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INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES

**NATURAL RESOURCES-BASED AGRICULTURAL RESEARCH PROJECT
(NRBAR)
1992-1998**

**FINAL REPORT OF
THOMAS J. CUSACK,
CHIEF-OF-PARTY / RESEARCH MANAGER**

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PREFACE

The activities and achievements described in this report represent a truly integrated effort by the Institut Senegalais de Recherches Agricoles (ISRA), the Consortium for International Development (CID), and the United States Agency for International Development (USAID), assisted by a large number of their collaborators, in implementing the Natural Resources-Based Agricultural Research Project (NRBAR)

Although this report focuses on Cusack's principal activities over the life of the project during the years 1992 to 1998, the successful completion and impact of these activities is largely due to the team efforts and support of many of the principal NRBAR participants, ranging from the thousands of farmer-collaborators to the Senegalese Government Ministers of Agriculture, Research, and Livestock. In order to successfully sustain such a consistent effort over such a long period, it has been particularly crucial to have had the invaluable leadership and support of successive Director Generals of ISRA, Mouhamadou Habib Ly, Jacques Faye, and Moussa Bakhayokho, and of the USAID NRBAR Facilitator, Mawa Diop.

Given the impracticality of individually acknowledging such a wide range of participants who have played key roles, we would like to thank all participants, who are listed in this and in the other project reports, for their invaluable contributions.

AVANT-PROPOS

Ce rapport presente les resultats d'un travail commun de l'Institut Senegalais de Recherches Agricoles (ISRA), le Consortium for International Development (CID) et le United States Agency for International Development (USAID), aides par un nombre important de partenaires, en vue de l'implementation du Projet de Recherche Agricole Basee sur la Gestion des Ressources Naturelles (NRBAR)

Bien que ce rapport souligne les activites principales de M Cusack sur ce projet de 1992 a 1998, l'aboutissement concluant et l'impact de ces activites sont largement du au travail d'equipe et au soutien des nombreux participants, depuis les milliers d'agriculteurs jusqu'aux Ministres de l'Agriculture, de la Recherche et de l'Elevage du Gouvernement Senegalais Afin de maintenir un tel effort sur une si longue periode, il a ete crucial d'avoir eu l'encadrement et le soutien des directeurs successifs de ISRA, Mouhamadou Habib Ly, Jacques Faye et Moussa Bakhayokho, et particulierement Mawa Diop, coordinateur du USAID NRBAR

Devant l'impossibilite d'exprimer individuellement notre gratitude au nombre important de personnes ayant eu un rôle essentiel dans ce projet, nous voudrions remercier toutes les personnes, listees dans ce rapport et dans d'autres rapports, pour leur indispensable contribution

Dr Thomas J Cusack
Chief of Party / chef d'equipe
Consortium for International Development

SUMMARY

This final report of Thomas Cusack, Chief-of-Party and Research Manager with the Natural Resources-Based Agricultural Research Project (NRBAR), summarizes activities and outcomes during the period September 1992 to September 1998, and discusses potential follow-up. Activities were undertaken as team efforts with NRBAR participants from ISRA and its collaborators, from USAID, and CID. The successful outcome of these activities was the attainment of project objectives prior to the project end-date of 30 September, 1998.

Cusack's principal activities as Chief-of-Party were integrating project activities into ISRA, managing expenditures incurred in local currency, supervising long-term expatriate and national staff, implementing more than 100 local and foreign short-term consultancies, providing leadership for program development, writing more than 50 progress reports and workplans, in close collaboration with ISRA and USAID staff, implementing more than 100 national and international linkage and training activities, at all levels ranging between farmer groups in village settings to Ph D programs in the U S , assisting USAID and ISRA in defining a results-oriented framework for project activities, and collaborating with USAID, the World Bank and other donors within the Results Framework of USAID.

Cusack's principal activities as Research Manager were assisting with the development, validation, dissemination, and evaluation of more than 50 agricultural and resource management technologies, designing and implementing training programs, implementing research management activities including strategic planning, setting of research priorities, and developing monitoring and evaluation systems, improving financial and administrative systems, establishing outreach and natural resources management units, designing and implementing collaborative research linkages between ISRA and extension agencies/farmers through formal contracts, providing technical and administrative assistance in the field for more than 50 research projects in the areas of rainfed and irrigated crops, agroforestry, livestock, and soils and water management, and evaluating and communicating research and outreach results, jointly with clients.

With Cusack's assistance in the area of agricultural and natural resources management (AG/NRM) technologies, ISRA and its collaborators completed detailed evaluations for 30 technologies out of the 108 technologies studied, developed 37 technologies, and provided assistance for the development of a further 37, validated 43 technologies at farm level, and provided assistance for the validation of a further 30, trained 8,813 farmers in new technologies, trained the administrators and technicians of 59 non-governmental organizations (NGOs) and farmer organizations, trained 473 farmer-leaders, and implemented 75 farmer exchange visits. These achievements will continue to be augmented, due to the project's groundwork of ensuring that many priority activities will continue to be financed into the post-project period.

With Cusack's assistance in the area of agricultural and natural resources management (AG/NRM) technologies, more than 2,000 ISRA staff and staff of collaborating institutions completed training, including 81 researchers, ISRA completed a detailed 20 year mission statement, and a five-year strategic plan, with the full participation of ISRA's clients and benefactors, ISRA established outreach, natural resources management, and monitoring/evaluation units, ISRA implemented a competitive research grants program, with the

formal participation of 14 collaborating institutions in 24 contracts, ISRA adopted improvements in research station, administrative and financial management, and 15 ISRA researchers trained for graduate degrees in the United States (U S) These achievements have increased the potential for ISRA to develop and validate improved agricultural and natural resources management technologies in the future

At management level, of particular importance to achieving these results has been the close collaboration of ISRA, CID and USAID staff in producing the annual workplans and progress reports, implementing the joint annual reviews, redesigning the NRBAR program in 1995-96 according to the restructured programs at both ISRA and USAID, and implementing the 4 large regional validation seminars and the national closing seminar during 1997-98

At field level, the collaborative approach between ISRA and its partners, which has been the main thrust of the project, has been more productive than anticipated – researchers have provided the necessary sustained technical support to extensionists and farmers, under formal contracts, to validate promising technologies, thereby motivating the farmers and NGOs to provide more of their own resources and effort in mastering the new techniques Just as significant was the quality of the training provided to farmers, which has largely been in farmers' fields, and sustained over a period of years

Although the full impact of NRBAR research and extension activities will not be felt until later in the dissemination process, a series of impact studies has shown significant on-farm benefits to date, with substantial increases in farm household incomes and food security Future impact will also be enhanced through project efforts in strengthening research management, ISRA staff are evidently better trained at all levels, their orientation is much more towards clients, and research teams take more regional responsibility for their research and administrative activities, as a result of NRBAR support Of particular note is the substantial consolidation of ISRA's personnel and infrastructure which commenced during the final months of the project

Although the project has generated the desired results, the future impact on target populations - potentially very great - is not assured, unless ISRA continues to develop and use its improved processes and orientation, and unless ISRA and its partners continue their validation and dissemination activities for promising technologies At farmer/partner level, it is expected that validation and dissemination activities will continue, at reduced levels, for existing technologies, as the enthusiasm and commitment exists, many existing linkages are strong, and partners can commit their own funds derived from a multitude of sources However, funding for the most successful collaborative research and dissemination projects needs to be continued and assured prior to the 1999 growing season, fortunately, it is likely that this will be provided through the World Bank PSAOP project, which has based its grants program on the NRBAR experience At ISRA level, much remains to be done to ensure continued viability and increased efficiency continued consolidation of infrastructure and personnel, sustained emphasis on outreach, and continued development of the improved human resources, research station, sustainable funding, financial management, and research management initiatives sponsored by the project

RESUME

Ce rapport final de Thomas Cusack, Chef d'equipe et Directeur de Recherche sur le Projet de Recherche Agricole Basee sur la Gestion des Ressources Naturelles (NRBAR), fait le bilan des resultats obtenus durant la periode allant de septembre 1992 a septembre 1998 et évoque les possibilites de travaux supplementaires relatifs a ce projet. Ces resultats sont le fruit d'une collaboration entre les personnes de l'ISRA and ses partenaires de l'USAID et du CID. L'heureuse issue de ce travail a ete l'atteinte des objectifs avant la date de fin du projet, le 30 septembre 1998.

Les activites principales de M. Cusack en tant que Chef d'equipe ont ete l'exploitation des resultats de ce projet par l'ISRA, la gestion des depenses dans la devise du pays, le suivi des expatries a long terme et du personnel a l'echelon national, l'implementation de plus de 100 missions d'appui au niveau local et international, l'encadrement du programme de developpement, la redaction de rapports d'activite et de plans de travail, en collaboration etroite avec l'ISRA et le personnel de l'USAID, l'implementation de plus d'une centaine de programmes de formation et d'echange a l'echelon tant national qu'international, a tous les niveaux, depuis l'installation de groupes d'agriculteurs au sein de villages jusqu'a des formations de niveau Ph.D. aux USA, collaboration avec l'USAID et l'ISRA sur l'organisation du projet pour l'obtention de resultats optimaux.

Les activites principales de M. Cusack en tant que Directeur de recherche ont ete l'assistance avec le developpement, la validation et la diffusion de plus de 50 technologies de gestion des ressources agricoles, la creation et la mise en place de programmes de formation, l'implementation d'un procede de gestion de la recherche, incluant une organisation strategique des priorites de recherche et le developpement de systemes de suivi et de developpement, amelioration des systemes financiers et administratifs, mise en place d'unites de gestion des ressources naturelles et de cellules recherche-developpement, creation et implementation d'un partenariat dans le domaine de la recherche entre l'ISRA et les representants des agences et agriculteurs au travers de contrats, l'apport d'un appui technique et administratif sur le terrain pour plus de 50 projets de recherche dans les domaines de l'irrigation naturelle, de l'irrigation par intervention humaine, de la gestion forestiere, du betail, de la gestion des sols et de l'eau, interpretation et diffusion des resultats de recherche et des cellules recherche-developpement, conjointement avec les clients.

Avec l'aide de M. Cusack dans les domaines de l'agriculture et des techniques de gestion des ressources naturelles (AG/NRM), 30 evaluations detaillees de technologies sur 108 etudiees ont pu être completees par l'ISRA et ses partenaires, 37 technologies ont ete developpees et ont servi de base pour le developpement de 37 autres, 43 technologies ont ete validees au niveau des agriculteurs et ont servi de base pour la validation de 30 autres, 8813 agriculteurs ont ete formes aux nouvelles technologies, ainsi que des organisations de producteurs et des gestionnaires et techniciens de 59 agences non gouvernementales (ONG), 473 paysans-leaders de premiere importance ont ete aussi formes, 75 visites d'echange avec les producteurs ont egalement ete organisees. Ces differentes activites continueront et seront etendues, dans la mesure ou la fondation même de ce projet est d'assurer le financement des activites prioritaires, ceci apres la periode suivant la fin du projet lui-même.

Avec l'aide de M Cusack dans les domaines de l'agriculture et des techniques de gestion des ressources naturelles (AG/NRM), plus de 2000 employes de l'ISRA et des institutions partenaires, incluant 81 chercheurs, ont déjà été formés, l'ISRA a mis en œuvre un projet d'entreprise sur 20 ans, et un plan stratégique sur 5 ans, avec la participation active de ses clients et bénéficiaires, l'ISRA a mis en place des cellules recherche-développement, un système de gestion des ressources naturelles et des unités de suivi et d'évaluation, ainsi qu'un programme de subventions de recherche avec la participation active de 14 institutions partenaires dans l'exécution de 24 contrats, l'ISRA également fait des améliorations dans la gestion des stations de recherches et dans la gestion administrative et financière, 15 chercheurs de l'ISRA ont reçu une formation diplômante aux USA. Toutes ces réalisations ont contribué à l'augmentation du potentiel de l'ISRA à développer et valider les technologies de gestion des ressources naturelles et agricoles.

Au niveau de l'encadrement, de première importance dans l'obtention de ces résultats, une collaboration étroite entre le personnel de l'ISRA, du CID et de l'USAID a permis d'aboutir à des plans de travail annuels, à des rapports d'activité, à la réalisation de revues annuelles conjointes, à la redefinition du programme NRBAR en 1995-96 en accord avec les programmes restructurés de l'ISRA et de l'USAID, ainsi qu'à l'implémentation de 4 séminaires régionaux de validation des résultats et un séminaire national de clôture durant 1997-98.

Sur le terrain, la collaboration entre l'ISRA et ses partenaires, qui a été la clé de la réussite de ce projet, a permis d'obtenir des résultats encore plus positifs qu'escompté. Les chercheurs ont fourni et maintenu un support technique nécessaire aux intermédiaires et agriculteurs, sous forme de contrats, pour valider des technologies prometteuses, et ainsi encourager les agriculteurs et les ONG dans la maîtrise de ces nouvelles technologies. Un point tout aussi essentiel a été la qualité de la formation des agriculteurs, qui a été largement dispensée sur le terrain et maintenue au cours des ans.

Bien que le plein impact des recherches et des applications découlant du NRBAR ne soit significatif qu'à plus long terme, une série d'études a montré des repercussions déjà très positives sur les exploitations agricoles, avec notamment une forte hausse du revenu de ces fermes et des stocks de sécurité de nourriture. Dans le futur, l'accent sera mis sur différents projets ayant pour but de renforcer la gestion des recherches, ce qui, là aussi, aura un impact positif, il est évident que la qualité de la formation du personnel de l'ISRA a ainsi été accrue, celle-ci étant plus orientée vers les besoins des clients, et les équipes de recherche prennent plus de responsabilités sur le plan régional pour leur recherche et leurs activités administratives, ceci grâce à l'aide du NRBAR. D'une importance toute aussi capitale, on a pu, depuis les derniers mois avant la fin de ce projet, remarquer une consolidation notable de la qualité du personnel et de l'infrastructure de l'ISRA.

Bien que le projet ait donné les résultats escomptés, l'impact futur sur les populations cibles (potentiellement très important) n'est pas certain, à moins que l'ISRA continue à développer et à utiliser de nouvelles méthodes, et que l'ISRA et ses partenaires continuent à valider et à diffuser ces technologies prometteuses. Au niveau agriculteur/partenaire on s'attend à ce que la validation et la diffusion de ces technologies continuent, même à des niveaux moindres, pour les technologies existantes grâce à l'enthousiasme et à la détermination des personnes. Les relations existantes sont fortes et les différents partenaires peuvent assurer leur propres fonds provenant de nombreuses sources. Cependant, le financement des projets de diffusion et de recherche commune les plus innovants se doit de continuer et doit être assuré avant la saison 1999. Heureusement, le projet PSAOP de la Banque Mondiale, qui a basé son programme de subventions sur l'expérience du NRBAR, fournira vraisemblablement les fonds. Au niveau de l'ISRA, il reste encore beaucoup à faire pour assurer une efficacité accrue et viable de longue durée : une consolidation continue de l'infrastructure et du personnel, un maintien de la qualité des cellules recherche-développement, ainsi que du développement continu des ressources humaines, des stations de recherche, de fonds durables, de la gestion des finances et des initiatives de gestion de la recherche découlant de ce projet.

TABLE OF CONTENTS

PREFACE	(ii)
AVANT-PROPOS	(iii)
SUMMARY	(iv)
RESUME	(vi)
TABLE OF CONTENTS	(ix)
LIST OF ACRONYMS	(x)
1 INTRODUCTION	
1 1 Background	1
1 2 Objectives and Resources	1
1 3 Outline of responsibilities and major tasks	2
1 4 Overview of this report	3
2 RESEARCH MANAGEMENT ACTIVITIES AND IMPACT	
2 1 Strategic planning and identification of research priorities	4
2 2 Information systems for research management	5
2 3 Human resource management and evaluation of personnel	5
2 4 Sustainable funding	6
2 5 Joint research management activities with the World Bank	6
2 6 Monitoring and evaluation of ISRA Programs	7
2 7 Research station management	7
2 8 Restructuring of ISRA	8
2 9 Annual programming and budgeting	9
2 10 Research reporting	9
2 11 Research linkages with other institutions	10
2 12 Financial management	10
2 13 Strengthening research activities	11
3 CHIEF-OF-PARTY ACTIVITIES AND IMPACT	
3 1 Planning	12
3 2 Progress reporting	13
3 3 NRBAR Monitoring and evaluation	13
3 4 Networking	14
3 5 Management of training programs	14
3 6 Management of the technical assistance program	15
3 7 Management of the grants programs	15
ANNEX A monthly reports for Tom Cusack, October 1992 - September 1998	
ANNEX B examples of project documents	
ANNEX C NRBAR Final Report	

LIST OF ACRONYMS

ACP	Agence Comptable Particuliere
AFID	Africaine D'Ingenierie pour le Developpement
AG	Agriculture
AI	Audit Interne
AT	Assistance technique
BAME	Bureau d'Analyses Macro-economiques
BMC	Lower and Middle Casamance
B S	Bachelor of Science
CDH	Centre pour le Developpement Horticole
CFA	Communaute Financiere Africaine
CG	Contrôle de Gestion
CID	Consortium for International Development
CIRA	Centre International de Recherches Agricoles
CM	Charge de Mission
CNBA	Center and North Peanut Basin
CNRA	Centre National de Recherches Agronomiques
CNRF	Centre National de Recherches Forestieres
COP	Chief of Party
CRODT	Centre de Recherches Oceanographiques de Dakar-Thiaroye
CRSP	Collaborative Research Support Program
CS	Special Advisor to the ISRA DG
CST	Comite Scientifique et Technique
DG	Direction Generale
DS	Directeur Scientifique de l'ISRA, (ISRA Scientific Director)
ENSA	Ecole Nationale Superieure d'Agriculture
FA	Financial Advisor
GIS	Geographical Information System
GRN (SP)	Gestion des Ressources Naturelles (et Systemes de Production)
GRNSPZS	Gestion des Ressources Naturelles et des Systemes de Production en Zone Seche
IARC	International Agricultural Research Centre
ICRAF	International Center for Research in Agroforestry
ICRISAT	International Center for Research in the Semi-Arid Tropics
IITA	International Institute for Tropical Agriculture
INFORM	Information for Agricultural Research Management
INTSORMIL	International Sorghum and Millet Program
ISNAR	International Service for National Agricultural Research
ISRA	Institut Senegalais de Recherches Agricoles (Senegal Agricultural Research Institute)
IST	Institut des Sciences de la Terre
LNERV	Laboratoire National d'Elevage et de Recherches Veterinaires
M/E	Monitoring and Evaluation
MIS	Management Information Systems
M S	Master of Science
NARS	National Agricultural Research System

NGO	Non-governmental Organisation (Organisation non gouvernementale)
NRBAR	Natural Resources-Based Agricultural Research Project
NRM	Natural Resources Management
ONG	Organisation non gouvernementale (Non-governmental Organisation)
OP	Organisation Paysanne (farmer organisation)
OS2	Objectif Strategique No 2
OSU	Oregon State University
Ph D	Doctor of Philosophy
PAPEM	Points d'Appui de Pre vulgarisation et d'Experimentation Multilocale
PAR/GRN	Programme d'Appui a la Recherche en GRN
PIR	Project Implementation Review
PNVA	Programme National de Vulgarisation Agricole
PRAII	Second Agricultural Research Project of the World Bank
PR1	Paquet pour Resultats No 1
PVO	Private Voluntary Organisation
R	Grant for ISRA Researcher
R-D	recherche-developpement
RI	Resultat Intermediaire
RP	Result Package
SARH	Service de l'Administration et des Ressources Humaines
SARII	Senegal Agricultural Research II
SBA	Southern Peanut Basin
SG	Secretariat General
S/E	Suivi et Evaluation
SIG	Systeme d'Information Geographique
SNRA	Systeme National de Recherches Agricoles
SO	Strategic Objective
SOAG	Strategic Objective Agreement
SOHC	Eastern Senegal and Upper Casamance
SOW	Scope of Work
S/V	Collaborative research grant
SYSPAI	Computer-Based Payroll Management System
TA	Technical Assistant
TDY	Consultant de courte duree, (Short-term Consultant)
UCAD	Univeresity of Dakar
URA	Unite de Recherche d'Appui
URR	Unite de Recherche Regionale
UNIVAL	Unite d'Information et de Valorisation
UP	Unite de Production
UPF	Unite de Programmation et Formation
USAID	United States Agency for International Development
WARDA	West African Rice Development Association
ZSP	rangeland zone
(partenaire)	(Institution collaborating with ISRA)

1 INTRODUCTION

1.1 BACKGROUND

In order to improve the provision of priority natural resources research and outreach services for the benefit of the rural population of Senegal, the Institut Senegalais de Recherches Agricoles (ISRA) and the United States Agency for International Development (USAID) designed the Natural Resources-Based Agricultural Research Project (NRBAR). The project was detailed in the Project Paper dated 23 July, 1991, and was initiated by the NRBAR Grant Agreement 685-0285 between the Government of Senegal and the United States of America dated 31 July, 1991.

The principal problems addressed by the project were Senegal's need for low-cost natural resources-based agricultural technologies in order to increase the productivity of agricultural systems, and the need for ISRA to have a strong institutional capacity to undertake natural resources-based research. The project was designed to focus particularly on improving resource management practices which enhance the productivity and sustainability of cereals-based cropping systems in areas of Senegal having greater than 400mm annual rainfall.

During the 1995-96 period, USAID/Senegal and its collaborators met numerous times to re-design their investments. One of the results of these meetings was the signing, on 27 September, 1996, of a new agreement between USAID and the Government of Senegal—the Strategic Objective Grant Agreement Number Two (SOAG No 685-SO2). Under the SOAG, the activities of the NRBAR and other agricultural sector projects were redefined and refocused towards the objective (SO2) “to increase crop productivity through improved natural resources management in zones of reliable rainfall in Senegal”. The SOAG agreement replaced the earlier 685-0285 Agreement, and ended on 30 September, 1998.

A five-year contract for NRBAR services (USAID Contract number 685-0285-C-00-2329-00) was awarded to the Consortium for International Development (CID) by USAID in July, 1992, and this contract was extended for the “option year” until 16 July, 1998, and again until the end of the SOAG period, 30 September, 1998.

Project programs and outcomes have been presented in more than five hundred documents completed through project assistance. The NRBAR Final Report, which is attached as Annex C, details and summarizes the project's programs, results and documents.

1.2 OBJECTIVES AND RESOURCES

The objectives of the NRBAR Program were as follows:

- institutional research capacity strengthened
- existing AG/NRM technologies assessed
- improved AG/NRM technologies developed
- improved AG/NRM technologies validated, and
- increased farmer exposure to improved AG/NRM technologies

In order to achieve the above objectives, the program consisted of the following major resource components

- research program support through collaborative and researcher grants
- grant support to ISRA's regional natural resources programs
- grants for linkages to international research institutions
- personnel, including long-term and short-term technical assistance
- long and short term training in Senegal and elsewhere, and
- complementary support by ISRA, USAID and CID

Long-term project staff consisted of the NRBAR Program Director, designated as the Director General of ISRA, the NRBAR Deputy Director designated as the ISRA Scientific Director, more than sixty additional ISRA staff, more than one hundred staff of ISRA's partner organizations related to specific collaborative research grants, and the following four long-term external Technical Assistants employed through CID Thomas Cusack (1992-98) as Chief-of-Party/Research Manager, Paul Anamosa (1992-96) as Natural Resources Planner, Wendy Wilson (1992-96) as Outreach Advisor, and David Holmes (1993-96) as Financial Advisor. Additional personnel consisted of a project administrator, a grants administrator, and other CID and USAID support staff.

1.3 OUTLINE OF RESPONSIBILITIES AND MAJOR TASKS

The responsibilities of the Chief-of-Party/Research Manager position were outlined in the original 1992 USAID/CID contract, in subsequent amendments to this contract, and in the annual workplans developed by the ISRA/CID/USAID team.

As Chief-of-Party, Cusack assumed the principal responsibility for ensuring that contract objectives were achieved. The following main areas of work were implemented through teamwork with NRBAR personnel, particularly the NRBAR Project Director (the ISRA Director General) and the NRBAR Deputy Director (the ISRA Scientific Director).

- implementing regular meetings with NRBAR collaborators
- compiling progress reports and workplans
- implementing periodic management visits to project field sites
- recruiting and supervising external technical assistance staff
- managing a NRBAR project office at ISRA, including the control of local currency accounts
- implementing NRBAR start-up and close-down activities, and coordinating changes in project direction
- implementing monitoring and evaluation exercises with collaborators
- assisting ISRA with establishing and managing the NRBAR grants programs
- assisting ISRA with proposing institutional reform measures, and more efficient utilization of resources
- assisting ISRA in maintaining a core natural resources management program, and
- managing the NRBAR participant training program

As Research Manager, Cusack was responsible for assisting ISRA to strengthen its planning and management systems. The following main areas of work were implemented through collaborative activities with NRBAR personnel, particularly the NRBAR Project Director (the ISRA Director General), the NRBAR Deputy Director (the ISRA Scientific Director), and the ISRA research and administrative teams:

- strategic planning and identification of research priorities
- assisting ISRA with reorganizing and restructuring
- annual programming and budgeting
- establishing a monitoring and evaluation system
- research reporting
- sustainable funding initiatives
- improving research linkages with other institutions
- human resource management and evaluation of personnel
- assistance for financial management
- strengthening of outreach activities, and
- strengthening of core natural resources management research activities

1.4 OVERVIEW OF THIS REPORT

This document reports on activities of Thomas Cusack, undertaken during the 1992-98 period as part of the NRBAR team effort to achieve NRBAR objectives. This report is based on progress recorded in the NRBAR Monthly reports, Quarterly Reports, and other project reports. In Chapter 2, summary statements of activities and outcomes are presented for each main research management area of work. In Chapter 3, summary statements are presented for each chief-of-party area of work. Indicative references to the appropriate project documentation are reproduced in the Annexes to this report. Annex A presents the monthly reports for Cusack for the whole project period, Annex B contains examples of written work in the research management and the chief-of-party areas. The complete NRBAR Final Report is presented in Annex C, as this best represents the scope and depth of Cusack's contribution in a single document.

2 RESEARCH MANAGEMENT ACTIVITIES AND IMPACT

Following a short summary section, specific activities and outcomes are described in this Chapter according to the main themes of the research management program. Details of program activities and outcomes are presented in the relevant ISRA documents, which are listed in the bibliography to the NRBAR Final Report.

SUMMARY

Cusack assisted senior ISRA staff in defining and implementing priority research management activities, through working closely and continuously in integrated fashion with the relevant ISRA teams. Formal and informal training was a pervasive element in this work. In addition, Cusack played a pivotal role in ensuring that aid donors (particularly the World Bank and USAID), ISRA's partners, and external technical assistance, were effectively coordinated and integrated into this process. In addition, Cusack, as an agricultural economist, assisted with the development of methodology for research priority-setting, with the socio-economic evaluation of technologies, and with measuring the impact of agricultural research.

2.1 STRATEGIC PLANNING AND IDENTIFICATION OF RESEARCH PRIORITIES

ACTIVITIES Cusack worked with the DG, the CS, and other senior ISRA staff, to design and implement the ISRA strategic planning process during 1994-98. Major activities included training of staff in priority-setting, participating in the strategic planning working group, designing and implementing participatory planning activities with ISRA's partners, designing and participating in a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis, designing and participating in outreach activities related to reaching consensus on key strategic planning elements, participating in the review of drafts of the ISRA strategic plan, the mission statement, and related documents, and employing 15 consultants to assist with key tasks.

ACHIEVEMENTS The ISRA strategic plan 1998-2003 and the ISRA Mission Statement 1998-2015, each with a Forward by the Minister of Agriculture, were validated by ISRA staff and by ISRA's partners, were published and were widely distributed. These documents identify jointly-agreed research priorities, acting as a basis for levels of program funding. ISRA's research programs now have clearly-defined objectives achievable in the medium term on a regional basis.

IMPACT The collaborative, participative and transparent processes used to develop the strategic plan and mission statement have forged close working relationships between ISRA units and customers, and have resulted in jointly-agreed priority programs being proposed for the medium term. This will ensure more client-oriented research and outreach activities, more productive joint implementation of future programs, and improved efficiency of developing, validating and disseminating improved technologies. It will also be easier for ISRA and its partners to obtain funding for their future activities. The final documents provide a secure basis for joint monitoring and evaluation of ISRA's achievements, on at least an annual basis.

2 2 INFORMATION SYSTEMS FOR RESEARCH MANAGEMENT

ACTIVITIES Cusack assisted senior ISRA staff, particularly the DS and Louis Sene, and ISNAR in developing a research management information system based on the ISNAR INFORM tool. Major activities included assistance in establishing the ISRA/INFORM system, for collecting INFORM data, and for preparing the research program and researcher summary information tables prior to the 1995 Joint Mid-Term Review, institutionalizing and adapting INFORM for use in ISRA units, including a pilot test in one unit, design and implementation of an annual programming and budgeting system using elements of INFORM, assistance with training of ISRA staff in Senegal and at ISNAR, and assistance to three short-term consultants in developing INFORM at ISRA.

ACHIEVEMENTS Summary management information on research programs and on the activities of individual researchers was presented to the Mid-Term Review in 1995, showing that researchers plan for too many separate activities. The INFORM methodology was used as a basis for a more rigorous system of annual programming and budgeting instituted in 1995/96, which increased researcher and research program transparency and accountability.

IMPACT Contributed to the decision to reduce the number of accepted research activities per researcher, and to the focus, from 1995/96, on realistic annual targets for researchers.

2 3 HUMAN RESOURCE MANAGEMENT AND EVALUATION OF PERSONNEL

ACTIVITIES Cusack assisted senior ISRA staff, particularly the DS, the SG and Louis Sene, and ISNAR, in developing human resources management and evaluation tools. Major activities included designing annual program and budget materials which could be effective aids in annual personnel evaluations, assisting with planning for annual, career and ad hoc personnel evaluations, training in personnel evaluation, primarily at ISNAR, assisting with developing evaluation criteria and procedures, and assisting with the audit of human resources.

ACHIEVEMENTS A comprehensive audit of human resources was completed, the personnel evaluation criteria for scientists were developed and agreed, a pilot test of an evaluation process was completed, and ISRA staff were trained in managing personnel evaluations.

IMPACT From informal data, it appears that the "evaluation initiale", the human resources audit, the development of a personnel evaluation procedures manual, and the test of a revised personnel evaluation process in some units, have resulted in improvements in efficiency of individual researchers, and have been used informally as a basis for making staff reassignments. However, the practical political problems, and in some cases the commitment of senior staff, to implementing a more transparent and accountable personnel system are such that it is unclear if this activity will achieve significant impact in the future. Although ISRA has shown some interest in developing a workable personnel evaluation process, many senior staff remain reluctant to institute even a basic annual evaluation system.

2 4 SUSTAINABLE FUNDING

ACTIVITIES Cusack worked with ISRA management and ISRA's partners throughout the 1995 to 1998 period, to design a sustainable funding initiative for post-NRBAR and post-PRAII financing of ISRA. Major activities included assisted with the January 1995 Joint mid-term review of ISRA by teams of ISRA, World Bank, USAID and other ISRA partners, where alternative funding mechanisms were first seriously discussed, continued the post-review collection of reference materials and discussions with USAID and other donors, but particularly within the new DG Steering Committee during late 1995 and 1996, where proposals were made for PSAOP financing using the NRBAR grants system as a model, assisted with a short-term consultancy by Cheikh T Sarr, funded by FAO, who completed a general study of the problem in early 1997, in May, 1997, arranged and participated in the NRBAR consultancy of Jean-Pascal Pichot, where the NRBAR grants system was evaluated for use as part of the funding mechanism, arranged and participated in the NRBAR consultancies of Cheikh T Sarr in late-1997, where a feasibility study for a Research Fund was completed in the context of an analysis of the NRBAR grants management system, and in May, 1998, where Sarr facilitated and reported on a national research funds workshop, which was funded by NRBAR, and which brought together senior ISRA management and 70 partners to define a common approach to national agricultural research funding.

ACHIEVEMENTS A research fund was designed and validated through a transparent, participatory, process involving ISRA's main clients and donors.

IMPACT ISRA and the World Bank have agreed on the research fund as the basis for funding for ISRA for the PSAOP Project, due to be signed in 1999. Funding for ISRA has therefore been assured for the next several years, under a framework which is potentially sustainable following the completion of the PSAOP activity. The agreed client participation in the selection, implementation and review of research projects, the competitive nature of the system, and the decentralization of responsibility, will help to ensure that priority farmers' needs will be addressed.

2 5 JOINT RESEARCH MANAGEMENT ACTIVITIES WITH THE WORLD BANK

ACTIVITIES Cusack worked closely with ISRA managers, and with World Bank personnel responsible for parallel projects, to ensure more effective implementation of the existing PRAII project, and to assist with preparations for the future PSAOP project. Major activities included assisted with the Joint Mid-Term Review of ISRA in January, 1995, through coordinating the USAID/World Bank collaborative effort, assisted with PRAII implementation through participating in an ISRA visit to the U S in 1994 to review priority setting methodology, and through frequent discussions to ensure that the NRBAR and PRAII were being managed by ISRA in as complementary a fashion as possible, assisted with PRAII close-out during 1995-97, including contributions to the ISRA team on final reporting and writing of an evaluative appendix of the World Bank Implementation Completion Report, and participated in the design and review of initial drafts of the PSAOP project, particularly regarding the proposed competitive collaborative research grants program which was based on the NRBAR grants, and on sustainable funding.

ACHIEVEMENTS The PRAII project was effectively closed-out, and the major elements of the future PSAOP project were agreed

IMPACT ISRA was able to complete implementation of the PRAII project in complementary fashion to NRBAR, and to successfully negotiate the follow-up PSAOP project with the World Bank, ensuring continuity of priority research programs with ISRA and its partners, with more customer orientation, and more transparency and accountability. Without this continuity, many of the gains of NRBAR would have been quickly lost

2.6 MONITORING AND EVALUATION OF ISRA PROGRAMS

ACTIVITIES Cusack collaborated with ISRA and NRBAR staff in developing monitoring and evaluation tools, implementing monitoring and evaluation activities, and establishing monitoring and evaluation processes in ISRA. Major activities included training ISRA and partner staff in the logical framework methodology, and in establishing monitoring and evaluation processes, implementing the methodology and associated processes in ISRA units, promoting and implementing evaluations of specific ISRA programs, participating in annual evaluations of ISRA's research programs, managing 12 short-term consultancies in this area, and establishing a database monitoring tool

ACHIEVEMENTS 42 ISRA research staff and 12 senior management staff have been trained in logical framework methods, all ISRA units have prepared, and are operating according to, monitoring and evaluation plans, ISRA-level plans such as the strategic plan and the PSAOP project contain viable logical frameworks, specialized ISRA staff train researchers in methodology, and assist with development and implementation of unit plans, and 5 external reviews of specific ISRA research programs were completed

IMPACT The current uses of monitoring and evaluation tools has resulted in a more rigorous, focused research program, at national and at unit levels, this has provided a base for improved transparency and accountability of programs, and a shared understanding of objectives and outcomes with partners. The improvements achieved in this program can likely be sustained, as the in-house capability to train and participate with researchers in using monitoring and evaluation tools has been developed

2.7 RESEARCH STATION MANAGEMENT

ACTIVITIES Cusack worked with the DG, the DS, the SG, the research station managers, other senior ISRA staff, the World Bank, and 2 consultants (who made repeated visits), to design, implement and review improvements in research station management. Major activities included collaborating with 16 months of effort by short-term consultants in all areas of research station management, coordination of activities with the World Bank, assisting with 2 studies of indirect costs, formal and informal training, and contributing to feasibility studies for infrastructure development

ACHIEVEMENTS ISRA established a technical services system of station managers, implemented and reported on an inventory of buildings and equipment, agreed and put into place procedures for station management, and determined a viable indirect cost rate suitable for external financing of contracts. ISRA developed a strategic plan for infrastructure, appointed station managers and a system coordinator, and benchmark soils assessments were made for the experimental areas of 3 main stations.

IMPACT The current substantial consolidation of infrastructure at ISRA was made possible through the data collected, the analyses undertaken, and management improvements achieved. Substantially-increased funding of research activities was achieved during 1996-98, with the use and acceptance by funding agencies of the 27% overhead rate for ISRA contracts. The improved management environment on stations, and in ISRA as a whole, is expected to sustain these types of impacts into the future.

2.8 RESTRUCTURING OF ISRA

ACTIVITIES Cusack assisted senior ISRA managers and research staff, partners, and NRBAR technical assistance in structurally incorporating the outreach and natural resources management functions into ISRA, and in establishing a competitive research grants program. Cusack also assisted with the two ISRA reorganizations which were designed and implemented during the period of the project. Major activities included designing and developing independent research units based on recommendation domains, and consolidating these units into regional centers, designing and supporting the establishment of outreach and natural resource management units as part of the ISRA Scientific Directorate, and designing, implementing and evaluating 3 competitive research grants programs, for research/outreach contracts with partners to work on farmers' fields, for ISRA researchers to work in controlled environments, and for researchers and partners to work under regional programs.

ACHIEVEMENTS Three competitive research grants programs were established and successfully managed at ISRA. ISRA established and operationalized national outreach and natural resource management units. ISRA reorganized its units to emphasize and more effectively target its customers, and reduced the number of major research sites, to reflect overall funding levels and to strengthen regional programs.

IMPACT The competitive grants system successfully evaluated 30 existing technologies, resulted in the development of 37 new technologies, and the validation at farm level of a further 43 technologies. The successful ISRA experience with the competitive grants system has provided the basis for the agreement for funding of the World Bank PSAOP project, which will ensure significant financial and material support to ISRA priority research programs for the next 5 years. The size and composition of ISRA staff and facilities are more closely aligned with research priorities and available resources, as a result of the restructuring, although this has improved efficiency, the process needs to be further developed in the future if the large potential efficiency and quality gains are to be realized. ISRA is now securely client-focused, and existing structures are well placed to continue to strengthen this outlook, implying expected continued gains in the relevance and productivity of research.

2 9 ANNUAL PROGRAMMING AND BUDGETING

ACTIVITIES Cusack assisted senior ISRA research and management staff in designing, implementing and evaluating a more realistic annual programming and budgeting system. Major activities included working with the DG and DS to design and implement the 1995/96 program and budget plans, and with senior staff to revise the process and tools for 1996/97 and 1997/98, working with individual ISRA units, central and regional, to prepare plans and budgets as management tools, and training staff in programming and budgeting.

ACHIEVEMENTS ISRA programmed and budgeted for its programs for 1996-98 using a simple but rigorous set of tools and procedures.

IMPACT. Research managers were able to assign funding to research activities on a realistic and transparent basis, improving efficiency of resource use and increasing efficiency in maintaining high-priority programs. This led to increased numbers of technologies being developed and validated. With 3 seasons of experience, the system appears to be well established at ISRA, and it is expected that the current stream of benefits will be at least be maintained.

2 10 RESEARCH REPORTING

ACTIVITIES Cusack assisted the DS, senior researchers, ISRA's partners, and technical assistants, in designing and completing research reports targeted towards specific audiences. Major activities included directly assisting research teams in writing reports, particularly for on-farm trials and socio-economics, promoting presentations to farmer groups and other partners, designing reporting formats and content with research/extensions teams contracted under NRBAR, assisting NRBAR short-term consultants in writing summary reports for technologies being developed and validated through the NRBAR grants programs, and assisting the DS in producing the ISRA Annual Reports for 1995, 1996, and 1997, and the final summary research report for the 1990-1995 period.

ACHIEVEMENTS The ISRA annual research reports for 1995, 1996, and 1997, and the summary research report for the 1990-95 period, were developed, published and distributed. All NRBAR research and research/extension teams effectively reported their research results. Summaries of the technologies evaluated, developed, and validated under NRBAR were written, presented for peer review by researchers and customers, and distributed.

IMPACT These reports have been crucial in the dissemination and review of ISRA's technical research results, often acting as a focal point for further ISRA/partner collaboration. Researchers, extensionists and policy-makers have used and acted upon these reports. For example, a report in Wolof is widely used directly by extension workers in training of farmers in composting, the research summaries have assisted researchers in defining research priorities for future activities, and donors have used the ISRA-wide reports in assessing future financial commitments to ISRA. Ultimately, the impact will be increased productivity on farms as this information is reinterpreted and acted upon at farm level, and as ISRA attracts increased funding.

from sources such as the PSAOP as a result of the demonstration of its progress in generating increased benefits to its customers

2 11 RESEARCH LINKAGES WITH OTHER INSTITUTIONS

ACTIVITIES Cusack assisted ISRA staff, and national and international research institutions, in collaborating on specific tasks of benefit to the institutions concerned. Major activities included developing formal long-term research and training links between ISRA, Tuskegee University and Oregon State University, involving NGOs and farmer groups, developing numerous joint review and training activities with ISNAR in the areas of financial sustainability, ISRA's reorganization, outreach activities and planning, strategic planning, priority-setting, personnel evaluation, researcher information systems, and financial management, and assisting with developing and strengthening ISRA's links with the University of Dakar, the Agricultural University in Senegal (ENSA), Winrock International, the Rodale Institute, IDRC, the University of Purdue, the INTSORMIL, Bean/Cowpea, and TropSoils CRSPS, and many other institutions and programs

ACHIEVEMENTS ISRA signed more than 10 formal research contracts with the linked institutions, and continues to implement joint research and training programs with them. Numerous joint research and training events have been completed and reported on.

IMPACT The increased and improved collaboration has resulted in higher quality research results, improved research planning, and improved dissemination and peer review of ISRA activities and outputs. Many of the collaborations in key areas are programmed to continue after the project end-date. For example, the on-farm research on degraded soils in the Peanut Basin through IDRC and Oregon State Collaboration, and on saline soils through collaboration with the University of the Negev in Israel.

2 12 FINANCIAL MANAGEMENT

ACTIVITIES Cusack assisted senior ISRA managers and their partners, and the NRBAR financial advisor, in project financial management interventions, particularly for establishing a new viable financial management system. Major activities included summarizing the NRBAR financial program and outputs for the period 1993-96, assisting with the implementation of the Ernst and Young sub-contract with USAID, developing budget formats for the annual program and budget, training and assistance to regional research units for financial management improvements, establishing an indirect cost rate, assisting with inventory valuations for the audit, and collaborating with the World Bank, USAID, and local consultants on proposed investments in financial management systems.

ACHIEVEMENTS ISRA completed a shared strategy for establishing a viable financial management system acceptable to donors and clients, determined a viable indirect cost rate for ISRA research contracts, developed terms of reference for contractors to establish the new financial management system, and established an improved and transparent accounting system for the management of the World Bank Second Agricultural Research Project (PRAII).

IMPACT The PRAII project was successfully completed, without the anticipated cost overruns, so helping to ensure the successful continuation of World Bank funding for research. ISRA received substantially increased levels of funding for its research programs, as a result of the acceptance and use by donors of the 27% indirect cost rate. ISRA improved the transparency of its financial transactions, and this has resulted in corrective actions being taken to improve accountability and efficiency of resource use. Only limited impact of this program is expected in the future, as ISRA has not as yet been able to establish a viable financial management system, and this is not a feature of anticipated donor follow-on assistance, in fact, future World Bank funding appears to ensure that program financing will be to some extent independent of ISRA's financial management system.

2.13 STRENGTHENING RESEARCH ACTIVITIES

ACTIVITIES Cusack assisted specific research teams in the technical design, implementation and review of their programs. Major activities included supervising and collaborating on socio-economic research projects in Kolda and Tambacounda on the stabling of livestock, collaborating with BAME and the University of Purdue on determining research impact, contributing to 5 studies of on-farm impact of NRBAR interventions, and making socio-economic contributions to numerous on-farm research teams, on methodology, questionnaire design, data analyses, and interpretation of results.

ACHIEVEMENTS The research projects were completed, with more than 20 technologies socio-economically validated, and the impact of research in cotton, rice and other cereals was found to be substantial, resulting in high net returns to investments in research and extension. Initial impact studies for NRBAR interventions showed that food security and farm incomes had been significantly increased through the adoption of new technologies sponsored by the project.

IMPACT The results for new technologies have been validated by users, and are currently being widely extended, this is expected to lead to further substantial increases in the food security of farm households. These successes, and the associated research impact evaluations, have supported and promoted ISRA's case to external funding agencies, that funding for research in Senegal can show excellent returns on investment as well as provide immediate measurable benefits to customers.

3 CHIEF-OF-PARTY ACTIVITIES AND IMPACT

Following a short summary section, specific activities and outcomes are described in this Chapter according to the main themes of the chief-of-party effort. Details of program activities and outcomes are presented in the relevant ISRA documents, which are listed in the bibliography to the NRBAR Final Report.

SUMMARY

Cusack assisted senior ISRA staff, ISRA's partners, and USAID staff, in jointly planning, monitoring, implementing, and evaluating project activities and impact. Through intensive networking and leadership, Cusack played a pivotal role in ensuring that stakeholders made appropriate contributions to project management, allowing project activities and goals to be reassessed and reoriented to achieve project objectives. Cusack also managed the training, technical assistance and grants programs, ensuring that they were able to effectively contribute to achieving project objectives.

3.1 PLANNING

ACTIVITIES Cusack assisted the NRBAR Director (the DG of ISRA) and the NRBAR Deputy Director, (the DS of ISRA), and other project participants, in preparing and presenting workplans and budgets, and other planning documents. Major activities included negotiating and writing the Annual Workplans, and other multi-year planning documents, together with major stakeholders, assisting research teams and other stakeholders, such as training sub-contractors in writing plans, coordinating inputs to such reports from all collaborators, collaborating with USAID and ISRA management in re-orienting project plans at the beginning of the project in 1992/93, and during the ISRA/USAID reengineering process in 1995/96, and presenting to, and discussing reports with, USAID and other stakeholders at relevant events such as the project restructuring/reengineering team meetings, the Project Implementation Review meetings, the Annual Joint Reviews and the U.S.-side management meetings.

ACHIEVEMENTS Plans were regularly produced and distributed to all main stakeholders, and were used to better manage, coordinate, and evaluate project activities, particularly when reports were used as a basis for team coordination meetings. Plans were restructured in 1995/1996, in accordance with the changes in emphasis of project objectives.

IMPACT The plan development process was a key vehicle for strengthening team collaboration between the various ISRA research units, ISRA management, the technical assistance staff, USAID, and ISRA's partners. This ensured more effective collective action to achieve all project objectives, particularly during the period 1995/96, when both ISRA and USAID were reengineering their operations. All stakeholders were able to contribute and to be placed at the same level of information. The project was successfully reengineered, so allowing funding to continue - through two extensions - to more precisely target results relevant for ISRA's customers.

3 2 PROGRESS REPORTING

ACTIVITIES Cusack assisted the NRBAR Director (the DG of ISRA) and the NRBAR Deputy Director, (the DS of ISRA), and other project participants, in preparing and presenting progress reports. Major activities included writing of the monthly, Quarterly, Biannual, and other occasional progress reports necessary for adequate monitoring of progress, assisting research teams and other stakeholders such as training sub-contractors in writing reports, coordinating inputs to progress reports from all collaborators, and presenting to, and discussing reports with, USAID and other stakeholders at relevant events such as the Project Implementation Review meetings, the Annual Joint Reviews and the U S -side management meetings

ACHIEVEMENTS Progress reports were regularly produced and distributed to all main stakeholders, and were used to better manage and plan project activities, particularly when reports were used as a basis for team coordination meetings. Progress reports were restructured in 1995/1996, in accordance with the changes in emphasis of project objectives

IMPACT The report-writing process was used as a key vehicle for strengthening team collaboration between the various ISRA research units, ISRA management, the technical assistance staff, USAID, and ISRA's partners. This ensured more effective collective action to achieve all project objectives, particularly during the period 1995/96, when both ISRA and USAID were reengineering their operations. All stakeholders were able to contribute to and to be placed at the same level of information. The project was extended twice, partly on the basis of available progress reports

3 3 NRBAR MONITORING AND EVALUATION

ACTIVITIES Cusack participated in regular project monitoring and evaluation activities, jointly with other project staff. Major activities included regular planning and monitoring through field visits to project sites with collaborators, preparing for and participating in the regular formal evaluation exercises, particularly the Annual Joint Reviews, participating in the CID Early Evaluation, the mid-term evaluation in 1995, and the USAID Contractor evaluation in 1996/97, assisting specific units in preparing monitoring and evaluation reports, and preparing for, implementing, and reporting on the 4 large regional evaluation workshops in 1997/98, the final evaluation workshop for the NRBAR grants programs of May 1998, and the Final National-level Closing Seminar of August, 1998

ACHIEVEMENTS The project was effectively monitored and evaluated by all stakeholders, ranging from participant farmers to the Senegal Minister of Agriculture

IMPACT Through the monitoring and evaluation process, stakeholders were able to effectively contribute to project direction and implementation, ensuring that jointly-owned project objectives could be achieved. In this way, post-project directions were jointly discussed, providing a strong basis for continuing the most productive thrusts of the project

3 4 NETWORKING

ACTIVITIES Cusack provided leadership for, and assisted with, meetings, communications and other networking activities between stakeholders in the project. Major activities included coordinating and participating in regular meetings (on average, one per week) with USAID, coordinating and participating in regular management meetings (on average, more than one per week) with ISRA (independently of in-service research manager activities), coordinating and participating in regular NRBAR management coordination meetings (on average, one per month) with USAID and ISRA, coordinating and participating in occasional NRBAR management meetings involving a broader group of stakeholders (on average, one per quarter) including USAID and ISRA, and implementing numerous coordinating meetings and communications between project participants such as short-term consultants, other donors, researchers and NGOs, on specific programs.

ACHIEVEMENTS The main stakeholders were effectively incorporated into project planning, decision-making, review, sharing of information and general management on a regular and consistent basis.

IMPACT Through the networking process, stakeholders were able to effectively contribute to project direction and implementation, ensuring that jointly-owned project objectives could be achieved. Through this productive team experience, joint post-project activities related to project objectives are expected to be continued.

3 5 MANAGEMENT OF TRAINING PROGRAMS

ACTIVITIES Cusack assisted with the design, implementation and review of the project's training programs, involving more than 50 foreign institutions, 20 Senegalese institutions, and more than 100 ISRA and partner staff. Major activities included designing and writing of the long-term training plan in 1993 for 15 M S and Ph D students in the U S , reorienting the long-term training plan in 1995/96, coordinating and designing short-term foreign training programs, coordinating and designing short-term training programs in Senegal in close cooperation with ISRA staff and short-term consultants, and establishing and supporting the women's B S program in Senegal at the University of Dakar and the Agricultural University (ENSA).

ACHIEVEMENTS Five M S degrees and 4 Ph D degrees were obtained by ISRA staff by project closing date, with a further Ph D and 4 further M S degrees expected to be completed shortly after the project closing date. Eighty-nine ISRA researchers and administrators successfully completed foreign short-term training programs. Thirty-four large short-term training events were successfully implemented in Senegal, in addition to a further 177 smaller events, servicing more than 2,000 participants from ISRA and its partners. 10 Senegalese women were trained to B S level at two Senegalese institutions (the training was actually completed in the months following the project end-date).

IMPACT The successful implementation of the training programs has ensured that these programs have made significant contributions to project objectives, such as the evaluation and validation of improved technologies. The impact of the increased skills, international

networking abilities, and the strengthened research collaboration will be felt far into the future, with the more productive generation, validation and dissemination of improved technologies

3 6 MANAGEMENT OF THE TECHNICAL ASSISTANCE PROGRAM

ACTIVITIES Cusack provided leadership for, and assisted with planning and management of, the short and long-term technical assistance programs Major activities included recruiting and supervising long-term and short-term project staff, coordinating technical assistance needs with availability, managing the CID/NRBAR field office in ISRA, and coordinating needs and implementation with ISRA and partners

ACHIEVEMENTS Four long-term technical assistants successfully completed their assignments, together with 10 local staff, and 121 short-term consultancy visits

IMPACT The impact of this program on project objectives has been comprehensive and pervasive, short and long term technical assistance have provided crucial leadership, management and technical expertise in the achievement of all project objectives

3 7 MANAGEMENT OF THE GRANTS PROGRAMS

ACTIVITIES Cusack provided leadership for, and assisted with planning and management of, the NRBAR grants programs Major activities included designing and revising of the 3 grants programs as an integral part of ISRA's operations, ensuring that all stakeholders are incorporated into the decision-making process, and regular monitoring and evaluation activities

ACHIEVEMENTS A competitive research grants system was established and succeeded in implementing 25 collaborative subcontracts between ISRA and its partners, 27 subcontracts with multidisciplinary research teams, and 35 regional research activities with 4 natural resource management teams

IMPACT The successful implementation of this program has been crucial in the achievements of the project in meeting its objectives In particular, 37 technologies have been developed, 43 validated, 8,813 producers trained in managing improved technologies, 34 NGO and farmer organizations trained, and 75 farmer exchanges implemented The impact of these results will continue to drive increases in productivity at farm and extension/research levels in the future

ANNEX A

MONTHLY REPORTS FOR TOM CUSACK, OCTOBER 1992 - SEPTEMBER 1998

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK OCTOBER 1992

1 PRINCIPAL ACTIVITIES· undertaken in collaboration with M Ndoye, NRBAR Project staff, and USAID staff

- French language training at ACI (30% of time).
- ✓-wrote draft specifications of NRBAR research grants.
- ✓-selected and appointed NRBAR Admin./Assist. Admin /3 drivers.
- ✓-established temporary NRBAR offices.
- established inventory system for NRBAR materials
- participated in the morning session of ANRO Biannual Retreat
- ✓-selected and established private housing.
- facilitated supply of project materials/vehicles
- drafted prelim project schedules for Oct-Feb and for 1992/93
- ✓-drafted preliminary budgets for 5 Ph.D. participant trainees
- ✓-initiated arrangements for NRBAR launching workshop
- admin work such as designing log-books for NRBAR vehicles
- met with Brhane Gebzekidan of INTSORMIL.
- participated in ISRA Management study review meeting.
- participated in ISRA technology inventory study meeting.
- met with Moussa of Louvain/Belgium on Geog Inform Systems
- facilitated start-up of Wendy/Paul.
- evaluated the initial computers provided by USAID.
- met with Rod Kite for initial M/E planning, incl TDY potential

2 ACHIEVEMENTS

- ✓-established temporary NRBAR offices in rented apartment.
- hired (on temporary basis prior to contract) project staff
- established initial working rapport with ISRA/USAID.
- family installed in house

3. DIFFICULTIES.

- no substantial difficulties encountered this month, considering the rapid project start-up

4 FUTURE PROGRAM

- write workplan, complete initial inventory, introductory planning sessions with ISRA staff, visits to stations, USAID and cultural orientation, initial reporting.

5 OTHER.

- ISRA and USAID have been most cooperative, allowing a very rapid project start-up, most of the logistics questions having already been resolved this month ,

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK. NOVEMBER, 1992

1. PRINCIPAL ACTIVITIES· undertaken in conjunction with staff:

- visited researchers at Bambe and Kaolack (24/25).
- participated in one-day cultural orientation workshop (16).
- participated in USAID orientation for NRBAR staff (17).
- participated in technology inventory study review meeting(27).
- administered establishment of project housing/offices.
- facilitated supply of project materials/vehicles.
- drafted Progress Report of 19NOV92.
- made arrangements for NRBAR launching workshop.
- admin work such as designing working conditions for drivers.
- met with David Andrews of INTSORMIL/NEBRASKA.
- participated in ISRA Management study review meeting.
- facilitated start-up of Wendy/Paul.
- drafted format for workplan and wrote initial section.
- regular meetings with M. Ndoye, USAID, and team members.
- completed first financial and monthly reports.
- reviewed progress against the CID contract.

2. ACHIEVEMENTS·

- principal counterparts identified, with relevant ISRA units.
- completed initial workplan meetings with many senior researchers
- hired a fourth project driver.
- strengthened working rapport with ISRA/USAID
- Wendy moved into permanent housing in Thies.

3. DIFFICULTIES:

- no substantial difficulties encountered this month, although procurement of housing and office materials has been much slower than expected. The development of the 1993 workplan with counterparts at ISRA will be somewhat slower than anticipated, as many key counterparts will continue to be involved in a research-extension review process until mid-December, and most senior researchers are not familiar with the project itself.

4. FUTURE PROGRAM:

- write workplan, continue planning sessions with ISRA staff, move to our Hann offices, ensure all TAs adequately installed in private housing.

5. OTHER.

- a productive month, focusing on orientation and establishment of project infrastructure.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: DECEMBER, 1992

1 PRINCIPAL ACTIVITIES:

- met with BAME staff on workplan and on research cycle.
- visited Bambe 3DEC92, discussed workplan with researchers.
- wrote research planning part of workplan and discussed with counterparts, USAID.
- wrote various drafts of the 1993 workplan, incorporated sections written by Paul/Wendy/Anne, latest French version being 24DEC92 and latest English version being 31DEC92. Distributed these drafts to Ndoye and Diop.
- moved the office from the apartment en centre ville to Hann.
- met with Louis Sen on Human Resource Study, obtained ISRA professional staff list.
- arranged Jean Kearns TDY.
- redrafted launching workshop proposal.
- participated in ISRA coordination meeting of 28DEC92, presented workplan and launching workshop materials.
- admin. work such as logistics for Hann office.
- met Leduc of World Bank, exchanged documents.
- normal meetings with Ndoye, Diop, TAs.

2 ACHIEVEMENTS:

- established NRBAR offices at Hann, with all major structural improvements completed.
- wrote first substantive draft of workplan
- Paul moved into permanent housing at Hann.

3. DIFFICULTIES

- no substantial difficulties this month, although some ISRA counterparts remain unavailable until the New Year.

4 FUTURE PROGRAM JANUARY

- launching workshop arrangements and participation.
- procedures manual writing.
- complete 1993 workplan.
- draft July-December Biannual Report.

5 OTHER:

- a productive month, focusing on establishment of project infrastructure and discussions with counterparts on workplan.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: JANUARY, 1993

1. PRINCIPAL ACTIVITIES:

- rewrote parts of PLAN DE TRAVAIL and discussed with all parties. Presented to ISRA Comité de gestion on 11JAN93. Participated in USAID project committee review of 8JAN93. Produced final workshop draft 21JAN93 in French and English.
- finalised SEMINAIRE DE DEMARRAGE proposal, following further comments of Ndoye. Wrote and presented speech to séminaire de démarrage, organised and participated in the séminaire.
- CONSEILLER FINANCIER: Holmes was selected, and dossier prepared and presented to ISRA and USAID for technical approval.
- met with Secrétariat Général and Louis Sen on TRAINING/HUMAN RESOURCE STUDY, modified ISRA professional staff list.
- MANUAL DE PROCEDURES: participated in Jean Kearns TDY. Assisted with compilation of initial draft, met with ISRA staff and USAID staff on details. Drafted TDY policy and Chambre de Passage policy.
- participated in ISRA COMITE DE GESTION meetings of 4JAN93, 11JAN93 and 19JAN93, presented workplan and launching workshop materials.
- SOMMAIRE DU PROJET: wrote and distributed first draft to workshop participants.
- participated in and wrote minutes of ISRA/CID/USAID COORDINATING MEETINGS of 5JAN93, 8JAN93 and 11JAN93.
- ADMIN. work such as assisting with Alice Anamosa Senegal visa, delivered seeds to Ndoye from Nebraska via OSU, writing monthly NRBAR summary report, interviewing potential TDY, shipping of personnel effects, and attending ISRA stone laying ceremony at ISRA/ORSTROM.
- met Safietou Fall and agreed to be nominated for committee on ISRA staff evaluations.
- discussed M/E and maize impact work with Bill Roberts
- discussed potential collaborative research grants cooperation with OSDIL's Kane and Daffe
- developed specifications for NRBAR computer request to USAID.
- met Leduc of World Bank, exchanged documents, and views on workplan and relationship between NRBAR and WB investments.
- met J-P Denis on the role of NRBAR in ISRA and workshop.
- normal weekly meetings with Ndoye, Diop, TAs.

2. ACHIEVEMENTS:

- workplan approved, except for minor changes, by ISRA and USAID project committee.
- Holmes technically approved by ISRA and USAID.
- finalised first drafts of workplan, sommaire de projet and computer specifications, obtained USAID approval in principle to purchase computers through OSU.
- successful implementation of séminaire de démarrage.

3. DIFFICULTIES: no substantial difficulties this month.

4. FUTURE PROGRAM: FEBRUARY

- writing of: launching workshop report, procedures manual, workplan, sommaire du projet, July-December Biannual Report, long-term training plan, impact study proposal.

5. OTHER: a very productive month.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK FEBRUARY, 1993

1. PRINCIPAL ACTIVITIES:

- rewrote parts of PLAN DE TRAVAIL, obtained final comments, and submitted final report 27FEB93 in English to ISRA and USAID for their approval
- finalised SEMINAIRE DE DEMARRAGE report, including review by Denis, and submitted to ISRA for approval. Wrote trip report.
- CONSEILLER FINANCIER: Holmes negotiated terms and conditions of his appointment, and a request for approval was prepared for USAID.
- met with Secrétariat Général and Louis Sen on TRAINING/HUMAN RESOURCE STUDY, modified ISRA professional staff list.
- MANUAL DE PROCEDURES: participated in final days of Jean Kearns TDY, wrote summary letter report. Obtained French translation of relevant sections, distributed to ISRA staff (Ndoye, Sall, SG, CG, ACP), obtained ISRA/TA/USAID comments, summarised comments in English and sent all notes DHL to Jean on 12FEB93. Met Lance/Mawa on procedure for spending Support for ISRA Researchers and International Liason funds directly from USAID. Met USAID Financial staff on financial procedures.
- SOMMAIRE DU PROJET: wrote and distributed second draft; following comments, wrote and submitted final draft to ISRA for approval.
- participated in and wrote minutes of ISRA/CID/USAID COORDINATING MEETINGS of 2FEB93 and 9FEB93.
- ADMIN work such as staff meetings, shipping, computer specs., housing/office materials specs., Senegal visas, TA/USAID communications, RAMs, writing monthly NRBAR summary report
- drafted one-page training programme
- reviewed and commented on technology inventory report.
- discussed M/E and impact work with Rod Kite, Mike McGahey, Mme. Ba, drafted one page M/E/impact programme.
- E+Y. participated in review meeting and wrote review.
- normal programming meetings with Ndoye, Diop, Wendy, Paul, Anne

2. ACHIEVEMENTS

- workplan finalised and submitted to USAID for approval.
- Holmes successfully negotiated terms and conditions of appointment, and timetable of 1JUN93 arrival agreed.
- finalised sommaire de projet and Report of Séminaire, and submitted to ISRA for approval.

3. DIFFICULTIES although the search for ISRA's long-term training candidates has been completed, the dossier has not yet been released from ISRA/Admin. Travel and meetings with counterparts were somewhat but not excessively disrupted by the Presidential elections.

4 FUTURE PROGRAM. MARCH

- preparation for and writing of procedures manual, workplan (in French), long-term training plan, M/E TDY proposal.

5. OTHER: a very productive month. Elaboration of priority workplan activities, with some progress on M/E and training aspects. The proposed February program was implemented, apart from the training difficulty noted above and the Biannual Report which is now scheduled to cover the period up to the end of March.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: MARCH, 1993

1. PRINCIPAL ACTIVITIES:

- finalised PLAN DE TRAVAIL in French, and distributed to ISRA for approval.
- SEMINAIRE DE DEMARRAGE report: approved by ISRA and distributed with cover letter from M. Ndoye.
- CONSEILLER FINANCIER: CID renegotiated terms and conditions of Holmes' appointment, and the revised salary level was presented to and approved by Sharon Cromer/USAID.
- MANUAL DE PROCEDURES: received first complete draft from Jean Kearns, distributed; began discussions and compilation of final draft in English (90% complete) and French (70% complete).
- SOMMAIRE DU PROJET: approved by ISRA and distributed with cover letter from M. Ndoye.
- APPUI AU PROGRAMME RESSOURCES NATURELLES DE L'ISRA: drafted two-page paper on constraints to and possible solutions for use of these funds prior to 1996. Discussed with ISRA and USAID.
- drafted M/E programme following meetings with CG, BAME, TAs. 4 candidates selected, placed in rank order, approved by M. Ndoye and sent to OSU for recruitment.
- drafted one page IMPACT programme, with BAME, in English and French.
- met UNIVAL/Bakhayokho to discuss communications and agreed on an outline program to assist with the end-June ISRA/partenaire activities.
- FORMATION A LONG TERME: redrafted a proposed USAID/PDO summary of subjects and levels of training.
- FORMATION A COURT TERME: made two proposals to M. Ndoye for U.S. training of key staff in research station management and in research linkages.
- COUNTERPART TRAVEL PAID FOR BY NRBAR: drafted and received approval for use of NRBAR operational funds to pay for NRBAR travel of counterparts from Ziguinchor.
- assisted with drafting the detailed SUBVENTIONS AUX CHERCHEURS DE L'ISRA and the PROGRAMME DE SUBVENTIONS A LA RECHERCHE COLLABORATIVE programs and procedures.
- met Mme. Sidibe of the University of Dakar on possible research collaboration with NRBAR.
- normal programming meetings with Ndoye, Diop, Wendy, Paul, Anne.
- participated in and wrote minutes of ISRA/CID/USAID COORDINATING MEETINGS of 2MAR93, 10MAR93 AND 23MAR93.
- ADMIN. work such as staff meetings, shipping, computer specs., housing/office materials specs., preparation for Holmes arrival, TA/USAID communications, RAMs, writing monthly NRBAR summary report.

2. ACHIEVEMENTS:

- workplan, in English, approved by USAID.
- M/E TDY approved by ISRA.
- USAID and Holmes agreed on salary.
- Sommaire de Projet and Report of Séminaire approved/distributed.

3 DIFFICULTIES:

-although the search for ISRA's long-term training candidates has been completed, the dossier has not yet been released from ISRA/Admin.

-travel and meetings with counterparts were somewhat, but not excessively, disrupted by the Presidential elections.

4. FUTURE PROGRAM: APRIL

-preparation for and writing of: biannual report, procedures manual, long-term training plan, M/E and IMPACT TDYS

5. OTHER: a productive month. Initial project reports were finalised, approved and distributed. Good progress on M/E and impact developments but training aspects remain stalled pending release of the appropriate file from ISRA. The proposed March program was implemented, apart from the training difficulty noted above.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK. APRIL, 1993

1. PRINCIPAL ACTIVITIES.

- VISITE DE TERRAIN 21-23 APRIL. assisted in preparation, participated in and wrote draft report of first NRBAR inspection visit. Visited Dahra and Bambey field sites, group discussions
- assisted with planning of follow-up to AFID TECHNOLOGY INVENTORY STUDY, and ERNST AND YOUNG FINANCIAL MANAGEMENT STUDY.
- CONSEILLER FINANCIER. began preparations for Holmes' arrival and orientation.
- MANUAL DE PROCEDURES. completed compilation of final draft in English after further consultation with ISAR/USAID, submitted to USAID for approval.
- APPUI AU PROGRAMME RESSOURCES NATURELLES DE L'ISRA: drafted paper in French on constraints to and possible solutions for use of these funds prior to 1996. Discussed and agreed possible solution with ISRA, OSU and USAID. Wrote and submitted request for changing funding arrangements to USAID.
- drafted M/E programme for Roberts TDY, following meetings with CG, TAs. Requested salary approval from RCO and TDY approval from Jepson.
- discussed two page IMPACT programme with Seck/BAME, and agreed to proceed with detailed scope of work.
- INDEMNITIES FOR ISRA STAFF: discussed and reached agreement with ISRA/USAID on issues of per diem, performance awards and fuel allowances for ISRA staff. USAID to draft PIL.
- FORMATION A LONG TERME. discussed with USAID and ISRA the possibility of cancelling the Ph D. program, and increasing the number of M.S. places. Initial review of LT PT dossier released by ISRA at the end of the month.
- FORMATION A COURT TERME distributed information on short-term courses from OSU.
- LIASONS INTERNATIONAUX. translated summary/cover page of Coops LUTTE proposal, and sent to M. Ndoye.
- assisted with redrafting and finalising with ISRA/NRBAR the detailed SUBVENTIONS AUX CHERCHEURS DE L'ISRA and the PROGRAMME DE SUBVENTIONS A LA RECHERCHE COLLABORATIVE programs and procedures.
- ACKER TDY: agreed program and dates with ISRA/USAID, requested official approval from Jepson.
- normal programming meetings with Ndoye, Diop, Wendy, Paul, Anne
- participated in and wrote minutes of ISRA/CID/USAID COORDINATING MEETINGS of 2APR93, 14APR93 AND 20APR93.
- ADMIN. work such as staff meetings, shipping, computer specs., housing/office materials specs., preparation for Holmes arrival, TA/USAID communications, RAMs, writing monthly NRBAR summary report.

2. ACHIEVEMENTS:

- Roberts recruited for M/E TDY position.
- Holmes signed employment agreement with Howard University.
- ISRA released 15 names selected for LT PT, with some supporting information.
- Grants for ISRA researchers protocols approved by ISRA and invitations to researchers distributed by M. Ndoye.
- Collaborative research Grants protocols approved by ISRA and invitations to researchers/partenaires distributed by M. Ndoye
- Procedures manual, in English, sent to USAID for approval.

3. DIFFICULTIES:

-the delay in provision of NRBAR computers continues to constrain operations, but relief expected next month as OSU has purchased the equipment, and is arranging for shipment.

4. FUTURE PROGRAM MAY

-preparation for and implementation of biannual report, procedures manual, LT PT dossiers, long-term training plan, ACKER, ROBERTS and IMPACT TDYS.

5. OTHER a productive month, with a number of long-term tasks being successfully completed. The proposed April program was implemented, apart from the training plan (waited for release of LT PT file) and Biannual Report (now for period up to end-April)

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: MAY, 1993

1. PRINCIPAL ACTIVITIES:

- FORMATION A LONG TERME: assisted M. Ndoye in writing first draft of long-term training plan, worked with ISRA/Acker to finalise the plan. Assisted with compiling dossiers for each candidate Met Louis Sene on personnel data.
- SUIVI ET EVALUATION: administered preparations for Roberts' TDY, collected and sent background documents to Roberts, developed a work and meetings schedule for Roberts in Senegal (and implemented the initial week of the programme), and prepared an outline M/E plan with CG and BAME.
- ACKER TDY: administered programmatic and logistical preparations for visit, developed and implemented a work and meetings schedule including a management review of project implementation to date.
- MANUAL DE PROCEDURES: assisted in revision of grants section, and resubmitted to USAID.
- met with Director of IST/Univ. of Dakar on FORMATION DES FEMMES
- met Michael Hentley of British Embassy on potential NRI cooperation.
- participated in USAID mission management/contractor meeting 27MAY93.
- met Mr. Blokland of KIT on potential cooperation.
- normal programming meetings with Ndoye, Diop, Wendy, Paul, Anne.
- participated in and wrote minutes of ISRA/CID/USAID COORDINATING MEETING of 19MAY93.
- ADMIN work such as staff meetings, shipping, computer specs., housing/office materials specs., preparation for Holmes and TDY arrivals, TA/USAID communications, writing monthly NRBAR summary report

2. ACHIEVEMENTS

- finalised, and submitted for USAID approval, the long-term participant training plan.
- obtained oral approval from USAID of the Procedures Manual.

3 DIFFICULTIES.

- the delay in provision of NRBAR computers continues to constrain operations, but relief expected next month as OSU has purchased and shipped the equipment.

4. FUTURE PROGRAM: JUNE

- writing of: biannual report, procedures manual (French), long-term training dossiers.

5. OTHER: a productive month, with a number of long-term tasks being successfully completed. The proposed May program was implemented, apart from the Biannual Report (now for period up to end-May)

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JUNE 1993

1 PRINCIPAL ACTIVITIES

- FORMATION A LONG TERME assisted with compiling dossiers for each candidate
- SUIVI ET EVALUATION assisted CG, BAME and Roberts with preparation of draft M/E plan for NRBAR, with plan for developing M/E for ISRA, including future Roberts work and international linkages suggestions Administered Roberts' TDY, collected documents arranged and participated in meetings, compiled schedules
- RESEARCH GRANTS assisted with planning and implementing the committee meetings of 15-16JUN93 at Saly, and with follow-up
- UNIVAL journée nationale assisting with planning, funding and implementing
- HOLMES arranged and implemented his arrival and initial planning meetings and orientation
- STRATEGIC PRIORITIES developed initial outline for study, with BAME, including ISNAR visit and Senegal workshop
- MICRO-ECONOMICS assisted BAME with drafting an initial proposal, including TDY and Senegal workshop
- IMPACT STUDY developed final version of this proposal with BAME, including TDY in September Assisted with Roberts' impact planning, including a 1994 study of ISRA's maize impact
- BIENNIAL REPORT drafted detailed outline, circulated and collected initial information
- NRBAR SUMMARY drafted a two-sided flyer, sent for review
- normal programming meetings with Ndoye, Diop, Wendy Paul, Anne
- participated in TA Quarterly Meeting 22JUN93
- met twice with Dr Ly to discuss project progress, following Mbaye Ndoye's departure
- met Louis Sene and Edwin Brush to plan PBS and human resource systems and ISNAR linkages
- ADMIN work such as communications, writing monthly NRBAR summary report TDY summary reports, obtaining TA residence visas, discussion of pouch use, etc

2 ACHIEVEMENTS

- obtained approval from USAID for the long-term participant training plan
obtained written approval from USAID of the Procedures Manual
- David Holmes the NRBAR Financial Advisor arrived and initial orientation completed
- draft M/E plan written and sent for review
- research grants awarded and implementation begun
- NRBAR computer shipment arrived and installation begun

3 DIFFICULTIES

- the delay in provision of NRBAR computers constrained operations but relief obtained at end of month

4 FUTURE PROGRAM JULY

- writing of biannual report participate in U S NRBAR management meeting at Tennessee State and OSU

- 5 OTHER A productive month The proposed June program was implemented with the first Biannual Report now to cover the period up to end-June 1993)

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: JULY/AUGUST, 1993

1. PRINCIPAL ACTIVITIES:

- wrote, produced and distributed first BIENNIAL REPORT in English, and sent for French translation.
- assisted with preparation of the April-July USAID PROJECT IMPLEMENTATION REPORT.
- made arrangements for Sept ISRA/USAID/CID VISITE DE TERRAIN
- participated in U.S.-side management Meeting: at OSU, for discussion of range of U.S -side NRBAR issues, general admin. and management support plan for the next twelve months, and discussed proposed programs of TDYs Participated in NRBAR meetings at Tennessee State, including short-term training possibilities, and the continuing Roberts' TDY involvement.
- made arrangements for the ISRA national Research Programming meetings, which review final draft research pprograms and budgets of research groups.

2. ACHIEVEMENTS:

- completed the first Biannual Report, and agreed on a revised Project Implementation Report

3. DIFFICULTIES:

- no substantial difficulties.

4. FUTURE PROGRAM SEPTEMBER

- complete arrangements for the impact TDY and an ISRA visit to ISNAR, workplan development with BAME, UPF and CG, arrange the ST training TDY and Subventions TDY visits

- 5 OTHER a productive period, with the proposed programme being fully implemented Five weeks were taken up with Annual Leave.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: SEPTEMBER, 1993

1 PRINCIPAL ACTIVITIES

- produced and distributed first BIENNIAL REPORT in French
- assisted with preparation of the April-July USAID PROJECT IMPLEMENTATION REPORT, participated in the PIR review meeting at USAID.
- finalised the IMPACT proposal with DS/BAME.
- made arrangements for the SANDERS IMPACT TDY, requested approvals from USAID
- developed the ISNAR visit proposal with DS/BAME and ISNAR staff
- made arrangements for ISNAR visit by DS/Sidibé
- further developed the ROCKY RAINIER SUBVENTIONS TDY
- further developed plans for LT and ST TRAINING.
- participated in the ISRA/USAID/CID COORDINATING MEETING OF 30SEP93.
- participated in initial NRBAR 94 workplan meetings with CG, BAME and SARH
- assisted with initial COTTON IMPACT work of BAME.
- participated at BAME meeting to prepare paper for submission to the ISRA national Research Programming meetings
- assisted with arrangements for Sept ISRA/USAID/CID VISITE DE TERRAIN.
- met with BAME/STEPHANIE LEAPHART on potential for implementing a cereals marketing study in the project zone
- further developed the WOMEN'S TRAINING program with ENSA, IST and ISE
- made arrangements for the ISRA national Research Programming meetings
- ADMIN work such as communications, writing monthly summary report, office locations for TAs, obtaining permanent residence visas, etc.

2 ACHIEVEMENTS

- the DS' strategic planning document accepted by the World Bank, and implementation has begun
- completed the first Biannual Report, and USAID approved the revised Project Implementation Report

3 DIFFICULTIES

- no substantial difficulties

4. FUTURE PROGRAM OCTOBER

- complete arrangements and implement the impact TDY, complete program for, make arrangements, and implement the ISNAR visit, workplan development with DS, BAME, UPF, SG and CG

5. OTHER. a productive month, with priority tasks being fully implemented Tom Cusack was allocated an office in BAME, in the same unit as the proposed locations of the DS's advisors

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: OCTOBER, 1993

1. PRINCIPAL ACTIVITIES:

- met Tony Hall and Samba Chou of the Bean/Cowpea CRSP
- met Joe Hulse of INTSORMIL
- continued to assist DS/BAME on the IMPACT study.
- established a NRBAR/BAME office for research planning.
- assisted DS/BAME with the SANDERS IMPACT TDY.
- planning for and assisting with the ISNAR visit by DS/BAME.
- participated in the ISRA/USAID financial management meeting chaired by Dr. Ly.
- planning for the ROCKY RAINIER TDY on NRBAR admin. assistance.
- drafted a proposal for a FIFTH DOCTORATE candidate.
- met with Louis Sene and obtained data for the FORMATION POUR LES FEMMES program.
- met with Pape Sall on project administration.
- 1994 workplanning meetings with CG, BAME and SARH.
- assisted with the proposal for the ANNUAL JOINT REVIEW.
- collaborated with participating institutions to finalise the FORMATION POUR LES FEMMES program
- ADMINISTRATION: assistance with meetings, communications, reports, relocation of offices, USAID/WASHINGTON visitors to project sites, and for access of project personnel to the Casamance.

2 ACHIEVEMENTS

- the DS/BAME participated in meetings at ISNAR on ISRA's needs for strategic planning, and identified an initial strategy for writing of a strategic plan.
- the DS/BAME wrote a report on impact for presentation to the CST, based on the Sanders TDY, with methodology, workplan and results to date.
- the NRBAR/BAME research planning office began operation

3. DIFFICULTIES.

- no substantial difficulties

4. FUTURE PROGRAM NOVEMBER

- planning for the annual joint review, and associated meetings; workplanning for 1994 with DS, BAME, UPF et CG.

5. OTHER. a productive month, although progress constrained by national strikes and by the usual busy schedule of the DS at this time of the year

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK NOVEMBER, 1993

1 PRINCIPAL ACTIVITIES

- met twice with Ted Brush (ISNAR) and Louis Sene on INFORM plans
- met Richard Caldwell of CID.
- continued to assist DS/BAME on the IMPACT study, including follow-up to the SANDERS IMPACT TDY
- assisted with planning of and participated in the ISRA financial management workshop
- assisted DRPF (Danthu) with agroforestry research paper
- met Diplomat journalist, Allasane Diaye
- met with ENSA and IST to finalise FORMATION POUR LES FEMMES programs
- prepared materials for and participated in the USAID/ANR RETREAT.
- assisted with planning and initial implementation of the ROCKY RAINIER TDY.
- planned for new administrative arrangements during ANNE SIDIBE's absence on maternity leave
- met Bill Fiebig on IMPACT/DESFIL.
- met UPF on formation pour les femmes, 1994 workplanning, L.T. training and biannual report.
- further developed the M S. and Ph D. proposals with ISRA and USAID.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès
- met with Pape Sall on project administration
- met Marie-Helene Collion of the World Bank
- developed a revised proposal for the ANNUAL JOINT REVIEW
- ADMINISTRATION assistance with meetings, communications, reports, relocation of offices, for initiating approvals for the GIS program, and for access of project personnel to the Casamance

2 ACHIEVEMENTS

- the DS/BAME presented a research impact plan to the CST, following the SANDERS TDY.
- the DS presented his plan for development of an ISRA research strategy to the CST, following the ISNAR visit
- contract modification #3, releasing additional funds for the Grants program, came into effect.
- M S. amended program finalised and sent to ISRA for approval and initial implementation
- approval for BARRY to return to MSU was obtained and the final request for ISRA approval sent to DS.
- hired temporary staff to replace ANNE SIDIBE for December-March
- ISRA finalised the Phase II workplan for the financial management

3. DIFFICULTIES:

- official counterparts not yet nominated by ISRA

4 FUTURE PROGRAM DECEMBER

- development of the NRBAR training programs and 1994 workplans

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: DECEMBER, 1993

1. PRINCIPAL ACTIVITIES:

- met Tom Nolan of EC on proposed EC projects at ISRA.
- met Louis Sene on INFORM and SARH planning.
- met Bocar Diagana/Mamadou Sidibé of BAME on NRBAR economics proposals and BAME planning meeting.
- assisted with English language evaluations for DG/ONG.
- provided assistance for the ISRA réunion de planification scientifique et conseil d'administration at St. Louis
- met with USAID to plan Banjul natural resource conference visit.
- met with USAID and ISRA to further develop the FORMATION POUR LES FEMMES program.
- assisted with implementation of the ROCKY RAINIER TDY.
- planned for new administrative arrangements during ANNE SIDIBE's absence on maternity leave
- produced draft of NRBAR admin. support structure.
- organised and implemented project lunch with ISRA/NRBAR staff chez Cusack.
- met Mme. Bâ and planned Bill Roberts' contribution to M/E during his January visit to Senegal.
- further developed the M.S. and Ph.D. proposals with ISRA and USAID.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and TAs/Mark Smith/Mawa Diop review meeting.
- met with Pape Sall on responsibilities of grants manager, subventions committee and visite de terrain.
- distributed and discussed with ISRA the 1994 USAID PARTS fellowships program.
- developed performance award criteria for key ISRA personnel in order to implement NRBAR PII #6.
- developed a revised proposal for the ANNUAL JOINT REVIEW.
- ADMINISTRATION: assistance with meetings, communications, reports, planning for biannual reports, relocation of offices, for office Christmas arrangements and 1994 leave arrangements, and for access of project personnel to the Casamance

2. ACHIEVEMENTS.

- ISRA designated principal homologues for TAs.
- comité des subventions arranged for 18JAN94.
- official letter requesting proposals from ISRA women under the FORMATION POUR LES FEMMES program was sent by DS.
- USAID approval obtained for replacing two women B S. positions at ISE with equivalent positions at ENSA.

3. DIFFICULTIES:

- no substantial difficulties encountered this month

4. FUTURE PROGRAM: JANUARY

- bns** - development of the NRBAR training programs and 1994 workplans.
- writing of biannual report
- initial coordinating meeting with counterparts.
- comité des subventions

5. OTHER:

- a productive month, most notably with a project management structure finally being put into place.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: JANUARY, 1994

1. PRINCIPAL ACTIVITIES:

- prepared for and participated in the first REUNION DE COORDINATION NRBAR of the core team.
- prepared for and participated in the January ISRA/NRBAR VISITE DE TERRAIN.
- prepared for and participated, as rapporteur and as presenter of NRBAR posters, in the USAID natural resources conference in The Gambia.
- prepared for and delivered three USAID PARTS fellowship applications for ISRA researchers.
- met Louis Sene on INFORM and SARH planning.
- met Bocar Diagana/Mamadou Sidibé of BAME on NRBAR economics proposals and BAME planning meeting.
- met Bill Roberts and Mme. Bâ on the M/E plan.
- arranged ISRA assistance for the ISRA/PNVA/WORLD BANK mi-parcours evaluation.
- met Mike MacGahey and Bill Fiebig on IMPACT measurement.
- redrafted NRBAR admin. support structure organogram.
- further developed the M.S. and Ph.D. proposals with ISRA and USAID.
- met Stephanie Leaphard and BAME on sorghum and millet impact studies.
- wrote and distributed the 31DEC93 NRBAR progress report in English, and a later edition in French.
- prepared set of NRBAR posters and photos of January visite de terrain for permanent display.
- developed and requested approvals for CID REVIEW.
- prepared brief financial analysis of the effects of CFA devaluation on project budget, for presentation to the PIR.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and two USAID/ISRA/CID COORDINATING meetings.
- met with Pape Sall on responsibilities of grants manager, subventions committee and visite de terrain.
- developed performance award criteria for key ISRA personnel in order to implement NRBAR PIL #6.
- ADMINISTRATION: assistance with and planning for project meetings, communications, reports, drafting biannual reports, relocation of offices, for project vehicule documentation, and for access of project personnel to the Casamance.

2. ACHIEVEMENTS:

- ISRA held the first NRBAR Team Coordinating meeting, 31JAN94.
- the 1993-94 subventions subcontracts and agreements were signed by ISRA.
- the comité des subventions met and agreed on the 1994-95 program.
- revised program to complete NRBAR M/E plan was drafted.
- Stephanie Leaphard began work with BAME on the sorghum and millet impact studies.
- ISRA approved the NRBAR coordination workshop, for 17FEB94.

3. DIFFICULTIES:

- no substantial difficulties encountered this month.

4. FUTURE PROGRAM: FEBRUARY

- development of NRBAR workplans and biannual report.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK FEBRUARY, 1994

1. PRINCIPAL ACTIVITIES

- prepared for and participated in the second REUNION DE COORDINATION NRBAR of the core team (17FEB)
- organised and prepared documentation for the 17FEB meeting
- met Louis Sene on INFORM and SARH planning
- met Bocar Diagana/Mamadou Sidibé of BAME on NRBAR economics proposals and BAME Quarterly planning meeting, participated in meeting at Kaolack.
- met Mme. Bâ on M/E planning
- met with Mme. Collion at Thiès during the ISRA/PNVA/WORLD BANK m1-parcours evaluation.
- further developed the M.S. and Ph D. proposals with ISRA and USAID, assisted with GRE forms, etc.
- prepared initial draft of the SECOND BIENNIAL REPORT, and of the 1994 WORKPLAN, discussed with counterparts
- organised, developed documentation for and requested approvals for CID REVIEW
- organised, developed documentation for and requested approvals for ANNUAL JOINT REVIEW
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and USAID/ISRA/CID COORDINATING meetings
- developed ENSA and IST contracts.
- provided NRBAR computers to DS and Pape Sall
- English check on DRPF agroforestry paper
- developed budget and summary of expenditures for 1993, 1994 and 1995.
- worked with Hannibal Muhtar and SG on research station reorganisation
- developed proposal for Monica Fisher to work with BAME
- assisted with ISRA planning for EXTERNAL EVALUATIONS.
- reviewed 1994 research planning proposals with DS and Mme Collion at DG
- prepared for SHORT-TERM training courses M/E-BANJUL, DS MANAGEMENT TRAINING, MME. BADIANE-MEXICO
- reviewed revised training proposals with USAID
- met John Kott on NRBAR finances, M Mbaye on DAHRA workshop, Florence Miroux on FAO forestry project identification mission, Colin Lyle on IDA.
- assisted with GIS, ISRA EXTERNAL EVALUATION and CID EXTERNAL EVALUATION TDYS.
- ADMINISTRATION assistance with and planning for project meetings, communications, reports, drafting reports, and for relocation of offices

2. ACHIEVEMENTS

- ISRA held the second NRBAR Team Coordinating meeting, 17FEB94.
- the ENSA and IST contracts finalised.

3. DIFFICULTIES:

- no substantial difficulties encountered this month

4. FUTURE PROGRAM MARCH

- development of NRBAR workplans and biannual report, the implementation of the CID evaluation and of the Annual Joint Review.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK· MARCH, 1994

1. PRINCIPAL ACTIVITIES:

- met Louis Sene on INFORM and SARH planning
- met Bocar Diagana/Mamadou Sidibé of BAME on socio-economic analyses of NRBAR grants projects
- met Mme Bâ on M/E planning, the Banjul workshop and Roberts TDY
- collaborated with Mme Collion on ISRA/NRBAR/IDA joint programs
- further developed the M S and Ph D. proposals with ISRA and USAID, revised the M S. training schedule, and revised the L T training proposals.
- prepared final draft of the SECOND BIENNIAL REPORT, following comments received on first draft
- prepared first draft of the 1994 WORKPLAN, following review of separate sections with counterparts
- organised, developed documentation for, participated in and reported on CID REVIEW
- organised, developed documentation for, participated in and reported on the ANNUAL JOINT REVIEW.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and USAID/ISRA/CID COORDINATING meetings.
- collaborated with Hannibal Muhtar and SG on research station reorganisation
- assisted with ISRA planning for EXTERNAL EVALUATIONS, especially for the TDYs of Suchet Louis, Mme Dicko, Dr Diallo and Dr Thiogane
- prepared for SHORT-TERM training courses SG and MOUSTAPHA DIOP AT RESEARCH STATION MANAGEMENT/ARKANSAS, M/E-BANJUL, DS MANAGEMENT TRAINING, MME BADIANE-MEXICO.
- assisted with preparation for GIS TDYs, and approvals of 4 outreach SOWs
- following discussions with ISRA, drafted final changes to indemnities document
- ADMINISTRATION: e-mail training, assistance with and planning for project meetings, communications, reports, drafting reports, and for staff development

2. ACHIEVEMENTS·

- ISRA hosted the ANNUAL JOINT REVIEW AND THE CID REVIEW
- first draft of 1994 WORKPLAN finalised by ISRA/NRBAR
- SECOND BIENNIAL REPORT finalised
- ISRA and USAID approved the 5 L T trainees for 1994

3. DIFFICULTIES.

- no substantial difficulties encountered this month.

4. FUTURE PROGRAM: APRIL

- USAID approvals of NRBAR WORKPLAN and BIENNIAL REPORT, arrange TDYs and training events

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK APRIL, 1994

1 PRINCIPAL ACTIVITIES:

- met Louis Sene on INFORM and SARH planning
- met Mme Bâ on M/E planning, the Banjul workshop and Roberts TDY
- collaborated with Mme Collion on ISRA/NRBAR/IDA joint programs
- assisted with implementation of M S. program for participant trainees
- prepared French draft of the SECOND BIENNIAL REPORT.
- prepared final draft of the 1994 WORKPLAN, following initial comments by USAID, and submitted to USAID for approval.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and USAID/ISRA/CID COORDINATING meetings.
- collaborated with Hannibal Muhtar and SG on research station reorganisation.
- assisted with ISRA planning and implementation of the EXTERNAL EVALUATIONS of research programs, especially for the TDYs of Suchet Louis, Mme Dicko, Dr. Diallo and Dr Thiogane.
- prepared for SHORT-TERM training courses. SG on a consultants management course, SG and MOUSTAPHA DIOP AT RESEARCH STATION MANAGEMENT/ARKANSAS, M/E-BANJUL, DS MANAGEMENT TRAINING, MME. BADIANE-MEXICO
- assisted with preparation for and initial implementation of GIS TDYs
- participated in the ISRA/NRBAR Grants Committee meeting, and assisted with follow-up activities
- met with Len Coop, OSU Faculty member on IPM
- ADMINISTRATION assistance with and planning for project meetings, communications, reports, drafting reports, and for staff development

2 ACHIEVEMENTS

- ISRA GRANTS COMMITTEE met and selected 1994 grantees
- ISRA/NRBAR agreed on two field events to incorporate farmers' evaluations of ISRA's NRM technologies
- NRM STRATEGY PLAN sent for review to the GRNSP external evaluation.
- 1994 WORKPLAN approved by USAID
- SECOND BIENNIAL REPORT distributed by the DS
- English language training began for the 4 L T M S trainees

3 DIFFICULTIES

- no substantial difficulties encountered this month

4 FUTURE PROGRAM MAY

- arrange TDYs and training events, establish basis for 95-98 workplan, implement ROCKY TDY and ROBERTS TDY

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: MAY, 1994

1 PRINCIPAL ACTIVITIES:

- wrote progress report 18MAY on L/T Training
- met Louis Sene on INFORM and SARH planning
- met Mme. Bâ on M/E planning, the Banjul workshop and Roberts TDY, Mme. Bâ and two ISRA M/E colleagues participated in the workshop (the final 3 days with Bill Roberts).
- collaborated with Mme Collion on ISRA/NRBAR/IDA joint programs, and on arranging the Seck/Cusack visit to World Bank in July.
- planned, assisted with the ROCKY TDY, particularly for project finances and the employment of two new NRBAR staff
- planned, assisted with the ROBERTS M/E TDY, including drafting SOW.
- prepared French FINAL draft of the 1994 WORKPLAN, following comments received
- met Azzedine Bennani and Jim Lowenthal of ESIG/Morocco.
- met Dr. Swindale and CRSP evaluation team.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and USAID/ISRA/CID COORDINATING meetings.
- collaborated with Hannibal Muhtar and SG on research station reorganisation
- assisted with ISRA planning and implementation of the EXTERNAL EVALUATIONS of research programs, especially for the TDYs of Suchet Louis, Mme. Dicko, Dr Diallo and Dr Thiogane
- prepared for/implemented SHORT-TERM training courses SG and MOUSTAPHA DIOP AT RESEARCH STATION MANAGEMENT/ARKANSAS, M/E-BANJUL, DS MANAGEMENT TRAINING, MME BADIANE-MEXICO
- assisted with review of GIS NEEDS ASSESSMENT
- assisted with follow-up activities to the April ISRA/NRBAR Grants Committee meeting
- developed June/July travel program with Papa Seck and Mawa Diop
- ADMINISTRATION assistance with and planning for project meetings, workshops, TDYs, communications, reports, drafting reports, Bocar/PARTS fellowship, Holmes dependency, Stephanie Leaphard, NRBAR project lunch, and for staff leave.

2 ACHIEVEMENTS.

- three ISRA staff members completed M/E training in Banjul
- the DS began management training in the U S.
- the DS distributed the 1994 WORKPLAN.
- first draft IMPACT studies completed for three cereals
- the Roberts M/E TDY began.
- the Rocky ADMIN. TDY was implemented

3. DIFFICULTIES:

- no substantial difficulties encountered this month

4 FUTURE PROGRAM JUNE

- arrange TDYs and training events, establish basis for 95-98 workplan, implement ROBERTS TDY, employment of two new NRBAR staff, complete July/August planning activities with the DS par interim, other ISRA/NRNAB staff and Mawa Diop

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: JUNE, 1994

1. PRINCIPAL ACTIVITIES:

- drafted 1994-98 NRBAR program notes with ISNAR and KIT
- met SG and Louis Sene on INFORM and SARH planning
- planned and coordinated arrangements for the Seck/Sonko/Diop visits in the U.S. in July/August.
- planned for the JUL94 ROCKY TDY.
- drafted 94-98 WORKPLAN.
- arranged, wrote a NRBAR PROGRESS REPORT for 9JUL meeting.
- conducted search for new NRBAR administrator and grants assistant
- planned, assisted with and finalised documents for the ROBERTS M/E TDY.
- prepared French FINAL draft of the 1994 WORKPLAN, following comments received.
- assisted with the USAID Director's visit to a OSDIL/ISRA/NRBAR research site.
- regular meetings with ISRA counterparts, USAID, CID staff, Wendy at Thiès, and USAID/ISRA/CID COORDINATING meetings.
- assisted with finalising ISRA/NRBAR documents for the EXTERNAL EVALUATIONS of research programs, especially for the TDYs of Suchet Louis, Mme. Dicko, Dr Diallo and Dr. Thiogane
- prepared for/implemented SHORT-TERM training courses SG and MOUSTAPHA DIOP AT RESEARCH STATION MANAGEMENT/ARKANSAS, M/E-BANJUL, DS MANAGEMENT TRAINING, MME BADIANE-MEXICO, PAPE SALL, J-P NDIAYE and MALAINY DIATTA.
- assisted with follow-up activities to the April ISRA/NRBAR Grants Committee meeting.
- assisted with the ISRA/NRBAR/USAID COORDINATING MEETING of 7JUN, including the USAID Mission Director and Dr. Ly.
- assisted with drafting of the JAN-MAR94 PIR.
- ADMINISTRATION. assistance with and planning for project meetings, workshops, TDYs, communications, reports, drafting reports, Bocar/PARTS fellowship, Holmes dependency, and for staff leave.

2 ACHIEVEMENTS.

- final draft of NRBAR M/E plan sent to all collaborators for final review
- initial drafts of logframes for the World Bank research project and for the NRBAR Subventions completed by ISRA staff.
- the initial cellule de réflexion meeting was held
- the DS completed the management/priorities seminar in the U S
- the second Quarter ISRA/NRBAR/USAID COORDINATING MEETING held with Dr. Ly and Ms. Williams
- first draft IMPACT studies for three cereals reviewed and comments received from John Sanders.
- an M/E strategy for ISRA outlined as a result of the ISRA/Roberts M/E initiative

3 DIFFICULTIES.

- no substantial difficulties encountered this month

4 FUTURE PROGRAM JULY

- meet with Papa Seck, Mme. Collion, Mawa Diop and the CID management team, to review progress and plan 1994-98 NRBAR strategy Take home leave from mid-month

1. PRINCIPAL ACTIVITIES:

- visited the World Bank (Washington) to meet Marie-Hélène Collion, with Papa Seck (JUL)
- visited Virginia Tech to meet Dr. DeDatta, George Norton and Keith Moore, with Papa Seck and Marie-Hélène Collion (JUL).
- visited Oregon State University with Papa Seck, including work with Mawa Diop (JUL), and participated in the NRBAR management meeting.
- visited ODG and Elon Gilbert at the University of East Anglia regarding NRBAR training proposals (AUG).
- returned from leave 2SEP.
- assisted with an ISRA/NRBAR/USAID VISITE SUR LE TERRAIN, at Osdil/Kaolack and écailles de poisson.
- met Keith Moore, Sociologist for reforestation project.
- wrote preliminary NRBAR project schedule for 1995.
- moved into new office at DG, adjacent to the DS and BAME.
- participated in the preparation and implementation of the BAME program review, internal and external.
- assisted BAME (Abdoulaye Fall, Monica Fisher and Bocar Diagana) with developing a proposal for socioeconomic work on NRBAR subventions in Kolda, and with completing the rice impact report.
- planning meeting with Matar Gaye and Désiré Sarr in Kaolack
- met Louis Sene on INFORM.
- participated in the first part of a SAIT meeting at USAID.
- planned for and developed materials for Sanders/impact TDY.
- planned for and developed materials for Andrews/cereals TDY.
- assisted with orientation of Massamba Dieng and T.J. Quan
- prepared for Rocky Rainer/admin-computer TDY.
- assisted with Jamil Simon/social marketing TDY preparation.
- prepared revised LT training plan, with the DS and USAID.
- assisted BAME in drafting NRBAR research planning programs for 1995, and in drafting a review of work to date
- participated in the closing session of the ISRA international agroforestry conference, and participated with ISRA colleagues in the post-conference dinner
- met with USAID sustainable development consultants to discuss international NRM networks and improved involvement of clients in the process of research
- reviewed M/E progress with Mme. Bâ/CG.
- regular meetings with ISRA counterparts, USAID and CID staff
- ADMINISTRATION: assistance with and planning for project meetings, training including proposal for Mme Sall to join Samba Sall, TDYs, communications, and staff benefits.

2. ACHIEVEMENTS:

- first draft rice impact report completed.
- first draft of 1995-98 NRBAR LT Training Plan completed
- ISRA staff completed station admin training in U S
- BAME/NRBAR progress report drafted.
- Massamba Dieng began work as NRBAR assistant grants admin

3 DIFFICULTIES

- no substantial difficulties encountered during July-September

4 FUTURE PROGRAM: OCTOBER

- complete Bian Report, draft workplan, implement Sanders TDY

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: OCTOBER, 1994

1. PRINCIPAL ACTIVITIES:

- assisted with the implementation of the Andrews/cereals TDY.
- met with the Director of IST to finalise the 1994-95 program.
- prepared for the Ndiaga Dieng visit to ISNAR on financial management, the DG to OSU, and Pierre Diene's accounts training
 - discussed ISRA's financial management issues with collaborators, including Hilarion Bruneau of ISNAR, and Marie-Hélène Collion and Colin Lyle of the World Bank.
- prepared terms of reference for the Rocky/administration TDY.
- met Louis Sene on INFORM, reviewed M/E progress with Mme. Bâ.
- collaborated with the World Bank and USIAD on planning the mid-term evaluation.
- prepared and delivered CID/NRBAR financial reports to USAID.
- assisted with terms of reference and the implementation of the Sanders-Sidibé/impact TDY.
- requested USAID approval for PT purchases of computers.
- submitted numerous supporting documents for the visit of Mme Samba Sall to the U.S., to visit her husband PT.
- assisted with preparations for the Montpellier systems workshop.
- assisted with preparations for the November comités de subventions meetings and with the justification to USAID for three 1994 research grants.
- implemented a NRBAR lunch chez Cusack.
- prepared for, and assisted with the Jamil Simon visit.
- met Abdoulaye Ndiaye, Director IUCN.
- prepared and wrote terms of reference for the Hannibal Muhtar/experiment station TDY.
- applied for USAID approval for LT training funds for Mme Gerard for France/doctorat, and communicated with Mme. Da Silva and Mme. Ali Ndiaye on LT training potential.
- prepared revised LT training plan, with the DS and DG.
- wrote trip report for June-August.
- wrote NRBAR progress report August-October.
- distributed the May 1994 sustainable funding workshop report.
- reviewed status of all training and TDY events, and transferred administrative responsibility to TJ.
- regular meetings with ISRA counterparts, USAID and CID staff.
- ADMINISTRATION: assistance with and planning for project meetings, communications, monthly reports, Fiebig/EROS database, residence visas and carte d'étrangères, réunion de coordination of 27NOV, initiated NRBAR commodity planning for 1995, and began compiling the latest biannual report.

2. ACHIEVEMENTS:

- second draft rice impact report completed.
- increased awareness of ISRA's financial management needs, beyond Ernst and Young's accounting activities.
- agreed timing of 1995 subventions program
- NRBAR August/October progress report completed.

3. DIFFICULTIES:

- no substantial difficulties

4. FUTURE PROGRAM: NOVEMBER

- complete Biannual Report, draft workplan, implement Sanders/Sidibé and Muhtar TDYS

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: NOVEMBER, 1994

1. PRINCIPAL ACTIVITIES:

- discussed TOR for AGRIC/ELEVAGE SEMINAR with Safietou Fall, Adama Faye, Mawa Diop, Arona Gueye.
- assisted with short-term training events in Senegal. BAME/IMPACT WORKSHOP, MUHTAR WORKSHOP, and POST-CST MEETINGS.
- prepared a U.S SHORT-TERM TRAINING program with PAPE SALL, for December, assisted with the NDIAGA DIENG November visit to ISNAR on financial management.
- assisted with preparations for the Montpellier systems workshop.
- wrote official letters to ISRA outlining the availability of "sandwich" courses in the U.S., and in reply to request for long-term training for Mme. Barry-Gerard.
- assisted with the implementation of, and follow-up to, the Sanders-Sidibé/IMPACT TDY.
- assisted Louis Sene with the BRUSH/INFORM visit, met Brush
- participated in the ROCKY RAINEY/administration TDY.
- assisted with implementation and reports of the Hannibal MUHTAR/experiment station TDY.
- arranged for 2 Montpellier TDYs and 3 MARP TDYs in November, followed-up on the Oct. ANDREWS TDY, prepared for future Simon, Roberts, Muhtar, Suchet and Bruneau TDYs.
- assisted ISRA, World Bank and USAID in planning, and implementation of preparatory work, for the MID-TERM REVIEW.
- assisted with the writing of the USAID PIR report (new format).
- assisted with the November comités de subventions meetings
- wrote a synthesis of the effects of the DEVALUATION on the NRBAR project finances, and wrote the CID/NRBAR budget for 1995
- initiated study to define the USAID ISRA financial certification requirements.
- drafted initial notes on strategic plan.
- regular meetings with ISRA counterparts, USAID and CID staff.
- ADMINISTRATION: assistance with and planning for project meetings, communications, staff evaluations, completing backlog of monthly reports, the proposal for Mme. Sall to visit Samba Sall, NRBAR financial reporting to USAID, the Howard Sub-Contract, discussions on the new Quarterly reporting requirement at USAID, NRBAR commodity planning for 1995, arranging the 1-3DEC VISIT SUR LE TERRAIN, and compiling the latest BIENNIAL report.

2. ACHIEVEMENTS:

- second draft rice impact report completed in French.
- impact methodology/cotton report completed (French)
- completed the final English draft of the Third Biannual Report.
- obtained final USAID approval for three outstanding grants.
- subventions committees finalised the 1995 grants programs, and requests for 1995 proposals were sent to researchers and partenaires.
- the OSU and Systems Seminars were successfully completed at Montpellier.

3. DIFFICULTIES:

- no substantial difficulties.

4. FUTURE PROGRAM: DECEMBER

- complete Biannual Reports, draft workplan, begin strategic plan, assist ISRA/USAID with preparation for the mid-term review.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: DECEMBER, 1994

1. PRINCIPAL ACTIVITIES:

- assisted with short-term training events in Senegal: including BAME/IMPACT for rice by Abdoulaye Fall, the BAME programming meeting in St. Louis, and BAME/SOCIO-ECONOMIC ANALYSES of technologies by Abdoulaye Fall.
- met with BILL ROBERTS and Mme. Ba on preparing a M/E document de base for the mid-term review before 15JAN95
- assisted with ISRA financial planning by writing position papers of 15DEC and 31DEC, telephone conversations with M-H Collion, and meeting with E&Y, USAID, Dr Ly, Anne Williams and ISRA/NRBAR numerous times.
- met Lamine Ndiaye and BAME on his proposal for a survey of the informal sector in rural Senegal.
- discussed with David Wilcock the potential BAME involvement with the rice structural adjustment support project.
- assisted with the annual GOS/USAID program review meeting on 15DEC, and wrote NRBAR project summary for this event
- discussed SHORT-TERM TRAINING program options with MARIAM DIOP for continuing her M.S. training at Reading.
- met M. OKA of the World Bank on a possible new WB GRN project.
- prepared draft of the 1995-98 NRBAR commodity procurement plan with Rocky Rainey, and sent to OSU/CID for comments.
- assisted with reports of the Sanders-Sidibé/IMPACT TDY.
- participated in the JAMIL SIMON/communications and ROCKY RAINEY/administration TDYS.
- assisted with implementation and reports of the Hannibal MUHTAR/experiment station TDY of November 1994.
- participated in and assisted with drafting TOR for the MOUSSA FALL/NDIAWAR KANE consultancy for an ISRA strategic training plan
- prepared for future Hannibal, Roberts, Suchet, Monica and Bruneau TDYS.
- assisted ISRA, World Bank and USAID in planning, and implementation of preparatory work, for the MID-TERM REVIEW
- initiated study to define the USAID ISRA financial certification requirements.
- assisted the DS and chef du BAME with drafting notes on the strategic plan: an action plan for completing the plan, and draft TOR for national and regional committees.
- regular meetings with ISRA counterparts, USAID and CID staff.
- ADMINISTRATION: assistance with and planning for project meetings, communications, the proposal for Mme. Sall to visit Samba Sall, NRBAR financial reporting to USAID, the USAID picnic of 15JAN95, the Howard Sub-Contract, NRBAR commodity planning for 1995, and compiling the latest BIANNUAL report.

2. ACHIEVEMENTS:

- initial ISRA strategic training plan drafted, with consultants.
- initial strategic plan Action Plan and committees TOR drafted.

3. DIFFICULTIES:

- difficulties in implementing the financial management program and involvement with general arrangements for the mid-term review have taken substantial amounts of unbudgeted time.

4. FUTURE PROGRAM: JANUARY

- preparation for and participation in the mid-term review.

1. PRINCIPAL ACTIVITIES:

- assisted ISRA, World Bank and USAID in planning, and implementation of the MID-TERM REVIEW. member of ISRA core team, and met with most of the 14 commissions, provided logistics - especially documentation, assisted with inter-commission interaction on financial and organisational issues
- continued to liaise with all parties on defining the USAID ISRA financial certification requirements, and on developing a detailed workplan for a means of achieving it by ISRA
- met with M. Sounka and Mawa Diop at USAID on measurement of project impact through the subventions programs.
- assisted with short-term training events in Senegal the pre-review ISRA/USAID/E&Y FINANCIAL WORKSHOP, and the PLANT GENETIC RESOURCES MANAGEMENT WORKSHOP
- met with BILL ROBERTS and Mme Ba on preparing a M/E document de base for the mid-term review before 15JAN95
- preparation of the Third BIENNIAL REPORT in French and English.
- preparation of the 1995 NRBAR WORKPLAN
- discussed further SHORT-TERM TRAINING program options with MARIAM DIOP for continuing her M S. training at Reading
- planned an ELEVAGE/AGRICULTURE WORKSHOP with Arona Gueye, Safietou Fall and Suchet Louis, discussed with A Ba the COMPUTER WORKSHOP for support staff, and requested INTERPAKS course info
- prepared final draft of the 1995-98 NRBAR commodity procurement plan and sent to USAID for approval.
- assisted with organising, implementation and reports of the Hannibal MUHTAR/experiment station TDY, the CALDWELL TDY, the SUCHET LOUIS TDY, and the MONICA FISHER TDY of January 1995,
- assisted with organising and implementation of the Howard Elliot and Hilarion Bruneau consultancies
- prepared for future Hannibal, Roberts, Suchet, Jamil Simon, and Dave Hibbs TDYS.
- regular meetings with ISRA counterparts, USAID and CID staff
- ADMINISTRATION: assistance with and planning for project meetings, communications, the re-establishment of check-cashing privileges at Citibank and at the U S Embassy, TA residence visas and Senegal ID card requests, personnel evaluations, CID issues for the mid-term review, and the proposed visit to US of Mme Sall.

2. ACHIEVEMENTS:

- reports of 13 of the fourteen MID-TERM REVIEW commissions completed and distributed
- the third BIENNIAL REPORT produced and distributed in French and English.
- the ISRA/USAID/E&Y FINANCIAL WORKSHOP recommended an ISRA financial management strategy
- ISRA reports on rice and cotton research impact, and on monitoring and evaluation was compiled for the mid-term review

3. DIFFICULTIES:

- many of the external consultants for the mid-term review did not write a separate position paper, so their views were not made clear outside of the internal workings of each commission. However, in some cases, their oral contributions were solicited where public or written statements would be embarrassing

4. FUTURE PROGRAM: FEBRUARY

- complete the mid-term review, and develop appropriate ISRA Action Plans, writing of fourth BIENNIAL REPORT and WORKPLAN

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: FEBRUARY, 1995

1. PRINCIPAL ACTIVITIES:

- assisted ISRA, World Bank and USAID in implementation of the ISRA MID-TERM REVIEW: member of ISRA core team, participated in the final draft document review at the Ministry of Agriculture, and assisted with the subsequent ISRA Action Plan.
- assisted with the NRBAR MID-TERM EVALUATION: meetings with consultants, counterparts and USAID, and comments on initial drafts of the evaluation report, including participation at the USAID/ISAR restitution meeting.
- assisted with the development of the ISRA strategic plan, particularly content and scheduling of events, including TOR for an ISRA strategic planning visit to ISNAR in March/April.
- reviewed and revised ISRA/ISNAR/INFORM proposals.
- continued to liaise with all parties on defining the USAID ISRA FINANCIAL CERTIFICATION requirements, and on developing a detailed workplan for a means of achieving it by ISRA
- reviewed NRBAR WINTER SEMINAR results and follow-up.
- assisted ISRA in defining the remaining NRBAR LONG-TERM TRAINING program.
- assisted with FOREIGN SHORT-TERM TRAINING events Pierre Diene/Financial Management/Maroc, Fatou Gueye/crops/France, TJ Quan/DG-Sall visit/OSU, Bakhayokho/communications/U S.-Interpaks, Mbaye-Sene/INFORM/ISNAR, Abdoulaye Fall/economics/U.S.
- assisted with SHORT-TERM TRAINING EVENTS IN SENEGAL. Aly Ndiaye/Strategic Planning/St. Louis, Désiré Sarr/Recherche-Developpement/Dakar, Abdoulaye Fall/economic evaluation of subventions/Kolda.
- met with ED PRICE, Director of the NRBAR equivalent in Mali.
- preparation of the FOURTH BIENNIAL REPORT and the 1995 WORKPLAN in French and English.
- assisted with organising, implementation and reports of the Hannibal MUHTAR/experiment station TDY, the DAVID HIBBS TDY, the SUCHET LOUIS TDY, and the MONICA FISHER TDY
- prepared for future Hannibal, Roberts, Suchet, Jamil Simon, and Cathy Knott TDYS
- regular meetings with ISRA counterparts, USAID and CJD staff.
- ADMINISTRATION: assistance with and planning for project meetings, communications, the re-establishment of check-cashing privileges at Citibank and at the U.S. Embassy, TA residence visas and Senegal ID card requests, the proposed visit to US of Mme Sall, TA residences administration, CID financial reports.

2. ACHIEVEMENTS:

- detailed strategic planning schedule agreed
- program for the remaining 6 M S. participants agreed
- the World Bank funded post-PNVA project is using NRBAR subventions protocols as a basis for grants design.

3. DIFFICULTIES:

- program implementation decisions and actions continue to be delayed as a result of the energy expended on the January/February review exercises.

4. FUTURE PROGRAM: MARCH

- complete the ISRA Action Plans, writing of fourth BIENNIAL REPORT and WORKPLAN, drafting of the strategic plan.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK: MARCH, 1995

1. PRINCIPAL ACTIVITIES:

- assisted with preparation of the ISRA Action Plan
- assisted with the NRBAR MID-TERM EVALUATION meetings with consultants, counterparts and USAID.
- assisted with the development of the ISRA strategic plan, particularly content and scheduling of events
- arranged courier shipment of strategic planning documents from ISNAR to ISRA.
- prepared for and participated in the two subventions committee meetings.
- organised, participated and assisted with the reporting of the very short PAUL PERRAULT/STRATEGIC PLANNING TDY, and the HANNIBAL MUHTAR/STATION MANAGEMENT TDY.
- assisted with FOREIGN SHORT-TERM TRAINING events. Kebé/strategic planning/ISNAR, Pierre Diene/Financial Management/Maroc, Fatou Gueye/crops/France, TJ Quan/DG-Sall visit/OSU, Bakhayokho/communications/U S.-Interpaks, Mbaye-Sene/INFORM/ISNAR, Abdoulaye Fall/economics/U.S.
- assisted with SHORT-TERM TRAINING EVENTS IN SENEGAL Aly Ndiaye/Strategic Planning/St. Louis, Desire Sarr/MARP/Kaolack.
- preparation of the FOURTH BIENNIAL REPORT and the 1995 WORKPLAN in French and English.
- assisted with reports of the the DAVID HIBBS TDY, the JAMIL SIMON TDY, and the MONICA FISHER TDY
- prepared for future Hannibal, David Andrews, Ali Kissi, M. Barro, Roberts, Suchet, Jamil Simon, and Cathy Knott/Ramata Aw TDYs.
- discussed the final plans for completing the rice impact studies, incorporating reviewers' comments, with Sanders, Thomas Randolph of WARDA, Abdoulaye and Monica.
- assisted with the planning of Mamadou Ndiaye's USAID/U.S. trip.
- met M Bennani of ESIG/Maroc (management training for ISRA staff) and M. Mombedlarno of Italian Aid (infrastructural developments by the Italians related to ISRA in the Casamance)
- regular meetings with ISRA counterparts, USAID and CID staff.
- ADMINISTRATION assistance with and planning for project meetings, communications, the re-establishment of check-cashing privileges at Citibank and at the U S Embassy, TA residence visas and Senegal ID card requests, field visits for USAID personnel, and the purchase of project vehicles and computers

2. ACHIEVEMENTS:

- the ISRA Action Plan was finalised.
- the Fourth Biannual Report finalised.
- the grants committees finalised the 1995 grants program

3. DIFFICULTIES:

- a realistic schedule for completing the ISRA Strategic Plan, and for taking specific complementary decisions, is not yet finalised

4. FUTURE PROGRAM APRIL

- complete the 1995 ISRA/NRBAR WORKPLAN, drafting of the strategic plan

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK APRIL, 1995

1. PRINCIPAL ACTIVITIES.

- met with Ted Brush of ISNAR on INFORM
- participated in the opening meeting of the national strategic planning committee
- distribution of Fourth Biannual Report
- compiling the 1995 Workplan
- assisted with the NRBAR MID-TERM EVALUATION meetings with consultants, counterparts and USAID
- assisted with the development of the ISRA strategic plan, particularly content and scheduling of events
- prepared for, and travelled to, ISNAR with Kebe on strategic planning.
- prepared for the two subventions committee meetings for May
- assisted with the CATHY KNOTT/RAMATA AW TDY, and the THIONGANE TDY.
- assisted with FOREIGN SHORT-TERM TRAINING events Kebe/strategic planning/ISNAR, Pierre Diene/Financial Management/Maroc, Fatou Gueye/crops/France, TJ Quan/DG-Sall visit/OSU, Bakhayokho/communications/U S -Interpaks, Mbaye-Sene/INFORM/ISNAR, Abdoulaye Fall/economics/U S , MADIAGNE DIAGNE to the U S., Ndiaga Dieng et al to Canada
- assisted with drafting of the USAID/NRBAR PIR
- assisted with SHORT-TERM TRAINING EVENTS IN SENEGAL Aly Ndiaye/Strategic Planning/St Louis, Desire Sarr/MARP/Kaolack, ISRA Audit/RIG
- assisted with reports of the the JAMIL SIMON TDY, and the MONICA FISHER TDY
- prepared for future TDYs, especially Bill Roberts and Jamil Simon
- ADMINISTRATION assistance with and planning for project meetings, communications, the re-establishment of check-cashing privileges at Citibank and at the U S Embassy, TA residence visas and Senegal ID card requests, field visits for USAID personnel, CID financial reporting, and the purchase of project vehicules and computers

2. ACHIEVEMENTS:

- the ISRA IDA budget was reallocated based on the ISRA Action Plan and available funds in the credit
- Fourth Biannual Report distributed
- Final English draft of the 1995 Workplan sent to USAID for comment
- the initial national and internal meetings of the strategic plan teams were held

3. DIFFICULTIES:

- a realistic schedule for completing the ISRA Strategic Plan, and for taking specific complementary decisions, is not yet finalised

4. FUTURE PROGRAM MAY

- visit ISNAR, drafting of the strategic plan, implementation of the Roberts monitoring and evaluation visit

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK MAY, 1995

1 PRINCIPAL ACTIVITIES

- met with Mark Powell, evaluator of Rodale
- met with Alfred Schultz of the Mali USAID ag research project
- assisted with the SWOT study
- met the personnel of the CBNRM project, to discuss links
- participated in teh USAID team building seminar
- developed strategic plan materials for, assisted with presentations at ISNAR, met numerous staff
- assisted with the development of the ISRA strategic plan, particularly content and scheduling of events
- prepared for and participated in the two subventions,committee meetings
- assisted with the ROBERTS TDY, the JAMIL SIMON TDY, the CATHY KNOTT/RAMATA AW TDY, the ANDREWS TDY and the THIONGANE TDY
- assisted with FOREIGN SHORT-TERM TRAINING events Kebe/strategic planning/ISNAR, DG-Adama Faye visit/Tuskegee-OSU, Bakhayokho/communications/U S -Interpaks, Abdoulaye Fall/economics/U S , MADIAGNE DIAGNE to the U S , Ndiaga Dieng et al to Canada, Safietou to the U S
- assisted with drafting of the USAID/NRBAR PIR
- assisted with SHORT-TERM TRAINING EVENTS IN SENEGAL ISRA Audit/RIG.
- assisted with reports of the MONICA FISHER TDY
- prepared for future TDYs and training events
- prepared a paper on life-of-project proposals and issues
- prepared an initial draft of the Quarterly Report, Jan-Mar95
- ADMINISTRATION assistance with and planning for project meetings, communications, arrangements for vacation leave, TA residence visas and Senegal ID card requests, field visits for USAID personnel, CID financial reporting, and the purchase of project vehicules and computers

2 ACHIEVEMENTS:

- the initial draft of the ISRA SWOT study was completed
- comments received form USAID on the Final English draft of the 1995 Workplan

3 DIFFICULTIES:

- a realistic schedule for completing the ISRA Strategic Plan, and for taking specific complementary decisions, is not yet finalised

4 FUTURE PROGRAM: JUNE

- drafting of the strategic plan, implementation of the Roberts monitoring and evaluation visit, completion of QUarterly Report and 1995 Workplan

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JUNE, 1995

1. PRINCIPAL ACTIVITIES:

- assisted with the Ly/Adama Faye papers for presentation at Tuskegee on collaborative research
- prepared for and met with and reported on the USAID NRBAR SAIT meeting of 26JUN, on the NRBAR mid-term evaluation and related topics
- met M-H Collion on NRBAR/World Bank links
- met with the ISRA/World Bank strategic plan team
- met with USAID at the TA/USAID meeting on review of the 1995 Workplan
- participated in the NRBAR coordination meeting of 23JUN
- made leave arrangements for all CID NRBAR staff
- participated in the 1906 CILSS/ISRA/GRN meeting
- completed the workplan and submitted final version for USAID approval
- completed and distributed the Quarterly Report
- provided follow-up to the the two MAY subventions committee meetings
- prepared a NRBAR organigram
- assisted with the ROBERTS TDY, the JAMIL SIMON TDY, the CATHY KNOTT/RAMATA AW TDY, the ANDREWS TDY, the LOUIS NDONG TDY, the JOHN RUSSELL TDY, and the THIONGANE TDY.
- assisted with FOREIGN SHORT-TERM TRAINING events Kebe/strategic planning/ISNAR, DG-Adama Faye visit/Tuskegee-OSU, Bakhayokho/communications/U.S -Interpaks, Abdoulaye Fall/economics/U S , MADIAGNE DIAGNE to the U S , Ndiaga Dieng et al to Canada, Safietou to the U S , Yaya Thiongane to South Africa, Pape Sall to Finland
- assisted with drafting of the USAID/NRBAR PIR
- assisted with SHORT-TERM TRAINING EVENTS IN SENEGAL
- assisted with reports of the MONICA FISHER TDY
- prepared for future TDYs and training events particularly the Perrault, Kissi, Muhtar and Diallo visits
- prepared a summary paper on life-of-project proposals and issues
- ADMINISTRATION assistance with and planning for project meetings, communications, arrangements for vacation leave, TA residence visas and Senegal ID card requests, field visits for USAID personnel, CID financial reporting, personnel evaluations, and the purchase of project vehicules and computers

2. ACHIEVEMENTS:

- completed the 1995 workplan, the PIR and the Quarterly Report

3. DIFFICULTIES:

- a realistic schedule for completing the ISRA Strategic Plan, and for taking specific complementary decisions, is not yet finalised

4. FUTURE PROGRAM JULY

- CID management meeting at OSU, drafting of the Kolda report and of the rice impact report with Abdoulaye Fall and Monica Fisher

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JULY, 1995

1 PRINCIPAL ACTIVITIES worked at OSU during the period 03-13JUL, prior to taking annual leave, and for a few days while on leave. Activities included

-assisted with TDYs Faustm/soils-phosphates Kissi and Perrault/strategic planning possible follow-up to Cathy Knott's earlier TDY on women's roles in technology development and gender aspects of impact

- short-term training - Senegal Papa Seck and a Kissi-led seminar in late July

- short-term training - foreign worked with Abdoulaye Fall on his impact and Kolda technology tasks participated in the Adama Faye and Dr Ly visit to OSU on participatory research, outlined possible future visits Safietou Fall on agroforestry/livestock technologies and research /extension for women's groups, Pape Sall on development of agroforestry technologies, Adama Faye to collaborate on a research paper on stabling technologies at Kolda, and Ammata Badiane on soil fertility

- long-term training in U S - M S /Ph D Participated in discussions with the LTPTs at OSU on technical and administrative matters Mouhamadou Sissoko, Bassirou Diaw and Iba Thomas

- long-term training in Senegal - women for the B S met with the NRBAR training officer on budget issues

- research grants met with the research committee for Monica Fisher/socio-economic validation of technologies in Kolda, on reviewing and completing the Kolda study

- administration participated in the CID/NRBAR management meeting with Rich Caldwell, Stan Miller, Dr Ly, Rochelle Ramey and Nick Hobgood and discussed overall project progress as well as specific programming issues. In addition a wide range of administrative and contract issues were reviewed and many problems resolved during numerous separate meetings with administrative staff. The potential for stagieres from the OSU international intern program to work at ISRA without any cost to the project was explored with the OSU administration

2 ACHIEVEMENTS

- agreed that at least three women would be sent for the MS, out of the remaining 6 places even if this would mean recruitment from outside the present ISRA staff

- numerous administrative and contractual issues were resolved or actions for their resolution agreed

- agreed that the OSU interns would be available to go to Senegal

- agreed in principle with OSU staff to implement technical training for 5 ISRA researchers within the next 2 years

3 DIFFICULTIES

- none

4 FUTURE PROGRAM

- implementation of existing programs and follow-up to the results of the OSU meetings upon return to Senegal

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK AUGUST, 1995

1 PRINCIPAL ACTIVITIES upon return from leave, worked primarily with the new DG, Jacques Faye, on the plan d'urgence and the GPS, as well as reducing the backlog of NRBAR administrative duties. Activities included

-assisted with TDYs Faustin/soils-phosphates, Kissi and Perrault/strategic planning, Hannibal Muhtar/research management, John Ashburner/management of infrastructure Dr Thuongane/ISRA links with other research institutions,

- short-term training - Senegal the DG, Papa Seck, and other members of the GPS for a meeting to prepare for the ISRA/partenaire seminar at Saly in mid-September ISRA seminar on strategy and plan d'actions 1995-96 at Saly (11-15SEP), journées de concertation entre l'ISRA/partenaires at Saly (13-14SEP), reunions de restitution at Kolda and Tamba with researchers by Taib Diouf (25-28SEP)

- short-term training - foreign worked with Papa Seck on his visit to Ireland for commercialisation of research, and Papa Seck to Louisiana on research linkages with Louisiana State University

- long-term training in U S - M S /Ph D assisted with proposals for re-selection of the final candidates for the remaining places

- long-term training in Senegal - women for the B S assisted with plans for the new academic year

- research grants assisted with the preparation of memoranda of negotiation for the recently-approved 1995 NRBAR research grants

- prepared for, participated in, and reported on the GPS retreat with senior ISRA management and research staff on Goree (25/26AUG) Prepared for the 5 major September meetings

- administration a wide range of administrative duties were implemented including implementing the results of the July NRBAR management meeting

2 ACHIEVEMENTS

- agreed with the DG on all major aspects of project policy, and on the NRBAR activities which need to be emphasised during the coming months

- the DG recognised the urgent need for budget/expenditure control, and requested that ISRA/NRBAR should re-present its financial management plan for achieving a viable financial management system.

- the MS candidates continued to progress on their preparations for travelling to the US

- for the 1995 research grants, memoranda of negotiation were completed and sent to USAID for approval, and contractual documents were sent for signature to ISRA and to OSU

3 DIFFICULTIES

- none urgent administrative and programming work was postponed due to the demands of the projet d'entreprise process and in order for project activities to adequately respond to the new DG's strategy

4 FUTURE PROGRAM

- implementation of existing programs, and development of the projet d'entreprise

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK SEPTEMBER, 1995

1 PRINCIPAL ACTIVITIES activities concentrated on supporting the strategie et plan d'actions 1995-96 participating in the GPS on drafting the schedule and content of the 1996 program/budget exercise, and on attempting to reduce the backlog of NRBAR administrative duties which has built up since June Activities included

-assisted with TDYs Faustin/soils-phosphates Hannibal Muhtar/research management, John Ashburner/management of infrastructure, Amadou Gueye/ressources humanes, Dr Thiongane/ISRA links with other research institutions, Maty Ndiaye/institutional management, team building and facilitation, Larry Lev/research resources planning, David Andrews/mil-sorgho technologies, John Russell/on-farm research methods, Bill Roberts/monitoring and evaluation

- short-term training - Senegal the DG, Papa Seck, and other members of the GPS for a meeting (01-02SEP) to prepare for the ISRA/partenaire seminar at Saly in mid-September, ISRA seminar on strategy and plan d'actions 1995-96 at Saly (11-15SEP), journées de concertation entre l'ISRA/partenaires at Saly (13-14SEP) reunions de restitution at Kolda and Tamba with researchers by Taib Diouf (25-28SEP) reunions de passation de service by ISRA managers at research stations

- short-term training - foreign worked with Papa Seck on his visit to Ireland for commercialisation of research, and Papa Seck to Louisiana on research linkages with Louisiana State University, the DG to the Tucson mid-winter seminar (DEC)

- long-term training in US - M S /Ph D reviewed problems associated with the implementation of Cissoko's program, continued to develop the dossier for the selection and travel of the final candidates - including 07SEP plan, sent copies of la lettre de l'ISRA to all LTPTs

- long-term training in Senegal - women for the B S assisted with amendments to subcontracts with IST and ENSA, and plans for the new academic year

- research grants assisted with the USAID and CID follow-up to the memoranda of negotiation and contract documents for the recently-approved 1995 NRBAR research grants

- wrote position paper on ISRA diagnosis for the September GPS meetings, and shared this with the DG staff Prepared for participated in and followed up on the GPS meetings (01-02SEP and 08-09SEP), the ISRA seminar on strategy and plan d'actions 1995-96 at Saly (11-15SEP), and the journées de concertation entre l'ISRA/partenaires at Saly (13-14SEP),

- writing of a first draft calendrier and summary tables for the programmation/budgetisation 1996 exercise, with the DG the CG and other DG and senior research staff

- administration assisted with US purchase of CERASS thermacouple for Bambey, TDY selection procedures IFDC publications Rockefeller research grants, CID financial reports, progress reporting, meetings with TA and USAID, workplan approvals from USAID

2 ACHIEVEMENTS

- ISRA completed a first draft calendrier and summary tables for the programmation/budgetisation 1996 exercise, which would define the mission of each research unit, outline the achievable objectives for each unit specifically for 1996 taking account of the resources available and research priorities, and provide the research management information needed for research managers including the 1996 evaluation of researchers' activities This tool also includes a simplified budget schedule, and will be used at both research unit and research activity levels

- the draft ISRA strategie et plan d'actions was developed, discussed with ISRA staff and partenaires, revised as a result of these meetings, and the final draft was communicated with all ISRA staff and partenaires through the ISRA newsletter and through personnel meetings

- ISRA/partenaire agreement was reached on the outline and methods of progressing towards a systeme national de recherche agricole et agro-alimentaire, including the development of the previously-excluded post-harvest technologies
- the MS candidates continued to progress on their preparations for travelling to the US

3 DIFFICULTIES

- none urgent administrative and programming work was postponed due to the demands of the projet d'entreprise process and in order for project activities to adequately respond to the new DG's strategy

4 FUTURE PROGRAM

- implementation of existing programs, especially the implementation of the 1996 program/budget process and development of the strategie et plan d'actions

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ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK OCTOBER, 1995

1 **PRINCIPAL ACTIVITIES** activities concentrated on supporting the strategie et plan d'actions 1995-96, on implementing the schedule and content of the 1996 program/budget exercise, and on NRBAR administrative duties. Activities included

-assisted with TDYs Faustin/soils-phosphates, Hannibal Muhtar/research management, John Ashburner/management of infrastructure, Amadou Gueye/ressources humaines, Dr Thiongane/ISRA strategic plan, Maty Ndiaye/institutional management, team building and facilitation, David Andrews/mil-sorgho technologies, Antonm Diouf/survey of the Niore watershed, Rocky Ramey/project administration, (Bolander/infrastructure) and Nicolas Dupuy/bibliographic synthesis of organic matter research.

- short-term training - Senegal reunion BAME a Bambey sur la strategie et plan d'actions, and the strategic plan/GPS, haison visit of Louisiana State University extension staff to ISRA, ISRA's work with computer consultants on ISRA's computer needs, October meeting of the GPS, and reunions de passation de service by ISRA managers at research stations

- short-term training - foreign worked with Papa Seck on his visit to Ireland for commercialisation of research, and Papa Seck to Louisiana on research linkages with Louisiana State University, the TOR for the DG's DEC visit to the US,

- long-term training in U.S. - M.S./Ph.D worked on Samba Sall extension until December 1997, contents and planning of the LTPT Tucson mid-winter seminar (DEC), proposals for recruiting two women candidates to fill the remaining MS positions, and continued to develop the dossier for the selection and travel of the final candidates.

- long-term training in Senegal - women for the B.S. assisted with plans for the new academic year

- research grants assisted with the USAID and CID follow-up to the memoranda of negotiation and contract documents for the recently-approved 1995 NRBAR research grants, and the planning of the November NRBAR subventions meetings.

- assisted with writing the infrastructure plan d'urgence, TOR for station managers, and outline of station management procedures manual.

- assisted with the summary of resource characteristics of ISRA units and centers.

- writing of a final calendrier, final summary tables and procedures for the programmation/budgétisation 1996 exercise, with the DG, the CG and other DG and senior research staff. Participated in the 12/13OCT reunion des responsables, and assisted units in completing their forms.

- drafted M/E schedule for ISRA reporting.

- discussed GIS development issues with ISRA/TA staff

- assisted BAME with programming/budgeting/personnel assignments

- developed initial Soils CRSP proposal policy with DG, DS and OSU

- developed a calendar for the USAID financial certification of ISRA.

- regular meetings/reporting participated in ISRA/DG coordination meetings, progress reporting, workplanning, and meetings with TA and USAID

- administration NRBAR guard service, Tony Hall of Bean/Cowpea CRSP on Ndiaga Cisse, Louis Sene at ISNAR and in West Africa for INFORM outreach, on the transfer of DS/NRBAR deputy directorship and grants management from Papa Seck and Pape Sall to J-P Ndiaye, assisted with US purchase of CERASS thermacouple for Bambey, relocation of Wendy from Thies to Dakar, salary waiver for Maty Ndiaye, financial reporting, replacement and recruitment of the NRBAR administrator, TA housing, move of the NRBAR admin. office, Wendy and Paul to the DG building, November project picnic at chez USAID Mission Director, English draft of NRBAR

mid-term evaluation, TA/medical procedures, USAID incremental funding for the CID contract, visa for Louis Sene to Holland, and the NRBAR commodity budget

2 ACHIEVEMENTS

- ISRA completed its description of the detailed functions of the station management coordinator (Muhtar TDY)
- a detailed plan d'aménagement for Bambey research station was completed and reviewed with ISRA managers (Muhtar TDY)
- plan d'urgence completed for all ISRA infrastructure actions, including inventory (Muhtar TDY)
- completion of final calendrier and summary tables for the programmation/budgetisation 1996 exercise, which defines the mission of each research unit, outlines the achievable objectives for each unit specifically for 1996 taking account of the resources available and research priorities, and provides the research management information needed for research managers, including the 1996 evaluation of researchers' activities. This tool also includes a simplified budget schedule, and is targeted for use at both research unit and research activity levels
- ISRA nominated the principal counterparts to the NRBAR TA, following the ISRA reorganisation
- ISRA nominated Adama Faye as its first institute-wide recherche/developpement coordinator
- Louis Sene was employed by ISNAR as a short-term consultant to train and evaluate other West African institutions in their INFORM development
- outline ISRA approval was received for the new financial development plan for the decentralised system.

3 DIFFICULTIES

- none, other than more effective prioritisation needs to be done, as the demand for NRBAR services by ISRA continues to far exceed the available resources of the project to respond to all requests in a timely manner
- the ISRA financial development strategy/system development was not identified as a specific activity/outcome in the plan d'actions.

4. FUTURE PROGRAM

- implementation of existing programs, especially the implementation of the 1996 program/budget process and development of the strategie et plan d'actions

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK NOVEMBER, 1995

1 **PRINCIPAL ACTIVITIES** activities concentrated on supporting the strategie et plan d'actions 1995-96 - particularly through development of the NRBAR life-of-project plan, on implementing the schedule and content of the 1996 program/budget exercise, and on NRBAR administrative duties. Activities included

-assisted with TDYs Hannibal Muhtar/research management, John Ashburner/management of infrastructure, Amadou Gueye/ressources humames, Dr Thiongane/ISRA strategic plan, Maty Ndiaye/institutional management, team building and facilitation, David Andrews/mil-sorgho technologies, Antonm Diouf/survey of the Niore watershed, Rocky Ramey/project admministration, (Bolander/infrastructure), the Monica Fisher final report, and Nicolas Dupuy/bibliographic synthesis of organic matter research.

- short-term training - Senegal travel of the commission sur la gestion des conventions to ISRA units and centers for data collection, ISRA's work with computer consultants on ISRA's computer needs

- short-term training - foreign the DG's DEC management visit to the US, and Astou Sene, Papa Dieye and Itaf Gningue to France on statistical analyses of technologies.

- long-term training in U.S. - M.S./Ph D worked on Samba Sall extension until December 1997, contents and planning of the LTPT Tucson mid-winter seminar (DEC), proposals for recruiting two women candidates to fill the remaining MS positions, and continued to develop the dossier for the selection and travel of the final candidates.

- long-term training in Senegal - women for the B S assisted with plans for the new academic year

- research grants assisted with the USAID and CID follow-up to the memoranda of negotiation and contract documents for the recently-approved 1995 NRBAR research grants, and the planning of the next NRBAR subventions meetings.

- participated and reported on the 08NOV NRBAR quarterly meeting between USAID/CID/ISRA.

- assisted with developing a NRBAR plan for infrastructure assistance in 1996, TOR for station managers, and with a review of feasibility of various options for consolidation of ISRA's Cap Verte installations.

- wrote a first and second draft of the NRBAR life-of-project workplan and budget.

- programmation/budgetisation 1996 exercise participated in the NOV reunion des responsables, reunions d'arbitrage, and assisted units in completing their forms

- assisted with ISRA's planning of development of the financial management system, including a meeting with Eurexcel at ISRA.

- participated in the 18NOV USAID/SOT2 picnic with ISRA staff

- reviewed all NRBAR activities and expenses to date, and placed in summary tables

- worked on the USAID results package framework, with ISRA/USAID

- developed the BAME 1996 plan for completion of the research impact work.

- discussed INFORM developments with Louis Sene, the DS and ISNAR.

- regular meetings/reporting participated in ISRA/DG coordination meetings, progress reporting, workplanning, and meetings with TA and USAID

administration. Tony Hall of Bean/Cowpea CRSP on Ndiaga Cisse, relocation of Wendy from Thies to Dakar, USAID salary waiver for Maty Ndiaye, financial reporting, replacement and recruitment of the NRBAR administrator, TA housing, move of the NRBAR admn. office, Wendy and Paul to the DG building, November project picnic at chez USAID Mission Director, Casamance visits by NRBAR staff, and translation of summary of a minerals deficiency research report

2. ACHIEVEMENTS

- the memoranda of negotiation and contract documents for the 1995 NRBAR research grants were negotiated and signed by USAID
- ISRA requested bids for the development of the financial system.
- ISRA established a 7-member core scientific committee under the direction of the DS
- the search for the new NRBAR administrator was completed with the recruitment of Didi Leguede
- ISRA developed TOR for the ISRA station managers (Muhtar TDY)
- ISRA wrote a technical paper on the feasibility of consolidating ISRA sites in Cap Verde (Muhtar TDY)

3 DIFFICULTIES

- none, other than the high volume of work at the same time as the need to accommodate the change of the NRBAR administrator and in the location of NRBAR offices.

4 FUTURE PROGRAM

- implementation of existing programs, especially the implementation of the 1996 program/budget process and development of the strategie et plan d'actions (particularly the completion of NRBAR renegotiations)

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK DECEMBER, 1995

1 PRINCIPAL ACTIVITIES activities concentrated on supporting the strategie et plan d'actions 1995-96 - particularly through revision of and budgeting for the NRBAR life-of-project plan, on implementing the schedule and content of the 1996 program/budget exercise, and on NRBAR administrative duties. Activities included

- assisted with TDYs Hannibal Muhtar/research management, John Ashburner/management of infrastructure, Amadou Gueye/ressources humaines, Dr Thiongane/ISRA strategic plan, Antonin Diouf/survey of the Niore watershed, Rocky Ramey/project administration, (Bolander/infrastructure), and Nicolas Dupuy/bibliographic synthesis of organic matter research
- short-term training - Senegal planning of future events
- short-term training - foreign the DG's DEC management visit to the US, and Astou Sene, Papa Dieye and Itaf Gningue to France on statistical analyses of technologies
- long-term training in U S - M S./Ph D reviewed Sissoko's admin and technical problems of research in Senegal with his research team and Didi, worked on final arrangements to send 4 MS candidates to the US, on the contents and planning of the LTPT Tucson mid-winter seminar (DEC), proposals for recruiting two women candidates to fill the remaining MS positions, a 14DEC review of the program, and continued to develop the dossier for the selection and travel of the final candidates. Criteria and procedures for recruitment of 2 women from outside ISRA to fill the remaining MS places were developed
- long-term training in Senegal - women for the B S assisted with plans for the new academic year
- research grants assisted with the USAID and CID follow-up to the memoranda of negotiation and contract documents for the recently-approved 1995 NRBAR research grants, and the planning of the next NRBAR subventions meetings. Wrote a letter of appreciation to Papa Sall.
- participated and reported on the 08DEC NRBAR Coordination (USAID/CID/ISRA) meeting
- revised and finalised the NRBAR life-of-project workplan and budget
- completed a review of allocations of NRBAR expenses to the results package structure
- programmation/budgetisation 1996 exercise participated in the preparation of the final document
- assisted with developing an ISRA inventory as part of the work of John Ashburner
- regular meetings/reporting participated in ISRA/DG coordination meetings, progress reporting, workplanning, and meetings with TA and USAID administration. worked with Rocky Ramey on a wide range of admin issues, financial reporting, replacement and recruitment of the NRBAR administrator, TA housing, move of the NRBAR admin office, Wendy and Paul to the DG building, and workplanning/progress reporting

2 ACHIEVEMENTS

- ISRA received at least 2 excellent bids for the development of the financial system, and the selection committee made a recommendation to the DG
- ISRA completed its NRBAR life-of-project proposals and sent them to USAID for approval
- proposals for recruitment of 2 women to fill the remaining MS positions were accepted, and implementation began
- The ISRA inventory was transferred to micro-computers, and re-formatted and revised to enable it to be used by station managers (Ashburner TDY)
- a preliminary pre-audit report on the CID/USAID contract was written (Rocky Ramey TDY)
- the first draft complete ISRA program and budget for 1996 was completed

3 DIFFICULTIES

- none, other than the continued volume of work at the same time as the need to accommodate the very significant changes of organisation and personnel at ISRA

4 FUTURE PROGRAM

- implementation of existing programs, especially the implementation of the 1996 program/budget process and development of the strategie et plan d'actions (particularly the completion of NRBAR renegotiations)

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JANUARY, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Rocky Rainey/NRBAR project administration, Amadou Gueye/ressources humaines, Hannibal Muhtar/research management, John Ashburner/management of infrastructure Dr Thiongane/ISRA links with other research institutions, John Sanders/research impact-research management-socio-economics methods
- short-term training - Senegal AI and CG to Bambey to develop a financial management plan, conventions visits to stations, mission de supervision comptable, gestion des immobilisations visit during FEB/MAR, training of inventory managers at DG (Ashburner), the GPS meeting of 07/08FEB, the CNPPS meeting of 13FEB, mission du contrôle des régies financiers
- short-term training - foreign prepared for Papa Dieye, Asdou Sene and Itaf Gningue to France/Statistical analyses of research on technologies, Mali visit by station managers, proposed CG technical training in Ivory Coast
- long-term training in US - M S/Ph D prepared materials for, and met with, Cissokho's ISRA research committee on 03JAN, arrangements for program and travel of 4 newly-selected PTs to the U S , procedures defined and national search for the remaining 2 PTs for the M S began
- long-term training in Senegal - women for the B S met with the Director of ENSA to agree the outline of the current year's ISRA/NRBAR program.
- assisted with preparation of materials for the 23JAN reunion de gestion des conventions, and with subsequent actions
- prepared materials for, presented, and otherwise participated in the ISRA reunion de programmation et coordination, 11-12JAN
- prepared for the GPS meeting of 07/08FEB
- proposed a 1996 program for INFORM following discussions with the DS, Louis Sene, and ISNAR.
- proposed with the DS a framework for reviewing the quality of research
- participated in financial management planning discussions with ISRA, USAID and the World Bank, and revised the ISRA/NRBAR financial certification plan
- prepared briefing notes for, and participated in, the DG and DS coordination meetings
- prepared for the CNPPS meeting of 13FEB
- participated in the World Bank review mission to ISRA.
- assisted with the 19JAN USAID/ISRA monthly financial meeting
- assisted with Mour Gueye 1995 annual report for Tambacounda
- administration routine meetings and communications with USAID, ownership issues of NRBAR equipment, TDY Nicolas Dupuy/organic matter research literature review, reporting to USAID documentation center, progress reporting - BIAN 5 and 6, Casamance travel issues, outline assessment of the impact of the E&Y financial management contract, TA administration and meetings, waivers for consultants, specifications for training equipment to be purchased under NRBAR, completion of administration for hire of new administrator, communications with USAID on contribution of NRBAR to technology development, and on existing and proposed changes instituted by the new ISRA DG

2 ACHIEVEMENTS

- four LTPTs departed for the U S to begin M S studies, while procedures were agreed for selecting the remaining two candidates for the M S
- the 1996 NRBAR subventions program and protocols were modified and agreed, with one additional proposal accepted contingent upon specific changes being made by the URR-Sud Bassin Arachidier team. A program for review of existing grants was defined

- agreed a program and budget with Cissokho for completing his M S
- a first and effective management meeting between the DG team and all ISRA unit managers was held (ISRA reunion de programmation et coordination, 11-12JAN)
- the ISRA human resources files were updated and simple procedures developed for future contracting (through the Gueye TDY)
- Papa Dieye, Asdou Sene and Itaf Gningue began short-term studies in France on Statistical analyses of research on technologies
- agreed on an outline ENSA/NRBAR program for 1996
- ISRA completed a diagnostic study and developed a detailed proposal for strengthening linkages between all national agricultural research institutions (Thiongane TDY)
- the first report of the ISRA audit of human resources established human resource management procedures and defined the establishment of personnel (Amadou Gueye TDY)

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available ISRA is waiting to hear from USAID on the 1996-98 proposed NRBAR workplan

4 FUTURE PROGRAM

- complete progress reporting and workplanning, implementation of existing programs, including participation in the FEB strategic planning meetings

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK FEBRUARY, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Amadou Gueye/ressources humaines, Hannibal Muhtar/research management, John Ashburner/management of infrastructure, Dr Thuongane/ISRA links with other research institutions, John Sanders/research impact-research management-socio-economics methods, Monica Fisher/socio-economic validation of technologies in Kolda
- short-term training - Senegal AI and CG to Bambe to develop a financial management plan, conventions visits to stations, mission de supervision comptable, reunion GPS-7/8FEB, forum national de la recherche agricole-13/14MAR, CNPPS-13FEB, gestion des immobilisations visit during FEB/MAR.
- short-term training - foreign Pittsburg management training proposals, Papa Dieye, Asdou Sene and Itaf Gningue to France/Statistical analyses of research on technologies, Mali visit by station managers
- development of researcher time and research projects data base with DS and Louis Sene
- quality of research and ISRA organigram development with the DS et al
- long-term training in U S - M S/Ph.D distributed the report of the LTPT seminar at Tucson, applied for approvals for Ahoune Dieng and Samba Sali thesis research projects in Senegal, the selection procedures and selection criteria were determined for the final two LTPTs, and participated in the selection of two women candidates (Mme Fana Sylla Bâ and Mlle Aissata Ndiaye) Began preparations for sending the candidates to the U S
- long-term training in Senegal - women for the B S met with ENSA on the current year's program and the proposed stages of the 7 Pts at ISRA in October
- participated in the GPS meeting of 07/08FEB
- participated in the CNPPS meeting of 13FEB
- assisted with Mour Gueye 1995 annual report for Tambacounda
- participated in the URA-Socio-Economie seminar of 23FEB on effects of devaluation on production and marketing of key crops.
- assisted with URA-Socio-Economie plan 1996-98
- preparations for the ISRA/USAID meetings of 01MAR (NRBAR) and 06/07MAR (SO2)
- administration: TDY Nicolas Dupuy/organic matter research literature review, reporting to USAID documentation center, progress reporting, Ammata Badiane officially made principal counterpart for Paul, NRBAR Coordinating meeting of 14FEB, CID contracting issues, change in NRBAR per diem/lodging rate, review of NRBAR commodity and vehicle budget with DG

2 ACHIEVEMENTS

- URA-Socio-Economie produced and communicated with partenaires on 8 studies related to the effects of devaluation on the production and marketing of key crops, 4 studies were concerned directly with applied economics for production, marketing and policy issues relating to millet, sorghum, rice and maize
- ISRA appointed a senior researcher (Ammata Badiane) as the ISRA-wide GRN specialist, and Ammata was named as the principal counterpart for Paul Anamosa
- the final two M S candidates (women) were selected
- the ISRA draft 1996 research program document was finalised and distributed, although not final until after the next ISRA program meeting with the Units, this document - for the first time defines the achievable objectives of each ISRA unit specifically for the planning period concerned and based on resources actually available

- the reflexions prospectives of the GPS were finalised at the 07/08FEB GPS meeting, and were validated by the 13FEB meeting of the Comite National de Prospective et Planification Strategique de Recherche Agricole, such that ISRA has the support and input of its collaborators in detailing the projet d'Entreprise, the 6-year Plan Strategique, and the Charte Culturelle
- the ISRA human resources files were updated and simple procedures developed for future contracting (through the Gueye TDY)
- a revised 1996 research station development program was proposed by the Muhtar TDY
- the existing ISRA equipment and vehicule inventory was finalised according to management unit, and 13 inventory accountants and 8 station managers were trained in inventory validation/procedures (Ashburner TDY)

3. DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available ISRA is still waiting to hear from USIAD on the 1996-98 proposed NRBAR workplan

4 FUTURE PROGRAM

- complete progress reporting and workplanning, implementation of existing programs.

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK MARCH, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Amadou Gueye/ressources humaines, Hannibal Muhtar/research management John Ashburner/management of infrastructure, Dr Thioungane/ISRA links with other research institutions, TOR for John Sanders/research impact-research management-socio-economics methods, Monica Fisher/socio-economic validation of technologies in Kolda, Antonm Diouf for the Niore topographic survey, Ted Brush for INFORM, and Mamadou Sidibe on research impact
- short-term training - Senegal AI and CG to Bambey to develop a financial management plan, conventions (commission de gestion des conventions) visits to stations, mission de supervision comptable, results package workshop of USAID/ISRA/partenaires, forum national de la recherche agricole-13/14MAR, gestion des immobilisations visits
- short-term training - foreign Papa Dieye, Asdou Sene and Itaf Gnngue to France/Statistical analyses of research on technologies, Mali visit by station managers, Mamadou Dione to Toulouse on forest technologies, Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, Pape Sall to the U S on development of agroforestry technologies, Adama Faye to the U S to collaborate on a research paper on stabling technologies at Kolda, Mbene Faye for economic validation of technologies, two researchers to Canada for GIS station development, 9 station managers to Canada for training
- long-term training in U S - M S/Ph D Participated in preparations for sending the two remaining MS candidates candidates (Mme Fana Sylla Bâ and Mlle Aissata Ndiaye) to the U S , assisted with SG's drafting of the ISRA contracts with the three women LTPTs who will be employed as ISRA staff upon their successful return to Senegal following training, facilitated Tanou Ba's visit to Mexico
- long-term training in Senegal - women for the B S met with ENSA on the current year's program and the proposed stages of the 7 Pts at ISRA in October
- research grants participated in the planning and analyses of the mission de supervision of the DS to NRBAR subvention sites Assisted with the review and revision of the S/V16 CARTAS/MODOU SENE grants proposal.
- development of researcher time and research projects data base with DS and Louis Sene
- quality of research and ISRA organigram development with the DS et al
- assisted with Mour Gueye 1995 annual report for Tambacounda
- contacted Eurexcel for their ISRA demonstration.
- participated in the selection and interview of candidates for the station coordinator position
- participated in the weekly DG coordination meetings and the occasional DS coordination meetings
- met with Thomas Epinou of ISNAR on research/development
- met with Jonathan Landeck and Mughtar Diop of Rodale on grants progress and strategy
- reviewed and participated in the revision of the David Holmes final report
- assisted with drafting of USAID results package document, and participated in numerous meetings with USAID and ISRA on this subject
- assisted with URA-Socio-Economie plan 1996-98, and worked with Mbene Faye on grants socio-economics analyses
- preparations for and participation in the ISRA/USAID meetings of 01MAR (NRBAR) and 06/07MAR (SO2)
- administration TDYs Nicolas Dupuy/organic matter research literature review, CIRAD statistics consultants, MARP diagnostic consultants, John Russell for on-farm research methods, and David Andrews for millet/sorghum technologies Progress reporting, NRBAR financial

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planning and reporting with USAID and ISRA, periodic summary updates of project activities English translation of research report summary in French, communications with US universities of ISRA Anaplasma needs, TA meetings, OSU intern planning, the Kebe food security chapter for US publication, summary of NRBAR radio-related activities,

2. ACHIEVEMENTS

- the revised S/V16 collaborative research grants project was reviewed and approved by the ISRA research grants committee
- given the recent reorganisation of ISRA into zonal multidisciplinary teams and extensive internal transfers of staff, the DS completed reassignments of ISRA personnel responsibilities for 25 of the 31 NRBAR grants projects in the URRs Haute Casamance/Senegal Oriental, Sud Basin Arachidier, Centre Nord Basin Arachidier, Fleuve, and Sylvo-pastorale
- terms of reference and tasks of station/centre managers were finalised and regularised by ISRA in a note de service (1552 of 07MAR)
- all but one candidate for the station manager position were interviewed and scored
- a preliminary test of INFORM showed that the system was still operational at ISRA and could be used to continue development of the 1996 researcher/project management information system. URA-Socio-Economie produced and communicated with partenaires on 8 studies related to the effects of devaluation on the production and marketing of key crops, 4 studies were concerned directly with applied economics for production, marketing and policy issues relating to millet, sorghum, rice and maize
- ISRA appointed a senior researcher (Hyacinthe Mbengue) as the ISRA-wide research station coordinator, until the new appointee (expected next month) has completed his probationary period
- the final two M S candidates (women) departed to begin their US training
- ISRA and USAID agreed on the main elements of the agricultural research results package
- the commission des conventions submitted its first complete report, detailing ISRA funding sources, but much of the detail of the conventions remains to be collected
- the development of a financial systems development plan for ISRA continues to make progress at the test site at Bambeby

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available
- the potential NRBAR financing of project zone GRN research station activity, and of further ISRA financial development, continues to be delayed until the completion of the Bambeby test

4 FUTURE PROGRAM

- complete progress reporting and workplanning, implementation of existing programs, and continue to work on the USAID/ISRA results package

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK APRIL, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Amadou Gueye/ressources humaines, TOR for Hannibal Muhtar/research management, TOR for John Ashburner/management of infrastructure, John Sanders/research impact-research management-socio-economics methods, Monica Fisher/socio-economic validation of technologies in Kolda, Antonin Diouf for the Nioro topographic survey, Ted Brush for INFORM, TOR for Mamadou Sidibe on research impact, Bill Roberts for monitoring and evaluation, Suchet Louis for Agriculture/livestock systems, and Jean Kearns/Rocky Ramey for project management
 - short-term training - Senegal AI and CG to Bambey to develop a financial management plan supervisory visit to Kolda/Nioro on GRN technologies - URA Productions Vegetales, inventory management training at CESIG for Mame Gungue (the ISRA inventory manager), seminar on office management for the DG's personal assistant and the NRBAR deputy administrator, visit by Seck/Diop/Mbaye to the regional committees of the strategic plan, 14 researchers to undertake a diagnostic study for the sylvopastoral zone, and accountants to Bambey to complete the 1995 closing accounts
 - short-term training - foreign Mali visit by station managers, Mamadou Dione to Toulouse on forest technologies, Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, Pape Sall to the U S on development of agroforestry technologies, Adama Faye to the U S to collaborate on a research paper on stabling technologies at Kolda, two researchers to Canada for GIS station development, 9 station managers to Canada for training
 - long-term training in U S - M S /Ph D Participated in the follow up to the departure of the two remaining MS candidates candidates (Mme Fana Sylla Bâ and Mlle Aïssata Ndiaye) to the U S , administration of Mamadou Lo's potential research in Senegal - including sending an approval request to USAID
 - long-term training in Senegal - women for the B S met with ENSA on the current year's program and the proposed stages of the 7 Pts at ISRA in October
 - research grants participated in the follow up to the mission de supervision of the DS to NRBAR subvention sites Assisted with the review and revision of the S/V16 CARITAS/MODOU SENE grants proposal
 - assisted with planning the socio-economics program for Mame Thuouf as a temporary employee
 - assisted with URA-Socio-Economie plan for NRBAR for 1996-98, and worked with Mbene Faye on grants socio-economics analyses
 - development of researcher time and research projects information system with DS and Louis Sene
 - quality of research and ISRA organigram development with the DS et al
 - participated in the selection and interview of the final candidate for the station coordinator position
 - assisted with searching for the Mour Gueye 1995 annual report for Tambacounda
 - participated in the Quarterly ISRA_wide management coordination meeting (01-02APR), the weekly DG coordination meetings and the occasional DS coordination meetings
 - reviewed and participated in the revision of the David Holmes final report
 - assisted with drafting of USAID results package document, and participated in numerous meetings with USAID and ISRA on this subject
 - coordinated and developed the NRBAR workplan 1992-98, and distributed for comments
- administration TDYs Nicolas Dupuy/organic matter research literature review, CIRAD statistics consultants, MARP diagnostic consultants, John Russell for on-farm research methods

and David Andrews for millet/sorghum technologies Progress reporting, NRBAR financial planning and reporting with USAID and ISRA, periodic summary updates of project activities, English translation of research report summary in French, communications with US universities of ISRA Anaplasma needs TA meetings OSU intern planning, the Kebe food security chapter for US publication, summary of NRBAR radio-related activities, David Holmes end-of-contract procedures communicated with Michael Satin and other potential stagieres, site visit travel to Gunea TA housing contracts preparation of pre-audit summary sheets for NRBAR activities, developed CID contract personnel plan MAY-DEC96, USAID personal information needs on TA

2 ACHIEVEMENTS

- the revised S/V16 collaborative research grants project was reviewed and approved by the ISRA DG, a memorandum of negotiation was written and submitted to USAID for approval and sent to USAID for research grants committee
- the final candidate for the ISRA station manager/coordinator position was interviewed, the recruitment dossier was completed and sent to the DG for final selection of the successful candidate
- the final draft results package was sent to the USAID Mission Director for approval
- the final draft 1992-98 NRBAR workplan was completed
- ISRA named its members on the ISRA/USAID results package workplan committee
- the development of a financial systems development plan for ISRA continues to make progress at the test site at Bambey
- contracts were signed between the three NRBAR women LTPTs and ISRA, to assure their return to Senegal as employees of ISRA
- ISRA approved the proposal for Mamadou Lo's research in Senegal
- the URA-socio-economics plan for NRBAR 1996-98 was finalised

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised to take into account the conflicting demands on the limited resources available
- the potential NRBAR financing of project zone GRN research station activity, and of further ISRA financial development, continues to be delayed until the completion of the Bambey test

4 FUTURE PROGRAM

- complete the backlog of progress reporting and workplanning, implementation of existing programs and continue to work on the USAID/ISRA workplan for the results package

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK MAY, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Amadou Gueye/ressources humaines, TOR for Hannibal Muhtar/research management, John Sanders/research impact-research management-socio-economics methods Monica Fisher/socio-economic validation of technologies in Kolda Antonn Diouf for the Nioro topographic survey, Mamadou Sidibe on research impact, Bill Roberts for monitoring and evaluation, Nicolas Dupuy on strategic planning, and Suchet Louis for Agriculture/livestock systems
 - short-term training - Senegal AI and CG to Bambey to develop a financial management plan supervisory visit to Kolda/Nioro on GRN technologies - R-D Unit, inventory management training at CESIG for Mame Gningue (the ISRA inventory manager), workshop/synthesis of organic matter research, workshop at Mbour for 13 researchers on on-farm research methods, 2 station managers on a survey of station needs
 - short-term training - foreign, Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, Adama Faye to the U S to collaborate on a research paper on stabling technologies at Kolda and on an evaluation of the collaborative research program, two researchers to Canada for GIS station development, 9 station managers to Canada for training
 - long-term training in U S - M S /Ph D Participated in the follow up to the departure of the two remaining MS candidates candidates (Mme Fana Sylla Bâ and Mlle Aïssata Ndiaye) to the U S , administration of Samba Sall's and Boubaccar Barry's potential research in Senegal - including sending an approval request to USAID
 - long-term training in Senegal - women for the B S met with ENSA on the current year's program.
 - research grants participated in the follow up to the mission de supervision of the DS to NRBAR subvention sites
 - assisted with planning the socio-economics program TOR for Mame Thiouf as a temporary employee
 - assisted with URA-Socio-Economie plan - especially the impact and soci-economic analyses of technologies programs - for NRBAR for 1996-98, and worked with Mbene Faye on grants socio-economics analyses
 - development of researcher time and research projects information system with DS and Louis Sene based on the INFORM methodology
 - participated in the weekly DG coordination meetings and the periodic DS coordination meetings
 - reviewed, and participated in writing the final revision of the David Holmes final report
 - assisted ISRA and USAID with drafting and revision of the USAID results package document and participated in numerous meetings with USAID and ISRA on this subject
 - assisted ISRA and USAID in revising the NRBAR workplan 1992-98, and distributed for comments
 - assisted with the World Bank visit designed to prepare for the July PSAOP pre-evaluation mission
 - coordinated USAID participation in the ISRA multi-donor meeting at Bambey
 - coordinated USAID visit to the financial management team at Bambey
- administration TDYs Nicolas Dupuy/organic matter research literature review CIRAD statistics consultants, John Russell for on-farm research methods, and the 1995 final report of Monica Fisher Progress reporting - particularly the completion and distribution of the Monthly Reports and Quarterly Reports for the period 1995-1996 NRBAR financial planning and reporting with USAID and ISRA - including Quarterly estimates of CID expenditures 1994-96 development

of the NRBAR commodity budget with ISRA and USAID, 07May project lunch chez Cusack to review David's work with ISRA/USAID, termination procedures and final reporting for Wendy and Paul, David Holmes end-of-contract procedures, Cusack house move

2 ACHIEVEMENTS

- a comprehensive review of organic matter research in Senegal was completed, and distributed
- a human resources audit was completed, and a report of recommendations for improvements in human resource management and procedures was completed
- 35 researchers were trained in the statistical analyses of experiments
- the ISRA inventory manager completed a course in inventory accounting and procedures
- 13 ISRA researchers were trained in on-farm research methods
- Quarterly Reports for the first Quarter of 1996 were completed and distributed
- the Final Report for David Holmes was completed

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available
- the potential NRBAR financing of project zone GRN research station activity, and of further ISRA financial development, continues to be delayed until the completion of the Bambey test
- the new socio-economist, Mme Thiouf, was involved in a serious traffic accident during her first week of work, and will not be available for at least six months

4 FUTURE PROGRAM

- complete the backlog of progress reporting and workplanning, implementation of existing programs, and continue to work on the USAID/ISRA workplan for the results package

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JUNE, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Hannibal Muhtar/research management, John Sanders/research impact-research management-socio-economics methods, Monica Fisher/socio-economic validation of technologies in Kolda, Antonn Diouf for the Nioro topographic survey, Mamadou Sidibe on research impact, Bill Roberts for monitoring and evaluation, Nicolas Dupuv on strategic planning Suchet Louis for Agriculture/livestock systems, and Vincent Bralts for the thesis of Boubacar Barry, and Hannibal Muhtar on ISRA's indirect costs

- **short-term training - Senegal** AI and CG to Bambey to develop a financial management plan supervisory visit to Kolda/Nioro on GRN technologies - R-D Unit, inventory management review of research stations, inventory monitoring mission by Mame Gningue workshop/synthesis of organic matter research by seven researchers, a study of researchers needs, 13 researchers implemented a diagnostic survey in SOHC, Mamadou Gueye to work with the UP-PS at Bambey accountancy mission to St Louis on ISRA's accounting of donor funds, meeting of the GPS to prepare for the PSAOP, visit to the Southern NRBAR sites by the DS, 2 station managers on a survey of station needs, ISACI seminar on audits of human resources

- **short-term training - foreign** Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, three station managers to Canada for GIS station development

- **long-term training in U S. - M S /Ph D** Participated in the Bralts/Barry meetings, the follow up to the departure of the two remaining MS candidates candidates (Mme Fana Sylla Bâ and Mlle Aissata Ndiaye) to the U S

long-term training in Senegal - women for the B S met with IST on the current year's program, and revision of funding justification and requests

- **research grants** participated in the follow up to the mission de supervision of the DS to NRBAR subvention sites

- participated in the 3-4JUN USAID/ISRA RP1 meetings

- Met with GTZ on potential GRN collaboration

- wrote a revised PIR for NRBAR

- met Dr Lowenburg on training for Mbene Faye and fiche technique development

- continued to assist Papa Seck and others with ISRA's strategic plan development

- met with Tomàs Epmou of ISNAR on links with partenaires

- worked with Monica Fisher on stabling research summaries and fiches techniques

- prepared reports for the July Annual Joint Review

- assisted ISRA with completion of the NRBAR Annual Report APR95-MAR96

- developed a plan for use of the \$1m. GRN funds, with ISRA and USAID

- assisted with the socio-economic reporting of Sidibe

- participated in the weekly DG coordination meetings and the periodic DS coordination meetings

- assisted ISRA and USAID with drafting and revision of the USAID results package document and participated in numerous meetings with USAID and ISRA on this subject

- assisted with the World Bank visit designed to prepare for the July PSAOP pre-evaluation mission

administration Candide Leguede to OSU for project administration Cusack to OSU for CID Management Meeting, recontracting for Wendy and Paul, farewell NRBAR lunch for David Holmes, letter of notice of termination to DAI CID staff meetings Progress reporting - particularly the completion and distribution of the Monthly Reports and Quarterly Reports for the period 1995-1996 Cusack house move

2 ACHIEVEMENTS

- the NRBAR Annual Report 95/96 was completed and distributed
- the final RP1 document was negotiated with USAID/ISRA
- the 1995/96 PIR document was completed
- a strategy for use of the \$1m. GRN funds was finalised with ISRA/USAID using CID financial management, clearly separating the use of these funds from ISRA's progress in improving its financial management
- 41 researchers were tutored in on-farm research methods
- a reference manual for self-tuition in on-farm methodologies was written and distributed
- a strategic plan for the URA-PASE was written

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available
- the completion of the Bambej test of ISRA's financial development continues to be delayed, further delaying the implementation of the results of the NOV95 appel d'offre

4 FUTURE PROGRAM

- the implementation of existing programs and follow-up to the JUL Annual Joint Review

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JULY/AUGUST, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs Hannibal Muhtar/research management, John Sanders/research impact-research management-socio-economics methods, Monica Fisher/socio-economic validation of technologies in Kolda, Antonm Diouf for the Niore topographic survey, Mamadou Sidibe on research impact, Bill Roberts for monitoring and evaluation, Nicolas Dupuy on strategic planning, Suchet Louis for Agriculture/livestock systems, and Hannibal Muhtar on ISRA's indirect costs
- **short-term training - Senegal** AI and CG to Bambey to develop a financial management plan, supervisory visit to Kolda/Niore on GRN technologies - R-D Unit, inventory monitoring mission by Mame Gangué, workshop/synthesis of organic matter research by seven researchers
- **short-term training - foreign** Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, three station managers to Canada for GIS station development
- **long-term training in U S - M S /Ph D** Participated in the OSU LTPT meeting of 25JUL, met with Oceanography/OSU on Bass's grading problems, Evelyne Ndiaye's research pre-proposal sent to ISRA and USAID for comments, request to USAID for extension of study period for Bass
- **long-term training in Senegal - women for the B S** met with IST on the current year's program, and revision of funding justification and requests
- **research grants** participated in the follow up to the mission de supervision of the DS to NRBAR subvention sites
- prepared for, participated in, and reported on the NRBAR Annual Joint Review of 11JUL
- coordination of USAID Mission Director's field visit to NRBAR sites
- participated in the ISRA/World Bank PSAOP preparation mission
- worked with Jean Pichot, Colin Lyle, M-H Collion and ISRA on revising ISRA's strategic plan
- assisted with Mme Ba purchase of computer in U S
- travelled on TDY to OSU, and participated in the CID management meeting
- assisted with preparation of PIL08
- distribution of the NRBAR Sixth Biannual Report
- worked with Monica Fisher on stabling research summaries and fiches techniques
- further development of a plan for use of the \$1m. GRN funds, with ISRA and USAID
- participated in the weekly DG coordination meetings and the periodic DS coordination meetings
- assisted ISRA and USAID with drafting and revision of the USAID results package document and participated in numerous meetings with USAID and ISRA on this subject
- administration**· discussed project workplanning and contracting issues with OSU staff, salary proposal for the Goze/Letourmey consultancy, Candide Leguede to OSU for project administration, Cusack to OSU for CID Management Meeting, recontracting for Wendy and Paul. Cusack house move Cusack was on leave during the month of August

2. ACHIEVEMENTS

- the Annual Joint Review resulted in an agreement between ISRA and USAID on the Results Package No 1, and on progress achieved to date on NRBAR.
- ISRA completed final drafts of strategic plans for each ISRA unit, and these were externally reviewed
- the NRBAR Sixth Biannual Report was completed and distributed
- the report of the ISRA projet d'entreprise 1996-2015 (the ISRA long-term strategy document/mission statement), and its synthesis, were completed
- ISRA created a cellule de Survı which has produced its first report summarising key information for all of ISRA's conventions with its funding sources,
- technical rehabilitation plans for Bambey and Nioro were completed
- trained 35 researchers in the 4 URRs of the project zone in development of monitoring/evaluation plans, including first draft plans for use of the NRBAR GRN funds
- the final draft report was received for the socio-economic validation of the stabling technology package in Kolda, showing that the following technologies have been successfully validated for different circumstances at farm level. (1) the Type I stable for milk production, (2) the Type I stable for meat production, (3) the Type II stable for milk production, (4) the Type II stable for meat production, (5) the Type III stable for milk production. and (6) the Type III stable for meat production Fiche Techniques have been drafted for these technologies, and ISRA plans to continue to improve and further test modifications to this package
- the final report was received for the fish scales project, showing that the following technologies have been successfully developed through on-station and on-farm trials (1) fish scales as a fertiliser on millet (2) fish scales as a fertiliser on maize (3) fish scales as a fertiliser on sorghum, (4) fish scales as a fertiliser on cowpeas and (5) fish scales as a fertiliser on groundnuts These technologies have now successfully proceeded to the validation stage with NGOs in the appropriate area of intervention using NRBAR collaborative research grants

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised to take into account the conflicting demands on the limited resources available
- the completion of the Bambey test of ISRA's financial development continues to be delayed further delaying the implementation of the results of the NOV95 appel d'offre

4 FUTURE PROGRAM

- the implementation of existing programs, and re-orientation of workplans towards the Results Package, including follow-up to the JUL Annual Joint Review

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK SEPTEMBER, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs John Sanders/research impact-research management-socio-economics methods, Monica Fisher/socio-economic validation of technologies in Kolda, Antonin Diouf for the survey of physical plant, Bill Roberts for monitoring and evaluation, Nicolas Dupuy on strategic planning, Suchet Louis for Agriculture/livestock systems, Richard Dick on restoration of degraded soils, Rochelle Ramey on project administration, David Andrews on local cereals technologies, and Hannibal Muhtar on ISRA's indirect costs
- **short-term training - Senegal** workshop/synthesis of organic matter research by seven researchers, field survey of the impact of maize, millet and sorghum research, station management mission to monitor progress on station development by AGETIP, and CSE training for ISRA staff on mapping
- **short-term training - foreign** Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, three station managers to Canada for GIS station development, Kebe to Purdue on research impact, and 3 researchers on GIS training in Canada
- **long-term training in U S - M S /Ph D** planning with ISRA/OSU for the December Mid-Winter LTPT Seminar in Hawaii, obtaining approvals for Alioune Dieng's research proposal review of LTPT procedures with arrival of Lisa Grubisha as OSU LTPT Coordinator,
- **long-term training in Senegal - women for the B.S** met with IST on the current year's program, and revision of funding justification and requests
- **research grants** coordination with Massamba on final reporting, and preparation for the GRN funds
- participated in the RIG NRM audit of USAID
- participated in the Fouchet CIRAD consultancy on MIS/INFORM development
- coordinated the Wendy Wilson farewell party at ISRA on 12SEP
- worked with Madiagne Diagne, Gray Tappen, and CSE on a CSE contribution to mapping for the URRs
- lunch at Anne Williams' with partenaires, Ambassador and COPs on 18SEP
- assisted with Jim Bauman visit on aquaculture technologies
- assisted with the OSU/Hobgood stage at CRODT
- outlined a potential soils analysis training project with Yost/Hawaii, Ammata and Tony Duo of the Soils CRSP
- participated in the ISRA and NRBAR coordination meetings
- assisted with preparation of PIL08
- with USAID and ISRA, participated in the review of Paul's draft final report
- further development of a plan for use of the \$1m. GRN funds, with ISRA and USAID
- administration** discussed project workplanning and contracting issues with OSU staff. salary proposal for the Goze/Letourmey consultancy, follow-up to OSU for CID Management Meeting project re-budgeting, producing and distributing final TDY reports for the JUL-SEP period assistance with end-of-tour reporting for Paul and Wendy, Cusack house move

2 ACHIEVEMENTS

- a first draft report of the analysis of ISRA's indirect costs was completed
- a MOU for research linkages between TU/ISRA was drafted, and outline proposals for two research projects completed
- a joint OSU/ISRA research proposal for restoration of degraded soils was drafted
- a new joint ISRA/Soils CRSP training project was outlined
- the final of the ISRA projet d'entreprise 1996-2015 (the ISRA long-term strategy document/mission statement), and its synthesis, were completed and distributed
- 3 station managers were trained in development of station plans
- finalised the Paul Anamosa Summary Final Report and sent to ISRA/USAID

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available
- the Bambeby test of ISRA's new financial development plan has been suspended, without substantial result, and it may be too late to return to the NOV95 plan

4 FUTURE PROGRAM

- the implementation of existing programs, and re-orientation of workplans towards the Results Package, including follow-up to the JUL Annual Joint Review

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK OCTOBER, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs John Sanders/research impact-research management-socio-economics methods, Antonin Diouf for the survey of physical plant, Rochelle Ramey on project administration, David Andrews on local cereals technologies, Hannibal Muhtar on station management, John Ashburner on the ISRA inventory, Robert Wilkinson for animal traction experiments, John Russell for participation at the CST/mid-winter seminar, Michael Satm for GRN technology evaluation, and Hannibal Muhtar on ISRA's indirect costs and on AGRICON contract
- short-term training - Senegal workshop/synthesis of organic matter research by seven researchers, field survey of the impact of maize, millet and sorghum research, the 1997 research planning and budgeting exercise in the Regions mission of presentation of 1997 NRBAR grants protocols to regional research teams, and CSE training for ISRA staff on mapping
- short-term training - foreign Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women s groups, Kebe to Purdue on research impact Mbene Faye to Purdue on socio-economic evaluation of technologies, Ammata Badiane to a soils seminar at Reims, Malami Diatta to review soils/water conservation technologies in Israel, Jean-Pierre Ndiaye, Fatou Ba and Louis Sene to ISNAR, Jean-Pierre Ndiaye to OSU/Hawaii for the mid-winter seminar and international linkages proposals, and 3 researchers on GIS training in Canada
- long-term training in U S - M S /Ph D planning with ISRA/OSU for the December Mid-Winter LTPT Seminar in Hawaii, obtaining approvals for Ahoune Dieng's research proposal,
- long-term training in Senegal - women for the B S met twice with the Director/IST on the current year's program, and revision of funding justification and requests
- research grants coordination with Massamba on final reporting, and use of the GRN funds
- participated in the RIG NRM audit of USAID
- participated in the USAID COP review with USAID staff, particularly the RCO/Carlton Bennet
- assisted with implementation of the Rocky Ramey TDY
- drafting of new NRBAR grants protocols
- discussions with Gray Tappen on potential CSE/ISRA/GIS applications
- review of the draft final report of the Winrock S/V02 project
- participation in the public URA-PASE seminar on the effects of devaluation on agriculture
- reviewed the DAI contribution to NRBAR and future work with David Wilcocks
- participation in the ISRA p/b97 exercise
- reviewed, with Vernon/Brush/Sene/DS, the ISNAR/ISRA potential collaboration in the area of research planning and management the regional INFORM project, the management of change project, the South/South project, and INFORM development at ISRA
- developed a contract extension request to USAID via CID
- organised and implemented the 09OCT PRI/NRBAR lunch (USAID/ISRA/CID) chez Cusack
- developed project reporting formats for NRBAR grants
- worked with Madiagne Diagne, Gray Tappen and CSE on a CSE contribution to URR mapping
- assisted with the OSU/Hobgood stage at CRODT
- development of potential soils analysis training project with Yost/Hawaii and Ammata
- development of a soils research and lab improvement project with Dick/OSU and Ammata
- participated in the routine ISRA and NRBAR coordination meetings
- assisted with preparation of PIL08
- with USAID and ISRA, participated in the review of Paul's draft final report
- further development of a plan for use of the \$1m. GRN funds, with ISRA and USAID administration CID financial reporting, discussed project workplanning and contracting issues with CID staff, project re-budgeting, assistance with end-of-tour reporting for Paul and Wendy

2 ACHIEVEMENTS

- the 1997 research program has been prepared according to a rigorous system of planning with the resulting 1997 ISRA workplan showing that (1) each research program now has clearly-defined objectives achievable in the medium term, (2) a system is in place for the monitoring and evaluation of research programs, (3) the programs are aligned with the human physical and financial resources available, and (4) a basis for the evaluation of researchers and research activities has been established
- ISRA approval of Ahoune Dieng's M S research project
- a second draft report of the analysis of ISRA's indirect costs was completed
- a MOU for research linkages between TU/ISRA was finalised and signed by all parties
- the first draft ISRA/CID budget for 1997-98 was drafted and circulated for comment
- the ISRA inventory and evaluation of physical plant was completed for Ziguinchor Kolda Tambacounda and Dakar

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised to take into account the conflicting demands on the limited resources available
- there continues to be no substantial progress on improving ISRA's financial management system with the 1996 accounts remaining on hard-copy and unanalysed
- in the process of determining ISRA's indirect cost rate it was observed that there were large unexplained costs inconsistencies between ISRA centres for 1995

4 FUTURE PROGRAM

- the implementation of existing programs re-orientation of workplans towards the Results Package and completion of ISRA's 1997 p/b exercise

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK NOVEMBER, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs John Sanders/research impact-research management-socio-economics methods, Antonin Diouf for the survey of physical plant, Hannibal Muhtar on station management, John Ashburner on the ISRA inventory, Robert Wilkinson for animal traction experiments, John Russell for participation at the CST/mid-winter seminar, Michael Satin for GRN technology evaluation, and Hannibal Muhtar on ISRA's indirect costs and on the AGRICON contract
 - short-term training - Senegal Boury Diallo and Ramatoulaye Dieng on a financial control mission to ISRA units, and the DG, Boury Diallo and Ramatoulaye Toure to the National Internal Auditors meeting
 - short-term training - foreign Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, Ammata Badiane to a soils seminar at Reims, Malami Diatta to review soils/water conservation technologies in Israel, Jean-Pierre Ndiaye, Fatou Ba and Louis Sene to ISNAR, Jean-Pierre Ndiaye to OSU/Hawaii for the mid-winter seminar and international linkages proposals, and Ammata Badiane, Modou Sene and Boubacar Barry on GIS training in Canada
 - long-term training in U S - M S /Ph.D planning with ISRA/OSU and John Russell for the December Mid-Winter LTPT Seminar in Hawaii.
 - long-term training in Senegal - women for the B S normal monitoring
 - research grants coordination with Massamba on progress reporting, and use of the GRN funds
 - participated in the 05nov regional CORAF/ISRA seminar on communications with partenaires
 - developed the December INFORM training program with ISNAR and ISRA staff
 - organised and participated in the 15nov DG/USAID coordination meeting chez Cusack on the draft NRBAR workplan 1997-98
 - drafting of the 1997-98 workplan and budget
 - assisted with preparations and review of documents for the CST meetings
 - review with ISRA of the draft final report of the Winrock S/V02 project, and identification of further work
 - participation in the ISRA p/b97 exercise
 - development of potential soils analysis training project with Yost/Hawaii and Ammata
 - development of a soils research and lab improvement project with Dick/OSU and Ammata
 - participated in the routine ISRA and NRBAR coordination meetings
 - further development of a plan for use of the \$1m. GRN funds, with ISRA and USAID
- administration.** CID financial reporting, CID/USAID contracting, and developing administrative procedures for short-term training and TDY activities

2 ACHIEVEMENTS

- the final report of the analysis of ISRA's indirect costs was completed, determining ISRA's indirect cost rate, and enabling ISRA to charge overhead
- ISRA created a cellule de Surv which has produced its first report summarising key information for all of ISRA's conventions with its funding sources, and has developed a plan for incorporating researcher and research activity information for management during 1997
- ISRA long-term strategy document/mission statement was finalised
- the ISRA technical Committee (CST) reviewed the 1997 draft program, and made suggestions for improvement
- the field research in Ziguinchor of LT/PT Alioune Fall was validated by Robert Wilkinson
- 3 researchers were trained in use of GIS at research station level
- the first draft NRBAR 1997-98 workplan was completed and circulated
- the effort of ISRA, especially of the DG, in controlling expenses at centre level has resulted in significant savings without a reduction in apparent benefits

3 DIFFICULTIES

- scheduling of activities in the various programs needs to be more realistic and to be prioritised to take into account the conflicting demands on the limited resources available
- the process of strategic planning is becoming too long, without sufficient focus on the overall relationship between the proposed size of research programs, and available resources
- too many resources/effort are being placed in the general planning/management/infrastructure area, at the expense of research operations

4 FUTURE PROGRAM

- the implementation of existing programs, re-orientation of workplans towards the Results Package, and completion of ISRA's 1997 p/b exercise

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK DECEMBER, 1996

1 PRINCIPAL ACTIVITIES

- assisted with TDYs John Sanders/research impact-research management-socio-economics methods, Hannibal Muhtar on station management, and John Ashburner on the ISRA inventory
- short-term training - Senegal Boury Diallo and Ramatoulaye Dieng on a financial control mission to ISRA units, and the DG, Boury Diallo and Ramatoulaye Toure to the National Internal Auditors meeting
- short-term training - foreign Safietou Fall to the U S on agroforestry/livestock technologies and research /extension for women's groups, Malami Diatta to review soils/water conservation technologies in Israel, Jean-Pierre Ndiaye, Fatou Ba and Louis Sene to ISNAR, and Jean-Pierre Ndiaye to OSU/Hawaii for the mid-winter seminar and international linkages proposals
- long-term training in U S - M S /Ph D planning with ISRA/OSU and John Russell for the December Mid-Winter LTPT Seminar in Hawaii.
- long-term training in Senegal - women for the B S normal monitoring
- research grants coordination with Massamba on progress reporting, and use of the GRN funds
- preparation and distribution of the first draft 1997 RP1/NRBAR workplan
- organizing, preparing for and reporting on the Annual Joint Review with ISRA/USAID/CID on 16dec
- travelled to Zigumchor to work with the BMC research team and partenaires 10-12dec and 26-30dec
- assisted BMC in reviewing existing NRBAR subventions R03, R08, R12, R15, S/V14, revisions of proposed GRN subventions, and developing their RP1/NRBA protocols, with Massamba
- visited the S/V14 field sites, and potential R08 sites, with BMC researchers/partenaires
- participated in the routine ISRA and NRBAR coordination meetings
- further development of a plan for use of the \$1m. GRN funds, with ISRA and USAID administration CID financial reporting and CID/USAID contracting

2 ACHIEVEMENTS

- during the period, the final report was received for the socio-economic validation of important technologies for the Peanut Basin, showing that the following technologies have been successfully validated (1) the improved millet variety Souna III, (2) the improved millet variety IBV 8001, (3) the improved millet variety IBV 8004, (4) the production of compost, and its use on improved millet varieties, and (5) live fencing in association with manioc. These technologies are now in the process of very wide extension within the area, and can potentially benefit at least 100,000 farm families on more than 500,000 hectares, at time of extension maturity
- designed, completed, and distributed the first draft 1997 RP1/NRBAR workplan
- completed the Annual Joint Review with ISRA/USAID/CID on 16dec, involving a review of the first draft workplan and a review of progress during 1996
- the Mid-Winter Seminar was completed in Hawaii, under the leadership of the DS, involving a thorough review of the long-term training program
- 15 ISRA researcher participants at the Mid-Winter Seminar were trained in on-farm research methods
- 3 ISRA researchers were trained in research management information systems and INFORM at ISNAR
- Malami Diatta was trained in Israel, in use of the diguette/agroforestry technology for rehabilitation of saline/acid soils, and developed a 1997-98 research program for testing this in the Sine-Saloum.
- Safietou Fall completed 3 months' training in the US in forage/livestock research, completing the analyses and text for 3 Journal articles, drafting 5 fiches techniques for partenaires and drafting a synthesis research article for ISRA.

3 DIFFICULTIES

- it is difficult to ensure that the NRBAR proposals are an integral part of the ISRA workplan, even though this has been clear to staff by the DG, because individual unit/personal plans outside of the NRBAR effort are not well prepared
- scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available
- the process of strategic planning is becoming too long, without sufficient focus on the overall relationship between the proposed size of research programs, and available resources
- too many resources/effort are being placed in the general planning/management/infrastructure area, at the expense of research operations

4. FUTURE PROGRAM

- the implementation of existing programs, completion of the final draft of the RP1/NRBAR workplan, and approval of the workplan

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JANUARY, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management - developing a realistic, costed, infrastructure plan, John Ashburner/management of infrastructure - inventory management and production of final report, Robert Wilkinson/animal traction - production of final report, John Sanders/research impact-research management-socio-economics methods - proposed May visit Monica Fisher/socio-economic validation of technologies in Kolda - proposed July visit, Antonin Diouf extension for ISRA buildings survey
- short-term training - Senegal preparation for future events NRBAR subventions seminars in regions, participatory diagnostics/MARP by regional research teams, InterCRSP NRM seminar, Organic Matter thematic review, and natural phosphate thematic review
- short-term training - foreign reporting on DS/Sene/Ba visit to ISNAR on INFORM, reporting on Safietou Fall visit to U S on agroforestry/livestock technologies and research /extension for women's groups, preparation for Kebe visit to Purdue on impact, preparation for Ammata visit to Atlanta on Soils CRSP
- long-term training in U.S - M S/Ph D obtaining forest product data from DRPF for Massamba Thiame, work with DS and OSU on proposed changes in Mour Gueye's program, discussions with Alioune Fall on administrative matters and BMC animal traction, work with USAID on requests for extensions of programs and purchase of hardware for students
- long-term training in Senegal - women for the B S met with ENSA on the current year's program
- GRN research grants reviewed the 4 proposals in detail and made recommendations, discussed the committee's findings with the SOHC team, assisted DG/DS with preparation of the final dossier
- other research grants Wrote notes on Dec/BMC trip Worked with Aifa Ndoye on initial Rodale/Winrock tasks and on completing the Winrock S02 report, discussed kick-starting of the delayed V10 with GADEC/ISRA at Tambacounda Liaised with Units as they complete their subventions proposals
- international linkages worked with the ISRA, Tuskegee, Hawaii and OSU teams on their proposals
- coordinated and developed the second (09jan) draft of the NRBAR97 workplan, and the final (23jan) draft, with ISRA counterparts
- assisted with 2 World Bank ISRA Missions evaluation of PRAII, and preparation for PSAOP
- travelled to Tambacounda to work with the SOHC team on their research
- followed-up on the dec96 BMC visit
- developed a procedure for realistic planning of infrastructure
- worked with Nicolas Dupuy on organic matter research proposals
- discussions with departing and new DGs, and participated in passation de service tasks
- finalised minutes of 16dec96 ISRA/USAID/CID/RPI/NRBAR team meeting
- worked with the consultants Konate Gnissa (evaluations of researchers) and Cheikh Tidiane Sarr (an ISRA Foundation)
- administration - participated in the weekly DG and USAID coordination meetings and the occasional DS coordination meetings, follow-up to the LTPT mid-winter seminar, progress reporting, NRBAR financial planning and reporting with USAID and ISRA, preparation of pre-audit files for NRBAR activities, re-organisation of NRBAR vehicles for work with the DG NRBAR commodity procurement - particularly vehicles

2 ACHIEVEMENTS

- the revised V10 collaborative research grant document was signed by the partenaire, and money was advanced to both GADEC and ISRA/SOHC to begin activities
- the 1997 Workplan was finalised and sent to USAID for approval
- ISRA approved the proposal for extension of Mamadou Lo and Tanou Ba's M S programs, the purchase of a computer for Mamadou Lo, and calculator for Massamba Thiam, and a blanket approval to amend the LTPTs' training budgets to include computer purchases
- ISRA completed its review of the detailed GRN proposals, and made recommendations to the four URRs concerned
- a Memorandum of Understanding were signed between OSU/ISRA for soils work
- revised drafts of the international linkages proposals with TU (2) and OSU were sent to the DS for approval
- Aïfa Ndoye completed the final Wmrock V02 report
- The Comite de gestion du DS completed its review of the GRN proposals of the four URRs, and made detailed recommendations
- La lettre d'Execution No 685-0285-08 was signed by USAID

3. DIFFICULTIES

- the scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available This is still missing from the present draft ISRA strategic plan, including the infrastructural plan
- it is not yet clear if substantial modifications of the program will be needed as a result of the change of DG
- it is still not possible for the Units to receive effective service from the DG Financial office for processing of NRBAR claims

4 FUTURE PROGRAM

- complete the backlog of progress reporting, continue to develop the detailed activity plans with researchers (due at end-March), implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK FEBRUARY, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management - developing a realistic, costed, infrastructure plan, Glenn Good/OSU audit of NRBAR accounts – preparation for March visit, Richard Dick/soils – preparation for March visit, Monica Fisher/stabling - preparation for June visit
- **short-term training - Senegal** preparation for future events NRBAR subventions seminars in Bambey on organic matter (developed initial proposal) , and in other regions/other themes
- **short-term training - foreign** Aminata Badiane visit to Atlanta on Soils CRSP
- **long-term training in U S - M S /Ph D** medical insurance issues, Sissokho research data request, PT/coordinators relations, work with USAID on requests for extensions of programs and purchase of hardware for students, developed plan with Kolda to integrate the Sissokho and Diop results and methods into their program
- **long-term training in Senegal - women for the B S** met with ENSA on the current year's program
- **GRN research grants** continued to revise the 4 proposals in detail and made recommendations, discussed the committee's findings and GRN management strategy with the SOHC team at Tamba and Kolda – prior to the DS's supervision visit next month, assisted DG/DS with preparation of the final dossier GRN
- **other research grants** reviewed farmer feedback at field sites of r04, R07 and S/V10, worked with Aifa Ndoeye on initial OSDIL tasks and on completing the Rodale S01 report, worked with ISRA/SODEFITEX at Tambacounda to complete their subventions proposals, and agreed next steps for the Tuskegee visit to Kolda/Tamba, implemented a review of local milk processing outlets with VSF and SODEFITEX
- **international linkages** worked with the ISRA, Tuskegee, Hawaii and OSU teams on their proposals, especially with ISRA/Richard Dick on the soils proposal
- discussions with the new DG on the structure of the NRBAR program, outlined an agreed strategy with the participation of USAID, and participated in passation de service tasks
- assisted with outlines of summaries of the ISRA strategic plan
- assisted with the rapport d'execution and the project completion report (PCR) of the PRAII
- assisted with the MOU between the Peanut CRSP and ISRA
- writing of Quarterly Reports and Monthly Reports (including the backlog), and summarised progress according to the PR1 indicators
- implemented a field supervision visit to SOHC (Tambacounda and Kolda), including a review of the Missira site
- reviewed the Ashburner work at Kolda and reviewed future inventory proposals at Kolda
- developed TORs with Fofana for TDY Andrews
- budgeting of indirect costs under the GRN funds, with the DS
- assisted with developing ISRA/World Bank preconditions for appraisal of the PSAOP
- worked with DG on plan of allocating resources between different agro-ecologic zones
- participated in the daily and weekly DG coordination meetings
- participated in the API/R4 reporting for USAID
- participated in discussions at ISRA and at USAID on the USAID strategic plan
- assisted with contractor performance reporting and preparations for implementing the NRBAR option year
- discussed progress on the PASE impact studies with Sanders and Sidibe
- assisted with development of the ISRA/InterCRSP proposal for GRN
- reviewed the Purdue Masters/Johnson research proposal on regional technology diffusion

- reviewed and translated a neem oil paper by URA-PF
- discussed latest ACCESS97/INFORM-R with ISRA/ISNAR administration - progress reporting, NRBAR financial planning and reporting with USAID and ISRA, preparation of pre-audit files for NRBAR activities, re-organisation of NRBAR vehicles for work with the DG, NRBAR commodity procurement - particularly vehicles

2 ACHIEVEMENTS

- a first- draft infrastructure plan and budget was developed by ISRA/TDY Muhtar, to serve as a point of reference for the PSAOP and the ISRA strategic plan
- the 1997 Workplan was approved by the new DG and by USAID
- revised drafts of the international linkages proposals with TU (2) and OSU were approved by the DS
- Aifa Ndoye completed fieldwork for the final Rodale S/V01 report

3 DIFFICULTIES

- the scheduling of activities in the various programs needs to be more realistic and to be prioritised, to take into account the conflicting demands on the limited resources available. A realistic assessment of ISRA's future resource availability and how such resources would be strategically distributed within the Institute is still missing from the present draft ISRA strategic plan, including the infrastructural plan
- there continues to be a lack of priority at ISRA and USAID for implementing the existing research program, compared to the broader institutional efforts

4 FUTURE PROGRAM

- complete approvals for the new 1997 research grants, including international linkages programs, continue to develop the detailed activity plans with researchers (due at end-March), implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK MARCH, 1997

1. PRINCIPAL ACTIVITIES

- assisted/worked with **TDYs** Hannibal Muhtar/research management – final report, planning of June visit, and subsequent summary draft budget tables for the PSAOP, Glenn Good/OSU audit of NRBAR accounts – implementation and reporting, Richard Dick/soils – implementation and reporting, David Andrews/cereals varieties on his replacement, Suchet Louis/international linkages – implementation and reporting, Gan and Noble/stabling technologies/international linkages – preparation for visit, Jean Pichot/subventions review – TOR and preparation for visit, Monica Fisher/stabling technologies – TOR and preparation for visit, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack – TOR and preparation for visit, Gretchen Le Van/NRBAR office assistance/legal study – TOR and preparation for visit, search for soils scientist to join the ISRA/OSU soils/international linkages project
- **short-term training - Senegal** preparation for future events NRBAR subventions seminars in Bambey on organic matter (developed initial proposal), and in other regions/other themes
- **short-term training - foreign** Adama Faye to CIRAD/Montpellier to develop a joint R/D project with the EC
- **long-term training in U.S - M S /Ph D** medical insurance and major professor travel issues, Mour Gueye research proposal with SODEFITEX, Fana Sylla extension
- **long-term training in Senegal - women for the B S** drafting of the new ENSA contract
- **GRN research grants** continued to revise the 4 proposals in detail and made recommendations, the DS's supervision visit, assisted DG/DS with preparation of the final dossier GRN
- **other research grants** 25mar visit of USAID/ISRA/CID to FJBS-S/V11, Cusack visit to Rodale/Thies on completion of S/V01 final report, subventions atelier at Bambey, PAR2-S21, and S/V13, worked with Aifa Ndoye on RODALE and OSDIL reporting tasks
 - **international linkages** worked with the ISRA, Tuskegee, Hawaii and OSU teams on their proposals, especially with ISRA/Richard Dick on the soils proposal
 - developing the proposal for the first NRBAR collaborative subvention workshop
 - reunion de coordination ISRA/USAID/CID of 24mar
 - reported on the 21-28feb field supervision visit to SOHC (Tambacounda and Kolda)
 - provided input to the USAID R4 draft
 - developing TOR and search for new on-campus coordinator with technical support potential
 - assisted with the new USAID training plan proposals
 - assisted with the rapport d'execution and the project completion report (PCR) of the PRAII
 - assisted with Coop grasshopper proposal
 - discussed plans for ACCESS97/INFORM-R with ISRA/ISNAR
 - assisted with contractor performance reporting and preparations for implementing the NRBAR option year
 - participated in the daily and weekly DG coordination meetings
 - participated in the API/R4 reporting for USAID
 - participated in discussions at ISRA and at USAID on the USAID strategic plan
- administration** - Quarterly training costs analyses reports to USAID, progress reporting, NRBAR financial planning and reporting with USAID and ISRA, preparation of pre-audit files for NRBAR activities, design of NRBAR staff monthly planning/monitoring tables, re-organisation of NRBAR vehicules for work with the DG, new NRBAR vehicle utilisation

2 ACHIEVEMENTS

- completed and distributed the Quarterly report for oct-dec96
- DG, USAID and CID agreed on a strategy for continuation of the NRBAR/PR1 activities
- 4 new NRBAR vehicles were made available to the 4 URRs in the project zone
- completed evaluation notes on PRAII
- proposal for the first ISRA/NRBAR collaborative research workshop was accepted
- the new ENSA contract was signed
- the DS completed his subventions supervision visits, and selected the final list of 1997 subventions
- USAID/CID contract amendment No 7 was signed

3 DIFFICULTIES

- the scheduling of activities in the various programs needs to be more realistic, particularly in accounting for demands on researcher time-
- there continues to be a lack of priority at ISRA and USAID for implementing the existing research program, compared to the broader institutional efforts

4 FUTURE PROGRAM

- complete approvals for the new 1997 research grants, including international linkages programs, work on the NRBAR option year contracting requirements with, implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK APRIL, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management – planning of June visit, and summary draft budget tables for the PSAOP, Glenn Good/OSU audit of NRBAR accounts – follow-up, Richard Dick/soils – follow-up Suchet Louis/international linkages – follow-up, Gan and Noble/stabling technologies/international linkages – preparation for visit, Jean Pichot/subventions review – TOR and preparation for visit, Monica Fisher/stabling technologies - TOR and preparation for visit Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack - TOR and preparation for visit, Gretchen Le Van/NRBAR office assistance/legal study - TOR and preparation for visit search for soils scientist to join the ISRA/OSU soils/international linkages project, Bill Roberts/monitoring TOR and preparation for visit, John Russell/CST/on-farm methods – preparation for next visit, biometrician – TOR and search, R/D assistant – TOR and search, Candace Buzzard/project development – implementation, 19-23 APR.
- **short-term training - Senegal** preparation for future events NRBAR subventions seminars in Bambeý on organic matter (developed final proposal) , and in other regions/other themes
- **short-term training - foreign** Samba Sall to US to present his Ph D results Mbene Faye to Purdue for socio-economics – TOR, Nguer to Morocco on audit – preparation
- **long-term training in U S - M S /Ph D** arrangements for Iba Thomas to return to Senegal complete his research, and return to the US in 1998, extensions and approval for research projects
- **long-term training in Senegal - women for the B S** reviewed IST contract
- **GRN research grants** assisted DG/DS with preparation of the final dossier GRN, and contracting
- **other research grants** contracting for the new subventions, subventions atelier at Bambeý worked with Aïfa Ndoýe on RODALE and OSDIL reporting tasks, preparation for the Linguere farmer visit to Kolda (R04 and R07)
- **international linkages** worked with the ISRA, Tuskegee Hawaii and OSU teams on their proposals
- developing the final proposal for the first NRBAR collaborative subvention workshop
- reunion de coordination ISRA/USAID/CID of 23~~apr~~
- developing TOR and search for new on-campus coordinator with technical support potential
- assisted with ACCESS97/INFORM-R communications between ISRA/ISNAR
- assisted with contractor performance reporting and preparations for implementing the NRBAR option year
- participated in the daily and weekly DG coordination meetings
- developed a proposal with DS for using allocataires in NRBAR subventions
- assisted with preparations for the farmer exchange visit at Kolda
- participated in the USAID atelier on “la prochaine strategie de l’USAID, 28-30APR
- reviewed PROGES/NRBAR activities with Pierre Tendeng
- estimated the NRBAR investment in women for USAID
- **administration** staff meetings, preparation of pre-audit files for NRBAR activities

2 ACHIEVEMENTS

- the process of contracting for the NRBAR option year was agreed by USAID, ISRA, CID
- the detailed proposal for the first ISRA/NRBAR collaborative research workshop was prepared and invitations sent to participants
- the DS completed his review of programs and budgets for the new selected subventions, following his March supervision visit
- the first tranche of NRBAR subventions 1997 was approved by ISRA, USAID and CID

3 DIFFICULTIES

- it is still not clear how researchers will manage their time, given the competing demands and interests, coupled with the demands of institutional development
- there continues to be a lack of priority at ISRA and USAID for implementing the existing research program, compared to the broader institutional efforts

4. FUTURE PROGRAM

- complete packages and approvals for the new 1997 research grants, including international linkages programs, work on the NRBAR option year contracting requirements, drafting of the ISRA strategic plan implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK MAY, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management – planning of June visit, and summary draft budget tables for the PSAOP, Glenn Good/OSU audit of NRBAR accounts – follow-up, Richard Dick/soils – follow-up, Suchet Louis/international linkages – follow-up, Gan and Noble/stabling technologies/international linkages – implementation of visit, Jean Pichot/subventions review – implementation of visit, Monica Fisher/stabling technologies - TOR and preparation for visit, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack – implementation of visit, Gretchen Le Van/NRBAR office assistance/legal study – implementation of visit, Mateugue Diack as soils scientist on the ISRA/OSU soils/international linkages project, Bill Roberts/monitoring TOR and preparation for visit, John Russell/CST/on-farm methods – preparation for next visit, R/D assistant – TOR and selection of Bocoum Rocky Ramey – TOR for next trip
- **short-term training - Senegal** implementation of the NRBAR subventions atelier in Bambey 20-21mai on organic matter
- **short-term training - foreign** Samba Sall to US to present his Ph D results, Mbene Faye to Purdue for socio-economics – TOR, Nguer to Morocco on audit – preparation, the DG to the US (World Bank, USAID, OSU CID management meeting) and ISNAR 28jun-06jul, Khouma to US for GIS/July, Babou Ndour to England on agroforestry
- **long-term training in U S - M S /Ph D** arrangements for Iba Thomas to return to Senegal complete his research, and return to the US in 1998, extensions and approval for research projects for Aissatou, Fana and Thiam, overall LTPT budgets development
- **long-term training in Senegal - women for the B S** met with the 3 IST participants
- **GRN research grants** assisted SOHC and BMC in implementing the initial stages of these grants, assisted DS with preparation of contracts and final budgets field visit to, and design of protocol for, PAR4-12 at Kolda
- **other research grants** contracting for the new subventions subventions atelier at Bambey 20-21mai, including restitution with farmers and NGOs for S/V1, 2, 11 12 and R01, and joint field evaluations of S/V02 and S/V11, worked with Aïfa Ndoeye on RODALE and OSDIL reporting tasks, the Linguere farmer visit to Kolda 25-28mai (R04, R09 and R07), reviewed progress of all grants at Kolda, Tamba and Ziguinchor with SOHC and BMC managers field visit to and design of protocol for, GADEC/S/V10
- **international linkages** worked with the ISRA, Tuskegee Hawaii and OSU teams on their proposals
- preparing for, and implementing, the first NRBAR collaborative subvention workshop (Bambey)
- preparation for the 02jul CID management meeting at OSU with participation of USAID and DG
- discussions on progress of PASE impact studies
- preparation for, and implementation of, the farmer exchange visit at Kolda, 25-28mai
- participated in the ISRA/BMC PROGES/NRBAR coordination meeting at Ziguinchor, 28mai
- discussion with Pierre Tandeng on PROGES/NRBAR programs
- discussions with ISRA, USAID and the World Bank on alternative future funding mechanisms for ISRA research from 1998
- implemented a monitoring visit to BMC/SOHC 25-29mai
- participated in the development of the USAID R4 text
- worked with the ISRA CS team in completing the methodology of the ISRA strategic plan and drafting the availability and allocation of resources sections
- reunion dinatoire de l'équipe USAID/ISRA/CID chez Cusack avec 4 consultants (TDYs) 23mai

- participated in search for new on-campus coordinator with technical support potential
- assisted with ACCESS97/INFORM-R communications between ISRA/ISNAR (Dick Vernon)
- prepared for the visit of Paul Perrault on ISNAR/ISRA linkages
- assisted with contractor performance reporting and preparations for implementing the NRBAR option year
- participated in the daily and weekly DG coordination meetings
- participated in the external USAID evaluation of Winrock, including S/V02
- met with Gray Tappen on EROS/ISRA/CSE potential collaboration
- participated in the USAID SO2 COPs meeting at AFRICARE, 13mai
- assisted with obtaining approvals of USAID, ISRA and OSU on the new subventions contracts
- participated in the World Bank donors meeting on PSAOP
- **administration** staff meetings, preparation of pre-audit files for NRBAR activities, OSU salary savings policies

2 ACHIEVEMENTS

- the USAID CID contract evaluation was completed, showing excellent performance
- the first ISRA/NRBAR collaborative research workshop was implemented, with farmer on-site evaluations and technical reviews with partenaires of the results of 5 organic matter subventions
- the GRN programs in Tamba and Kolda were completed and second tranche funding was made
- the second tranche of NRBAR subventions 1997 was approved by ISRA, USAID and CID

3 DIFFICULTIES

- there continues to be a lack of institutional focus on completing urgent preparations for and implementing, existing and new 1997 research programs due to the demands of reorganisation and strategic planning

4 FUTURE PROGRAM

- complete packages and approvals for the new 1997 research grants, including international linkages programs, work on the NRBAR option year contracting requirements drafting of the ISRA strategic plan, implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JUNE, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management - implementation of premier chiffrage of the strategic plan Gan and Noble/stabling technologies/international linkages - follow-up to visit Jean Pichot/subventions review - follow-up to visit Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack - implementation of visit Gretchen Le Van/NRBAR office assistance/legal study - implementation of visit Bill Roberts/monitoring TOR and preparation for visit Bocoun/R/D - TOR and implementation Nicolas Dupuy/research planning and reporting - TOR Paul Perrault/Howard Elliott for alternative funding mechanisms for ISRA - TOR Conrad Bonsi/Tuskegee University on indigenous vegetable crops/international research linkages - TOR Aifa Ndoye/socio-economics - TOR
- **short-term training - Senegal** reporting on the results of the NRBAR subventions atelier in Bambev 20-21mai on organic matter implementation of scientific and administrative supervision missions of the DG DS Adama Fave Aminata Badiane and others
- **short-term training - foreign** Samba Sall to US to present his Ph D results Nguer to Morocco on audit the DG to the US (World Bank USAID OSU CID management meeting) and ISNAR 28jun-06jul Khouma to US for GIS/Julv Babou Ndour to England on agroforestry Ibrahima Ly to OSU on analyses of forage samples 2 managers to ISNAR for research personnel evaluations
- **long-term training in U S - M S/Ph D** arrangements for Iba Thomas to return to Senegal complete his research and return to the US in 1998 extensions and approval for research projects for Aissatou Fana and Thiam overall LTPT budgets development proposals for terminating the program of Tanou Ba
- **long-term training in Senegal - women for the B S** met with Moussa Fall on the 7 ENSA participants
- **GRN research grants** assisted DS/Massamba with preparation of funding documents and final budgets follow-up to the 25-29mai field visit and June visit by USAID/ISRA/Massamba
- **other research grants** recontracting for the new subventions follow-up to the subventions atelier at Bambev 20-21mai worked with Aifa Ndoye on RODALE and OSDIL reporting tasks follow-up to the Linguere farmer visit to Kolda 25-28mai follow-up to May review of progress of all grants at Kolda Tamba and Ziguinchor
- **international linkages** worked with the ISRA Tuskegee Hawaii and OSU teams on their proposals and on implementation
- reporting on the SOHC and BMC 25-29mai field visits
- reporting on the the subventions atelier at Bambev 20-21mai
- prepared for and followed up on June visit of USAID ISRA Massamba to SOHC and BMC
- preparation for the 02jul CID management meeting at OSU with participation of USAID and DG
- discussions with ISRA USAID and the World Bank on alternative future funding mechanisms for ISRA research from 1998
- participated in the 19jun USAID-hosted review of SO2 progress and plans and of the USAID Washington reaction to the R4 development of the USAID R4 text
- developed a fiche de suivi NRBAR dated 18jun
- worked with the ISRA CS team in completing the premier chiffrage of the ISRA strategic plan
- reunion dinatoire de l'equipe USAID/ISRA/CID chez Cusack avec l'equipe de Kolda et consultants (TDYs) 13jun

- participated with USAID and ISRA in search for new on-campus coordinator with technical support potential
- assisted with Paul Perrault/ISNAR visit on ACCESS97/INFORM-R, researcher performance evaluations alternative funding mechanisms for research and proposed visit of DG to ISNAR on 04/05jul
- assisted with preparation of budget/program response of CID to RCO on implementing the NRBAR option year jul97-jul98
- participated in the daily and weekly DG coordination meetings
- met with Constance McCorkle on gender issues
- assisted with obtaining approvals of USAID ISRA and OSU on the new subventions contracts
- **administration** staff meetings computer problems preparation of pre-audit files for NRBAR activities progress reporting – particularly Quarterly Reports

2 ACHIEVEMENTS

- the USAID CID contract extension documentation was completed by CID and USAID
- the socio-economic validation reports for the RODALE and OSDIL projects were completed showing extensive benefits of organic matter and agroforestry technologies to farmers
- the GRN programs in Ziguinchor Kaolack and Bambey were completed and second tranche funding was made
- the third tranche of NRBAR subventions 1997 was approved by ISRA USAID and CID
- ISRA completed the first complete drafts of its strategic plan and projet d'entreprise
- Mour Gueye and Alioune Dieng LTPTs at Tuskegee University were awarded prizes for their work
- Samba Sall (Ph D) and Mamadou Lo (M S) returned to ISRA after successfully completing their training, and two paper/posters by Samba Sall have been accepted for presentation at the August 1997 international agricultural economics conference

3 DIFFICULTIES

- there continues to be a lack of institutional focus on completing urgent preparations for and implementing, existing and new 1997 research programs due to the demands of reorganisation and strategic planning From July with the completion of the first draft of the strategic plan and the projet d'entreprise it is anticipated that the necessary focus will be effected
- NRBAR computer problems are beginning to significantly reduce our ability to provide the necessary services to ISRA and USAID hardware and software dating from 1992 needs to be updated in order to comply with ISRA's standards
- Tanou Ba (M S candidate) failed to earn his M S but is expected to complete the successful research component before the end of 1997
- Ibrahima Thomas (Ph D) returned to ISRA without a completed Degree but is expected to return to the US at end-1997 to take his final exams and present his thesis Thomas has shown excellent academic performance

4 FUTURE PROGRAM

- preparation for participation in and follow-up to the CID Management Meeting complete the NRBAR option year contracting requirements implementation and monitoring of existing programs and Home Leave during late July/August

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Richard Dick/soils and project management, Jean Kearns/project close-out, and Cathy Knott/Gender
- **short-term training - Senegal** reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- **short-term training -- foreign** the DG to the US (World Bank, USAID, OSU CID management meeting) and ISNAR 28jun-06jul, Mawa Diop to OSU for training in participatory methods for natural resource management, 30jun-20jul, meetings with OSU staff to identify collaborating scientists for ISRA researcher visits and reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- **long-term training in US - M S /Ph D** met with David Marshall on arrangements for Iba Thomas to complete his research and return to the US in 1998, met with ISRA students who are currently at OSU, and reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- **long-term training in Senegal - women for the B S** reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- **GRN research grants** reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- **other research grants** reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- **international linkages** met with Richard Dick to develop the next steps on the OSU/ISRA linkage and reporting on progress to the 02JUL CID/ISRA/USAID NRBAR Management Meeting
- preparation for, implementation of and reporting on the 02jul CID management meeting at OSU with participation of Mawa Diop and the DG where project progress was evaluated and future program priorities defined
- retrieving documentation for and discussions with the CID Management meeting participants and with Colin Sorus on alternative future funding mechanisms for ISRA research from 1998
- participated in the USAID-led review of SO2 progress and plans and of the USAID Washington reaction to the R4 development of the USAID R4 text at the CID Management Meeting
- assisted with the program and logistics during the visit of the DG and ISRA to OSU, including a ranch-stay and a visit to a private forest nursery
- participated in the CID/NRBAR annual internal meeting oriented towards project close-out procedures
- **administration** option year contracting change of on-campus project coordinator, new NRBAR computer purchase and presentations of NRBAR to the OSU President and to staff meetings
- took home-leave from 14-31jul

2 ACHIEVEMENTS

- 02JUL CID/ISRA/USAID NRBAR Management Meeting at OSU agreed that progress to date has been excellent apart from the financial/administration elements, in particular ISRA had made fundamental changes to its research program by introducing both R/D and GRN units at the DS level, increasing the volume of research undertaken in collaboration with partenaires, and focusing on priority GRN problems of farmers. It was agreed that future project emphasis will be on documentation and communication of results support for the collaborative research program and improving post-project financial and program sustainability with much-reduced emphasis on broad institutional strengthening
- a USAID/partenaire workshop finalised the indicators and data needed for the monitoring and evaluation of NRBAR relative to SO2

- a monitoring and evaluation procedure, including *fiches de suivi* were agreed with USAID and ISRA for the final year of the NRBAR project
- ISRA developed a monitoring and evaluation plan for its strategic plan, including a logical framework, with the assistance of the consultant Bill Roberts
- ISRA developed a monitoring and evaluation procedure, including the logical framework tool, for its scientific procedures manual with the assistance of the consultant Bill Roberts
- ISRA selected project sites and identified priority vegetables crops species to maximise research impact in Tambacounda and Kaolack with the assistance of the consultant, Conrad Bonsi
- ten ISRA station management staff were trained in planning and budgeting for regional research station activities with the assistance of the consultant, Hannibal Muhtar
- ISRA revised its investment budget and consolidated station management plan, for incorporation into the ISRA strategic plan with the assistance of the consultant, Hannibal Muhtar

3 DIFFICULTIES

- no significant difficulties this month

4 FUTURE PROGRAM

- home leave during August and follow-up to the CID Management Meeting

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK SEPTEMBER, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management - follow-up to visit and preparation for assistance to SG for writing of station procedures manual Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack - follow-up to visit, Bill Roberts/monitoring - follow-up to visit Bocoum/R/D - implementation Nicolas Dupuy/research planning and reporting - implementation Paul Weatherly and Cheikh Sarr/sustainable funding for ISRA - TOR and preparation for visit Monica Fisher/socio-economic validation of technologies - preparation for visit and Richard Dick/soils - implementation of visit
 - **short-term training - Senegal** implementation of the improved rice seed production workshop in Velingara (S/V17 S25 R18 and PAR1-8) and implementation of scientific and administrative supervision missions of the DG DS Adama Fave Aminata Badiane and others
 - **short-term training - foreign** Pape Sall to Turkey for the International Forestry Congress
 - **long-term training in U S - M S /Ph D** extensions for study period for the final four M S candidates to 31dec98
 - **long-term training in Senegal - women for the B S** continued monitoring of the 10 PTs
 - **GRN research grants** site visit to SOHC 15-19sep preparation for the USAID/Mission Director visit to PAR4-12
 - **other research grants** site visit to SOHC 15-19sep planning of the return visit to Linguere of Kolda farmers (R04 R07 R09) worked with Aïfa Ndoye on RODALE and OSDIL reporting tasks
 - **international linkages** LIR-01 purchase of animals
 - **site visit to SOHC 15-19sep** with USAID ISRA and Massamba discussed progress constraints and future activities with Tamba and Kolda managers researchers and partenaires, including field visits to field sites GADEC (2) (S/V10) PAR4-12 S/V23 PAR4-9 and the Mour Gueye M S Thesis plots wrote and distributed report
- Development of NRBAR fiches de suivi
- participated at the USAID/partenaire cocktail at the Mission Director's residence
 - prepared for the **October visit of USAID Mission Director to SOHC**
 - development of **Sustainable funding proposals** with ISRA, USAID and the World Bank for a Research Fund/Foundation for the National Research System and for the extension of the NRBAR project
 - participated in the daily and weekly DG coordination meetings and in USAID meetings
 - **administration** staff meetings computer problems and distribution of progress reports

2 ACHIEVEMENTS

- ISRA completed its dossier on the **validation of 10 improved varieties of rice** adapted to the various growing environments found in the Lower Middle and Upper Casamance (S/V17 S25 R18 and PAR1-8)
- more than 30 farmer representatives and representatives of organisations involved in the production of rice in the Casamance were **trained** in seed production and utilisation of 10 improved rice varieties and related activities (S/V17 S25 R18 and PAR1-8)
- **ISRA developed and distributed documents and articles** explaining the characteristics and availability of 10 improved rice varieties in collaboration with the public media PROGES and the *Division Semences*
- almost all ISRA contractors and the four URRs have written Quarterly technical and financial reports justifying their activities
- monthly management meetings are held at Unit level and the minutes sent to the DG

- ISRA hosted an ISNAR-sponsored workshop which reviewed lessons learned in developing effective links between research extension, and farmer organisations in West African countries, guidelines for improving these linkages were agreed and 2 days of training were provided to ISRA and partenaire staff for managing these links The consultant M Bocoum assisted with this work
- Samba Sall received his Doctorate Degree and presented his final Thesis document to the DS, the research was an evaluation of adoption and performance of the improved rice varieties DJ684D DJ12519 IRAT144 IKP ROCK5 and TOX-728 in the Casamance
- ISRA completed the first draft of its report on the 1990-94 Five-Year Plan, with the assistance of the consultant Nicolas Dupuy
- a preliminary list of potential dissemination products was made based on a review of the technical results of the NRBAR subventions with the assistance of the consultant, Richard Dick
- Richard Dick was accepted by USAID and CID as the new NRBAR On-Campus Coordinator
- USAID agreed that extension of the four final LTPTs programs to dec98 is possible, even if the CID contract ends earlier
- the form of the Letter of Commitment for each of the concerned LTPTs to sign prior to the USAID approval of an extension of the study period to 31dec98 was finalised
- the final validation report for the RODALE project (S/V01) was completed, showing extensive benefits of organic matter technologies to farmers the results show that (1) production of millet increased by 34% with adoption of the manure/compost technologies allowing a significant increase in household staple food security and that (2) the cattle and sheep fattening technologies resulted in high rates of return (between 71% and 5%)
- the final validation report for the OSDIL project (S/V03) was completed showing extensive benefits of agroforestry technologies to farmers in particular live fences allowed the increased cultivation of market gardens which increased household incomes from this source by a factor of four

3 DIFFICULTIES

- unusually-concentrated repayment demands by NRBAR's ISRA/partenaire contractors, at the same time as the need to finalise the major 1997 NRBAR equipment purchases has caused some delays in reimbursement during the month
- it was not possible to fund some short-term training demands during the month, as they were received at the DS/NRBAR Office level too late
- because the expected delay in implementing the next World Bank project and in any new USAID project the expected impact at farm level of technologies currently being validated and developed through NRBAR funds will be much reduced

4 FUTURE PROGRAM

- preparation of the NRBAR Progress Report to 30sep97 and implementation and monitoring of existing programs

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs **Hannibal Muhtar/research management** - follow-up to visit, and preparation for assistance to SG for writing of station procedures manual, **Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack** - follow-up to visit and preparation for next visit, **Bill Roberts/monitoring** - follow-up to visit, **Bocoum/R/D** - implementation, **Nicolas Dupuy/research planning and reporting** - implementation, **Paul Weatherly and Cheikh Sarr/sustainable funding for ISRA** - TOR and preparation for visit, **Monica Fisher/socio-economic validation of technologies** - preparation for visit, **Antonin Diouf/evaluation of physical plant** - preparation for visit, **Louis Ndong/video production for outreach** - preparation for visit, **Errol Rhoden/LIR03** - preparation for visit, **Aminata Ba/rice extension manual** - preparation for visit, **Ted Brush/evaluation of personnel and INFORM** - preparation for visit, and **B Pasternak/halophytes for S/V07, S/V18, R20** - preparation for visit
- **short-term training - Senegal** implementation of scientific and administrative supervision missions of the DS, **Adama Faye, Aminata Badiane, and others**
- **short-term training - foreign** **Ndiaga Dieng** to Canada on station management, **Abibou Niang** to Holland on plant and soils analyses, **Papa Sarr** to the U S on soils analyses
- **long-term training in U S - M S/Ph D** extensions for study period for the final four M S candidates to 31dec98, negotiations for extension of Ph D program of Iba Thomas, and development of proposals for visits to ISRA of the last 4 M S students
- **long-term training in Senegal - women for the B S** continued monitoring of the 10 PTs
- **GRN research grants, site visit to SOHC, 01-02oct**, for the USAID/Mission Director visit to PAR4-12 at Sare Pathe Kamako
- **other research grants** planning of the return visit to Linguere of Kolda farmers in November (R04, R07, R09), worked with Aifa Ndoye on RODALE and OSDIL reporting tasks
- **international linkages** materials and equipment orders for the Bambey soils lab were made (LIR02)
- Development of NRBAR fiches de suivi
- participated in the **October visit of USAID Mission Director to SOHC**
- development of **Sustainable funding proposals** with ISRA, USAID and the World Bank, for a Research Fund/Foundation for the National Research System, and for the extension of the NRBAR project
- developed a **policy for NRBAR advances**, in order to continue research activity financing until the last day of the life of the program
- writing of the **January-September progress report** and of the **July-September Quarterly Report**
- discussions with key ISRA staff and partenaires on the **sustainable funding initiative**
- preparation for the **NRBAR Annual Joint Review meetings and field visits, 3-5nov97**
- preparation for the **10-11dec97 soils and agroforestry workshop in Kaolack**
- collaborated with Aifa Ndoye on reports of **impact of NRBAR subventions in Kaolack**
- collaborated with Massamba Dieng in **closing of the oldest subventions contracts**
- participated in the daily and weekly DG coordination meetings, and in USAID meetings
- distributed an **index of Journals** with guidelines for authors, which was developed at OSU for the needs of ISRA researchers in publishing their results
- participated in the **USAID workshop 28-20oct** on definition of the new strategy, and assisted at the associated meeting between the DG and Alan Reed
- discussions and proposals for **NRBAR extensions of various durations**
- assistance with the November visit of Tom Crawford, INTSORMIL CRSP
- assistance with preparations for the **USAID PIR**
- assisted with the **World Bank supervision mission to ISRA**

- reviewed Samba Sall's Ph D thesis
- made an overall assessment of ISRA's institutional progress, in preparation for a proposal for ISRA's presentation of its institutional results in 1997, for the period 1990-98
- **administration** budgeting for overall life-of-NRBAR expenses under different assumptions, staff meetings computer problems Cusack jul97 TDY report, assisted with the ISRA/PEDUNE/IITA contract on Niebe, assisted with the ISRA/soils and inter-CRSP activities through Russ Yost displaying of photos of field sites and distribution of progress reports

2 ACHIEVEMENTS

- ISRA applied for **national registration** of 10 improved varieties of rice, following successful validation related to the various growing environments found in the Lower Middle and Upper Casamance (S/V17, S25 R18 and PAR1-8)
- the training report was completed for the September activity where more than 30 farmer representatives and representatives of organisations involved in the production of rice in the Casamance were **trained** in seed production and utilisation of 10 improved rice varieties, and related activities (S/V17 S25 R18 and PAR1-8)
- developed and agreed with ISRA and CID on an **advances policy** which would ensure research activity financing to the end of the program period through replacing CID advances by advances from the DS's returned indirect costs fund
- an **index of Journals** with guidelines for authors was compiled by OSU for the needs of ISRA researchers in publishing their results
- **summary fiches de suivi** for results according to each program objective, were compiled and distributed
- ISRA completed the **evaluation of 11 improved rice varieties** compared with local varieties and concluded on ways to improve the adoption rates of such varieties (thesis of Samba Sall)
- Boubacar Barry returned to ISRA after successfully completing his **Ph D** in the U S

3 DIFFICULTIES

- because of the expected delay in implementing the next World Bank project and in any new USAID project the expected impact at farm level of technologies currently being validated and developed through NRBAR funds will be much reduced
- it is not clear if ISRA staff will have time to analyse and adequately write up and present the large volume of research data generated through NRBAR and associated research and development activities

4 FUTURE PROGRAM

- implementation of the NRBAR Annual Joint Review and implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK NOVEMBER, 1997

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management - preparation for visit Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack - preparation for next visit Nicolas Dupuy/research project reporting - preparation for next consultancy Bocoum/R/D - implementation Nicolas Dupuy/research planning and reporting - implementation, Aly Diouf and Cheikh Sarr/sustainable funding for ISRA - implementation Monica Fisher/socio-economic valuation of technologies - preparation for visit, Antonin Diouf/evaluation of physical plant - implementation Louis Ndong/video production for outreach - implementation Errol Rhoden/LIR03 - preparation for visit, Aminata Ba/rice extension manual - implementation Richard Dick/soils and agroforestry research - preparation for visit Charles Yamoah/NRM results scientific reporting - preparation for visit Ted Brusn/evaluation of personnel and INFORM - preparation for visit and B Pasternak/halophytes for S/V07, S/V18 R20 - preparation for visit
- short-term training - Senegal Kolda/Linguere farmer exchange visit, support to develop ISRA's information system implementation of scientific and administrative supervision missions of Adama Faye and Aminata Badiane and the Annual Joint Review
- short-term training - foreign Abidou Niang to Holland on plant and soils analyses, Papa Sarr to the U S on soils analyses
- long-term training in U S - M S /Ph D extensions for study period for the final four M S candidates to 31dec98 negotiations for extension of Ph D program of Iba Thomas and development of proposals for visits to ISRA of the last 4 M S students
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants continued monitoring and implementation
- other research grants implementation of the 16-21 November return visit to Linguere of Kolda farmers (R04 R07 R09) site visit to SBA 03-04nov as part of the Annual Joint Review (S/V13 S/V18 S/V07 and S/V09)
- international linkages prepared for consultants visits and discussions with ISRA staff on delays in the LIR01 and LIR03 programs
- Development of NRBAR fiches de suivi
- discussions with key ISRA staff and partenaires on the sustainable funding initiative
- implementation of the NRBAR Annual Joint Review meetings and field visits 3-5nov97 and production and distribution of the Review Report
- preparation for the 10-11dec97 soils and agroforestry workshop in Kaolack
- participated in the daily and weekly DG coordination meetings and in USAID meetings
- participated in the USAID R4 meeting 19 November on the PIR and reporting of results and impact related to SO2
- preparation for the DG's request to ISRA/NRBAR staff for progress reports and the 1998 program and budget
- production and distribution of the 20-21 May Bambey workshop report
- discussions and proposals for NRBAR extensions of various durations
- assistance with the November visit of Tom Crawford INTSORMIL CRSP
- preparing proposals for the NRBAR 1998 workshops
- work with Kebe and Purdue staff on the 1998 research impact program including preparation of the final rice and impact methodology reports and review of field data for the maize/sorghum/millet study
- administration Cusack expense claims to OSU budgeting for overall life-of-NRBAR expenses under current assumptions start meeting computer problems and distribution of progress reports

2 ACHIEVEMENTS

- **Ibrahima Thomas** presented an animation scientifique at Djibelor, on his **Ph D** research
- **Boubacar Barry** returned to ISRA after successfully completing his **Ph D** in the U S on the analyses of the relationship between recent hydrology and watershed management, and land use, in the Casamance. The results are useful for making extension recommendations for crop scheduling, and for new varieties of rice and other crops which are needed to better utilise the drier growing conditions. The results demonstrate the effects of anti-salt dikes, and can be used in the more effective planning of new dikes as well as in the more productive use of existing dikes. The results can also help regional decision-makers in establishing natural resources policies and guidelines
- the **M S** reports of **Mamadou Lo** were circulated at ISRA and show that the Adaptability Analysis and Linear Programming approaches, which are currently being promoted at ISRA, are superior to previous methods for improving the adoption rate of improved technologies through (a) predicting farmer responses to improved technologies, and (b) designing better extension messages. This study has significantly added to our knowledge and understanding of farm households in the Lower Casamance. The study evaluates the success of the improved nappe varieties DJ12519, IRAT112, IRAT133, and IKP, compared with local varieties. The results demonstrate the necessity for researchers to take into account farmers' evaluation criteria in the development and validation of improved technologies
- the **Annual Joint Review** was successfully implemented, and all activities - consisting of two consultant presentations, four site visits and a formal meeting at Bambey - succeeded in their objectives. The conclusion was that NRBAR was producing more than the required level of results and impact on the population, mainly because the collaborative process had been more productive than anticipated
- **Safietou Fall** released **4 publications** that she had completed as a result of her visit to the U S with NRBAR. These provide important contributions to the design of recommendations for the use of improved technologies by farmers, as follows: (a) The effects of browse level on efficiency of feed utilisation in the cereals and peanut hay based diets of sheep and cattle were described for the browse species *A. albida* (pods), *Pithecellobium dulce*, *Adansonia digitata* and *Calotropis procera* (leaves), (b) The negative effects of increased concentrate use on fibre digestion in cereal-based diets of sheep and cattle were described, using feed materials commonly available in Senegal, suggesting that concentrates should be limited in order to ensure efficient utilisation of fibrous feeds, (c) the effects of incorporating fruits of *Faidherbia albida* into millet-based diets for stall-fed cattle were described, and it was concluded that (1) the optimum proportion of these fruits in the diet was 16%, (2) this new dietary component was more effective and less costly than concentrates, and (3) ISRA needs to provide substantial technical assistance at farmer level to ensure effective establishment and diffusion of this technology, (d) The crude protein degradability in the rumen of cereals-based diets fed to cattle was described, with the following conclusions: (1) variations in degradability depended on diet ingredients rather than on type of feed, (2) crude protein degradability in the rumen was satisfactory with molassed rice straw and with molassed millet straw rations and (3) further work is needed to evaluate post-ruminal digestion of available protein sources

3 DIFFICULTIES

- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will not be realised
- it is unlikely that ISRA staff will have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR.

4 FUTURE PROGRAM

- NRBAR workplan development and implementation and monitoring of existing programs

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs Hannibal Muhtar/research management - preparation for visit Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack - preparation for next visit, Nicolas Dupuy/research project reporting - preparation for next consultancy Bocoum/R/D - implementation, Nicolas Dupuy/research planning and reporting - implementation, Aly Diouf and Cheikh Sarr/sustainable funding for ISRA - implementation Monica Fisher/socio-economic validation of technologies - preparation for visit Antonin Diouf/evaluation of physical plant - implementation, Louis Ndong/video production for outreach - implementation, Errol Rhoden/LIR03 - implementation, Aminata Ba/rice extension manual - implementation, Richard Dick/soils and agroforestry research - preparation for visit, Charles Yamoah/NRM results scientific reporting - preparation for visit, Ted Brush/evaluation of personnel and INFORM - preparation for visit, John Russell/quantitative research reporting - preparation for visit, and B Pasternak/halophytes for S/V07, S/V18 R20 - implementation
- short-term training - Senegal financial system training and supervision, and the research synthesis of organic matter technologies
- short-term training - foreign Abibou Niang to Holland on plant and soils analyses, Papa Sarr to the U S on soils analyses
- long-term training in U S - M S /Ph D extensions for study period for the final four M S candidates to 31dec98, negotiations for extension of Ph D program of Iba Thomas, and development of proposals for visits to ISRA of the last 4 M S students
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants continued monitoring and implementation
- other research grants implementation of the 10-11 December NRBAR results workshop at Kaolack, including site visits to S/V07-R20-S/V19, S/V08, S/V13, R10 S/V09, S/V16 and S22-PAR3-2, and closure activities of S/V01 and S/V02
- international linkages prepared for consultants' visits, and participated in the work of Rhoden/C A Fall on LIR03
- developed a detailed impact/BAME plan for 1998, including proposals for the April impact workshop
- developed detailed proposals for the March institutional strengthening workshop, for the Feb Kolda workshop on agriculture/livestock, and for the March Kolda workshop on rice
- reviewed the personnel evaluation needs of ISRA with staff
- drafting of the 1997 Annual Report and of the 1998 Workplan
- implementation of the NRBAR Kaolack results workshop on soils and agroforestry, and field visits, 10-11dec97, and production and distribution of the Report
- participated in the daily and weekly DG coordination meetings, and in USAID meetings
- managing the response to the DG's request to ISRA/NRBAR staff for progress reports and the 1998 program and budget
- administration NRBAR bibliography, progress reporting, seminar program 1998, NRBAR 1998 budgeting, establishing indirect costs management tables for the DS, donor financing of ISRA summary, creation of wall posters of the Kaolack workshop visits, and staff meetings

2 ACHIEVEMENTS

- Aloune Dieng successfully defended his M S thesis "Cereal Supply and Demand in Senegal, 1960-1995 Implications for Food Self-Sufficiency", and will return to ISRA in 1998 following the revisions of the research material requested, and the writing of scientific papers based on this work
- Bassirou Diaw successfully completed his M S , and will return to ISRA early in 1998
- forty-five ISRA staff were trained in the new national accounts system SYSCOA

- Abibou Niang successfully completed the Wageningen Graduate training course on soils and plant analyses
- Pape Sarr successfully completed the OSU soil physics training module
- the ISRA organic matter research team completed the first draft report of its research synthesis
- ISRA developed master copies of the 1995 Annual Report, the 1996 Annual Report, the report of implementation of the 1990-95 Plan, ISRA's Strategic Plan for 1998-2003, and the ISRA 15-year Mission Statement (Projet d'Entreprise) The latter two reports may need further adjustments to reflect more limited resource availability than originally envisaged
- ISRA completed the first draft of a feasibility study for the creation of a National Research Fund/Foundation to assist with the sustainability of ISRA s, and other research structure's, future funding
- ISRA produced three video films on the use by farmers of improved organic matter technologies (R01, S/V12, S/V08)
- the Kaolack results workshop was implemented A major feature of the workshop was the insistence by NGOs and farmers that ISRA must expand its technical assistance to on-going farm-level activities and must improve its communications of results In response, ISRA has agreed to organise 2 further workshops with partenaires, on compostage and saline soils The conclusions (a) The site visits showed that villagers were committed to, and integrally involved in, development of the technologies although in many cases it was too early yet to see significant results, (b) The meeting between ISRA and its partenaires was well attended and the level of participation during the sessions was very high, showing the relevance of the subject matter for the participants, (c) Participants were able to effectively learn of each others' needs and perspectives, in terms of approach and in terms of interpretation of research results (d) The importance of a well-prepared presentation was evident, well-prepared presentations resulted in effective and targeted discussion, while poorly-prepared presentations resulted in the participants largely wasting their time, (e) Workshops on compostage, saline/acid soils and technology adoption (and other topics for which there is an urgent partenaire demand) should be held with partenaires to detail and finalise fiche techniques on the relevant technologies adapted for appropriate environments, (f) The quantitative approaches of researchers, particularly related to on-farm trials need to be strengthened, (g) Non-NRBAR sources of funding for GRN projects that are high-priority and long-term should be urgently sought, (h) The technical monitoring of validation projects and of technologies in the early stages of diffusion need to be an integral part of ISRA's work, and must be strengthened, (i) ISRA needs to concentrate more effort at researcher level on producing results reports and communicating them effectively to clients, to achieve impact on the population, (j) The atelier made a significant contribution to the exchange of ideas and results between ISRA researchers themselves, in the absence of similar researcher participation at the internal ISRA level, and (k) ISRA needs to continue to develop multidisciplinary, particularly for incorporating socio-economic aspects For example it appears that many reports were not prepared jointly with partenaires

3 DIFFICULTIES

- the expected long-term secondment of Adama Faye from ISRA from January will make it much more difficult to implement the ambitious 1998 outreach program In any case, it appears that ISRA staff will not have time to adequately write up and present to partenaires the large volume of research extension and training data generated through NRBAR prior to the completion date of the program in mid-1998
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR workplan development and implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JANUARY, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting, Suchet Louis/stabling, Bocoum/R/D, Aly Diouf and Cheikh Sarr/sustainable funding for ISRA, Monica Fisher/socio-economic validation of technologies, Aminata Ba/rice extension manual and Richard Dick/soils and agroforestry research Prepared for visits of Hannibal Muhtar/research management, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, Charles Yamoah/NRM results scientific reporting, Ted Brush/evaluation of personnel and INFORM, John Russell/quantitative research reporting, Yossi Ben-Dov/Nursery Production, Mme Seck/genre, and Rocky Rainey/NRBAR administration
- long-term training in U S - M S /Ph D extensions for study period for the final four M S candidates to 31dec98, negotiations for extension of Ph D program of Iba Thomas, and development of proposals for visits to ISRA of the last 4 M S students
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants continued monitoring and implementation
- other research grants work with the S/V18-R20 team on nursery development
- international linkages assisted with implementation through Suchet Louis Abdou Fall C A Fall and Diack
- assisted with the BAME impact study proposals for the work of Aifa Ndoye, and proposals for the April impact workshop
- further developed proposals for the compost atelier in April, for the Feb Kolda workshop on agriculture/livestock, and for the March Kolda workshop on rice
- assisted with personnel evaluation system design
- drafting of the 1997 Annual Report, the oct-dec97 Quarterly Report, a report of principal activities during mid-nov97 - mi-jan98 for the USAID Mission Director, and of the 1998 Workplan
- participated in the daily and weekly DG coordination meetings and in USAID meetings
- managing the response to the DG s request to ISRA/NRBAR staff for progress reports and the 1998 program and budget
- assisted with ISRA's participation in the USAID/CRSP meetings 2-5feb
- assisted with the work of the USAID NRM impact consultancy team
- assisted with SO2 relations with the new USAID strategy development
- administration NRBAR bibliography progress reporting, seminar program 1998 NRBAR 1998 budgeting, financial reporting, and staff meetings

2 ACHIEVEMENTS

- the Ph D thesis of Mamadou Diop was circulated in final form "Design and Analysis of Open Nucleus Breeding Systems for Cattle in Senegal This research evaluates the open and closed nucleus technology methods of improving livestock productivity in cereals systems, which are presently being developed and validated at Kolda and Dahra The results show that (a) the improvement program itself could be improved through specific changes in selection procedures such as accounting for maternal effects incorporating the important environmental factor of month of birth, and using mixed model procedures (b) an open-nucleus system of 250 cows with recording in pre-nucleus herds, is technically and economically most effective and (c) nucleus herds should be opened only in the early years in order to conserve genetic gain in pre-nucleus herds
- the first draft ISRA/NRBAR 1998 workplan was completed and sent to ISRA and USAID for comments
- ISRA officially requested to USAID that NRBAR be extended from 17jul98 to 30sep98

- the oct-dec97 **Quarterly Report** was completed
- **Iba Thomas** returned to the U S to complete his Ph D
- **final reports** for project S/V08 were received
- the **closure dossier** for S03 was completed
- the first draft **NRBAR bibliography** was completed
- a **practical guide to the economic impact** of agricultural research was produced and distributed by Purdue University, based on and using the examples of, the NRBAR impact work of Sidibe/Sanders
- the **Ph D thesis of Arona Ndiaye Samba** "influence de Cordyla pinnata sur la fertilité d'un sol ferrugineux tropical et sur le mil et l'arachide dans un systeme agroforestier traditionnel au Senegal" of September, 1997, was distributed, and shows that the traditional system ensures higher soil fertility under and adjacent to the canopy but specific pruning methods are needed to ensure that this fertility effect results in improved yields of millet and peanut

3 DIFFICULTIES

- the departure for extended periods of three key ISRA/NRBAR staff during this first Quarter will make it much more difficult to implement the ambitious 1998 program. In any case, it appears that ISRA staff will not have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR prior to the completion date of the program in mid-1998
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR workplan development and progress reporting, project close-out plan, inventory of NRBAR materials, closure of 19 of the 22 dossiers for research contracts which terminated in 1996 and 1997, implementation of the Kolda workshop and planning for the remaining NRBAR workshops, and implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK FEBRUARY, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting and future program proposals, Bocoum/R/D, Mme. Seck/genre, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions, Yossi Ben-Dov/Nursery, Aly Diouf and Cheikh Sarr/sustainable funding for ISRA, Monica Fisher/socio-economic validation of technologies, Aminata Ba/rice extension manual, Ted Brush/evaluation of personnel and INFORM, and Rocky Rainey/NRBAR administration Prepared for visits of Suchet Louis/final livestock research reporting and stabling, Hannibal Muhtar/research management, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, John Russell/quantitative research reporting, Dov Pasternak/agroforestry for saline soils, Bill Roberts/monitoring and evaluation, Richard Dick/final technical reporting, John Sanders and Mamdou Sidibe/ impact final reporting, and Rocky Rainey/administration
- long-term training in U S - M S /Ph D extensions for study period for the final four M S candidates to 31dec98, and negotiations for extension of Ph D program of Iba Thomas
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants continued monitoring and implementation
- other research grants work with the S/V18-R20 team on nursery development
- international linkages assisted with implementation through Abdou Fall, C A. Fall, and Diack
- assisted with the technical review of the completed subventions (tables of technologies and summaries) with Charles Yamoah
- assisted with implementing the Feb Kolda workshop on agriculture/livestock, and planning for the March Kolda workshop on rice
- assisted with Brush and ISRA on personnel evaluation system design, and research foundation proposals
- met Jeff Dorsey and Mbeye Sarr for the design of CBNRM credit proposals
- met with the World Vision/Winrock team on development of a new NRM project
- collaborated with USAID in R4 reporting drafts and summaries of results
- reviewed Presidential briefing notes for the CSE/EROS GIS project
- drafting of the 1997 Annual Report, the oct-dec97 Quarterly Report, and of the 1998 Workplan
- participated in ISRA/DG coordination meetings and in USAID meetings, principally with the DG and with Mawa Diop
- administration discussions with USAID and ISRA on programs and contracting for a possible extension of NRBAR designing NRBAR program monitoring tables, NRBAR bibliography, progress reporting, seminar program 1998, NRBAR 1998 budgeting, financial reporting, and staff meetings

2 ACHIEVEMENTS

- the Ph D thesis of Aloune Fall (Activity 3G of the 1997 and 1998 workplans) was circulated in final form, it evaluates the existing animal traction technology using the Ndama cattle breed, in the Casamance Region The results show that
 - (g) the range of implements available for use with animal traction is small,
 - (h) mainly due to the low quality of materials used in the working components and to the harsh field conditions, implements experienced frequent breakdowns, which local blacksmiths were often unable to repair due to unavailability of tools and of inadequate raw materials,
 - (i) 70% of farmer users rely on only one pair of oxen, which makes this technology somewhat unreliable, given the frequency of animal problems and of materials limitations, leading to these farmers frequently having to resort to hand-tools for short or long periods of time,
 - (j) level of utilisation is low as almost all effort is concentrated on land preparation, rather than including at least the main weeding operations, due to lack of suitable equipment

- (k) more research is needed on the problem of solving the constraint of lack of feed for draft animals during the peak land preparation season, on testing an improved yoking system, and on improved design of implements, and
- (l) farmers need more technical assistance, particularly for improving the low level of skills in their use of this technology, through increased and improved training operations
 - ISRA officially requested to USAID that NRBAR be extended from 17jul98 to 30sep98
 - the oct-dec97 Quarterly Report was completed
 - final reports for project S/V08 were received
 - the closure dossiers were completed for S07, S08, V01, V02, V04, V07, V08, R01, R02, R03, R04, R05, and R06
 - the Ph D thesis of Mamadou Ndiaye "Contribution de legumineuses arbustives a l'alimentation azote du maïs" was circulated at ISRA, and showed that alley cropping/Bradyrhizobium systems were potentially effective in the Peanut Basin, and require few expensive inputs, further on-farm validation is recommended
 - the initial technical review of the NRBAR subventions was completed, and the tabulated results show that 37 technologies were technically validated, 25 were economically validated, 27 were developed and should now be tested for validation, and 48 need additional development testing
 - the February NRBAR agriculture/elevage workshop was held at Kolda with the participation of more than 50 researchers and partenaires Results were presented for 17 projects Joint evaluation of results with farmers was implemented at two field sites ISRA is presently drafting the report, which will be an important validation document
 - a review of ISRA's personnel evaluation strategy was completed by a joint ISRA/ISNAR team
- (a) ISRA management must commit themselves to a routine internal personnel evaluation system such as notation/annual evaluation, which aims to improve productivity through motivation of personnel In particular, ISRA managers need to accept their personal responsibilities in evaluating their staff,
- (b) INFORM was successfully tested and adapted in ISRA, but was little used, in the absence of a stronger commitment to accountability/transparency from ISRA managers Although important elements of INFORM are used in the existing program/budgeting system, INFORM cannot substitute for a personnel evaluation system,
- (c) the 1993 Evaluation Initiale was successfully implemented, was not formally used, and should not be repeated – at least until after the RD'E is finally adopted and the necessary resources with which to reclassify are guaranteed
- (d) evaluation of support staff should be implemented as a routine internal task by immediate supervisors, and
- (e) annual performance evaluations should be based on activity reports and be largely internal

3 DIFFICULTIES

- the departure for extended periods of three key ISRA/NRBAR staff during this first Quarter will make it much more difficult to implement the ambitious 1998 program In any case, it appears that ISRA staff will not have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR prior to the completion date of the program in mid-1998
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR workplan development and progress reporting, project close-out plan, inventory of NRBAR materials, remaining closures of the 22 dossiers for research contracts which terminated in 1996 and 1997, implementation of the Tambacounda rice workshop and planning for the remaining NRBAR workshops, and implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK MARCH, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting and future program proposals, Bocoum/R/D, Mme. Seck/genre, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions, Yossi Ben-Dov/Nursery, Monica Fisher/socio-economic validation of technologies, , Hannibal Muhtar/research management, Aminata Ba/rice extension manual, and Rocky Rainey/NRBAR administration Prepared for visits of Suchet Louis/final livestock research reporting and stabling, Cheikh Sarr/sustainable funding for ISRA, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, Dov Pasternak/agroforestry for saline soils, Bill Roberts/monitoring and evaluation, Richard Dick/final technical reporting, John Sanders and Mamdou Sidibe/ impact final reporting, Ralph Noble/LIR01 final reporting, Richard Dick/final technical reporting, Louie Tripp/financial closure, and Rocky Rainey/administrative closure
- long-term training in US - M S /Ph D Mour Gueye thesis completion tasks, potential short visits by PTs to Senegal, and negotiations for extension of Pn D program of Iba Thomas
- short-term training development of specific activities consistent with final technical reporting
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants continued monitoring and implementation
- other research grants work with Massamba on financial and technical close-out
- international linkages assisted with implementation of LIR01, 02 and 03
- assisted with the technical review of the completed subventions (tables of technologies and summaries) with Charles Yamoah
- assisted with implementing the March Tambacounda workshop on rice
- organised and implemented the 0603 USAID/ISRA/CID Quarterly Meeting for 28 participants, with lunch, chez Cusack, which concentrated on close-out plans
- participated in the 1603 ISRA/USAID/CID close-out meeting at ISRA
- participated in the 2003 CID/USAID/RCO meeting on close-out
- writing of close-out plan and revised 1998 workplan, and developing a CID request to USAID for contract extension to 30sep98
- administration financial planning for reducing CID advances to zero on all subventions as soon as possible, discussions with USAID and ISRA on close-out issues programs and contracting for a possible extension of NRBAR, preparation for the Clinton visit personnel close-out issues progress reporting, financial reporting, and staff meetings

2 ACHIEVEMENTS

- the final thesis report of Boubacar Barry, on the analyses of the relationship between recent hydrology and watershed management, and land use, in the Casamance, was circulated, the results are useful for making extension recommendations for crop scheduling and for new varieties of rice and other crops which are needed to better utilise the drier growing conditions The results demonstrate the effects of anti-salt dikes, and can be used in the more effective planning of new dikes as well as in the more productive use of existing dikes The results can also help regional decision-makers in establishing natural resources policies and guidelines
- the ISRA/CID detailed proposal for closure of NRBAR was re-written and renegotiated, such that activities will terminate by 30jun98 (except for existing grants which will terminate on schedule on 16jul98, and the Long-Term Foreign Training program which will continue until 30sep98 under CID and until 31dec98 under other contract management) The CID/USAID contract will be extended until 30sep98 to allow CID to complete CFA account payments for all terminated activities by 30sep especially for more than \$200 000 on the 50 research contracts, CID to manage the LTPTs until 30sep such that another contractor would be able to complete this program additional time to complete the documentation of research results and their impact on farmers especially the technical

reports for those activities that end on 16jul98, and all activities would be represented in the CID final report, which would cover the entire period of activities up to 16jul, without need for any technical annex after 30sep98

- Charles Yamoah completed his **technical review of the NRBAR grants results** A total of 84 subventions were reviewed These comprised subvention numbers (research activity codes) Collaborative Research Grants S/V01 to S/V25, Grants for ISRA Researchers R01 to R27, and Support for Natural Resources Management Research PAR1-1 to PAR4-13 A total of 20 subventions for which studies were completed (or close to completion) were selected and summarized in detail, these included subvention numbers S/V01 to S/V08, S/V011, S/V012, S/V014, S/V015 and S/V017, and R01 to R06 and R13 Technologies were classified broadly as Soil management (animal manure, compost, fertilizer, soil conservation), Crop production (improved varieties and cultural practices), Agroforestry (wind breaks, live fencing, alley copping, erosion control), and Livestock production The results showed that, to end-March, 1998

- 1) 84 improved technologies were being evaluated
- 2) 42 technologies were technically validated
- 3) 29 technologies were socio-economically validated
- 4) 26 technologies were developed
- 5) 3 developed technologies need further validation
- 6) 43 technologies need further development
- 7) More than 100 technical reports were written and presented to/discussed with partenaires
- 8) More than 2000 farmers were trained in the use of improved technologies
- 9) 6 extension bulletins were written and distributed conjointly with partenaires
- 10) 6 video cassettes were produced with the assistance of partenaires

- two scientific reports produced by Samba Sall, as a result of his **Ph D research on NRBAR** were circulated

"Quantitative assessment and the adoption of improved rice varieties in Casamance, Senegal the farmer's perspective" The results show that it is important to include farmers' perceptions of potential new technologies early in the technology development process, in ways similar to those advocated and practiced through the NRBAR project Specifically for rice, it was found that extension is more effective if it concentrates on those farmers who have not yet adopted improved rice varieties, rather than trying to increase the intensity of adoption of those who have already adopted the technology

"Adaptability of improved rice varieties, Casamance, Senegal" The results show that improved rice varieties should be extended only into those production and socio-economic environments (recommendation domaines) which are most relevant, rather than making blanket recommendations The present ISRA practice, of introducing a package of new rice varieties covering a range of more specific production environments in the Casamance, is supported by this research On the other hand, more work is needed by multidisciplinary teams in defining more relevant recommendation domaines with farmers and in incorporating farmers' perspectives into the development of technologies at an earlier stage

- the NRBAR inventory was completed and sent to USAID for their drafting of a **PIL for transfer** of NRBAR materials to ISRA and partenaires

- the draft final NRBAR report for the U S -side administration of the project was completed

- the **March NRBAR rice technology workshop** was held at Tambacounda with the participation of more than 50 researchers and partenaires Results were presented for 16 projects and joint evaluation of results with farmers was implemented at two field sites ISRA is presently drafting the final report which will be an important validation document

- the final draft report of the consultant Cheikh Sarr was circulated prior to a national workshop on the establishment and operation of a **research fund/foundation** for the national research system, the consultant made specific detailed proposals and concluded that a research fund would be a viable way of improving the sustainability of research financing, as well as aiding in promoting collaborative

research activities which better respond to farmers' needs. However, it will be necessary to improve the financial and administrative structures, unless external management of the fund is envisaged, as in the NRBAR project

- an analysis of the **on-farm training results** of 30 of the NRBAR grants by the consultant Lamine Bocoum showed that 7,801 producers had been trained in improved technologies, 67 NGO technicians trained, 129 farmer leaders trained, and 12 farmer group exchange site visits implemented

3 DIFFICULTIES

- the departure from ISRA this month of three more key staff, either permanently or for extended periods, will make it much more difficult to fully implement the 1998 program. In any case, it appears that ISRA staff will not have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR prior to the completion date of the program in mid-1998

- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR workplan development and progress reporting, project close-out plan, inventory of NRBAR materials, remaining closures of the 22 dossiers for research contracts which terminated in 1996 and 1997, compilation of documents for the NRBAR final report, and implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK APRIL, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting and future program proposals, Bocoum/R/D, Mme Seck/genre, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions, Hannibal Muhtar/research management, John Sanders and Mamdou Sidibe/ impact final reporting, and Rocky Rainey/NRBAR administration Prepared for visits of Louis Tripp/financial mangement, Cheikh Sarr/sustainable funding, Ralph Noble/LIR01, Suchet Louis/final livestock research reporting and stabling, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, John Russell/quantitative research reporting, Dov Pasternak/agroforestry for saline soils, Bill Roberts/monitoring and evaluation, Richard Dick/final technical reporting, and Rochelle Rainey/administration
- long-term training in U S - M S /Ph D extensions for study period for the final four M S candidates to 31dec98, and negotiations for extension of Ph D program of Iba Thomas
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants continued monitoring and implementation
- other research grants work with the S/V18-R20 team on nursery development
- international linkages assisted with implementation through Abdou Fall, C A. Fall, and Diack
- assisted with planning the 8 remaining short-term foreign training events
- assisted with the technical review of the completed subventions (tables of technologies and summaries) with Charles Yamoah
- assisted with the PAR4-12 farmers' visit to Kaolack
- assisted with reporting of the Feb Kolda workshop on agriculture/livestock, and the March Kolda workshop on rice
- preparation for the May sustainable funding workshop, personnel evaluation workshop, the final NRBAR grants committee meeting, and the final NRBAR workshop
- assisted with ISRA follow-up to Brush on personnel evaluation system design, and research foundation proposals
- drafting of progress reports and further revision of the 1998 Workplan
- participated in ISRA/DG coordination meetings, and in USAID meetings, principally with the DG and with Mawa Diop
- administration discussions with USAID and ISRA on programs and contracting for a possible extension of NRBAR, designing NRBAR program monitoring tables, NRBAR bibliography, progress reporting, seminar program 1998, NRBAR 1998 budgeting, financial reporting, and staff meetings related to termination

2 ACHIEVEMENTS

- received confirmation from USAID that the project would be extended to 30sep98
- 13 farmers and support staff from Kolda reviewed erosion control technologies in Kaolack
-

the Ph D thesis of Alioune Fall (Activity 3G of the 1997 and 1998 workplans) was circulated in final form, it evaluates the existing animal traction technology using the Ndama cattle breed, in the Casamance Region The results show that

- (a) the range of implements available for use with animal traction is small,
- (b) mainly due to the low quality of materials used in the working components and to the harsh field conditions, implements experienced frequent breakdowns, which local blacksmiths were often unable to repair due to unavailability of tools and of inadequate raw materials,

- (c) 70% of farmer users rely on only one pair of oxen, which makes this technology somewhat unreliable, given the frequency of animal problems and of materials limitations, leading to these farmers frequently having to resort to hand-tools for short or long periods of time,
 - (d) level of utilisation is low as almost all effort is concentrated on land preparation, rather than including at least the main weeding operations, due to lack of suitable equipment,
 - (e) more research is needed on the problem of solving the constraint of lack of feed for draft animals during the peak land preparation season, on testing an improved yoking system, and on improved design of implements, and
 - (f) farmers need more technical assistance, particularly for improving the low level of skills in their use of this technology, through increased and improved training operations
- ISRA officially requested to USAID that NRBAR be extended from 17jul98 to 30sep98
 - the oct-dec97 **Quarterly Report** was completed
 - **final reports** for project S/V08 were received
 - the **closure dossiers** were completed for S07, S08, V01, V02, V04, V07, V08, R01, R02, R03, R04, R05, and R06
 - the **Ph D thesis of Mamadou Ndiaye** "Contribution de legumineuses arbustives a l'alimentation azote du mais" was circulated at ISRA, and showed that alley cropping/Bradyrhizobium systems were potentially effective in the Peanut Basin, and require few expensive inputs, further on-farm validation is recommended
 - the initial technical review of the NRBAR subventions was completed, and the tabulated results show that 37 technologies were technically validated, 25 were economically validated, 27 were developed and should now be tested for validation, and 48 need additional development testing
 - the February agriculture/elevage atelier NRBAR was held at Kaolack with the participation of more than 50 researchers and partenaires Results were presented for 17 projects Joint evaluation of results with farmers was implemented at two field sites ISRA is presently drafting the report, which will be an important validation document

3 DIFFICULTIES

- the departure for extended periods of three key ISRA/NRBAR staff during this first Quarter will make it much more difficult to implement the ambitious 1998 program In any case, it appears that ISRA staff will not have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR prior to the completion date of the program in mid-1998
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR workplan development and progress reporting, project close-out plan, inventory of NRBAR materials, remaining closures of the 22 dossiers for research contracts which terminated in 1996 and 1997, implementation of the Tambacounda rice workshop and planning for the remaining NRBAR workshops, and implementation and monitoring of existing programs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK· MAY, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting and future program proposals, Bocoum/R/D, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions, Cheikh Sarr/sustainable funding, Louis Tripp/financial mangement, Suchet Louis/final livestock research reporting and stabling, Ralph Noble/LIR01; John Sanders and Mamadou Sidibe/ impact final reporting, and Rocky Rainey/NRBAR administration Prepared for visits of Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, Dov Pasternak/agroforestry for saline soils, Bill Roberts/monitoring and evaluation, and Richard Dick/final technical reporting
- long-term training in U S - M S /Ph D extensions for study period for the final four M S candidates to 31dec98, and negotiations for extension of Ph D program of Iba Thomas
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants assistance with close-out activities
- other research grants assistance with close-out activities
- international linkages assisted with close-out
- assisted with planning and implementing the 8 remaining short-term foreign training events
- assisted with the technical review of the completed subventions (tables of technologies and summaries) with Charles Yamoah
- assisted BAME with completing the five research impact studies
- participated in the preparation, implementation and reporting on the sustainable funding workshop, and the personnel evaluation workshop
- prepared for the final NRBAR grants committee meeting, and the final NRBAR workshop
- drafting of progress reports and further revision of the 1998 Workplan
- participated in ISRA/DG coordination meetings, and in USAID meetings, principally with the DG and with Mawa Diop
- administration discussions with USAID and ISRA on programs and contracting for a possible extension of NRBAR, financial reporting, and staff meetings related to termination

2 ACHIEVEMENTS

- received written confirmation from USAID/SOT2 that the project would be extended to 30sep98
- 35 senior ISRA staff decided on the researcher personnel evaluation procedures and criteria
- 15 senior ISRA staff and 70 partenaires reached consensus on the outline and content of a research fund for the national research system
- ISRA completed the 5 research impact studies which BAME/Purdue has been working on since 1994

3 DIFFICULTIES

- It appears that ISRA staff will not have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR prior to the completion date of the program in September 1998
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR workplan development and progress reporting, project close-out plan, inventory of NRBAR materials, remaining closures of the grants dossiers, implementation of the remaining NRBAR workshops

111

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JUNE, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting and future program proposals, Bocoum/R/D, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions, Suchet Louis/final livestock research reporting and stabling, Mamadou Sidibe/ impact final reporting, Rocky Rainey/NRBAR administration, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, Dov Pasternak/agroforestry for saline soils, Bill Roberts/monitoring and evaluation, and Richard Dick/final technical reporting
- long-term training in US - M S /Ph D preparations for hand-over to new contractor from 01oct98
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants assistance with close-out activities
- other research grants assistance with close-out activities
- international linkages assisted with close-out
- assisted with planning and implementing the 7 remaining short-term foreign training events
- planned, implemented and reported on the final meeting of the DS/NRBAR conventions committee
- assisted BAME with completing the five research impact studies
- participated in the reporting on the sustainable funding workshop, and the personnel evaluation workshop
- prepared for the final NRBAR workshop
- participated in ISRA/DG coordination meetings, and in USAID meetings, principally with the DG and with Mawa Diop
- administration discussions with USAID and ISRA on programs and contracting for a possible extension of NRBAR, financial reporting, and staff meetings related to termination

2 ACHIEVEMENTS

- received contract amendment extending contract until 30sep98
- 34 senior ISRA/partenaire/USAID staff technically and administratively evaluated the NRBAR research results, particularly for the collaborative and researcher grants programs, at the final meeting of the DS/NRBAR conventions committee held at Saly
- ISRA presented and evaluated seeds research results with partenaires at the national forum on seed production and supply at Bambey
- ISRA completed a synthesis of NRBAR animal production technology results

3 DIFFICULTIES

- It appears that ISRA is not adequately prepared for the final workshop in July, as most final technical reports are not yet in, and the participation of the relevant Ministers is not assured
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR final workshop and final report, final inventory of NRBAR materials, remaining closures of the grants dossiers, and assistance with final TDYs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK JULY, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/research project reporting and future program proposals, Bocoum/R/D, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions; Mamadou Sidibe/ impact final reporting, Rocky Rainey/NRBAR administration, Michael Satin/socio-economic evaluation of agroforestry technologies in Kaolack, Bill Roberts/monitoring and evaluation, and Richard Dick/final technical reporting
- long-term training in U S - M S /Ph D preparations for hand-over to new contractor from 01oct98
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants assistance with close-out activities
- other research grants assistance with close-out activities
- international linkages assisted with close-out
- prepared for the final NRBAR workshop
- participated in ISRA/DG coordination meetings, and in USAID meetings, principally with the DG and with Mawa Diop
- administration close-out activities, including staff meetings related to termination

2 ACHIEVEMENTS

- ISRA published the 1997 Annual Report, the Strategic Plan and the Projet d'Entreprise
- ISRA wrote a review of recherche-developpement activities during 1997/98
- ISRA researchers completed 5 more scientific articles through the assistance of TDY Charles Yamoah
- ISRA completed a review of its monitoring and evaluation system and outputs, 1992-98
- the 1996-98 study of the socio-economic viability of live fencing and windbreaks in Kaolack was completed

3 DIFFICULTIES

- ISRA was not able to implement the final workshop in July, so much additional effort has gone into reorganising and rescheduling this for August
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR final workshop and final report, final inventory of NRBAR materials, remaining closures of the grants dossiers, and assistance with final TDYs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK AUGUST, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/final project reporting and future program proposals, Bocoum/R/D, Charles Yamoah/technical review and scientific articles related to the NRBAR subventions, Rocky Rainey/NRBAR administration, and finalised reports for a further 8 TDYs which were completed during February-July, 1998
- long-term training in U S - M S /Ph D preparations for hand-over to new contractor from 01oct98
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs
- GRN research grants assistance with close-out activities
- other research grants assistance with close-out activities
- international linkages assisted with close-out
- prepared for, implementation of, and reporting on the final NRBAR workshop
- participated in ISRA/DG coordination meetings, and in USAID meetings, principally with the DG and with Mawa Diop
- administration close-out activities, including staff meetings related to termination

2 ACHIEVEMENTS

- more than 70 ISRA staff reviewed NRBAR results with more than 80 partenaires, and senior GOS officials at the final NRBAR workshop at Ngor, including a display of 232 of the NRBAR research reports
- final project budgeting was completed as scheduled, and the request submitted to USAID

3 DIFFICULTIES

- because of the delay in implementing the final workshop, close-out is approximately 4 weeks behind schedule, and a request was made to USAID by ISRA and CID for a one-month extension, including a request for more obligated funds
- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

4 FUTURE PROGRAM

- NRBAR final workshop and final report, final inventory of NRBAR materials, remaining closures of the grants dossiers, and assistance with final TDYs

ISRA/NRBAR MONTHLY REPORT FOR TOM CUSACK SEPTEMBER, 1998

1 PRINCIPAL ACTIVITIES

- assisted/worked with TDYs implementation of Nicolas Dupuy/final project reporting and future program proposals, and Rocky Rainey/NRBAR administration
- long-term training in U S - M.S /Ph D preparations for hand-over to new contractor from 01oct98
- long-term training in Senegal - women for the B S continued monitoring of the 10 PTs, and hand-over preparations
- GRN research grants assistance with close-out activities
- other research grants assistance with close-out activities
- international linkages assisted with close-out
- reporting on the final NRBAR workshop
- participated in ISRA/DG coordination meetings, and in USAID meetings, principally with the DG and with Mawa Diop
- administration final close-out activities, including writing of final report, negotiations over a possible extension and budget request,

2 ACHIEVEMENTS

- final inventory completed
- final draft project report was completed and sent to ISRA and USAID, including a presentation at USAID
- final list of bills to be paid compiled
- all sub-contracts accounts completed and closed

3 DIFFICULTIES

- because of the delay in implementing the final workshop, close-out is approximately 4 weeks behind schedule, but a request made to USAID by ISRA and CID for a one-month extension was rejected
- Negotiations continue with USAID over the level of obligated funding
- 5 final technical reports are outstanding and one fiche inventaire

4 FUTURE PROGRAM

- conclude negotiations with USAID on obligated funds, and reach resolution on accounts through the OSU contracts office
- Receive final comments on the draft final report, produce final copy, and distribute
- Complete audit files

ANNEX B

EXAMPLES OF PROJECT DOCUMENTS

Cusack, T J "Summary Evaluation of the Agricultural Research Project II" Appendix C of the Implementation Completion Report of the Senegal Second Agricultural Research Project, World Bank Report Number 16610 World Bank, Washington, DC , May 27, 1997

NRBAR "Plan de Travail, 1998 " ISRA, Avril, 1998

NRBAR "Sixth Biannual Report, for the period 01 January to 31 December, 1995" ISRA, 1996 (Extract)

NRBAR "Rapport Trimestriel Janvier - Mars, 1998 Quarterly Report January - March, 1998 " ISRA, 1998 (Extract)

NRBAR "Quarterly Report for the period 01 January to 31 March, 1995 " ISRA, 1995

Compte Rendu de la Reunion de Coordination de l'ISRA/NRBAR tenue le 14 fevrier, 1996

Tom Cusack/Massamba Dieng report of visit to the BMC, 10-13dec96 and 26-30dec96

Tom Cusack Rapport Sommaire/Trip Report, visit to SOHC, 21-28feb97

Life-of-Project Training Plan, 26 May, 1993 (Main text only)

An example of short-term foreign training documents "Program pour la mission de Papa A Seck 21mai94-15juil94, 25avr94"

A selection of Tom Cusack's 1998 reports to USAID on the results of short-term consultants' missions

Some examples of grants management documents April, 1993 and July, 1996

Report to USAID on the final, June 1998, evaluation of the NRBAR grants 14 July, 1998

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The World Bank
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Report No 16610

IMPLEMENTATION COMPLETION REPORT

SENEGAL

SECOND AGRICULTURAL RESEARCH PROJECT
(CREDIT 2107-SN)

MAY 27, 1997

Agriculture 3
Country Department 14
Africa Region

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Agricultural Research Project II

Summary Evaluation¹

(by USAID/NRBAR)

¹ This summary evaluation was prepared by the USAID/Natural Resource-based Agricultural Research Chief-of-Party who worked closely with ISRA and Bank staff over the last four years. The view points presented here are the author's and do not necessarily reflect the views of USAID

SUMMARY EVALUATION OF THE SENEGAL SECOND AGRICULTURAL RESEARCH PROJECT

The Second Agricultural Research and the Natural Resource-based Agricultural Research (NRBAR) projects cover approximately the same period of implementation, the IDA project was appraised, and implementation began, approximately one year before the Natural Resource-based Agricultural Research Project (1990, compared to 1991). The IDA project was completed on 31st December 1996, while the National Resource-Based Agricultural Research project is scheduled to end in 1998. The objectives of both projects are virtually the same (see page (iii) of the IDA Staff Appraisal Report and page 1 of the *Accord de Subvention* National Resource-Based Agricultural Research). The *Institut senegalais de recherches agricoles* (ISRA) has taken primary responsibility for the implementation of both these projects, and has funded activities from either project, depending on the availability of funds for specific line items and the relative convenience of accessing funds for various types of activities, in this way, program segmentation has been avoided. Cooperation between ISRA responsible staff (largely the Director General, the Scientific Director and the Directors), World Bank staff, and Natural Resource-based Agricultural Research staff has been excellent, not only at the general management level, but also for the implementation of a large number of specific activities. One of the most important public expressions of this cooperation was in the planning and implementation of the joint mid-term review of ISRA in January, 1995. This cooperation has continued for the preparation of the Agricultural Services and Producer Organization Project.

The two projects were conceived with ISRA as being complementary, with differences between the two projects being only in emphasis. A large proportion of the IDA funds (approximately \$7m) has been spent on construction, equipment and vehicles, whereas a large proportion of the Natural Resource-based Agricultural Research Project funds (approximately \$5m) is being spent on technical assistance. IDA concentrated funding on the ISRA core research and management/administrative programs, whereas the NRBAR concentrates funding on the natural resource management and outreach programs. In addition, the NRBAR Project has provided direct assistance to NGOs involved in extension, and this is a useful parallel to the IDA financing of the more formal extension system under a separate IDA project. NRBAR funds spent during 1991-96 are estimated at \$11.3m, with a further \$5-6.4m projected for the period 1997-98. Progress towards the NRBAR objectives is described in the various NRBAR progress reports.

The activities of ISRA funded under the Second Agricultural Research Project have assured the continuity of the ISRA research programs when alternative funding sources were difficult to find, and have resulted in significant progress in all areas of project focus, especially during the last two years of the project. However, these gains have succeeded in achieving only modest improvements in ISRA's performance, in terms of generating research results and adequately communicating these results to clients. Such performance improvements are, in fact, difficult to measure in the absence of adequate institutional monitoring and progress reporting. Nevertheless, given the present institutional strength of ISRA, substantial improvements in performance can be expected in the future with the more results-oriented and results-managed approach that is presently being developed.

ISRA's progress in each of the areas of specific Second Agricultural Research Project focus can be summarized as follows:

- (a) Adaptive research a higher proportion of total research is currently being implemented as adaptive compared to 3-4 years ago, but progress is modest due to much resistance to placing further emphasis on adaptive. Diagnostic survey work and evaluation of existing technologies have been particularly strengthened, with additional training and the creation of the *Unites de Recherche Regionales* (URRs) as regional research teams. A collaborative research grants program developed since 1993 has been successful in ensuring that researchers work with partners in planning and implementing adaptive activities. There has been extensive training of researchers in on-farm research methodology, and ISRA has created a research development unit to specifically provide leadership to further developing the adaptive research program. Client orientation has very significantly improved, with direct participation of clients in ISRA's strategic planning, the creation of the *Unites de Recherche Regionales* (URR), more formal linkages and contracts with partners, and farmer evaluation of technologies under test. The adaptive research teams structure was not developed as anticipated, but this has not been a constraint as the *Unites de Recherche Regionales* system appears to be a stronger way of ensuring that adaptive research is adequately supported. This focus of ISRA's work has high potential for rapid development, given the results of investments made during the Second Agricultural Research Project.
- (b) Applied research applied research is now more focused on the specific zonal needs of farmers, following the creation of the *Unites de Recherche Regionales* and the continued involvement of regional structures in strategic planning and research contracts. A competitive internal research grants system ensures that the highest-priority problems are funded. However, the overall quality of research continues to be problematic, and research is still inadequately focused, although fewer research activities are now being funded, and annual workplans now more adequately reflect both expressed needs of clients and the available resources, substantial further improvement is needed.
- (c) Natural resources management program improvements in this area have been substantial, although further more precise focusing of research is needed. ISRA has created a Natural Resource Management Unit reflecting its renewed commitment to this priority area of applied research, has developed a natural resource management strategy for rainfed crops, and is currently funding a much higher proportion of total research in this area. Numerous trials are now being conducted on farmers' fields to ensure the development of appropriate organic and inorganic fertilizer recommendations.
- (d) Research/extension/farmer linkages ISRA has made a determined effort during the latter part of the project period to strengthen and increase the productivity of these linkages. ISRA now has formal contracts in place for joint research activities with more than 20 partners in Senegal, and with a significant number of international research organizations. Under these protocols, researchers train extension staff and collaborating farmers, and partners participate with ISRA in planning, implementing and evaluating the research. Given this strong institutional base, which ISRA continues to expand, it should be easier for ISRA to conduct adaptive, farmer-focused research in the future.

- (e) Administrative and financial management only very modest improvements in administrative and financial management have been achieved during the period, despite the large expenditures on infrastructure, equipment, training, technical advice, and recurrent costs that have been made in this area. The only significant improvements were made within the last year, and it is not clear if these can be sustained. Particularly problematic are the facts that financial accountability and control remain weak, and a merit-based personnel evaluation and promotion system is not yet implemented. On the other hand, research management improvements have been substantial, with adequate procedures currently being developed, research programs having more clearly-defined and realistic objectives, systems in place for evaluating and revising research priorities, and a more results-focused program being implemented.
- (f) Research support and revenue-earning services only very modest improvements were made in these services, and the independent production company proposal was not implemented. Developments in this area has been particularly impeded through a lack of technical leadership and management.
- (g) Funding of urgent research work the research fund was not used. However, under the NRBAR Project, ISRA did implement a competitive research grants system which performed essentially the same function in a more sustainable way, work began almost immediately after the proposals were approved (by a committee of the Scientific Director), and were used to augment the resources of the more functional teams.

Significant benefits were realized, in accordance with the general appraisal objectives: the closer integration of research on crops, livestock and forestry, substantially more emphasis on the restoration of soil fertility, reductions in compartmentalized research, an increased proportion of adaptive research, much greater partners' participation in the research process, and closer coordination with extension services. However, ISRA has not adequately monitored progress towards its results in terms of technology development, has not established indicators of progress, and did not implement adequate annual reviews of research proposals/results.

In general, the risks to implementation identified at appraisal significantly impeded progress, but did not prevent achieving important research results. Although ISRA suffered from a lack of program leadership for most of the project and did not develop a motivational career stream, sufficient research operating funds were available to ISRA as a whole and satisfactory service linkages with extension were developed. A continuing problem was the frequent unavailability of funds to researchers in the field due to a lack of research proposals of acceptable quality, poor research project management, poorly-operating administrative systems, and a lack of financial management and control. ISRA has largely succeeded in reorienting the research program, and this process is still continuing. However, it appears that the project was insufficiently focused on the technical aspects of research compared to the further strengthening of infrastructure and human resources, as a consequence, the quality of research remains problematic. ISRA is progressing towards a management-for-results orientation, but this is especially impeded by a lack of research monitoring and evaluation, and of personnel evaluation.

ISRA's management of the program has been weak, rigorous monitoring was undertaken only during supervision missions, without results-oriented indicators and without the effective leadership

of ISRA staff. Adequate program progress reports were not written by ISRA staff, and assignment of responsibility for program-related activities within ISRA has been problematic for most of the period. On the other hand, with the creation of the regional research units in 1995, a number of key unit chiefs have demonstrated excellent management results, reflecting the general management improvements at ISRA since that time.

In conclusion, during the Second Agricultural Research Project period, ISRA has made significant gains in all areas of project focus, but many of these were made only during the last two years of implementation, gains are significantly less than anticipated, and basic improvements in administrative and financial processes remain to be made despite the substantial investments in these areas. Nevertheless, with a much-improved research base, ISRA is capable of substantial performance improvements over the next several years.

Carade chief



INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES

**RECHERCHE APPLIQUEE EN AGRICULTURE ET SUR
LA GESTION DES RESSOURCES NATURELLES
(PROGRAMME ISRA/USAID PR1/NRBAR)**

PLAN DE TRAVAIL 1998

AVRIL 1998

En collaboration avec
l'Agence des Etats-Unis pour le Développement International (USAID)
Numéro de l'Accord de Subvention USAID 685-SO2
et
le Consortium pour le Développement International (CID)
Numéro du Contrat USAID 685-0285-C-00-2329-00

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SOMMAIRE

Ce rapport resume les activites prevues pour 1998, dans le cadre des cinq objectifs principaux du programme. Les activites prioritaires seront celles qui sont plus susceptibles de consolider les acquis et d'aider a la realisation des objectifs. Un accent particulier sera mis sur la recherche collaborative, la communication et la valorisation de resultats de recherche, l'elaboration des rapports de recherche et de synthese, la publication d'articles et de bulletins pour les partenaires, les fiches techniques, et la formation des producteurs et des ONG/partenaires.

Le plan resume de l'annee est le suivant

premier trimestre execution des activites normales ,
deuxieme trimestre preparation et elaboration des rapports du seminaire de clôture ,
troisieme trimestre elaboration du rapport final et clôture administratif et financier

Pendant cette derniere annee du projet, le programme de clôture du projet (Annexe 1) est dominant, avec les echeances globales suivantes

31mar fin du volet renforcement de la capacite institutionnelle de recherche, sauf les activites d'elaboration des rapport finals et de communication des resultats ,

31mai fin d'execution des programmes de formation de courte duree au Senegal et hors du Senegal, et des consultations, sauf les activites d'elaboration des rapport finals et de communication des resultats ,

05-09jul seminaire de clôture du programme ,

16jul fin d'execution des programmes de recherche suivants Ia Subventions pour la Recherche Collaborative, Ib Subventions aux Chercheurs de l'ISRA, II Appui au Programme des Ressources Naturelles de l'ISRA, et III Liaisons avec les Institutions Internationales de recherche ,

17août fin de traitement des rapports techniques, et dossiers financiers et administratifs sur les programmes de recherche ,

31août envoi du premier draft du rapport final a l'USAID , clôture des dossiers CID de formation de longue duree aux Etats-Unis, et au Senegal , et fin du programme d'elaboration des rapports finals et des communications des resultats ,

15sep revue finale conjointe ISRA/USAID/CID ,

25sep depôt du rapport final a l'ISRA et l'USAID, clôture du compte FCFA NRBAR , et

30sep fin de l'activite PRI/NRBAR

OBJECTIF NO.1 RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE

Ce programme, qui est resume en Section 2 et en Annexe 2, concerne principalement (1) la gestion scientifique l'execution d'un seminaire d'evaluation des resultats sur le renforcement de la capacite institutionnelle de l'ISRA 1990-1998, l'evaluation des performances des chercheurs, publication des rapports annuels, les bilans des activites de recherche, et des rapports prospectifs, et mise en place d'un systeme durable de financement de la recherche, (2) la gestion administrative finalisation de l'inventaire des immobilisations, elaboration des procedures administratives, elaboration d'un plan d'infrastructure gestion des stations, et gestion des ressources humaines, (3) la gestion financiere gestion du budget 1998, et amelioration de la gestion comptable, (4) la Recherche-Developpement l'execution des seminaires d'evaluation des resultats, et la restitution des resultats de la recherche, (5) la Gestion des Ressources Naturelles l'execution d'un seminaire national et de deux seminaires thematiques d'evaluation des resultats, l'amelioration des liaisons avec les autres institutions de recherche, et le developpement des analyses des sols et (6) l'amelioration des connaissances techniques des chercheurs et des administratifs

OBJECTIF NO 2 EVALUATION DES TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX

Ce programme, qui est resume en Section 3 et en Annexe 3, concerne (1) les etudes d'inventaire des technologies (deux activites), (2) les etudes d'impact des technologies au niveau du paysan utilisant des donnees globales (deux activites), (3) les etudes d'impact des technologies au niveau du paysan utilisant des donnees des sites specifiques (cinq activites), (4) les evaluations de pratiques specifiques au cours des autres projets de recherche (plus de quinze activites), et (5) les evaluations specifiques au cours des activites de diagnostic proposees par les URR sur les pratiques existantes au niveau des paysans (quatre activites) Les rapports sur au moins vingt technologies existantes sont prevus pendant 1998

OBJECTIF NO 3 MISE AU POINT DE NOUVELLES TECHNOLOGIES EN AGRICULTURE ET GRN

Ce programme, qui est resume en Section 4 et en Annexe 4, concerne (1) la fertilisation des sols en utilisant la matiere organique (cinq activites), (2) l'agroforesterie (quatre activites), (3) les programmes GRN des URR cibles par le PR1 (quatre activites), (4) l'utilisation de fourrage (trois activites), et (5) le developpement des autres technologies specifiques (quatre activites) Des rapports sur au moins dix nouvelles technologies mises au point sont prevus pendant 1998

OBJECTIF NO 4 VALIDATION DES TECHNOLOGIES EN AGRICULTURE ET GRN

Ce programme, qui est resume en Section 5 et en Annexe 5, concerne (1) la fertilisation des sols en utilisant la matiere organique (six activites), (2) l'agroforesterie (six activites), (3) les programmes GRN des URR cibles par le PR1 (quatre activites), (4) l'introduction de varietes ameliorees (trois activites), et (5) le developpement des autres technologies specifiques liees avec la GRN (six activites) Des rapports sur au moins dix technologies validees sont prevus pendant 1998, avec leurs fiches techniques

OBJECTIF NO 5 ACCES DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES

Ce programme, qui est resume en Section 6, concerne (1) la formation formelle et informelle des producteurs et des agents de vulgarisation aux nouvelles technologies, (2) la demonstration formelle et informelle des nouvelles technologies dans les stations de recherche, et (3) la demonstration formelle et informelle des nouvelles technologies dans les champs des ruraux Au moins mille producteurs et dix ONGs seront formes pendant l'annee 1998

TABLE DES MATIERES

SOMMAIRE	iii
TABLE DES MATIERES	v
LISTE DES ABREVIATIONS	vi
1 INTRODUCTION	1
1 1 Historique	1
1 2 Objectifs	2
1 3 Aperçu General	3
2 RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE	4
3 EVALUATION DES TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX	5
4 MISE AU POINT DE NOUVELLES TECHNOLOGIES EN AGRICULTURE ET GRN	6
5 VALIDATION DES TECHNOLOGIES EN AGRICULTURE ET GRN	8
6 ACCES DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES	10
7 COMPOSANTES RESSOURCES DU PROGRAMME	12
Ia Programme de Subventions pour la Recherche Collaborative	12
Ib Subventions aux Chercheurs de l'ISRA	14
II Appui au Programme des Ressources Naturelles de l'ISRA	18
III Liaisons avec les Institutions Internationales de recherche	19
IV Personnel	21
V Formation	21
VI Soutien Direct de l'ISRA	21
VII Soutien Direct de l'USAID	22
8 ACTIVITES DE SOUTIEN DU PROGRAMME	22
9 PLAN FINANCIER	27
ANNEXE 1 PLAN DE CLOTURE	
ANNEXE 2 PROGRAMMES ET BUDGETS DES ACTIVITES 2	
ANNEXE 3 PROGRAMMES ET BUDGETS DES ACTIVITES 3	
ANNEXE 4 PROGRAMMES ET BUDGETS DES ACTIVITES 4	
ANNEXE 5 PROGRAMMES ET BUDGETS DES ACTIVITES 5	

LISTE DES ABREVIATIONS

ACP	Agence Comptable Particuliere
AFID	Africaine D'Ingenierie pour le Developpement
AT	Assistance technique
BAME	Bureau d'Analyses Macro-economiques
CDH	Centre pour le Developpement Horticole
CF	Conseiller Financier
CFA	Communaute Financiere Africaine
CG	Contrôle de Gestion
CGO	Comite de Gestion des Octrois
CID	Consortium for International Development
CIRA	Centre International de Recherches Agricoles
CNRA	Centre National de Recherches Agronomiques
CNRF	Centre National de Recherches Forestieres
COP	Chief of Party
CRODT	Centre de Recherches Oceanographiques de Dakar-Thiaroye
CRSP	Collaborative Research Support Program
CST	Comite Scientifique et Technique
CV	Conseiller a la Vulgarisation
DAI	Development Alternatives Incorporated
DG	Direction Generale
DS	Directeur Scientifique de l'ISRA, (ISRA Scientific Director)
EDP	Electronic Data Processing
EEP	Examen de l'Execution du Programme
ENSA	Ecole Nationale Superieure d'Agriculture
FA	Financial Advisor
GIS	Geographical Information System
GRN (SP)	Gestion des Ressources Naturelles (et Systemes de Production)
GRNSPZS	Gestion des Ressources Naturelles et des Systemes de Production en Zone Seche
GWC	Grants Working Committee
IARC	International Agricultural Research Centre
ICRAF	International Center for Research in Agroforestry
ICRISAT	International Center for Research in the Semi-Arid Tropics
IDA	International Development Agency
IITA	International Institute for Tropical Agriculture
ILCA	International Livestock Center for Africa
INFORM	Information for Agricultural Research Management
INTSORMIL	International Sorghum and Millet Program
ISNAR	International Service for National Agricultural Research
ISRA	Institut Senegalais de Recherches Agricoles (Senegal Agricultural Research Institute)
IST	Institut des Sciences de la Terre
IST	Unite Information Scientifique et Technique de l'ISRA
KIT	Royal Tropical Institute The Netherlands
LNERV	Laboratoire National d'Elevage et de Recherches Veterinaires
M/E	Monitoring and Evaluation
MIS	Management Information Systems
NARS	National Agricultural Research System
NGO	Non-governmental Organisation (Organisation non gouvernementale)

NRBAR	Natural Resources-Based Agricultural Research Project
NRI	Natural Resources Institute, The United Kingdom
NRM	Natural Resources Management
NRP	Natural Resources Planner
OA	Outreach Advisor
ONG	Organisation non gouvernementale (Non-governmental Organisation)
OP	Organisation Paysanne (farmer organisation)
OS2	Objectif Strategique No 2
OSDIL	Organisation Senegalaise pour le Developpement des Initiatives Localisees
OSU	Oregon State University
PAPEM	Points d'Appui de Pre vulgarisation et d'Experimentation Multilocale
PAR/GRN	Programme d'Appui a la Recherche en GRN
PIR	Project Implementation Review
PNVA	Programme National de Vulgarisation Agricole
PR1	Paquet pour Resultats No 1
PVO	Private Voluntary Organisation
RI	Resultat Intermediaire
RP	Research Planner
SARH	Service de l'Administration et des Ressources Humaines
SARII	Senegal Agricultural Research II
SAS	Statistical Package for Social Sciences
SG	Secretariat General
S/E	Suivi et Evaluation
SIG	Systeme d'Information Geographique
SNRA	Systeme National de Recherches Agricoles
SOW	Scope of Work
SYSPAI	Computer-Based Payroll Management System
TA	Technical Assistant
TDY	Consultant de courte duree, (Short-term Consultant)
TOR	Terms of Reference
URA	Unite de Recherche d'Appui
URR	Unite de Recherche Regionale
UNIVAL	Unite d'Information et de Valorisation
UP	Unite de Production
UPF	Unite de Programmation et Formation
USAID	United States Agency for International Development
WARDA	West African Rice Development Association

1 INTRODUCTION

1.1 HISTORIQUE

Pour renforcer l'efficacite de l'Institut Senegalais de Recherches Agricoles (l'ISRA) en tant qu'institut de recherche au service du developpement, l'ISRA et l'Agence des Etats-Unis pour le Developpement International (USAID) ont mis en place le Projet de Recherche Agricole Basee sur la Gestion des Ressources Naturelles (NRBAR). Une description detaillee du projet est disponible dans le document du projet du 23 juillet 1991. Les activites du projet ont ete definies dans l'accord de subvention No 685-0285 entre le gouvernement du Senegal et le gouvernement des Etats-Unis en date du 31 juillet 1991.

Les problemes principaux auxquels s'adresse le projet concernent les besoins du Senegal en technologies agricoles a coût modere basees sur les ressources naturelles afin d'augmenter la productivite des systemes agricoles et la necessite pour l'ISRA de renforcer sa capacite institutionnelle pour mettre en oeuvre cette recherche basee sur les ressources naturelles. Le projet est surtout conçu pour mettre un accent particulier sur l'amelioration des pratiques de gestion des ressources naturelles qui augmentent la productivite et la viabilite des systemes de production des cereales dans les zones du Senegal recevant plus de 400mm de pluie par an.

Les resultats initiaux attendus du projet etaient (1) la generation et la validation de technologies ameliorees dans le court terme a travers des subventions et d'autres appuis directs a la recherche qui est en cours, et (2) la generation et la validation de technologies ameliorees dans le moyen et long termes a travers la formation et le renforcement institutionnel.

Durant la periode 1995-1996, l'USAID et ses partenaires senegalais ont eu plusieurs rencontres pour mieux lier leurs investissements. Un des resultats atteints est la signature le 27 Septembre 1996, entre les gouvernements des Etats-Unis et du Senegal, d'un protocole (No 685-SO2) appele Protocole d'Accord pour l'Objectif Strategique No 2 PRODUCTIVITE AGRICOLE AUGMENTEE PAR UNE MEILLEURE GESTION DES RESSOURCES NATURELLES DANS LES ZONES A PLUVIOMETRIE FIABLE. Ce Protocole d'Accord, qui a remplace les precedents y compris le No 685-0285, prendra fin le 30 Septembre 1998.

Le nouveau protocole Objectif Strategique No 2 (OS2) donne les orientations generales suivantes pour l'execution effective des activites: (a) les activites devront être centrees sur les besoins et les priorites des clients et la participation de ces derniers a la planification, a l'execution et a l'evaluation des activites, (b) les activites devront avoir des resultats tangibles, mesurables, de sorte que leur impact sur la vie des beneficiaires puisse être evalue, (c) les individus impliques dans l'execution des activites devront être suffisamment responsabilises pour prendre des decisions et être comptables des resultats, et (d) les activites devront être gerees et executees de maniere participative par le personnel responsable, avec des rôles et responsabilites clairement definies.

Dans le but d'atteindre l'Objectif Strategique No 2 a travers le Cadre de Resultats decrit dans le Protocole d'Accord, l'USAID et ses partenaires ont propose quatre Resultats Intermediaires-cles (RICs) et trente deux Resultats Intermediaires (RIs). Les quatre Resultats Intermediaires-cles sont les suivants:

RIC A Investissements Fonciers securises

RIC B Technologies de gestion des ressources naturelles maıtrisees et utilisees par les ruraux

RIC C Acces aux marches accrus

RIC D Acces aux capitaux accrus

Les Resultats Intermediaires sont regroupes dans des "Paquets pour Resultats" (PRs) ou ils deviennent la base de concentration des ressources, la definition de la mesure des realisations vers l'OS 2 Le principal Resultat Intermediaire-cle de ce Plan de Travail, le RIC B, a deux Paquets pour Resultats

PR 1 Recherche Appliquee en agriculture/gestion des ressources naturelles, et

PR 2 formation des utilisateurs et vulgarisation des technologies de gestion des ressources naturelles

Le programme ISRA/USAID centre sur le PR 1 de RIC B, est ainsi designe par "PROGRAMME ISRA/USAID RP1/NRBAR" au lieu de l'ancienne appellation de "Projet NRBAR"

Un contrat d'une duree de cinq ans pour l'execution du projet (numero de contrat 685-0285-C-00-2329-00) a ete passe avec le Consortium pour le Developpement International (CID) le 21 juillet 1992, actuellement, ce contrat entre USAID/CID prendra fin le 16 Juillet 1998 Neanmoins, une premisses de ce plan de travail est que le contrat USAID/CID devra prendre fin le 30 Septembre 1998, date limite de l'Accord de Subvention, le processus d'approbation par l'USAID de la prolongation de ce contrat jusqu'en 30 septembre 1998 est en cours Le present plan de travail est elabore dans le but de s'assurer que les activites financees sous le contrat USAID/CID sont en conformite avec l'Objectif Strategique No 2 En plus, une autre premisses de ce plan de travail est que la financement du volet formation de longue duree devra prendre fin le 31 decembre 1998

1 2 OBJECTIFS

Pour realiser l'OS 2, le Programme ISRA/USAID RP1/NRBAR cherche a atteindre cinq principaux objectifs avant le 30 septembre 1998 Ces objectifs sont designes comme les Resultats Intermediaires du Paquet pour Resultats No 1, comme suit

RI B 4 0 RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DES STRUCTURES DE RECHERCHE

RI B 3 4 TECHNOLOGIES EXISTANTES ET UTILISEES PAR LES RURAUX EVALUEES

RI B 3 3 NOUVELLES TECHNOLOGIES GRN MISES AU POINT

RI B 2 2 UN PLUS GRAND NOMBRE DE TECHNOLOGIES GRN VALIDEES

RI B 1 0 ACCES ACCRU DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES

Etant donne que l'OS 2 devra être realise dans les "zones a pluviometrie fiable", la zone d'intervention du PR1/NRBAR comprend les regions de Fatick, Kaolack, Thies, Diourbel, Tambacounda, Kolda et Ziguinchor En termes de zones agroecologiques definies par l'ISRA, la zone du Programme couvre d'une part, la totalite des Unites Regionales de Recherche (URRs), suivantes

URR-Basse et Moyenne Casamance

URR-Haute Casamance et Senegal Oriental

URR-Sud Bassin Arachidier, et

URR-Centre Nord Bassin Arachidier, et

d'autre part, une petite partie des URRs suivantes

URR-Zone Sylvo-Pastorale

URR-Niayes

1 3 APERCU GENERAL

Ce cinquieme Plan de Travail Annuel de la collaboration entre l'ISRA, l'USAID et le CID decrit les activites prevues pour l'annee 1998, et a ete le produit d'un effort integre par ISRA, USAID et CID. Le format de ce rapport suit le format du Protocole d'Accord No 685-SO2, au lieu de l'ancien format des Plans de Travail Annuels et rapports de progres, dans le but d'assurer une coherence avec le present Protocole d'Accord. Suite au premier draft du plan de travail 1998, qui etait soumis a l'USAID le 16 janvier, 1998, un plan de clôture etait elabore par l'equipe USAID/ISRA/CID du PR1 et discute aux reunions des 16 et 20 mars, 1998.

La presente version du plan de travail 1998 a ete elaboree suite a l'accord de principe de l'USAID (voir le memorandum d'action de l'USAID datee du 27mar98) sur la prolongation du contrat USAID/CID jusqu'au 30 septembre 1998.

Les Sections 2-6 de ce Plan de Travail presentent separement chacun des cinq objectifs du Programme (ou Resultats Intermediaires), avec leurs indicateurs de succes ainsi qu'une description des activites planifiees pour les atteindre.

Dans le but de realiser les cinq objectifs cites ci-dessus et les activites correspondantes decrites dans les Sections 2-6, le Programme comprend sept principales composantes ressources qui sont resumees dans la Section 7. Des Protocoles precisant comment ces ressources seront utilisees pour executer les activites specifiques, ont ete developpes et sont decrits en Annexe 1 du plan de travail 1997.

L'execution de PR1/NRBAR sera effectuee a travers ses unites de gestion decentralisees, et, la participation proposee par chacune d'elle dans le Programme est presentee en Annexes 2-5.

La Section 8 detaille les Activites de Soutien au Programme, comprenant l'orientation, l'administration, la gestion, le suivi et l'evaluation, et les services financiers.

La Section 9 donne un sommaire du Budget et des previsions de depenses.

Les propositions sont orientees en tenant compte des resultats des experiences passees, pour le reste de la duree du programme, l'accent sera mis sur la consolidation des acquis pour la realisation des resultats intermediaires, particulierement sur la recherche collaborative. L'approche consiste a completer et developper les initiatives actuelles de l'ISRA dans les domaines vises par le Programme, tout en integrant le travail parallele tels que les etudes financieres et technologiques financees par l'USAID, en collaborant avec les activites des autres donateurs tels que le PSAOP de la Banque Mondiale, en terminant le travail inacheve tel que l'etude du coût unitaire sous le SAR II ISRA/USAID, et en institutionnalisant dans l'ISRA les nouvelles procedures telles que le Programme de Subventions a la Recherche Collaborative.

Le developpement de ce Plan de Travail s'est assure que les activites planifiees tiennent compte des resultats du recent projet d'entreprise de l'ISRA, du plan d'action de 1997 et des exercices de programmation/budgetisation. Il a egalement tenu compte des recommandations de l'Evaluation a Mi-Parcours de ISRA/NRBAR, de la Revue a Mi-parcours de l'ISRA, de la Revue Conjointe Annuelle de NRBAR en Juillet et Decembre 1996, et en Novembre 1997. Les activites decrites dans ce plan ont, par dessus tout, ete developpees comme partie integrante de l'exercice de programmation et budgetisation 1998 de l'ISRA. Le plan general de ce document est base sur le Paquet pour Resultats No 1, document qui a ete developpe par l'ISRA, l'USAID et le CID. Ci joint en Annexe 3. Ce PR1 represente en fait le Plan de Travail pour la duree de vie du Programme ISRA/USAID PR1/NRBAR.

2 RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE

Les resultats initiaux attendus du Programme sont (1) la generation et la validation de technologies ameliorees dans le court terme a travers des subventions et d'autres appuis directs a la recherche qui est en cours, et (2) la generation et la validation de technologies ameliorees dans le moyen et long termes a travers la formation et le renforcement institutionnel

Au Senegal, la principale institution responsable de la generation et de la validation de technologies agricoles est l'Institut Senegalais de Recherches Agricoles (ISRA) Les autres institutions telles que les deux universites et l'Ecole Nationale Supereure d'Agriculture (ENSA) jouent un rôle mineur dans la generation de technologies L'ISRA est ainsi la premiere cible du renforcement institutionnel En outre, un accent supplementaire est egalement mis sur le rôle de leader de l'ISRA dans (a) le developpement d'un Systeme National de Recherche Agricole et Agro-alimentaire (SNRAA) qui inclut toutes les institutions de recherche agricole, et (b) l'amelioration des liaisons avec les partenaires

Les ameliorations de la capacite institutionnelle de l'ISRA rendront ce dernier capable d'ameliorer son efficacite et la qualite des operations de maniere que plus de technologies soient generees, validees et utilisees par les paysans L'Institut sera egalement plus apte a utiliser plus de ressources humaines et financieres Bien que l'ISRA ait demontre recemment que ces ameliorations institutionnelles sont possibles, il reste beaucoup a faire dans les trois domaines suivants cibles par PRI/NRBAR

(1) la gestion scientifique, administrative et financiere, (2) la Recherche/Developpement, et (3) la Gestion des Ressources Naturelles

C'est ainsi que, le renforcement institutionnel attendu du programme PRI/NRBAR sera realise par la mise en oeuvre des activites suivantes, detaillees dans les fiches en Annexe 2

ACTIVITE 2

- A Elaboration du Plan Strategique harmonisation - finalisation et synthese (Papa Seck)
- B Programmation annuelle des activites de recherche determination des priorites (DS)
- C Mise en place d'un systeme d'information pour le suivi-eval de la recherche (Mme Ba)
- D Restitution des resultats de la recherche aux chercheurs, clients et bailleurs (DS)
- E Amelioration des connaissances techniques des chercheurs et techniciens (DS)
- F Amelioration des connaissances techniques des agents financiers (AI/ACP)
- G Amelioration des connaissances techniques des agents administratifs (SG/CG)
- H Etude sur le financement durable de la recherche (DG)
- I Amelioration des liaisons avec les autres institutions de recherche en GRN (DS)
- J Mise en place d'une base de donnees regionale (PAR3-7 Modou Sene)
- K Procédures administratives financieres et comptables (AI)
- L Amelioration de la gestion financiere et comptable (AI)
- M Mise en place d'un systeme d'information géographique (PAR1-7 Mamadou Kouma)
- N Mise en place du budget 1998, et contrôle et suivi du budget 1998 (CG)
- O Gestion des centres et stations (SG)
- P Mission de contrôle et d'assistance aux Unites (AI)
- Q Gestion des ressources humaines (SG)
- R Evaluation de personnel performance et carriere (DG)
- S Methodologie d'analyse des sols (M S These Evelyne Ndiaye)
- T Methodologie d'analyse des sols (M S These Aissatou Ndiaye)
- U Test Methodologique varietes de sorgho resistantes a la secheresse (Tanou Ba)
- V Etude Methodologique sur la productivite de bois (M S These Massamba Thiame)
- W Etude Methodologique sur la selection varietale de niebe (M S These Fana Sylla Ba)

Les indicateurs selectionnes pour le suivi de la performance de chacune de ces activites sont en rapport avec les indicateurs globaux suivants retenus par le PRI pour le Resultat Intermediaire concerne "Capacite institutionnelle des structures de recherche renforcee"

1 Nombre de personnel de recherche forme

2 Nombre d'activites de recherches GRN menees en milieu reel et en station par rapport a l'ensemble des activites de recherches

Prevu a la date du 31mar fin du volet renforcement de la capacite institutionnelle de recherche, sauf les activites d'elaboration des rapport finals et de communication des resultats

3 EVALUATION DES TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX

Une etape essentielle au debut et a la fin du processus de la recherche est d'identifier et d'evaluer les technologies existantes utilisees par les paysans Cette etape est en tram d'être realisee par l'ISRA a travers les etudes d'inventaire des technologies, les etudes de l'impact des technologies au niveau du paysan utilisant des donnees globales, et les evaluations de pratiques specifiques au cours des projets de recherche Une information substantielle est egalement collectee durant les activites de diagnostic proposees par les URR sur les pratiques existantes des paysans Les activites suivantes sont cibles par le programme PRI/NRBAR, pour l'annee 1998, et sont detaillees dans les fiches en Annexe 3

ACTIVITE 3

- A. Impact economique de la recherche et de la vulgarisation sur le developpement agricole (M Kebe)
- B R12 l'inventaire des technologies GRN utilisees en Basse Casamance (Cheikh Omar Ba)
- C R02 une etude d'impact des Unites experimentales de Kaolack SBA (Desire Sarr)
- D R15 evaluation des technologies de gestion des sols dans les rizeres en MBC (Cheikh Omar Ba)
- E Ph D These (Boubacar Barry) l'impact des pratiques alternatives de digues anti-sel en BMC
- F Ph D These (Samba Sall) evaluation de l'adoption des varietes de riz ameliorees en BMC
- F Ph D These (Alioune Fall) l'impact de la traction animale sur le riz, le mil et le mais en BMC
- (H) les evaluations des pratiques prevalentes entreprises comme partie integrante de la mise au point et de la validation des technologies, sont decrites dans les Sections 4 et 5) (M Kebe)
- (I) Les nouveaux projets de recherche qui etaient approuves pendant l'annee 1997 Recherche Etudes de sites/Programmes Sabbatiques/Theses/ Liaisons Internationales) (M Kebe)
 - R16 - Inventaire de Technologies basees sur la gestion des ressources naturelles et utilisees en Moyenne Casamance (CHEIKH OUMAR BA)
 - PAR3-3 Analyse de l'impact socio-economique des principales technologies agricoles (SBA-Astou SENE)
 - PAR3-4 Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles -SBA (Desire SARR)
- J Diagnostic participatif des systemes agro-sylvo-pastoraux dans le Programme PAR/GRN de l'URR Centre Nord Bassin Arachidier CNBA (PAR2-2, Dogo Seck)
- K Diagnostic pluridisciplinaire des systemes de production dans le Programme PAR/GRN de l'URR Senegal Oriental Haute Casamance SOHC (PAR4-8 Demba Farba Mbaye)
- L Diagnostic pluridisciplinaire du secteur agricole regional dans le Programme PAR/GRN de l'URR Sud Bassin Arachidier SBA (PAR3-6, Manieval Sene)
- M Approfondissement du Diagnostic partage dans le Programme PAR/GRN de l'URR Basse et Moyenne Casamance BMC (PAR1-6 Mamadou Khouma)

- N Etude sur l'auto-suffisance en cereales (M S These – Ahoune Dieng)
- O Etude sur le climat lie avec la production halieutique (Bassirou Diaw)

Les indicateurs selectionnes pour le suivi de la performance de chacune de ces activites sont en rapport avec l'indicateur global suivant retenu par le PRI pour le Resultat Intermediaire concerne "Technologies traditionnelles et pratiques prevalentes evaluees"

I Disponibilite de rapports d'evaluation sur les pratiques et technologies de GRN existantes"

4 MISE AU POINT DE NOUVELLES TECHNOLOGIES EN AGRICULTURE ET GRN

Il est apparu qu'au Senegal, il y a eu relativement peu de nouvelles technologies qui ont ete recemment mises a la disposition des ruraux pour validation Les ruraux et les agences de vulgarisation continuent de demander de nouvelles technologies pour ameliorer la durabilite de la productivite agricole, et continuent d'adapter les technologies existantes dans ce but Durant l'annee 1998, le programme PRI/NRBAR va continuer d'executer un ambitieux programme dans ce domaine, base sur la recherche en station et la recherche en milieu reel, en utilisant les anciens et nouveaux projets et en incluant les etudes a l'interieur et a l'exterieur du Senegal, comme suit (detaillees dans les fiches en Annexe 4)

ACTIVITE 4

- A R01 utilisation des ecailles de poisson comme engrais organique pour le mil et le sorgho dans CNBA (Mamadou Ndiaye)
- B R03 utilisation de Vetivera pour reduire l'erosion des sols dans BMC (Mankeur Fall)
- C R04 utilisation des etables fumieres pour augmenter la productivite agricole dans SOHC (Nouhne Dieye)
- D R05 utilisation de la matiere organique et de l'engrais pour reduire l'allilopathie du sorgho dans SBA (Manieval Sene)
- E R06 utilisation du phosphate naturel pour ameliorer les pâturages naturels dans la zone sylvo- pastorale (Amadou Diop)
- F R07 utilisation des legumineuses fourrageres pour ameliorer les productions cerealieres et animales dans SOHC (Ambroise Diatta)
- F R08 utilisation des arbres ligneux pour redresser le statut organique et la fertilité des sols dans BMC (Souleye Badiane)
- H R09 analyse socio-economique des technologies developpees (M Kebe)
- I R10 utilisation des etables fumieres pour augmenter la productivite agricole dans SBA (Fatimata Dia)
- J R11 utilisation du neem pour la protection et la conservation des sols contre les nematodes pour la culture du mil et du marâchage dans CNBA (Emile Coly)
- K R13 utilisation du fumier de vache dans la culture mil/miebe dans CNBA (Mbaye Ndiaye)
- L R14 utilisation de matiere organique pour la croissance des arbres et des cultures dans les champs dans CNBA (Ibrahima Diate)
- M Ph D These utilisation d'un centre noyau pour la multiplication du betail dans la zone sylvo-pastorale et SOHC (Mamadou Diop)
- N M S These test des techniques alternatives de conservation du fourrage pour la gestion villageoise du betail dans SOHC (M Sissokho)
- (O les nouveaux projets de recherche qui etaient approuves pendant l'annee 1997 Recherche (Chercheurs/Collaborative), Etudes de sites Programmes sabbatiques liaisons internationales et Theses)
 - R17 Mise au point de techniques accelerees de compostage Mamadou KHOUMA
 - URR BMC
 - R19 Gestion et conservation des ressources phytogenetiques et de la biodiversite - SBA - Ibrahima DIAITE - URR SBA

135

- **R20** Etudes de techniques de recuperation des sols sales - Maleim DIATTA - URR SBA
- **R21** Influence des conditions hydriques et du travail du sol sur les effets ameliorateurs des amendements (organiques et inorganiques) - Modou SENE - URR SBA
- **R22** Amelioration du taurin Ndama par le schema genetique a Noyau Ouvert (SAGNO) Mamadou Alassane BA - URR SOHC /Kolda
- **R23** Determination de la periode de semis et de la densite de peuplement des legumineuses fourrageres annuelles en association avec le maïs in "NRBAR R07" Ambroise DIATTA - URR SOHC /Kolda
- **R25** Etude de l'adaptabilite des varietes de maïs dans le Sud Bassin Arachidier - Abdou NDIAYE - URR SBA
- **R26** Contribution des micro-organismes (rhizobiums et champignons cellulolytiques) a l'amelioration de la fertilité des sols - Mamadou GUEYE - URA-PV
- **R27** Etudes des methodes d'exploitation des ligneux en zone periurbaine influence sur la qualite du fourrage et la survie des peuplements - Safietou T FALL - URA-PA
- **S22** Etude des possibilites de mise en valeur des bas-fonds du Sud Bassin Arachidier - Avec le Departement Geographie de l'Universite CAD Abdou NDIAYE UCAD -Dept Geographie
- **LIR-02** Etude sur la regeneration des sols degrades, Aminata Badiane
- P** Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR CNBA
- **PAR2- 6** Etude des effets de melange de phosphates naturels et de phosphogypse sur les sols et cultures (generation de technologies) Mankeur FALL
- **PAR2- 7** Developpement de methodes alternatives de protection des recoltes vivrieres et des semences contre les insectes (generation, validation et transfert) Dogo SECK
- Q** Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR SOHC
- **PAR4- 2** Synthese des travaux sur les insectes ravageurs des cultures cerealieres et de rente Djibril BADIANE
- **PAR4- 3** Synthese sur les recherches sylvicoles de la zone Alphousseym BODIAN
- **PAR4- 4** Synthese des recherches sur les cultures fourrageres au Senegal Oriental et en Casamance Ambroise DIATTA
- **PAR4- 6** Synthese des etudes sur la pathologie animale des ruminants de la zone Momar Talla SECK
- **PAR4- 7** Synthese des recherches en amelioration varietale de cereales Amadou FOFANA
- **PAR4- 9** Prospection sur les insectes ravageurs des cultures cerealieres et de rente Djibril BADIANE
- **PAR4-11** Prospection et evaluation de varietes locales de cereales (mil, maïs, sorgho et fonio) Amadou FOFANA
- **PAR4-13** Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du Taurin Ndama utilise en monoboœuf et en paire Momar Talla SECK
- R** Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR SBA
- **PAR3-2** Etude des possibilites de mise en valeur des bas-fonds du Sud Bassin Arachidier - Abdou NDIAYE
- S** Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR MBC
- **PARI- 2** Etude et mise au point de techniques de lutte appropriees contre les attaques de poisson sur le riz au niveau des vallees amenees Vaque NDIAYE
- **PARI- 4** Caracterisation de l'entomofaune parasite des manguiers et agrumes en Casamance Saliou DJIBA
- **PARI- 5** Amelioration des itineraires techniques de la patate douce Youga NIANG
- T** Etudes sur la forêt naturelle (Ph D These - Ibrahima Thomas)
- U** Etude sur la productivite du systeme coton/cereales (M S These Mour Gueye)

Les indicateurs selectionnes pour le suivi de la performance de chacune de ces activites sont en rapport avec l'indicateur global suivant retenu par le PR1 pour le Resultat Intermediaire concerne "Nouvelles technologies de GRN mises au point"

1 Nombre de nouvelles technologies de GRN developpees en station et en milieu paysan

5 VALIDATION DES TECHNOLOGIES EN AGRICULTURE ET GRN

Les technologies qui ont ete developpees en milieu contrôle, ou testees ailleurs doivent être validees en champs dans des regions specifiques L'ISRA collabore avec ses partenaires qui travaillent dans des environnements specifiques dans le but de realiser cette validation Une validation reussie assure que la technologie concernee peut être diffusee sans risque pour les paysans dans certaines conditions de production La definition de ces conditions et les specifications des technologies validees sont presentees sous la forme d'une fiche technique Cette fiche qui est preparee par les chercheurs de l'ISRA concernees et leurs partenaires est approuvee par le chef d'Unite

L'ISRA est actuellement dans le processus de valider plusieurs technologies et d'ecrire les fiches techniques de plusieurs d'entre elles Le programme PR1/NRBAR va appuyer ce processus, en executant les activites suivantes (detaillees dans les fiches en Annexe 5) durant l'annee 1998

ACTIVITE 5

- A S/V01 preparation et utilisation du compost enrichi au phosphate naturel sur le mil et le nebe dans CNBA (Madiagne Diagne)
- B S/V02 preparation et utilisation du compost sur des varietes de mil local et ameliorees dans CNBA (Aminata Badiane)
- C S/V02 utilisation de la haie vive/manioc sur la rotation mil/arachide dans CNBA (Aminata Badiane)
- D S/V02 utilisation de varietes ameliorees de mil dans CNBA (Aminata Badiane)
- E S/V03 haie vive comme brise vent pour le mil/legumes dans les sols sales dans SBA, avec la collaboration de groupements feminins (Maleim Diatta)
- F S/V04 etablisement et utilisation de varietes d'arbres dans les champs de paysans dans SBA (Babou Ndour)
- G S/V05 et V06 utilisation d'arbres comme brise-vent pour riz irrigue et maraichage en saison seche au lac de Guiers et a Nguer dans FLEUVE (Abdourahm Tamba)
- G S/V07 etablisement et utilisation de varietes d'arbres dans les champs des paysans dans SBA (Maleim Diatta)
- I S/V08 utilisation de paquet integre de technologies agroforestieres dans SBA (Desire Sarr)
- J S/V09 utilisation de strategie amelioree de gestion de terroir dans SBA (Modou Sene)
- K S/V10 utilisation de varietes ameliorees de riz en conjonction avec les digues anti-sels dans SOHC (Samba Thiaw)
- L S/V11 gestion integree de GRN, par les groupements feminins dans CNBA (Aminata Badiane)
- M S/V12 utilisation des ecailles de poissons comme engrais organique sur le mil/sorgho dans CNBA (Mamadou Ndiaye)
- N S/V13 preparation et utilisation du compost enrichi au phosphate naturel sur le mil et le nebe dans SBA (Manievel Sene)
- O S/V13 utilisation du fumier de vache pour la fertilisation du sol (Manievel Sene)
- P S/V14 preparation et utilisation du compost pour mil/sorgho a Sedhiou dans BMC (Souleymane Diallo)
- Q S/V14 introduction de varietes ameliorees de mil et sorgho dans BMC (Souleymane Diallo)
- R S/V14 utilisation d'itineraires techniques ameliorees pour contrôler les infections de striga a Sedhiou dans BMC (Souleymane Diallo)
- S S/V15 utilisation de la diversification des cultures dans SBA (Manievel Sene)

- T S/V16 utilisation des structures de contrôle améliorées de l'érosion dans le Bassin versant de Nioro dans SBA (Modou Sene)
- U Production de fiches techniques à travers un processus de validation des technologies améliorées par l'Unité Information Scientifique et Technique IST (Samba Aw)
- (V projets collaboratifs approuvés en 1997/Visites de sites/ Thèses/ Liaisons Internationales)
- V17/S17/S25 Transfert de variétés de riz dans les vallées salées du Pakao et du Kassa - Amadou BEYE
 - S18 Restauration agronomique des sols - SBA- Maleim DIATTA
 - PAR3/S19 Consolidation des acquis dans le cadre du projet ISRA/ARAF S/V08 (1994/1997) Valorisation et GRN dans la région de Fatick - Desire Y SARR
 - PAR2/S20 Collaboration entre AHDIS et CNBA dans le Programme GRN (PAR2-3, PAR2-4 et PAR2-5) Desire Sarr
 - PAR2 S21 Collaboration entre RODALE et CNBA dans le Programme GRN (PAR2-3 à PAR2-7) Desire Sarr
 - V23 Introduction de la culture fourragère de légumineuses annuelles en milieu paysan en vue de l'amélioration des productions céréalières et animales en Haute Casamance au Sénégal Ambroise DIATTA
 - V24/S24 Effets des bois rameaux fragmentés et du compost de litière de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraîchères des Niayes Abdourahmane TAMBA
 - R18 Formation et Assistance Technique aux groupements de producteurs de semences des régions de Ziguinchor, centre Nord Bassin Arachidier et SOHC Arthur DA SYLVA
 - R24 Valorisation du potentiel pastoral pour le développement de systèmes céréaliers performants et viables en zone subhumide du Sénégal – Nohune DIEYE
 - LIR-03 Etude de validation des variétés améliorées des légumes, C Alassane Fall
 - LIR-01 Etude de validation des technologies agriculture/élevage, Abdou Fall
- W Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR CNBA
- PAR2- 3 diagnostic sur les modes de transferts et évaluation socio-économique des technologies sur la GRN - Mbene D FAYE
 - PAR2- 4 Diffusion de technologies en milieu paysan le compostage enrichi - Aminata BADIANE
 - PAR2- 5 Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives défensives (validation et transfert) - Babou NDOUR
- X Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR SOHC
- PAR4- 5 Exploitation et valorisation des données du CRZ sur la reproduction du taureau Ndama Mamadou A BA
 - PAR4-10 Etude et amélioration des systèmes de production et de la gestion des ressources naturelles Suivi des élevages bovins villageois Mamadou A BA
 - PAR4-12 Test de techniques de lutte contre l'érosion hydrique par l'utilisation des haies vives Alphousseym BODIAN
- Y Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR SBA
- PAR3- 5 Etude des facteurs limitants de la traction animale dans la mise en œuvre des techniques de travail du sol et test d'innovations performantes Fatmata DIA
- Z Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR MBC
- PAR1- 3 Installation de collections d'arbres fruitiers et tests de variétés d'agrumes de manguiers et de bananiers en milieu paysan Demba SIDIBE
 - PAR1- 8 en place d'une collection d'écotypes locaux de céréales et de variétés améliorées de riz Transfert en milieu paysan de matériel adapté Amadou BEYE

- AZ Ateliers de presentation des resultats des projets de recherche (Aminata Badiane)
- BZ Analyses socio-economiques des technologies developpees (M Kebe)
- CZ Methodologie de recherche en milieu paysan (M S These – Mamadou Lo)

Les indicateurs selectionnes pour le suivi de la performance de chacune de ces activites sont en rapport avec l'indicateur global suivant retenu par le PR1 pour le Resultat Intermediaire concerne "Un plus grand nombre de technologies de GRN validees"

1 Nombre de technologies de GRN techniquement et socio-economiquement validees

6 ACCES DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES

Cet objectif de formation des utilisateurs et de la vulgarisation des technologies de GRN, est partage avec le programme Paquet pour Resultats No 2, qui est le second Programme charge de realiser l'Objectif Strategique No 2 a travers les Resultats Intermediaire-cle B Techniques de GRN maîtrisees et utilisees par les ruraux Les relations entre PR1 (activites de recherche) et PR2 (activites de vulgarisation) sont montrees par la figure ci-apres

Bien que l'execution des activites directement liees a cet objectif soient en priorite sous la responsabilite de RP2, sous le PR1, les chercheurs de l'ISRA travaillent frequemment avec les producteurs et les agences de vulgarisation pour l'evaluation des technologies existantes et pour la generation et la validation de technologies tel que decrit dans les Sections precedentes de ce Plan de Travail Dans ce processus, l'ISRA apporte une contribution importante pour l'acces des ruraux aux technologies ameliorees de GRN, a travers la formation et les effets de la demonstration qui consiste a realiser des projets de recherche decrits dans les Sections 3, 4 et 5 Par exemple, dans le but de valider effectivement les technologies, l'ISRA forme ces ruraux et le personnel de vulgarisation qui sont impliquees dans les tests

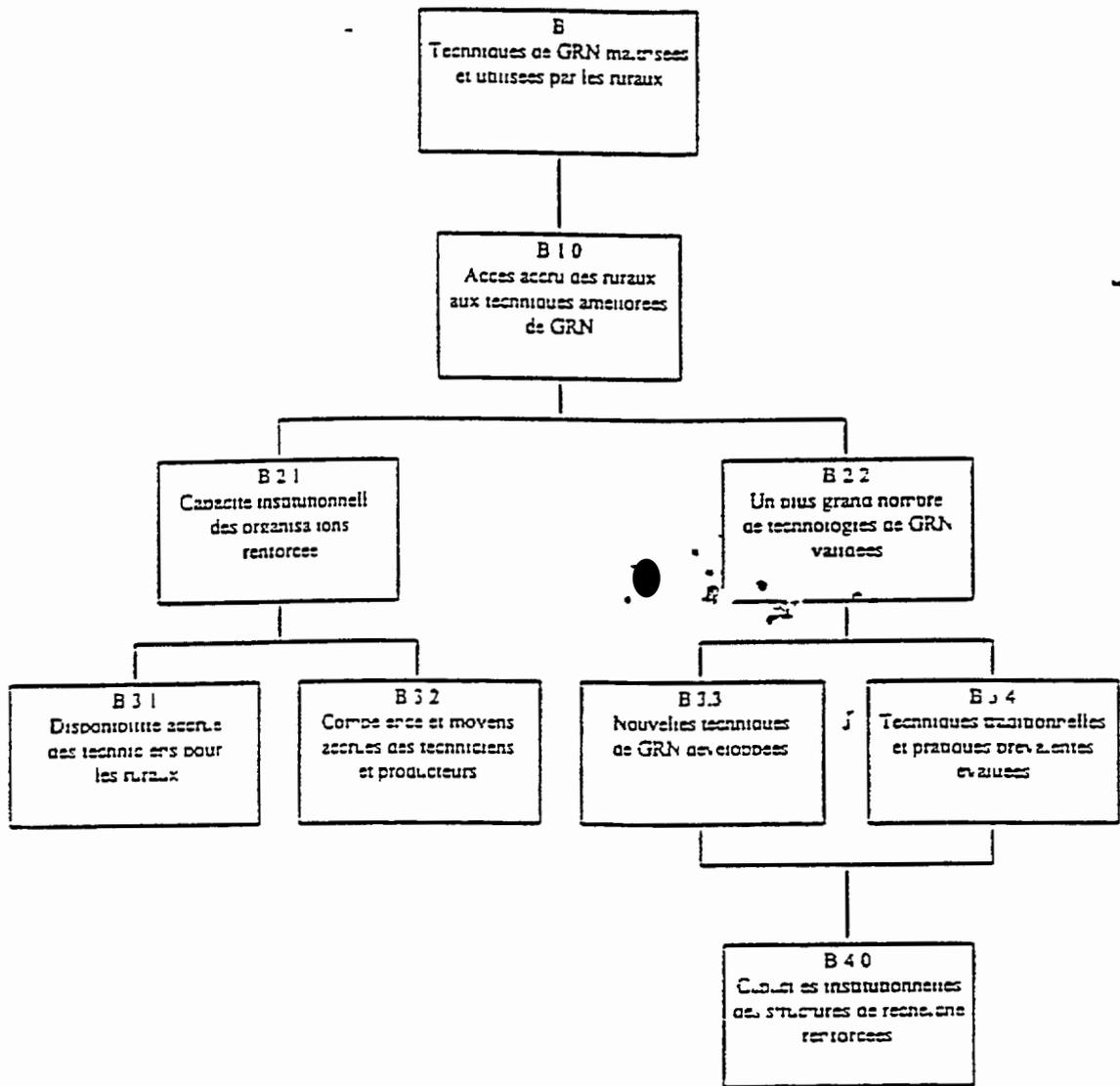
En conclusion, bien que l'ISRA n'ait pas d'activite specifiquement orientee vers la realisation de cet objectif, l'ISRA y contribue neanmoins fortement a travers les activites des projets de recherche suivants

ACTIVITE 6

- A la formation formelle et informelle des producteurs et des agents de vulgarisation aux nouvelles technologies (Aminata Badiane)
- B la demonstration formelle et informelle des nouvelles technologies dans les stations de recherche (Aminata Badiane)
- C la demonstration formelle et informelle des nouvelles technologies dans les champs des ruraux (Aminata Badiane)

Les progres realises vers cet objectif sous PR1 seront suivis a travers les activites proposees dans les Sections precedentes, mais seront resumes sous 6 A, 6 B et 6 C Les indicateurs selectionnes pour le suivi de la performance des activites sont en rapport avec l'indicateur global suivant retenu par le PR1 pour le Resultat Intermediaire concerne "Acces accru des ruraux aux technologies ameliorees de GRN"

- 1 Nombre de ruraux rapportant leurs connaissances des technologies ameliorees, et
- 2 « Nombre de paysans et agents de vulgarisation (par sexe) formes »



7 LES COMPOSANTES RESSOURCES DU PROGRAMME ISRA/USAID PR1/NRBAR

Afin d'atteindre les objectifs du programme ISRA/USAID PR1/NRBAR, les ressources mobilisées sont de sept ordres. Les programmes prévus pour l'utilisation de chacune des ressources sont résumés ci-dessous, et dans les fiches jointes.

I SOUTIEN AU PROGRAMME DE RECHERCHE

Dans ce programme, il y a deux formes de renforcement des activités de recherche existantes qui présentent des potentialités pour mieux contribuer aux Résultats Intermédiaires du PR1. Il s'agit des subventions pour la recherche collaborative et les subventions aux chercheurs de l'ISRA.

1a PROGRAMME DE SUBVENTIONS POUR LA RECHERCHE COLLABORATIVE

Aucune nouvelle subvention ne sera proposée pendant cette dernière année du programme. Les dates de clôture retenues sont 16 juillet fin d'exécution des programmes de recherche, et 17 août fin de traitement des rapports techniques, et dossiers financiers et administratifs sur les programmes de recherche. Voir le plan de clôture en Annexe 1.

But Augmenter le nombre d'essais et la qualité de la participation des producteurs à la planification des essais en milieu paysan et évaluer les technologies agricoles basées sur les ressources naturelles, afin que plus de technologies soient disponibles pour leur utilisation en milieu réel.

Participants Cibles Organisations paysannes, ONG, Groupements de producteurs, fournisseurs d'intrants, universités, services privés et publics de vulgarisation.

Protocoles Développés et distribués au staff de l'ISRA et aux Partenaires. Ils identifient la problématique de la recherche, les solutions proposées, la durée, les contributions de chaque partie, le budget, les obligations et les responsabilités, la sélection des producteurs, les interventions de recherche, l'exécution, le suivi, la collecte et l'analyse des données et la formation du personnel.

Financement Pour le carburant, le per diem, les fournitures, les salaires des assistants de recherche. L'achat d'équipements et leur réparation dans certains cas.

Durée des Projets Jusqu'au 16 juillet 1998.

Mode Un fonds de roulement représentant environ les charges de fonctionnement d'un trimestre est mis en place au début de l'exécution. Puis, à chaque fin de trimestre, les dépenses exécutées sont remboursées à la soumission des rapports techniques et financiers trimestriels.

Budget Un maximum de \$100 000 par projet durant la période 1997/1998, soit 50 millions CFA.

Financement Global du Programme \$1 612 500

Source de Financement Fonds de l'USAID gérés par le CID/OSU pour l'ISRA.

Evaluateurs Le Comité de Gestion des Conventions de l'ISRA, présidé par le DS, avec une représentation des ONG, des organismes de vulgarisation et de développement, le Gestionnaire des Subventions NRBAR et le Chef d'Équipe CID.

Procédures d'Évaluation Rencontres au moins quatre fois par an du Comité de Gestion pour évaluer les propositions, planifier le programme et pour suivre et évaluer l'exécution.

Le personnel de l'ISRA L'ISRA a nommé Jean Pierre Ndiaye, Directeur Scientifique de l'ISRA, comme Coordonnateur des subventions de recherche

Nombre de projets	Annee 1993/96	3 nouvelles subventions
	Annee 1994/97	5 nouvelles subventions
	Annee 1995/98	7 nouvelles subventions
	Annee 1996/98	1 nouvelle subvention
	Annee 1997/98	8 nouvelles subventions

Calendrier A annoncer chaque année au mois de novembre Un délai de six semaines est accordé pour la préparation des propositions trimestrielles. Soumission avant la fin du mois de janvier, pour le premier trimestre. La sélection des projets est faite par le Comité de Gestion avant la fin du mois de mars (30 jours au plus tard après la soumission des propositions)

Propositions En se basant sur les protocoles déjà élaborés, les propositions doivent identifier le problème, décrire la pertinence du projet par rapport au Paquet pour Résultats #1, détailler le travail de recherche requis de l'ISRA, la localisation de l'activité, les résultats escomptés, les coûts et tout co-financement éventuel. Les propositions doivent être adressées au DS de l'ISRA avec une copie au Gestionnaire des Subventions NRBAR.

Calendrier pour 1998

Aucune nouvelle subvention ne sera financée dans le cadre des activités recherche collaborative. Les subventions déjà existantes continueront leurs activités comme prévu. Aucune nouvelle avance de fonds ne pourra être accordée avant la liquidation complète du fonds de roulement qui a été mis en place lors du démarrage de l'activité. Suite à cela, les nouvelles avances seront faites basées sur les fonds du DS obtenus des coûts indirects NRBAR.

Premier trimestre visites de suivi sur le terrain, clôture des projets S/V01-S/V08, rapport final des projets qui prennent fin, exécution des programmes de recherche-développement, organisation des ateliers pour partager les résultats avec les partenaires, et de formation des paysans et des ONGs concernés.

Deuxième trimestre visites de suivi sur le terrain, exécution des programmes de recherche-développement, organisation des ateliers pour partager les résultats avec les partenaires, formation des paysans et des ONGs concernés, réunion du comité de gestion pour la revue du Programme 1997, et pour planifier la fin du programme 1998, Draft du rapport final financier complète pour toutes les subventions.

Troisième trimestre visites de suivi/impact sur le terrain, clôture des projets S/V09-S/V24, exécution des programmes de recherche-développement, organisation des ateliers pour partager les résultats avec les partenaires, formation des paysans et des ONGs concernés, rencontre final du Comité, rapport final du Programme.

Ib SUBVENTIONS AUX CHERCHEURS DE L'ISRA

Le but de ce programme est de fournir un soutien a la recherche destine (1) aux chercheurs qui sont deja engages dans une recherche basee sur les ressources naturelles, mais qui ont besoin d'un soutien allant au-dela de ce qui est disponible actuellement, (2) aux chercheurs de l'ISRA pour leur permettre d'effectuer des visites de sites afin d'etudier ou d'evaluer des technologies basees sur les ressources naturelles a l'exterieur du Senegal, et (3) aux chercheurs interesses par des sejours sabbatiques afin de mener des activites de collaboration avec des chercheurs ou des organismes a l'exterieur du Senegal Ces projets sont conçus pour augmenter directement le nombre de technologies de gestion des ressources naturelles disponibles pour être testees en milieu reel avec les partenaires

Il y a trois types de Subventions aux Chercheurs de l'ISRA qui sont les subventions pour la recherche au Senegal, les etudes de site et les programmes sabbatiques Le Comite des subventions a etabli des protocoles pour l'execution du programme des subventions pour la recherche au Senegal Chacun de ces types de subventions est presente en detail ci-apres

Ib 1 SUBVENTIONS POUR LA RECHERCHE AU SENEGAL

Aucune nouvelle subvention sera ne proposee pendant cette derniere annee du programme Les dates de clôture retenues sont 16jul fin d'execution des programmes de recherche , et 17août fin de traitement des rapports techniques et dossiers financiers et administratifs sur les programmes de recherche Voir le plan de clôture en Annexe 1

But Offrir des fonds supplementaires afin de maximiser l'impact du travail deja accompli par le personnel scientifique de l'ISRA et d'augmenter le nombre de technologies disponibles pour être testees en milieu reel

Participants Cibles Les chercheurs de l'ISRA deja impliques dans des activites de recherche ayant des implications sur la gestion des ressources naturelles

Protocoles Developpes et distribues au staff de l'ISRA. Ils identifient la problematique de la recherche proposee, les solutions preconisees, la duree, les ressources necessaires, le budget sur la duree du projet, les obligations et les responsabilites, l'execution, le suivi, la collecte et l'analyse des donnees

Financement Pour engager un personnel technique supplementaire a court terme, financer les coûts de fonctionnement et acheter et reparer certains equipements

Duree des Projets Jusqu'au 16 Juillet 1998

Mode Un fonds de Roulement representant environ les charges de fonctionnement d'un trimestre est mis en place au debut de l'execution Puis a chaque fin de trimestre les depenses executees sont remboursees a la soumission des rapports techniques et financiers trimestriels

Budget Un maximum de \$15 000 par projet, soit 7,5 millions CFA pour 1997/98

Financement Global du Programme \$225 500 qui devraient être suffisants pour terminer les projets en cours Un montant additionnel de \$130 000 est disponible sous le PIL06 en vue de financer de nouvelles activites en 1997/98

Source de Financement Fonds de l'USAID geres par le CID/OSU pour l'ISRA

Evaluateurs Le comite de gestion des subventions de l'ISRA, preside par le DS

Nombre de Projets	Annee 1993/96	4 nouvelles subventions
	Annee 1994/97	2 nouvelles subventions
	Annee 1995/98	9 nouvelles subventions
	Annee 1996/98	0 nouvelle subvention
	Annee 1997/98	12 nouvelles subventions (dont 3 anciens projets prolongees)

Calendrier A annoncer chaque annee au mois de novembre

Un delai de six semaines est accorde pour la preparation des propositions, pour chaque soumission trimestrielle. Soumission avant la fin du mois de janvier, pour le premier trimestre. La selection des propositions est par le Comite de Gestion avant la fin du mois de mars (30 jours au plus tard apres la soumission des propositions)

Propositions En se basant sur les protocoles deja elabores, les propositions doivent identifier le probleme, decrire la pertinence du projet par rapport au Paquet pour Resultats #1, detailler le travail de recherche requis de l'ISRA, la localisation de l'activite, les resultats escomptes, les coûts et le budget. Les propositions doivent être adressees au DS de l'ISRA avec une copie au Gestionnaire des Subventions NRBAR. Les propositions soumisees seront de trois types : de nouveaux projets, des projets existants prolonges ou des projets existants etendus.

Calendrier pour 1998

Aucune nouvelle subvention pour la recherche au Senegal ne sera financee. Les subventions deja existantes continueront leurs activites comme prevu. Aucune nouvelle avance de fonds ne pourra être accordee avant la liquidation complete du fonds de roulement qui a ete mis en place lors du demarrage de l'activite. Suite a cela, les nouvelles avances seront faites basees sur les fonds du DS obtenus des coûts indirects NRBAR.

Premier trimestre visites de suivi sur le terrain, clôture des projets R01-R06, Rapports finals des projets qui prennent fin, execution des programmes de recherche, organisation des ateliers pour partager les resultats avec les partenaires, et formation des paysans, les chercheurs, et des ONGs concernes.

Deuxieme trimestre visites de suivi sur le terrain, execution des programmes de recherche, organisation des ateliers pour partager les resultats avec les partenaires et formation des paysans et des ONGs concernes. La revue du Programme 1997, et le planification de la fin du programme 1998. Rapport final financier complete pour toutes les subventions.

Troisieme trimestre visites de suivi sur le terrain, clôture des projets R07-R27, execution des programmes de recherche, organisation des ateliers pour partager les resultats avec les partenaires, et formation des paysans et des ONGs concernes. Rencontre finale du Comite. Rapport final du Programme.

Ib 2 ETUDES DE SITES

But Familiariser le personnel scientifique de l'ISRA avec les approches et les actions sur les ressources naturelles pratiquées ailleurs dans le Sahel, en Afrique et en Asie, dans le but d'assurer le développement de technologies en GRN susceptibles d'être utilisées en milieu réel

Participants Cibles Chercheurs ISRA avec des partenaires si nécessaire

Protocoles En se basant sur les protocoles déjà élaborés, les propositions doivent identifier le problème, décrire la pertinence de l'activité par rapport au Paquet pour Résultats #1, détailler les potentialités et les engagements de l'institut hôte, la localisation de l'activité, les résultats escomptés, les coûts et le budget. Les propositions doivent être adressées au DS de l'ISRA avec une copie à l'Administration du NRBAR.

Financement Disponible pour l'identification des problèmes d'ordre technique, les déplacements afin d'étudier des problèmes spécifiques, les approches et l'impact de la recherche sur le site

Durée Jusqu'à 4 semaines

Mode Le financement est déboursé directement par le NRBAR

Budget \$10 000 par participant, soit 5 millions CFA

Financement Global du Programme \$146 000 pour environ 10 études

Source de Financement Fonds de l'USAID gérés par le CID/OSU pour l'ISRA.

Evaluateurs Le DS, avec le Comité de Gestion des Conventions si nécessaire

Procédures d'Evaluation Le Comité se réunit au moins 4 fois par an pour examiner les propositions, élaborer un programme, évaluer l'exécution et pour assurer le suivi et l'évaluation des objectifs

ISRA Staff Le DS va coordonner ce programme, avec au besoin, l'assistance du Comité de Gestion

Nombre de Projets	1996	1 subvention
	1997	0 nouvelles subvention
	1998	1 nouvelle subvention

Calendrier A annoncer chaque année au mois de novembre. Un délai de six semaines est accordé pour la préparation des propositions trimestrielles. Premières soumissions avant la fin du mois de mars. Le DS, avec l'assistance du Comité si nécessaire, sélectionne les candidats vers la fin du premier trimestre (30 jours au plus tard après la soumission des propositions)

Propositions Doivent identifier qui/quoi/pourquoi/quand/comment pour l'activité comprenant un budget détaillé et la justification. Une description détaillée des technologies étudiées et leur potentiel à être utilisées en milieu réel au Sénégal. Les propositions sont soumises au DS de l'ISRA.

Localisation/Instituts Hôtes Les pays sahéliens voisins et tout autre pays approprié. Le candidat doit faire des propositions incluant les engagements des instituts hôtes.

Ib 3 PROGRAMMES SABBATIQUES

But Permettre au personnel scientifique de l'ISRA de participer a des activites de recherche dans d'autres instituts de recherche et de valoriser les donnees obtenues dans le cadre d'activites ayant trait a la GRN et qui supportent directement les objectifs du Paquet pour Resultat #1

Participants Cibles Le personnel scientifique de l'ISRA ayant participe a des activites de recherche agricole basee sur les ressources naturelles en tant que chercheurs principaux pour une duree d'au moins trois ans et ayant suffisamment de donnees a analyser

Protocoles En se basant sur les protocoles deja elabores, les propositions doivent identifier le probleme, decrire la pertinence de l'activite par rapport au Paquet pour Resultats #1, detaillier les potentialites et les engagements de l'institut hôte, la localisation de l'activite, les resultats escomptes les coûts et le budget Les propositions doivent être adressees au DS de l'ISRA avec une copie a l'Administration du NRBAR

Financement Paiement, du per diem, du logement et des depenses liees au conge sabbatique

Duree jusqu a 4 mois

Mode Fonds debourses directement par le NRBAR

Budget \$30 000 au maximum par subvention

Financement Global du Programme \$100 000 pour approximativement 7 bourses

Source de Financement Fonds de l'USAID geres par le CID/OSU pour l'ISRA

Evaluateurs Le DS, avec le Comite de Gestion des Convention si necessaire

Procedures d'Evaluation Le Comite se reunit au moins 4 fois par an pour examiner les propositions, elaborer un programme, evaluer l'execution et pour assurer le suivi et l'evaluation des objectifs

ISRA Staff Le DS va coordonner ce programme, avec au besoin, l'assistance du Comite de Gestion

Nombre de Projets 1998 1 nouvelle subvention

Calendrier A annoncer chaque annee au mois de novembre Un delai de six semaines est accorde pour la preparation des propositions Soumission de la premiere proposition trimestrielle avant la fin du premier trimestre Le DS avec l'assistance du Comite si necessaire, selectionne les candidats vers la fin du premier trimestre (30 jours au plus tard apres la soumission des propositions)

Propositions Doivent identifier qui/quoi/pourquoi/quand/comment pour l'activite, comprenant un budget detaille et la justification une description detaillee des technologies etudiees et leur potentiel a être utilisees en milieu reel au Senegal Les propositions sont soumisees au DS

Localisation/Instituts Hôtes Tout pays y compris le Senegal Les candidats doivent faire des propositions prouvant entre autre l'engagement des instituts hôtes a fournir un collaborateur un bureau et l'assistance pour les travaux de secretariat

II APPUI AU PROGRAMME DES RESSOURCES NATURELLES DE L'ISRA

Depuis le mois d'Octobre 1996, les fonds d'un montant de \$1 000 000 sont disponibles pour le Programme GRN de l'ISRA. Le déboursement de ces fonds de l'USAID est inclus dans le Contrat de CID à travers la Lettre d'Execution No 685-0285-08 CID étant responsable du déboursement et de la gestion de ces fonds, la certification financière de l'ISRA ne constitue plus une condition préalable.

Ces fonds sont utilisés pour couvrir les coûts des opérations relatives aux Programmes Agriculture et GRN dans les unités de recherche de l'ISRA (URR) responsable de la zone d'intervention du RP1/NRBAR. Ceci concerne aussi bien les coûts directs que les coûts indirects de fonctionnement du Programme, les taux de coûts indirects s'élevaient à 27% (URR 10%, DG 17 %). La zone d'intervention de RP1/NRBAR inclut les régions de Fatick, Kaolack, Thies, Diourbel, Tambacounda, Kolda et Ziguinchor. En termes de zones agro-écologiques telles que définies par l'ISRA, la zone du Programme concerne la totalité de l'aire des URRs Basse et Moyenne Casamance, Haute Casamance et Senegal Oriental, Sud Bassin Arachidier et Centre Nord Bassin Arachidier, avec une partie des URRs Niayes et Zone Sylvo-Pastorale.

Des Protocoles ont été développés et approuvés pour exécuter ce Programme, et les Programmes et budgets des 4 URRs impliquées étaient sélectionnées par le Comité de Gestion de la DS. Une copie du protocole est jointe en annexe. Les décaissements sont faits au fur et à mesure de la soumission des justifications des dépenses par les Chefs d'URR pour remboursement.

Toutes les activités sont directement liées aux objectifs du Paquet pour Résultats #1. Pour le financement des activités de recherche de l'ISRA qui sont menées en dehors de la zone des 4 URRs concernées, et exclues de ce Programme, les nouvelles subventions étaient octroyées sous le Programme de Subventions aux Chercheurs (ressource Ib 1), les URAs, l'URR-Niayes et l'URR-Zone Sylvo-Pastorale font partie des bénéficiaires de ces subventions. Pour le financement de l'intervention des partenaires de l'ISRA associés aux programmes des 4 URRs concernées, les nouvelles subventions étaient octroyées sous le Programme de Subventions à la Recherche Collaborative (ressource Ia). Des fonds pour les Liaisons avec les autres Instituts de Recherche (ressource III) sont disponibles pour le travail complémentaire avec des collaborateurs nationaux, régionaux et internationaux.

Calendrier pour 1998

Aucune nouvelle subvention ne sera proposée pendant cette dernière année du programme. Les dates de clôture retenues sont 16 juillet fin d'exécution des programmes de recherche, et 17 août fin de traitement des rapports techniques, et dossiers financiers et administratifs sur les programmes de recherche. Voir le plan de clôture en Annexe 1. Les subventions déjà existantes continueront leurs activités comme prévu. Les responsables pour les subventions qui existent peuvent proposer des modifications aux propositions déjà accordées pendant 1997. Aucune nouvelle avance de fonds ne pourra être accordée avant la liquidation complète du fonds de roulement qui a été mis en place lors du démarrage de l'activité. Suite à cela, les nouvelles avances seront faites basées sur les fonds de DS obtenus des coûts indirects NRBAR.

Premier trimestre. En plus des rapports trimestriels, chacune des URRs concernées produira un rapport pour la saison 1997 qui détaille les technologies qui sont en train d'être développées, acceptées en 1997 et validées durant 1997, avec une description du processus de validation utilisé, visites de suivi sur le terrain, exécution des programmes de recherche, organisation des ateliers pour partager les résultats avec les partenaires, et formation des paysans, les chercheurs, et des ONGs concernées.

Deuxieme trimestre visites de suivi sur le terrain , execution des programmes de recherche, organisation des ateliers pour partager les resultats avec les partenaires, et formation des paysans et des ONGs concernees La revue du Programme 1997, et le planification de la clôture du programme 1998 Rapport final financier complete pour toutes les subventions

Troisieme trimestre visites de suivi sur le terrain, clôture des projets PAR1-4, execution des programmes de recherche, organisation des ateliers pour partager les resultats avec les partenaires, et formation des paysans et des ONGs concernees Rencontre finale du Comite Rapport final du Programme

III LIAISONS AVEC LES INSTITUTIONS INTERNATIONALES DE RECHERCHE

Depuis le mois d'octobre 1996, des fonds d'un montant de \$500,000 sont disponibles pour les institutions qui travaillent avec l'ISRA dans ce Programme Le deboursement de ces fonds de l'USAID est inclus dans le Contrat de CID a travers la Lettre d'Execution No 685-0285-08 CID etant responsable du deboursement et de la gestion de ces fonds, la certification financiere de l'ISRA ne constitue plus une condition prealable a l'utilisation de ces fonds Des protocoles ont ete developpes et approuves (voir Annexe 1) Aucune nouvelle subvention pour ces liaisons ne sera financee

But Contribuer a l'atteinte des objectifs du paquet pour Resultats #1, en favorisant la participation du personnel de l'ISRA a des activites de recherche et de developpement, principalement au Senegal, en etroite collaboration avec des experts appropries provenant d'autres institutions de recherche Ces activites peuvent comprendre un appui direct sur le terrain, le partage d'information scientifique, la formation dans des domaines specifiques et pertinents pour la generation de technologies, et le developpement de la capacite de l'ISRA a entreprendre la recherche en GRN telles que des facilites en analyses du sol

Participants Cibles Personnel scientifique de l'ISRA implique dans la recherche basee sur les ressources naturelles

Objectifs Permettre a l'ISRA

(1) de profiter de la recherche executee dans d'autres pays ayant une pertinence directe pour le Senegal, (2) d'augmenter l'efficacite-coût des programmes et l'avantage comparatif de la recherche a l'ISRA et (3) d'etablir des relations a long terme avec des instituts internationaux de recherche agricole qui faciliteraient les echanges d'experiences entre chercheurs

Protocoles developpes et distribues aux chercheurs de l'ISRA et aux institutions internationales de recherche-cles

Financement Financer les coûts de recherche conjointe, les activites d'assistance technique telles que les coûts d'analyse de sols, les coûts d'organisation et de participation a des seminaires, conferences, ateliers et visites d'echanges entre le personnel de l'ISRA et le personnel des institutions regionales ou internationales de recherche

Duree n'importe quand durant la periode du 1er Janvier 1997 au 16 Juillet 1998

Mode Fonds debourses directement par CID Le financement partage des activites conjointes est encourage

Budget \$500 000 pour 2-10 projets avec un maximum de \$250 000 pour un seul projet

Source du Financement Fonds de l'USAID administres par CID/OSU pour l'ISRA

Evaluateurs Le DS, avec le Comite de Gestion des Conventions si necessaire

Procédures d'Evaluation Le Comite se reunit au moins 4 fois par an pour examiner les propositions, elaborer un programme, evaluer l'execution et pour assurer le suivi et l'evaluation des objectifs

ISRA Staff Le DS va coordonner ce programme, avec au besoin, l'assistance du Comite de Gestion, et du Conseiller Special du DG qui est responsable des relations internationales de l'ISRA

Nombre de projets 1997/98 jusqu'a 10 projets au maximum avec au moins un grand projet dans le domaine des sols

Calendrier A annoncer chaque annee au mois de novembre Un delai de six semaines sera accorde pour la preparation des propositions Soumission de la premiere proposition trimestrielle avant la fin du premier trimestre Le DS, avec l'assistance du Comite si necessaire, selectionne les candidats vers la fin du premier trimestre (30 jours au plus tard apres la soumission des propositions)

Propositions En se basant sur les protocoles deja developpes par le Comite, les propositions doivent identifier le probleme et son lien avec le Paquet pour Resultats #1, detaillier le travail de recherche requis de l'ISRA, la localisation de la recherche, les resultats attendus, le budget et le partage des coûts Les propositions des partenaires doivent être adressees aux Chefs d'Unites concernees qui sont responsable de la soumission finale au DS avec copie a l'Administration de CID/NRBAR Une description detaillee des technologies etudiees et leur potentiel a être utilisees en milieu reel au Senegal Les propositions sont soumisees au DS

Localisation Tout pays y compris le Senegal Cependant toute proposition doit inclure des activites conjointes menees sur le terrain au Senegal

Calendrier pour 1998

Aucune nouvelle subvention ne sera proposee pendant cette derniere annee du programme Les dates de clôture retenues sont 16jul fin d'execution des programmes de recherche, et 17août fin de traitement des rapports techniques, et dossiers financiers et administratifs sur les programmes de recherche Voir le plan de clôture en Annexe 1 Les subventions deja existantes continueront leurs activites comme prevu Les responsables pour les subventions qui existent peuvent proposer des modifications aux propositions deja accordees pendant 1997 Aucune nouvelle avance de fonds ne pourra être accordee avant la liquidation complete du fonds de roulement qui a ete mis en place lors du demarrage de l'activite Suite a cela, les nouvelles avances seront faites basees sur les fonds du DS obtenus des coûts indirects NRBAR

Premier trimestre elaboration des rapports trimestriels, visites de suivi sur le terrain, execution des programmes de recherche, les ateliers pour partager les resultats avec les partenaires, et formation des paysans, les chercheurs, et autres partenaires concernees

Deuxieme trimestre visites de suivi sur le terrain, execution des programmes de recherche, les ateliers pour partager les resultats avec les partenaires, et formation des paysans et des ONGs concernees La revue du Programme 1997, et la planification de la clôture du programme 1998 Rapport final financier complete pour toutes les subventions

Troisième trimestre visites de suivi sur le terrain, clôture des projets LIR01-03, exécution des programmes de recherche, les ateliers pour partager les résultats avec les partenaires, et formation des paysans et des ONGs concernés Rencontre finale du Comité Rapport final du Programme

IV PERSONNEL

IVa PERSONNEL A LONG TERME

Tout le personnel a long terme de l'ISRA, de l'USAID et du CID a été recruté et est en poste Voir l'Annexe 1 pour le programme détaillé de termination du personnel

IVb PERSONNEL A COURT TERME

Approximativement 25 consultations sont programmées pour la période 1998 dans les Sections 2-7 de ce plan de travail, le niveau d'utilisation des consultants est sensiblement le même que les années précédentes quand les consultants ont joué un rôle crucial dans tous les aspects du Programme Les propositions sont transmises au DS par les Chefs d'Unité

V FORMATION

Va FORMATION DE LONGUE DUREE

Sept étudiants en Master et un seul en Doctorat sont toujours en formation aux USA pour des diplômes supérieurs Parmi les étudiants en Master, trois sont des femmes Tous ces étudiants en Doctorat et en Master vont terminer leurs études en 1998, avec cinq étudiants qui vont terminer pendant le trimestre octobre-décembre CID préparera les dossiers de continuation pour le nouveau contractant qui va prendre en charge ce programme à partir de septembre 1998

Vb FORMATION DE COURTE DUREE HORS DU SENEGAL

Quinze formations sont prévues pour l'année 1998 Les propositions sont transmises au DS par les Chefs d'Unité Ce programme de formation de courte durée sera terminé le 26 juin 1998, et les activités à partir du 01 avril doivent être liées directement avec les rapports finals

Vc FORMATION DE COURTE DUREE AU SENEGAL

Onze activités majeures sont prévues pour la période 1998, avec en plus environ trente activités ponctuelles d'appui Les propositions sont transmises au bureau NRBAR par les Directions Ce programme de formation de courte durée sera terminé le 31 mai 1998, sauf pour les rapports finals, et les présentations finales

Vd FORMATION LONGUE DUREE NIVEAU LICENSE POUR FEMMES AU SENEGAL

Dix femmes sont actuellement en train de poursuivre leurs études à l'ENSA et à l'IST de l'Université de Dakar, et elles termineront leurs programmes en 1998 Les femmes qui ont déjà terminé leur formation sont également éligibles pour un stage à l'ISRA sous ce financement Les propositions sont transmises directement au DS CID préparera les dossiers de continuation pour le nouveau contractant qui va prendre en charge ce programme à partir de septembre 1998

VI SOUTIEN DIRECT DE L'ISRA

L'ISRA continuera de fournir le soutien physique nécessaire ainsi que les ressources et le temps du

personnel necessaire pour mener a bien le programme RP1/NRBAR

VII SOUTIEN DIRECT DE L'USAID

L'USAID continuera de fournir le financement et le soutien necessaire pour mener a bien le programme RP1/NRBAR

Les tableaux de l'Annexe 1 indiquent le niveau d'effort attendu selon chaque composante ressource du programme

8 ACTIVITES DE SOUTIEN AU PROGRAMME PR1/NRBAR

Les activites indiquees dans les Sections 2 a 7 seront soutenues par des activites de gestion, d'administration, de suivi et d'evaluation, ainsi que par des services financiers. Le Directeur du Projet (Directeur General de l'ISRA - Moussa Bakhayokho) et le Directeur Adjoint du Projet/Administrateur des Subventions (le Directeur Scientifique de l'ISRA - Jean Pierre Ndiaye) assureront la direction et le soutien global du Projet. De plus, le personnel du CID/NRBAR participera aux activites de soutien du Projet, les efforts devant être concentres au niveau du Chef d'Equipe pour la direction generale du projet et de l'Administrateur du Programme pour la gestion journaliere. Des efforts en dehors du Senegal sont concentres au niveau de l'Universite d'Etat d'Oregon sous le Coordinateur du CID/NRBAR et au niveau du Consortium pour le Developpement International sous le Directeur Executif du CID. Les responsabilites specifiques de soutien sont definiées dans les paragraphes suivants

Le Directeur du Programme PR1/NRBAR, assiste du Directeur Adjoint du Programme, du Chef d'Equipe CID et de l'Administrateur du Programme en collaboration avec d'autres membres de l'Equipe ISRA/NRBAR ont la responsabilite de

(a) planifier et participer a des reunions regulieres avec les collaborateurs du programme, et elaborer les rapports du programme (voir la liste ci-jointe),

(b) participer a des visites trimestrielles d'inspection de l'ISRA/USAID aux sites du programme

(c) gerer les bureaux et autres locaux, superviser et recruter le staff d'assistance technique et le staff local, y compris la gestion (elaboration de termes de reference, logistique, recrutement, elaboration de rapports, etc.) des consultations de courte duree,

(d) gerer les procedures de fin de contrat (1) ecrire un plan de clôture en Mars 1998 avec l'assistance d'un consultant du CID, du RCO de l'USAID et le Charge de Programme de l'USAID, (2) coordonner l'elaboration des rapports de fin de contrat par chaque personnel contractuel du CID avant la fin du programme, (3) executer les seminaires prevus pour la fin du programme, (4) ecrire le rapport final de fin de contrat en août 1998 et (5) ecrire le rapport de clôture du programme en octobre 1998

(e) participer aux reunions bi-annuelles de revue conjointe ISRA/USAID

(f) participer (planification, mise en oeuvre, evaluation) aux programmes d'audit et d'evaluations selon les besoins, incluant l'evaluation finale du Programme,

(g) etablir, gerer, et effectuer des paiements, et contrôler les comptes en monnaie locale de NRBAR/PR1,

(h) évaluer les progrès en utilisant les indicateurs de performance identifiés dans le plan d'évaluation et de suivi de NRBAR/PR1, avec l'appui d'un assistant technique de courte durée (se référer à la Section 2),

(i) continuer la collecte et l'analyse des données de base du Paquet pour Resultats No-1, et élaborer un rapport de données de base,

(j) coordonner les changements intervenus dans le contrat CID pour tenir compte des nouvelles stratégies de l'USAID sur les Paquets pour Resultats et un moindre micro management du programme, en collaboration avec un consultant du CID en Mars 98, y compris la prolongation du contrat,

(k) programmer et gérer tous les aspects du programme de formation au Sénégal de NRBAR/PR1, et collaborer avec le Coordinateur du CID/NRBAR pour tous les programmes de formation à l'étranger,

(l) aider l'Administrateur des Subventions de l'ISRA et le CM en R&D à créer un système pour aider à la gestion et à l'exécution des programmes de subventions à la recherche collaborative,

(m) maintenir le système d'inventaire du NRBAR/PR1 et,

(n) maintenir les activités de soutien telles que l'amélioration et l'entretien des logements et des bureaux, et la familiarisation avec les procédures de l'ISRA et de l'USAID

Les activités de l'Administrateur du Programme seront axées sur le soutien logistique et administratif avec un soutien mineur d'assistance technique, comme suit

(o) administrer les besoins en logement et autres du programme,

(p) effectuer localement l'achat et la gestion du matériel du programme y compris la gestion des véhicules,

(q) fournir des services de personnel au CID/NRBAR, la supervision du personnel du bureau,

(r) fournir des services de traduction,

(s) fournir tous les services de secrétariat,

(t) fournir des services de comptabilité et de gestion financière des transactions en monnaie locale,

(u) aider le personnel du NRBAR dans les tâches administratives liées à leurs tâches techniques

(v) assurer la gestion journalière des programmes de formation de courte et longue durée et le programme de consultation, et

(w) mettre en œuvre les procédures de clôture du programme

Les activités du Coordinateur du CID/NRBAR, du Directeur Adjoint du CID responsable du NRBAR et des autres membres du personnel de soutien basés aux États-Unis seront axées sur la gestion, le soutien administratif et logistique, et exécutées aux États-Unis selon les besoins exprimés par le personnel basé au Sénégal, comme suit

(x) recrutement recherche preliminaire et recrutement des consultants internationaux de courte duree,

(y) logistique (1) achat et transport des equipements du programme, (2) arrangements pour le transport international, (3) preparation pour l'obtention des visas et des certificats medicaux selon les besoins,

(z) soutien technique les informations techniques requises par ISRA/NRBAR seront obtenues et envoyees au Senegal,

(aa) visites au Senegal (1) le Coordinateur du CID/NRBAR base a OSU et autres membres de l'equipe de gestion du CID effectueront des visites au Senegal selon les besoins, pour effectuer des tâches administratives precises , et (2) le Directeur Executif du CID visitera le programme pour participer aux reunions finales,

(ab) contrat (1) gerer les sous-contrats du programme, (2) soumettre a l'approbation des sous-contrats developpes dans le cadre de la Subvention a la Recherche Collaborative, et (3) communiquer directement avec le Charge des Contrats de l'USAID si besoin est, pour les affaires contractuelles,

(ac) formation des participants placer et gerer les participants aux programmes de formation de courte et longue duree hors du Senegal,

(ad) communication une communication constante sera maintenue avec le bureau de ISRA/NRBAR afin de faciliter les tâches decrites ci-dessus,

Les activites enoncees ci-dessus seront soutenues par la participation a environ 150 reunions et l'elaboration de plus de 113 rapports

REUNIONS (ref section 8 (a))

Mise a part les reunions techniques et administratives tenues d'une maniere informelle avec les collaborateurs du projet, un certain nombre de reunions formelles seront organisees durant l'annee Il est prevu d'organiser douze reunions de gestion (y compris les reunions mensuelles, trimestrielles et bi-annuelles) par an entre l'ISRA, l'USAID et le CID en plus des autres reunions formelles, comme suit

SUR UNE BASE HEBDOMADAIRE

Une reunion hebdomadaire de coordination sera tenue entre le chef d'equipe du CID et/ou l'Administrateur du Programme et le Charge du programme a l'USAID

SUR UNE BASE MENSUELLE

Une reunion de coordination sera tenue entre le Directeur General/ Scientifique de l'ISRA, le Charge du programme a l'USAID et le Chef d'Equipe du CID avec une frequence d'au moins une fois par mois Suivant les besoins, les reunions de coordination seront egalement tenues avec d'autres collaborateurs de l'ISRA, CID et USAID En plus de cela, une reunion de tout le personnel CID/NRBAR coordonnee par l'Administrateur du Programme se tiendra au moins une fois par mois

SUR UNE BASE TRIMESTRIELLE

Une reunion de coordination de l'Equipe NRBAR/PR1 sera tenue sur une base trimestrielle

REUNION DE L'EQUIPE DE GESTION DES ETATS-UNIS

La reunion annuelle de l'equipe de gestion des Etats-Unis avec le Chef d'Equipe CID est programmee du 29 au 30 juin 1998 a l'Universite d'Etat de l'Oregon. La reunion de cette annee doit statuer sur les mesures adequates de clôtüre du programme en vue d'assurer que les avantages du NRBAR/PRI persisteront au dela de la date de clôtüre du programme.

REUNIONS D'EVALUATION DE L'EXECUTION DU PROGRAMME

Presentations des documents de travail et participation aux reunions biannuelles d'Evaluation de l'execution du programme devant être tenues en conjonction avec les reunions biannuelles d'evaluation conjointe.

REVUES BIANNUELLES CONJOINTES

Ces reunions auront lieu deux fois par an.

REUNIONS D'AUDIT

Participation aux reunions d'audit selon le besoin.

REUNIONS AVEC LES CONSULTANTS DE COURTE DUREE

Pour chaque mission d'appui, participation aux reunions initiales de planification et aux reunions de synthese avec l'ISRA/USAID.

RAPPORTS (ref Section 8 (a))

Tous les rapports lies directement aux travaux avec l'ISRA seront ecrits en français, ou au moins resumes en français, et suivront le format et le calendrier specifique requis pour tous les rapports de l'ISRA. Ces rapports comprennent:

RAPPORTS MENSUELS

Bien que les rapports mensuels ne soient pas une obligation contractuelle, nous proposons de preparer des rapports mensuels du NRBAR/PRI afin de fournir une information ponctuelle de suivi a l'equipe ISRA/CID, a l'USAID et aux autres participants au programme. Chaque membre du personnel CID est responsable de l'elaboration d'un rapport d'une page, en français ou en anglais, a la fin de chaque mois, resumant les activites, les resultats, les difficultes rencontrees, le plan de programme propose pour le futur immediat, et d'autres informations utiles. Le chef d'equipe CID/NRBAR est charge de rassembler ces informations, d'ajouter une page recapitulative, et d'envoyer le rapport au Directeur General et Directeur Scientifique de l'ISRA avec copie a l'USAID aussitôt que possible durant le mois suivant.

Le comptable du Programme elaborera un rapport financier mensuel des depenses en FCFA du mois precedent aussitôt que possible apres validation par l'Administrateur du Programme. Ce rapport sera envoye directement a OSU par courrier express pour être incorpore dans le rapport financier mensuel du Programme du CID. Le rapport financier mensuel du CID sera expedie directement a l'USAID/Washington par le bureau financier du CID et l'Administrateur du Programme. Enverra en même temps une copie au Charge du programme NRBAR a l'USAID/Senegal.

RAPPORTS DE COORDINATION

Le chef d'equipe du CID fera un compte rendu de chaque reunion officielle de coordination.

RAPPORTS TRIMESTRIELS

Chaque responsable d'activite fournit un rapport trimestriel d'activite au plus tard le 15 du mois suivant le trimestre. Le chef d'equipe du CID preparera un rapport trimestriel base sur ces rapports d'activite et sur les rapports mensuels.

DOCUMENTATION ADMINISTRATIVE DE L'USAID

L'Administrateur du Programme preparera et soumettra les documents pertinents du programme a l'USAID pour l'execution des activites du programme, y compris les PIO/Ps

RAPPORTS DE MISSION

Le personnel ISRA/NRBAR qui effectue une mission necessitant au moins une nuit de deplacement preparera un rapport succinct de mission

RAPPORTS ANNUELS

Le rapport annuel de la periode de janvier a decembre 1997 sera acheve pendant le premier trimestre 1998, et un autre rapport annuel de la periode de janvier a septembre ou decembre 1998 sera acheve au cours du dernier trimestre 1998

RAPPORTS PERIODIQUES D'ACTIVITES ET SUJETS SPECIFIQUES

Ceux-ci seront elabores de temps en temps Par exemple, a la suite de missions de consultation et d'activites de formation au Senegal ou a l'etranger Les rapports du Comite d'Evaluation de la Recherche seront elabores apres chaque reunion et des copies seront envoyes a l'USAID Les Rapports Semi-Annuels de performance et les Rapports Semi-Annuels des activites de Personnel et des Depenses seront incorpores dans les Rapports Trimestriels et Annuels

RAPPORTS DE VISITES D'INSPECTION/D'EVALUATION SEMI-ANNUELLE CONJOINTE

Un rapport sera elabore pour chaque visite d'inspection USAID/ISRA et pour chaque Evaluation Semi-Annuelle Conjointe

RAPPORTS DE REVUE DE L'EXECUTION DU PROGRAMME

Des rapports seront elabores pour chacune des revues biannuelles (Project Implementation Review)

RAPPORTS D'INVENTAIRE ET D'ACHATS

Ces rapports d'inventaire et de l'etat de chaque equipement seront remis a jour au cours du premier trimestre 1998 et a la fin du programme Le Rapport Annuel sur les Biens du Gouvernement sous la Responsabilite du Contractant sera elabore au cours 1998

RAPPORTS DE FORMATION

Le detail des progres enregistres par les participants en formation de courte et de longue duree sera documente dans le Rapport Trimestriel et Annuel de Formation Des rapports sur l'analyse des coûts de formation seront elabores par OSU et soumis a l'USAID par CID en Mars 1997, Octobre 1997 et Mars 1998

PLAN DE TRAVAIL ET BUDGETS

Ce Plan de Travail et budget seront remis a jour tous les trimestres Les amendements consecutifs au plan de travail seront apportees de temps en temps selon les besoins

PLAN DE FORMATION

Voir Section 7 V, avec les fiches de l'Annexe 1

RAPPORTS FINALS DE CLOTURE DU PROGRAMME

Un plan de clôture du programme sera elabore au cours du premier trimestre de 1998, un programme de clôture et rapport final sera acheve en août 1998 et un rapport de fin de contrat acheve en septembre 1998

9 PLAN FINANCIER

Le plan financier du programme est resume dans le tableau ci-joint (Tableaux 9 1) Le budget du contrat du CID a ete fixe a \$5 255 446 pour la periode entre 17 juillet 1997 et la fin du programme, suite a la PIO/T No 685 0285 3 60003

Les depenses entre le 17 juillet 1997 et le 31 decembre 1997 sont estimees a \$ 1 693 000, selon les rapports financiers du CID, et le niveau des activites pendant la periode jusqu'au decembre 1997

Il est prevu un accroissement du taux de depenses durant la periode 1997/1998 a cause de l'execution des fonds du nouveau Programme GRN, des nouvelles liaisons internationales, l'augmentation des depenses des partenaires sous ces nouvelles activites dans le cadre de la recherche collaborative et l'augmentation des depenses pour la formation courte duree au Senegal Les depenses prevus entre 01 janvier et le 30 septembre 1998 sont estimees a \$ 2 949 000 Les depenses prevus pendant toute la Periode du 17 juillet 1997 au 30 septembre 1998 sont \$ 4 642 000 (Voir le tableau ci-apres)

03avr98 FINANCEMENT PRI/NRBAR 1997-1998 ('000 Dollars US)				16jul97- 30sep97	01oct97- 31dec97	01jan98- 31mar98	01avr98- 30jun98	01jul98- 30sep98
COMPOSANTE RESSOURCE: CONTRAT USAID/CID	BUDGET CID 97-98	DEPENSES TOTAL PREV 16jul97-30sep98						
I PROGRAM D'APPUI A LA RECH								
Ia subv a la recherche collaborative	500	450		80	70	80	110	110
Ib subventions aux chercheurs de l'ISRA								
Ib 1 subv a la recherche au Senegal	130	110		20	20	20	20	30
Ib 2 etudes sites	30	20		0	0	0	10	10
Ib 3 sabbatiques	100	60		0	0	0	0	60
II APPUI AU PROGRAMME GRN	1 122	900		200	200	200	200	200
III PROGRAMME DE LIAISONS	450	410		50	80	80	80	120
IV PERSONNEL								
IVa assistants techniques a long terme	200	170		30	30	35	35	40
IVb assistants techniques a court terme	350	330		50	60	80	80	60
V FORMATION								
Va long terme	450	400		100	90	80	80	50
Vb court terme, etranger	144	120		20	22	30	30	30
Vc court terme, Senegal	240	200		40	40	40	40	40
Vd long terme, femmes/B S	80	70		10	15	15	15	15
SOUTIEN DU CID	1 459	1 290		228	238	251	282	291
TOTAL CID	5 255	4 642		828	865	911	982	1 056
VI SOUTIEN DIRECT DE L'ISRA	750	625		125	125	125	125	125
VII SOUTIEN DIRECT DE L'USAID								

ANNEXE 1 PLAN DE CLOTURE

157

PLAN DE CLOTURE NRBAR 2704	MOIS	MAI				JUN				JUL				AOUT				SEP					
		SEM AINE	04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21
ACTIVITES DE SOUTIEN AU PRI/NRBAR																							
CONTRAT USAID/CID																							
Demande de prolongation du contrat jusqu'au 30sep envoi à l'USAID 14avr																							
Approbation de l'USAID sur le prolongation 22avr																							
Envoi du Programme et budget a l'USAID pour la période de prolongation 08mai																							
Envoi du PIL de l USAID au CID pour signature 22mai																							
REUNIONS																							
Atelier de présentation des resultats du programme NRBAR 1991-98 05-09jul																							
Reumon de clôture ISRA/USAID/CID 15sep																							
PLANS DE TRAVAIL																							
Plan de clôture - premier draft à l'USAID 20mar																							
Plan de clôture - draft final a l'USAID 30avr																							
Plan de travail 1998 - draft final - à l'USAID 30avr																							
Approbation de l'USAID sur le plan de cloture et le plan de travail 1998 08mai																							
RAPPORTS DE PROGRES																							
Premier draft du rapport final envoye à l'USAID 31août																							
Rapport final envoyé à l'USAID 25sep																							
Rapport trimestriel jan-mar98 envoyé à l'USAID 30avr																							
Rapport trimestriel avr-jun98 envoyé à l'USAID 09jul																							
Rapport trimestriel jul-sep98 envoyé à l'USAID 30sep																							
FINANCIAL MANAGEMENT paiements directs																							
Programme de Paiements Directs termine 15avr																							
FINANCIAL MANAGEMENT remboursements																							
Traitement des demandes de remboursements recus avant fin-mars 01-08avr																							
Traitement des demandes de remboursements recus avant fin-avr 01-08mai																							
Traitement des demandes de remboursements recus avant fin-mai 01-08jun																							
Traitement des demandes de remboursements recus avant fin-jun 01-08jul																							
Traitement des demandes de remboursements recus avant fin-jul 01-08août																							
Date finale de recu des demandes de remboursement au bureau NRBAR 17août																							
Traitement finale des demandes de remboursement 17-21août																							
FINANCIAL MANAGEMENT gestion des comptes bancaires																							
Clôture du compte bancaire 25sep																							
INVENTAIRE/TRANSFER D'EQUIPMENT																							
Traducteur engagé 01mai-30jun																							

PLAN DE CLOTURE NRBAR	1604 PAGE 1	MOIS	MAI				JUN				JUL				AOUT				SEP				
ACTIVITE	la SUBVEN A LA RECHERCHE COLLABORAT	SEMAINE	04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21
Gestion financière paiements directs																							
Date finale de recu des demandes de Paiements Directs 08avr																							
Traitement finale 08-16avr																							
Programme de Paiements Directs terminé 16avr																							
Lettre du DS/NRBAR sur la politique des paiements directs 19mar																							
Gestion financière remboursements																							
Lettre du DS/NRBAR sur la politique des remboursements 19mar																							
Traitement des demandes de remboursements recus avant fin-mars 01-08avr																							
Traitement des demandes de remboursements recus avant fin-avr 01 08mai																							
Traitement des demandes de remboursements recus avant fin-mai 01-08jun																							
Traitement des demandes de remboursements recus avant fin-jun 01-08jul																							
Pas de remboursement de subvention sans rapport final (a partir du 30jun)																							
Pas de remboursem d aucune subvention sans rapports finals (à partir du 31jul)																							
Date finale de recu des demandes de remboursement au bureau NRBAR 17aout																							
Traitement finale des demandes de remboursement 17-21aout																							
Gestion financière gestion des comptes bancaires																							
Gestion financière clôture des dossiers et rapports																							
Lettre du DS/NRBAR sur la politique de cloture des dossiers et rapports 19mar																							
cloture des dossiers des subventions déjà terminés Mass/31mar																							
Mettre à jour les dossiers pas encore clôturés Mass/30avr																							
Clôture des avances 31mar																							
Donner tous remboursements du 08avr net des avances																							
Rapport final admin/financier (draft) Mass/31mai																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Draft du Rapport final admin/financier Mass/30jun																							
Gestion administrative																							
cloture des dossiers des subventions déjà terminés Mass/31mar																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Mettre a jour les dossiers pas encore clôturés Mass/30avr																							
Rapport final admin/financier (draft) Mass/30mai																							
Derniere journee d'exécution des activités contractuelles 16jul																							
Rapport final admin/financier 31aout																							
Gestion technique																							
cloture des dossiers des subventions déjà terminés Charles/31mar																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Mettre à jour les dossiers pas encore clôturés Charles/30avr																							
Rapport final technique (draft) Charles/31mai																							
Reunion du comité du DS revue technique du programme 11-15mai																							
Rapport final technique 31aout																							
Revue du rapport final technique Dick/jun/jul																							

120

CODE	TITRE ET SITES DU PROJET	CHERCH & PARTEN	Budget 1998	Programme 1998
1993/96				
V01 S01	Valorisation des Ressources Naturelles Thies - Diourbel - Fatick	M Diagne RODALE	0	Présentation des résultats 0 Clôture
V02 S02	Amélioration de la fertilité des sols Thies - Kaolack - Diourbel - Fatick - Tambacounda	A BADIANE WINROCK	0	Présentation des résultats 0 Clôture
V03 S03	Valorisation des Technologies Agroforestières Mises au Point par la Recherche et Transfert en Milieu Réel Fatick	M DIATTA OSDIL	0	Présentation des résultats 0 Clôture
1994/97				
V04 S04	Amélioration et diversification des productions agricoles en milieu réel par le biais de l'agroforesterie Kaolack	Mal DIATTA WINROCK	0	Présentation des résultats 0 Clôture
V05 S05	Amélioration de la productivité Céréalière par la protection des cultures dans les cuvettes du Lac de Guiers St Louis	A TAMBA SAHEL 3000	0	Arrêté 12/95 0 Clôture
V06 S06	Etude de l'influence des brise-vent sur la productivité agricole céréalière dans la vallée du Fleuve Sénégal Podor	A TAMBA G P KIRAYE	0	Arrêté 12/95 0 Clôture
V07 S07	Projet de Recherche Collaborative en Agroforesterie Kaolack	Mal DIATTA AFRICARE	0	Elaboration rapport final 0 Présentation de Résultats et Clôture
V08 S08	Collaboration ISRA/ARAF Pour une meilleure Valorisation et Gestion des Ressources Naturelles Gossas	D Y SARR ARAF	0	Elaboration rapport final 0 Présentation de Résultats et Clôture
19 95/98				
V09 S09	Méthode d'évaluation d'une stratégie d'aménagement de terroir appliquée à deux villages du Sine Saloum Niore - Kaffrine	M SENE CARITAS	6 700 000 3 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V10 S10	Mise au point d'itinéraires techniques pour l'intensification de la riziculture dans les vallées aménagées par le GADEC dans le SOHC	S THIAW GADEC	17 000 000 5 400 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V11 S11	Gestion Intégrée de Ressources Naturelles par des groupements féminins dans le Département de Bambey Bambey	A BADIANE FJBS	0	Elaboration de rapport final 0 Présentation de Résultats et Clôture
V12 S12	Valorisation des résidus de transformation du poisson fumé pour la fertilisation des terres Thiès - Fatick - Diourbel	M NDIAYE AHDIS	9 000 000 5 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V13 S13	Amélioration de la fertilité des sols de Ndog Fatick	M SENE RODALE	9 000 000 6 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V14 S14	Amélioration de la fertilité des sols et gestion des adventices par la production de céréales de plateau (maïs et mil) Sédhiou	S DIALLO OCRV	9 500 000 5 200 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V15 S15	Diversification des cultures Kaolack	Manièr SENE CARITAS	9 500 000 3 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture

CODE	TITRE ET SITES DU PROJET	CHERCH & PARTEN	Budget 1998	Programme 1998
19 96/98				
V16 S16	Aménagement anti érosif et redressement de la fertilité des sols du bassin Versant de Diamaguène en zone périurbain	M SENE CARITAS	19 500 000 10 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
19 97/98				
V17 S17 S25	Transfert de variétés de riz dans les vallées salées du Pakao et du Kassa -	A BEYE AJAEDO OCRV	4 000 000 4 500 000 4 150 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
S18	Restauration agronomique des sols - SBA	M DIATTA AFRICARE	55 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 S19	Consolidation des acquis dans le cadre du projet ISRA/ARAF S/V08 (1994/1997) Valonsation et GRN dans la région de Fatick -	D SARR ARAF	10 030 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 S20	Collaboration entre AHDIS et CNBA dans le Programme GRN (PAR2-3 PAR2-4 et PAR2-5)	URR CNBA AHDIS	25 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 S21	Collaboration entre RODALE et CNBA dans le Programme GRN (PAR2-3 a PAR2-7)	URR CNBA RODALE	29 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 S22	Etude des possibilités de mise en valeur des bas-fonds du Sud Bassin Arachidier - Avec le Département Géographie de l'Université CAD	A NDIAYE UCAD	30 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V23	Introduction de la culture fourragère de légumineuses annuelles en milieu paysan en vue de l'amélioration des productions céréalières et animales en Haute Casamance au Sénégal	A DIATTA GIEs	24 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
V24 S24	Effets des bois rameaux fragmentés et du compost de litière de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraichères des Niayes	A TAMBA SAHEL 3000	15 000 000 4 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture

CODE	TITRE ET SITES DU PROJET	Budget 1998	Programme 1998
19 93/96			
R01	Etude sur l'utilisation agricole des ecaïlles de poisson fumé comme amendement organique des sols du Sénégal Mbour- Fatick 93/94 - CNBA	0	Présentation des résultats Clôture
R02	Etude de l'impact de la recherche le cas des Unites Expérimentales de Thyse-Kaymor-Sonkorong et Koumbidia Kaolack 93/96 - SBA	0	Présentation des résultats Clôture
R03	Influence des itinéraires techniques sur la conservation de sols de plateau au milieu paysan (Basse Casamance) Ziguinchor 93/96 - BMC	0	Présentation des résultats Clôture
R04	Valorisation du potentiel pastoral pour le développement de systèmes céréaliers performants et viables en zone sub humide du Sénégal la Haute Casamance 93/96 SOHC	0	Présentation des résultats Clôture
19 94/97			
R05	Effets des techniques culturales sur la variabilité des rendements du sorgho pluvial et sur son effet allélopathique Kaolack - Diourbel 94/97 SBA	0	Elaboration de rapport final 12/97 Présentation des résultats Clôture
R06	Amélioration des pâturages naturels des zones d'élevage du Sénégal par utilisation de phosphates naturels Kolda Louga 94/97 - ZSP	0	Elaboration de rapport final 12/97 Présentation des résultats Clôture
19 95/98			
R07	Valorisation du Potentiel des légumineuses fourragères en vue de l'amélioration des productions céréalières et animales en zone subhumide Kolda 95/98 SOHC	4 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R08	Influence de quelques espèces ligneuses sur le redressement du statut organique et de la fertilité de vieux champs sur sol ferrallitique (rouge) en Casamance Ziguinchor - Bignona 95/97	7 100 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R09	Evaluation socio-economique des projets de recherches en GRN sous financement NRBAR 95/98 - URA/PASE	7 400 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R10	Effet d'une stabulation améliorée des bovins sur leurs performances pondérales et sur la gestion de la fertilité des sols dans le centre du Bassin Arachidier Fatick 95/98 SBA	6 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R11	Etude de l'efficacité du neem dans la protection et la conservation des sols contre l'infestation des nématodes phytoparasites ravageurs des cultures maraîchères 95/97	7 000 000	Le rapport final est dû 07/97 Elaboration de rapport final Présentation de Résultats et Clôture
R12	Inventaire des Technologies basées sur la Gestion des Ressources Naturelles et utilisées dans la production Agricole en Basse Casamance 95/96 BMC	0	Rapport final 12/97 Fiches Techniq Elaboration de rapport fina Présentation de Résultats et Clôture
R13	Identification de technologies de la culture de mil/niébe en zone humide Tamba - Kaolack 95/98 CNBA	0	Arrêté en 1996/ Elaboration de rapport final Présentation de Résultats et Clôture
R14	Etude de l'influence de la matière organique sur la croissance des arbres et le rendement des cultures dans le centre du Bassin Arachidier (Bambey) Bambey 95/98 SBA	0	Arrêté en 1996/ Elaboration de rapport final Présentation de Résultats et Clôture
R15	Etude comparée de l'adoption des technologies de gestion des sols dans les rizières de mangroves de Casamance et les périmètres irrigués de la Vallée de l'Anambé 95/98 BMC	6 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture

CODE	TITRE ET SITES DU PROJET	Budget 1998	Programme 1998
19 97/98			
R16	Inventaire des Technologies basées sur la gestion des ressources naturelles et utilisées en Moyenne Casamance 97/98 BMC	8 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R17	Mise au point de techniques accélérées de compostage- 97/98 BMC	3 600 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R18	Formation et Assistance Technique aux groupements de producteurs de semences des régions de Ziguinchor centre Nord Bassin Arachidier et SOHC 97/98 CNBA	35 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R19	Gestion et conservation des ressources phylogénétiques et de la biodiversité - SBA - 97/98 SBA	7 600 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R20	Etudes de techniques de récupération des sols salés 97/98 SBA	4 900 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R21	Influence des conditions hydriques et du travail du sol sur les effets améliorateurs des amendements (organiques et inorganiques) - 97/98 SBA	7 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R22	Amélioration du taurin Ndama par le schéma génétique à Noyau Ouvert (SAGNO) 97/98 SOHC	12 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R23	Détermination de la période de semis et de la densité de peuplement des légumineuses fourragères annuelles en association avec le maïs in "NRBAR R07 97/98 - SOHC	3 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R24	Valorisation du potentiel pastoral pour le développement de systèmes céréaliers performants et viables en zone subhumide du Sénégal - 97/98 SOHC	5 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R25	Etude de l'adaptabilité des variétés de maïs dans le Sud Bassin Arachidier - 97/98 SBA	4 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R26	Contribution des micro organismes (rhizobiums et champignons cellulolytiques) à l'amélioration de la fertilité des sols - 97/98 URA/PV	10 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
R27	Etudes des méthodes d'exploitation des ligneux en zone périurbaine influence sur la qualité du fourrage et la survie des peuplements - 97/98 URA/PA	5 900 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture

PLAN DE CLOTURE NRBAR	1604 PAGE 1	MOIS	MAI				JUN				JUL				AOUT				SEP				
ACTIVITE II PROGRAMME GRN	SEMAINE		04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21
Gestion financière paiements directs																							
Date finale de recu des demandes de Paiements Directs 08avr																							
Traitement finale 08-16avr																							
Programme de Paiements Directs termine 16avr																							
Lettre du DS/NRBAR sur la politique des paiements directs 19mar																							
Gestion financière remboursements																							
Lettre du DS/NRBAR sur la politique des remboursements 19mar																							
Traitement des demandes de remboursements recus avant fin-mars 01-08avr																							
Traitement des demandes de remboursements recus avant fin-avr 01-08mai																							
Traitement des demandes de remboursements recus avant fin-mai 01-08jun																							
Traitement des demandes de remboursements recus avant fin-jun 01-08jul																							
Pas de remboursement de subvention sans rapport final (à partir du 30jun)																							
Pas de remboursem d'aucune subvention sans rapports finals (a partir du 31jul)																							
Date finale de recu des demandes de remboursement au bureau NRBAR 17août																							
Traitement finale des demandes de remboursement 17-21août																							
Gestion financière gestion des comptes bancaires																							
Gestion financière clôture des dossiers et rapports																							
Lettre du DS/NRBAR sur la politique de clôture des dossiers et rapports 19mar																							
cloture des dossiers des subventions déjà termines Mass/31mar																							
Mettre à jour les dossiers pas encore clôtures Mass/30avr																							
Cloture des avances 31mar																							
Donner tous remboursements du 08avr net des avances																							
Rapport final admin/financier (draft) Mass/31mai																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Draft du Rapport final admin/financier Mass/30jun																							
Gestion administrative																							
cloture des dossiers des subventions déjà terminés Mass/31mar																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Mettre a jour les dossiers pas encore clôtures Mass/30avr																							
Rapport final admin/financier (draft) Mass/30mai																							
Derniere journee d'execution des activités contractuelles 16jul																							
Rapport final admin/financier 31août																							
Gestion technique																							
cloture des dossiers des subventions déjà terminés Charles/31mar																							
Reunion du comité du DS revue admin/finan Du programme 11-15mai																							
Mettre à jour les dossiers pas encore clôtures Charles/30avr																							
Rapport final technique (draft) Charles/31mai																							
Réunion du comité du DS revue technique du programme 11-15mai																							
Rapport final technique 31aout																							
Revue du rapport final technique Dick/jun/jul																							

CODE	TITRE DE L'ACTIVITE	CHERCH & PARTEN	Budget98	Programme 1998
URR Basse et Moyenne Casamance - MBC		Budget 98 61 800 000 F		
PAR1 1	Gestion du Programme	M KHOUMA	31 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 2	Etude et mise au point de techniques de lutte appropriées contre les attaques de polisson sur le riz au niveau des vallées aménagées	V NDIAYE	1 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 3	Installation de collections d'arbres fruitiers et tests de variétés d'agrumes de manguiers et de bananiers en milieu paysan	D SIDIBÉ	9 900 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 4	Caractérisation de l'entomofaune parasite des manguiers et agrumes en Casamance	S DJIBA	2 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 5	Amélioration des itinéraires techniques de la patate douce	Y NIANG	5 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 6	Approfondissement du diagnostic partagé	M KHOUMA	5 300 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 7	Mise en place d'un système d'information géographique	M KHOUMA	3 900 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR1 8	Mise en place d'une collection d'écotypes locaux de céréales et de variétés améliorées de riz Transfert en milieu paysan de matériel adapté	A BÉYE	2 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
			61 800,000	
URR Centre Nord Bassin Arachidier - CNBA		Budget 98 74 700 000 F		
PAR2 1	Gestion du Programme	D SECK	40 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 2	Diagnostic Participatif	D SECK	5 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 3	Etude diagnostique sur les modes de transferts et évaluation socio économique des technologies sur la GRN	Mb FAYE AHDIS&RODALE	5 300 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 4	Diffusion de technologies en milieu paysan le compostage enrichi	A BADIANE AHDIS&RODALE	4 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 5	Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives défensives (validation et transfert)	B NDOUR AHDIS&RODALE	7 400 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 6	Etude des effets de mélange de phosphates naturels et de phosphogypse sur les sols et cultures (génération de technologies)	M FALL AHDIS&RODALE	6 300 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR2 7	Développement de méthodes alternatives de protection des récoltes vivrières et des semences contre les insectes (génération validation et transfert)	D SECK AHDIS&RODALE	5 700 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
			74,700,000	

CODE	TITRE DE L'ACTIVITE	CHERCH & PARTEN	Budget98	Programme 1998
URR Sud Bassin Arachidier SBA		Budget 98 70 000 000 F		
PAR3 1	Gestion du Programme	D Y SARR	19 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 2	Etude des possibilités de mise en valeur des bas fonds du Sud Bassin Arachidier	A NDIAYE UCAD	12 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 3	Analyse de l'impact socio économique des principales technologies agricoles	A SENE	6 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 4	Analyse institutionnelle et recherche de stratégie de gestion communautaire des ressources naturelles	D SARR	4 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 5	Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovations performantes	F DIA	4 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 6	Diagnostic pluridisciplinaire du secteur agricole	Man SENE	9 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR3 7	Mise en place d'une base de données régionale	Mod SENE	13 900 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
			70 000,000	
URR Sénégal Oriental Haute Casamance - SOHC		Budget 98 60 000 000 F		
PAR4 1	Gestion du Programme	D F MBAYE	32 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 2	Synthèse des travaux sur les insectes ravageurs des cultures céréalières et de rente	D BADIANE	250 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 3	Synthèse sur les recherches sylvicoles de la zone	A BODIAN	600 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4- 4	Synthèse des recherches sur les cultures fourragères au Sénégal Oriental et en Casamance	A DIATTA	350 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 5	Exploitation et valorisation des données du CRZ sur la reproduction du taunm Ndama	M A BA	600 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 6	Synthèse des études sur la pathologie animale des ruminants de la zone	M T SECK	600 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4- 7	Synthèse des recherches en amélioration variétale de céréales	A FOFANA	600 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 8	Diagnostic pluridisciplinaire et participatif des systèmes de production Mbaye	D F MBAYE	10 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 9	Prospection sur les insectes ravageurs des cultures céréalières et de rente	D BADIANE	3 500 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 10	Etude et amélioration des systèmes de production et de la gestion des ressources naturelles Suivi des élevages bovins villageois	M BA	2 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 11	Prospection et évaluation de variétés locales de céréales (mil/mais/sorgho/ fonio)	A FOFANA	2 000 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 12	Test de techniques de lutte contre l'érosion hydrique par utilisation des haies vives	A BODIAN	2 900 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
PAR4 13	Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du Taunm Ndama utilisé en monoboëuf et en paire	M SECK	3 800 000	Exécution du Programme/ Elaboration de rapport final Présentation de Résultats et Clôture
			60 000 000	

PLAN DE CLOTURE NRBAR	1604	MOIS	MAI				JUN					JUL				AOUT				SEP			
ACTIVITE	III LIENS ENTRE L'ISRA/INSTITUT DE RECH	SEMAINE	04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21
Gestion financière paiements directs																							
Date finale de recu des demandes de Paiements Directs 08avr																							
Traitement finale 08-16avr																							
Programme de Paiements Directs terminé 16avr																							
Lettre du DS/NRBAR sur la politique des paiements directs 19mar																							
Gestion financière remboursements																							
Lettre du DS/NRBAR sur la politique des remboursements 19mar																							
Traitement des demandes de remboursements recus avant fin-mars 01-08avr																							
Traitement des demandes de remboursements recus avant fin-avr 01-08mai																							
Traitement des demandes de remboursements recus avant fin-mai 01-08jun																							
Traitement des demandes de remboursements recus avant fin-jun 01-08jul																							
Pas de remboursement de subvention sans rapport final (à partir du 30jun)																							
Pas de remboursem d'aucune subvention sans rapports finals (a partir du 31jul)																							
Date finale de recu des demandes de remboursement au bureau NRBAR 17août																							
Traitement finale des demandes de remboursement 17-21août																							
Gestion financière gestion des comptes bancaires																							
Gestion financière clôture des dossiers et rapports																							
Lettre du DS/NRBAR sur la politique de cloture des dossiers et rapports 19mar																							
Mettre à jour les dossiers pas encore clôturés Didi/30mai																							
Cloture des avances 31mar																							
Donner tous remboursements du 08avr net des avances																							
Rapport final admin/financier (draft) Didi/31mai																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Draft du Rapport final admin/financier Didi/30jun																							
Gestion administrative																							
Reunion du comite du DS revue admin/finan Du programme 11-15mai																							
Mettre à jour les dossiers pas encore clôturés Didi/30mai																							
Rapport final admin/financier (draft) Didi/30mai																							
Dernière journée d execution des activités contractuelles 16jul																							
Rapport final admin/financier 31août																							
Gestion technique																							
Reunion du comité du DS revue admin/finan Du programme 11-15mai																							
Mettre à jour les dossiers pas encore clôturés Charles/30mai																							
Rapport final technique (draft) Charles/31mai																							
Réunion du comité du DS revue technique du programme 11-15mai																							
Rapport final technique 31août																							
Revue du rapport final technique Dick/juin/jul																							
LIR01 ISRA/TU agriculture/elevage																							
LIR02 ISRA/OSU gestion des sols																							
LIR03 ISRA/TU legumes																							

PLAN DE CLOTURE NRBAR	1604	MOIS	MAI				JUN					JUL				AOUT					SEP		
ACTIVITE	IVa ASSISTANCE DE LONGUE DUREE	SEMAINE	04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21
chef d'équipe CID/gestion (Tom Cusack)																							
Travail a Dakar jusqu au fin et Depart Dakar 30sep (En conge 13-24jul)																							
demande à l'USAID pour prendre la relicat de conge après la fin du projet 30avr																							
Preavis au societe immob Pour quitter la maison avant 30sep Didi/27jun																							
Quitter la maison et couper les services 09sep																							
Herbergement a l'hotel 09-29sep																							
Envoyer les baggages de la maison au societe de deménagement 09sep																							
Vider la maison des materiaux du project aux l ISRA, stockage, etc 10sep																							
Nettoyer, repaier, la peinture de la maison 10-24sep																							
Fin du contrat de la maison donner les clefs au societe immobilier 25sep																							
Dernier paiement de gard 26sep, et (au plus tard) derniers paiements des services																							
Dernier journée de travail normal au bureau ISRA/NRBAR 25sep																							
Transfer de materiel du bureau (aux l ISRA, bureau de passage, stock) 28-29sep																							
Transfer des vehicules NRBAR a l'ISRA 30jul-25sep																							
Administratrice du projet (Didi Leguede)																							
-Travail a Dakar jusqu'au fin juillet, derniere journée du travail, 30jul																							
PERSONNEL CONTRACTUEL LOCAL																							
Travail à Dakar jusqu'au 16jul, conge à prendre apres																							
Mettre les dossiers à jour Didi/30avr																							
Approbation de personnel local sur leur bulletin de separation 30avr																							
Administrateur des subventions (Massamba Dieng)																							
Assistante administrative (Faty Ba)																							
Assistante du bureau (Mame Diouf)																							
Chauffeur du bureau (Daouda Nging)																							
Chauffeur du programme GRN/develop Des technol (Malang Diaw)																							
chauffeur du programme r/d, validation des technol (Cherif Dabou)																							
chauffeur du programme capacite institution (Moussa Gadiaga)																							
chauffeur du bureau (Babacar Ciss)																							
Comptable (Makar)																							
ASSISTANTS TECHNIQUES																							
Planificateur GRN (Paul Anamosa)																							
Conseillere en recherche-developpement (Wendy Wilson)																							
Conseiller financier (David Holmes)																							
Mettre les dossiers à jour Rocky/31mar																							
Contrats precises avec le personnel local à besoin pendant jul sep																							
(Didi à faire la liste détaillé des tâches de clôture du personnel)																							

PLAN DE CLOTURE NRBAR	2705	MOIS	MAI				JUN					JUL				AOUT					SEP			
ACTIVITE IVb ASSISTANCE A COURT TERME	SEMAINE		04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	
Derniere date pour approbation de l'ISRA sur les propositions	22avr																							
Derniere date pour l'envoi des propositions à l'USAID pour approbation	24avr																							
Derniere date pour l'approbation des propositions par l'USAID	08mai																							
Derniere date d'execution des activites (sauf liées avec les rapport finals)	31mai																							
Rapport final (draft) du programme 1992 jusqu'au 31mar élaboré	Didi/30avr																							
Derniere date d'execution des activités	16jul																							
Traduction du rapport final (draft) terminé	16août																							
Rapport final distribue	26août																							
Ted Brush/evaluation de personnel	(fév)																							
Cheikh Sarr/fonds de recherche	(jan)																							
Richard Dick/LIR02	(jan)																							
Monica Fisher/PAR4-12/R09	(fév/mar)																							
Lamine Bocoum/R-D	(-31mai)																							
Nicolas Dupuy/restitution des resultats	(-30jun+)																							
Charles Yamoah/articles scientifiques/rapport final technique	(05fev-30jun+)																							
Hannibal Muhtar/gestion des stations	(2mar-3avr)																							
Yossi Ben-DovS/V18-R20/pépin	(26fév-10mar)																							
Madame Seck/genre	(2fev-12mar)																							
Rocky Rainey/admin du projet	(23fév-13mar)																							
Rocky Rainey/admin du projet	(14-30avr)																							
Madame Ba/livrette-dissem - riz	(15dec 30mar)																							
Mamadou Sidibe/impact de la recherche	(20avr-16mai, jun/jul)																							
John Sanders/impact de la recherche/rapport final	(22avr-01mai)																							
Cheikh Sarr/restitution sur le fonds de recherche	(27avr-15mai)																							
Louie Tripp/gestion financiere du projet	(05-18mai)																							
Suchet Louis/LIR01 et LIR03/rapport final technique elevage/agric	(2mai-05jun)																							
Bill Roberts/suivi/appui institutionnelle/rapport final institutionnelle	(15mai-20jun)																							
Ralph Noble/LIR01 rapport final	(11mai-14jun)																							
Dov Pasternak/S/V18-R20, rapport final halophytes	(06-09jun)																							
John Ashburner/rapport final sur l'inventaire	(3 semaines mai/jun)																							
Richard Dick/LIR02/rapport final technique	(4 semaines jun/jul)																							
Michael Satin/agroforestrie-validation	(10jun 10jul)																							
John Russell /rapport final sur les études en milieu paysan	(4 semaines jun/jul)																							
Consultant en communication des résultats	(4 semaines)																							
CLOTURE DU PROJET NRBAR																								
Rocky Rainey/admin du projet	(18mai 04sep)																							
Jean Kearns/Directrice CID	(2 semaines jul/sep)																							

PLAN DE CLOTURE NRBAR 1604 ACTIVITE Va FORM /LONG TERME A L'ETRANGER	MOIS SEMAINE	MAI				JUN					JUL				AOUT				SEP				
		04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	
Demande officielle du NRBAR pour la prolongation d Iba Thomas	24avr																						
Rapport final (draft) du programme 1992 jusqu'au 31mar elabore Didi	30avr																						
Clôture des dossiers pour les étudiants qui ont termine en 1997	30avr																						
Traduction du rapport final (draft) termine et distribue	31mai																						
Mettre a jour les dossiers pour les étudiants du 1998	31mai																						
Derniere journee de traitement financiere du programme CID au Senegal	31août																						
Periode de transition CID/autre contrator	01-30sep																						
Derniere journee d execution du programme Va du CID au Senegal	25sep																						
Preparation/signature de l USAID/PIO/P pour etudiants	17jul-30sep (30mai)																						
Ph D																							
Samba Sall economie agricole	Kansus State U																						
Aloune Fall gene agricole (sol/hydraulique)	Michigan State U																						
Ibrahima Thomas, gestion forestiere	Oregon State U (retour 12jul)																						
Mamadou Diop, sciences animales	U of Nebraska																						
Boubacar Barry, gene agricole (sol/hydraul)	Purdue U																						
M S																							
Tanou Galle Ba, gene agricole (sol/hydraulique)	U of Arizona																						
Mohamadou Cissoko, sciences animales	Oregon State U																						
Bassirou Diaw, pecheries/meteorologie	Oregon State U																						
Mamadou Lo agronomie	U of Florida																						
Aloune Dieng, econometrie	Tuskegee U (retour jun)																						
Massamba Thuam, sciences de bois	Oregon State U (retour dec)																						
Mour Gueye, agronomie	Tuskegee U (retour jun)																						
Evelyne Ndiaye, sciences du sol	Oregon State U (retour dec)																						
Fana Sylla Ba, agronomie/variety selection	UC-Davis (retour dec)																						
Aissatou Ndiaye, sciences du sol	Oregon State U (retour dec)																						

PLAN DE CLOTURE NRBAR	2704	MOIS	MAI				JUN					JUL				AOUT				SEP				
ACTIVITE Vb FORM/COURTE TERME A L'ETRANGER	SEMAINE		04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	
Derniere journee d'execution du prog (sauf liees avec les rapport finals)	31mar																							
Derniere date pour approbation de l ISRA sur les propositions	30avr																							
Derniere date pour l envoi des propositions a l'USAID pour approbation	30avr																							
Rapport final (draft) du programme 1992 jusqu'au 31mar elabore Didi/30avr																								
Clôture des dossiers pour les etudiants qui ont termine en 1997	30avr																							
Derniere date pour l'envoi des PIO/Ps a l'USAID	30avr																							
Derniere date pour l'approbation des propositions par l'USAID	08mat																							
Traduction du rapport final (draft) termine et distribue	31mat																							
Mettre a jour les dossiers pour les etudiants du 1998	31mat																							
Derniere journee d'execution du prog	26jun																							
Derniere journee de traitement du programme	30jun																							
Rapport final distribue	15aout																							
Abdourhamane Tamba/Togo (fev)																								
Salou Faye a l'OSU (6fev- 25mar)																								
Malany Diatta/UK R20/SV18 halophytes 2-3 semaines (18mai-05jun)																								
Abdou Mbeye/Israel R20/SV18 halophytes 2-5 semaines -26jun																								
Aladjr Diack/TU R04/24/LIR01 stabulation 2 4 semaines -26jun																								
Papa N Dieye/TU R04/24/LIR01 stabulation 2-4 semaines -26jun																								
Aziz Diallo/TU R04/24 stabulation/ subventions agric/elev 2-4 semaines -26jun																								
Manivel Sene/France V13,V15,PAR3 6 agronomie 8 semaines -26jun																								
M Gueye/France R26 ecologie microbienne (08-19jun)																								
M Kebe/Purdue Etudes d'impact/R09 (18mai-12jun)																								
Cheikh Alassane Fall/Tuskegee LIR03 biotechnologie 2-6 semaines -26jun																								
Ambroise Diatta/Belgique R07/23 associations mais/legum 2-4 semaines -26jun																								
Astou Sene/Mali PAR3 3 economie/agroforestre/haies vives 3 semaines -26jun																								
M A Ba/TU LIR01/Par4-5 4-10 tech de la reprod Animale 2-5 semaines -26jun																								
Fat Dia Toure/U S R10/PAR3-5 stabul bovine/traction animal 3-5 sem -26jun																								

PLAN DE CLOTURE NRBAR	2404	MOIS	MAI	JUN	JUL	AOUT	SEP
ACTIVITE Vc FORM/COURTE TERME AU SENEGAL	SEMAINE	04	11	18	25	1	08
Derniere journee d execution du prog. Appui institutionnelle		31mar					
Derniere journee d execution du prog. (sauf liees avec les rapport finals)		31mar					
Derniere date pour approbation de l ISRA sur les propositions		24avr					
Derniere date pour l envoi des propositions a l USAID pour approbation		30avr					
l'approbation des propositions par l USAID		08mai					
Rapport final (draft) du programme 1992 jusqu'au 31mar elabore		Didi/30avr					
Cloûture des dossiers pour les etudiants qui ont termine en 1997		30avr					
Traduction du rapport final (draft) termine et distribue		31mai					
Mettre à jour les dossiers pour les etudiants du 1998		31mai					
Derniere journee d execution du prog. (sauf liees avec les rapport finals)		31mai					
Derniere journee d execution du programme		16jul					
Derniere journee de traitement du programme		30jul					
Derniere journee d execution du programme Vc/rapports finals		31août					
Derniere journee de traitement financiere du programme		11sep					
Activites ponctuelles d appui (Syntheses de recherche etc) -		31août					
Atelier de valid du manuel sur la production du riz au BMC/Tambac		12-17fev					
Atelier de presentation des resultats agric/eleavage		Kolda 17-207fev					
Atelier sur la synthese des etudes sur la matiere organique		Kolda 21-28fev					
Atelier de presentation des resultats sur le riz au BMC		Tambacounda 10-13mar					
Visite des paysans de Kolda sur Kaolack		(GRN PARA-12) 6-10mar					
Atelier de valid pour un Fonds de Recherche (SNRA/PSAOP)		7-8mar					
Atelier de validation des critera d evaluation du personnel		12-13mar					
Atelier sur fiche technique produits du compost		18-20mar					
Comite du DS revue admin/fin et technique des subventions		15-19jun					
Journee nationale de science/exposition national des technologies		NRBAR 30jun					
Atelier de presentation des resultats du programme		NRBAR 1991-98 06 09jul					

PLAN DE CLOTURE NRBAR	1604	MOIS	MAI				JUN					JUL					AOUT					SEP		
ACTIVITE Vd FORM /LONG TERME AU SENEGAL	SEMAINE		04	11	18	25	1	08	15	22	29	06	13	20	27	03	10	17	24	31	07	14	21	
Rapport final (draft) du programme 1992 jusqu'au 31mar élabore	Didi/30avr																							
Traduction du rapport final (draft) termine et distribue	31mai																							
Mettre a jour les dossiers pour les étudiants du 1998	31mai																							
Dernière journée de traitement financière du programme CID au Sénégal	31août																							
Periode de transition CID/autre contrator	01-30sep																							
Derniere journée d'exécution du programme Vd du CID au Sénégal	25sep																							
Lettre du CID aux étud pour confirmer la prolongation jusqu'au 30sep	31mai																							
IST																								
Aminata Ndoye science des sols, IST																								
Fatma Seck science des sols IST																								
Khady Sow science des sols IST																								
ENSA																								
Seynabou Toure, agriculture, ENSA																								
Yaye Ngouye, agriculture, ENSA																								
Fatmata Doucoure, agriculture, ENSA																								
Oumy Thiam, agriculture, ENSA																								
Ndeye Maty Bocoum, agriculture, ENSA																								
Soukeyna Awa Diaw, agriculture, ENSA																								
Diop Fall, agriculture, ENSA																								

ANNEXE 2 PROGRAMMES ET BUDGETS DES ACTIVITES 2

- A Elaboration du Plan Strategique harmonisation - finalisation et synthese (Papa Seck)
Elaboration du rapport final et publication du plan strategique
Elaboration du rapport final et publication du projet d'entreprise
Presentation des resultats
- B Programmation annuelle des activites de recherche determination des priorites (DS)
Pas de programme en 1998
Elaboration du rapport final
Presentation des resultats
- C Mise en place d'un systeme d'information pour le suivi-eval de la recherche (Mme Ba)
Elaboration du rapport final
Presentation des resultats
- D Restitution des resultats de la recherche aux chercheurs, clients et bailleurs (DS)
Elaboration et publication des rapports finals scientifiques des annees 1995, 1996, 1997
Elaboration et publication du rapport sur la production du riz
Elaboration et publication du Bilan du Plan Quinquenal
Presentation des resultats
- E Amelioration des connaissances techniques des chercheurs et techniciens (DS)
Le programme prendra fin le 31 mars, sauf pour les techniciens impliques dans les analyses
finals des subventions
Elaboration du rapport final
Presentation des resultats
- F Amelioration des connaissances techniques des agents financiers (AI/ACP)
Pas de programme majeur en 1998
Elaboration du rapport final
Presentation des resultats
- G Amelioration des connaissances techniques des agents administratifs (SG/CG)
Pas de programme en 1998
Elaboration du rapport final
Presentation des resultats
- H Etude sur le financement durable de la recherche (DG)
Presentation des resultats et atelier de restitution
Elaboration du rapport final
- I Amelioration des liaisons avec les autres institutions de recherche en GRN (DS)
Pas de programme majeur en 1998
Elaboration du rapport final
Presentation des resultats
- J Mise en place d'une base de donnees regionale (PAR3-7 Modou Sene)
Execution du programme elaboration du rapport final et clôtüre
Presentation des resultats
Clôtüre

- K Procédures administratives, financières et comptables (AI)
Pas de programme majeur en 1998, jusqu'au 31 mars
Elaboration du rapport final
Présentation des résultats
- L Amélioration de la gestion financière et comptable (AI)
Pas de programme majeur en 1998, jusqu'au 31 mars
Elaboration du rapport final
Présentation des résultats
- M Mise en place d'un système d'information géographique (PAR1-7 Mamadou Khouma)
Exécution du programme, élaboration du rapport final, et clôture
Présentation des résultats
Clôture
- N Mise en place du budget 1998, et contrôle et suivi du budget 1998 (CG)
Pas de programme majeur en 1998, jusqu'au 31 mars
Elaboration du rapport final
Présentation des résultats
- O Gestion des centres et stations (SG)
Elaboration du rapport final pendant le premier trimestre, avec consultant
Présentation des résultats
- P Mission de contrôle et d'assistance aux Unités (AI)
Pas de programme majeur en 1998, jusqu'au 31 mars
Elaboration du rapport final
Présentation des résultats
- Q Gestion des ressources humaines (SG)
Pas de programme majeur en 1998, jusqu'au 31 mars
Elaboration du rapport final
Présentation des résultats
- R Évaluation de personnel performance et carrière (DG)
Évaluation du programme actuel avec consultant
Elaboration des critères d'évaluation et réunion de restitution
Elaboration du rapport final
Présentation des résultats
- S Méthodologie d'analyse des sols (M S These Evelyne Ndiaye)
Complete coursework by June 1998
Collect final year of data for research – Summer 1998
Analyze results, write and defend thesis – Fall 1998
Return to Senegal with MSc by end December 1998
Budget need to increase PIO/P allowances line item \$6000 to cover costs to July 1998
(increase total from current \$91,318 to \$97451 – this includes travel costs to Senegal and thesis
preparation costs)
Budget to Sept 30, 1998 on current PIO/P if date amended Need an additional \$3,222 to cover
stipend, books, and insurance from July 17 to Sept 30
Budget to December 31, 1998 on current PIO/P if date also amended need an additional
\$7,343 to cover tuition and fees stipend, books, and insurance from Oct 1 to Dec 31

- T Methodologie d'analyse des sols (M S These Aissatou Ndiaye)
 Complete coursework by June 1998
 Collect final year of data for research – Summer 1998
 Analyze results, write and defend thesis – Fall 1998
 Return to Senegal with MSc by end December, 1998
 Budget no additional funding needed until current PIO/P ends July 16, 1998 (this PIO/P includes travel costs to Senegal and thesis preparation costs)
 Budget to Sept 30, 1998 on current PIO/P if date amended Need an additional \$2000 to cover stipend books, and insurance from July 17 to Sept 30
 Budget to December 31, 1998 on current PIO/P if date amended need an additional \$7250 to cover tuition and fees, stipend, books, and insurance from Oct 1 to Dec 31
- U Test Methodologique varietes de sorgho resistantes a la secheresse (Tanou Ba)
 Using data and methods from coursework in USA 1994-1997
 Clôture du dossier
- V Etude Methodologique sur la productivite de bois (M S These Massamba Thiam)
 Complete coursework by June 1998
 Complete data collection for research – Summer 1998
 Analyze results, write and defend thesis – Fall 1998
 Return to Senegal with MSc by end December, 1998
 Budget need to increase PIO/P allowances line item \$9055 to cover costs to July 1998 (increase total from current \$91318 to \$100373 – this includes travel costs to Senegal and thesis preparation costs)
 Budget to Sept 30, 1998 on current PIO/P if date amended Need an additional \$3222 to cover stipend books, and insurance from July 17 to Sept 30
 Budget to December 31, 1998 on current PIO/P if date also amended need an additional \$7231 to cover tuition and fees, stipend, books, and insurance from Oct 1 to Dec 31
- W Etude Methodologique sur la selection varietale de niebe (M S Projet Fana Sylla Ba)
 Complete coursework by June 1998
 Collect final year of data for research – Summer 1998
 Analyze results, write and take exam – Fall 1998
 Return to Senegal with MSc by end December, 1998
 Budget need to increase PIO/P allowances line item \$3018 to cover costs to July 1998 (increase total from current \$91318 to \$94336 – this includes travel costs to Senegal and thesis preparation costs)
 Budget to Sept 30 1998 on current PIO/P if date amended Need an additional \$3450 to cover stipend books and insurance from July 17 to Sept 30
 Budget to December 31 1998 on current PIO/P if date also amended need an additional \$7950 to cover tuition and fees stipend, books, and insurance from Oct 1 to Dec 31

ANNEXE 3 PROGRAMMES ET BUDGETS DES ACTIVITES 3

- A. Impact economique de la recherche et de la vulgarisation sur le developpement agricole (M Kebe)
execution du programme,
elaboration des rapports finals pour le riz, coton, et les cereals
presentation des resultats
- B R12 l'inventaire des technologies GRN utilisees en Basse Casamance (Cheikh Omar Ba)
Rapport final 1997
Elaboration des fiches techniques
Elaboration des rapports finals
Presentation des resultats
Clôture
- C R02 une etude d'impact des Unites experimentales de Kaolack SBA (Desire Sarr)
Presentation des resultats
Clôture
- D R15 evaluation des technologies de gestion des sols dans les rizeries en MBC (Cheikh Omar Ba)
Execution du programme
Elaboration des fiches techniques
Elaboration des rapports finals
Presentation des resultats
Clôture
- E Ph D These (Boubacar Barry) l'impact des pratiques alternatives de digues anti-sel en BMC
Returned to Senegal with Ph D in Oct 1997
Elaboration des rapports de synthese
Presentation des resultats
Clôture
- F Ph D These (Samba Sall) evaluation de l'adoption des varietes de riz ameliorees en BMC
Returned to Senegal with Ph D in June 1997
Elaboration des rapports de synthese
Presentation des resultats
Clôture
- G Ph D These (Alioune Fall) l'impact de la traction animale sur le riz, le mil et le mais en BMC
Returned to Senegal with Ph D Nov 1997
Elaboration des rapports de synthese
Presentation des resultats
Clôture
- (H les evaluations des pratiques prevalentes entreprises comme partie integrante de la mise au point et de la validation des technologies, sont decrites dans les Sections 4 et 5) (M Kebe)
Elaboration des rapports de synthese
Presentation des resultats

(I Les nouveaux projets de recherche qui etaient approuves pendant l'annee 1997 Recherche, Etudes de sites/Programmes Sabbatiques/Theses/ Liaisons Internationales) (M Kebe)

- **R16** - Inventaire de Technologies basees sur la gestion des ressources naturelles et utilisees en Moyenne Casamance (CHEIKH OUMAR BA)
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- **PAR3-3** Analyse de l'impact socio-economique des principales technologies agricoles (SBA- Astou SENE)
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- **PAR3-4** Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles -SBA (Desire SARR)
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- J Diagnostic participatif des systemes agro-sylvo-pastoraux dans le Programme PAR/GRN de l'URR Centre Nord Bassin Arachidier CNBA (PAR2-2, Dogo Seck)
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- K Diagnostic pluridisciplinaire des systemes de production dans le Programme PAR/GRN de l'URR Senegal Oriental Haute Casamance SOHC (PAR4-8, Demba Farba Mbaye)
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- L Diagnostic pluridisciplinaire du secteur agricole regional dans le Programme PAR/GRN de l'URR Sud Bassin Arachidier SBA (PAR3-6 Manieval Sene)
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

Approfondissement du Diagnostic partagé dans le Programme PAR/GRN de l'URR Basse et Moyenne Casamance BMC (PAR1-6, Mamadou Khouma)

Execution du programme
Elaboration des fiches techniques
Elaboration des rapports finals
Presentation des resultats
Clôture

M Etude sur l'auto-suffisance en cereales (M S These -- Alioune Dieng)
Defense of thesis, finalizing text, will return to Senegal May 1998 with MSc
Budget will not need any increase to current PIO/P
Elaboration des rapports des synthese
Presentation des resultats
Clôture

O Etude sur le climat lie avec la production halieutique (Bassirou Diaw)
Returned with Ms Degree December 1997
Elaboration du rapport final du M S
Presentation des resultats
Clôture

ANNEXE 4 PROGRAMMES ET BUDGETS DES ACTIVITES 4

- A R01 utilisation des ecailles de poisson comme engrais organique pour le mil et le sorgho dans CNBA (Mamadou Ndiaye)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- B R03 utilisation de Vetivera pour reduire l'erosion des sols dans BMC (Mankeur Fall)
Presentation des resultats
Clôture
- C R04 utilisation des etables fumieres pour augmenter la productivite agricole dans SOHC (Nouhine Diye)
Presentation des resultats
Clôture
- D R05 utilisation de la matiere organique et de l'engrais pour reduire l'allilopathie du sorgho dans SBA (Maneval Sene)
Elaboration du rapport final
Presentation des resultats
Clôture
- E R06 utilisation du phosphate naturel pour ameliorer les pâturages naturels dans la zone sylvo- pastorale (Amadou Diop)
Elaboration du rapport final
Presentation des resultats
Clôture
- F R07 utilisation des legumineuses fourrageres pour ameliorer les productions cerealières et animales dans SOHC (Ambroise Diatta)
Execution du programme
Elaboration du rapport final
Presentation des resultats
Clôture
- G R08 utilisation des arbres ligneux pour redresser le statut organique et la fertilité des sols dans BMC (Souleye Badiane)
Execution du programme
Elaboration du rapport final
Presentation des resultats
Clôture
- H R09 analyse socio-economique des technologies developpees (M Kebe)
Execution du programme
Elaboration du rapport final
Presentation des resultats
Clôture

- I R10 utilisation des etables fumieres pour augmenter la productivite agricole dans SBA (Fatimata Dia)
- Execution du programme
 - Elaboration du rapport final
 - Presentation des resultats
 - Clôture
- J R11 utilisation du neem pour la protection et la conservation des sols contre les nematodes pour la culture du mil et du maraîchage dans CNBA (Emile Coly)
- Execution du programme
 - Elaboration du rapport final
 - Presentation des resultats
 - Clôture
- K R13 utilisation du fumier de vache dans la culture mil/niébe dans CNBA (Mbaye Ndiaye)
- Elaboration du rapport final
 - Presentation des resultats
 - Clôture
- L R14 utilisation de matiere organique pour la croissance des arbres et des cultures dans les champs dans CNBA (Ibrahima Diate)
- Elaboration du rapport final
 - Presentation des resultats
 - Clôture
- M Ph D These utilisation d'un centre noyau pour la multiplication du betail dans la zone sylvo-pastorale et SOHC (Mamadou Diop)
- Returned to Senegal with Ph D in July 1997
 - Elaboration des rapports des synthese
 - Presentation des resultats
 - Clôture
- N MS These test des techniques alternatives de conservation du fourrage pour la gestion villageoise du betail dans SOHC (M Sissokho)
- Successfully defended thesis March 1998 and returned to Senegal, he is working with his advisor to finalize text and submit for final approval and award of MSc (by June 1998)
 - Budget will not need any increase in current PIO/P
 - Elaboration des rapports des synthese
 - Presentation des resultats
 - Clôture
- (O les nouveaux projets de recherche qui etaient approuves pendant l'annee 1997 Recherche (Chercheurs/Collaborative) Etudes de sites, Programmes sabbatiques liaisons internationales et Theses)
- R17 Mise au point de techniques accelerees de compostage Mamadou KHOUMA URR BMC
 - Execution du programme
 - Elaboration du rapport final
 - Presentation des resultats
 - Clôture

- R19** Gestion et conservation des ressources phylogénétiques et de la biodiversité - SBA - Ibrahima DIAITE - URR SBA
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture
- **R20** Etudes de techniques de recuperation des sols sales - Maleim DIATTA - URR SBA
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture
 - **R21** Influence des conditions hydriques et du travail du sol sur les effets ameliorateurs des amendements (organiques et inorganiques) - Modou SENE - URR SBA
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture
 - **R22** Amelioration du taurin Ndama par le schema genetique a Noyau Ouvert (SAGNO) Mamadou Alassane BA - URR SOHC /Kolda
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture
 - **R23** Determination de la periode de semis et de la densite de peuplement des legumineuses fourrageres annuelles en association avec le maïs in "NRBAR R07" Ambroise DIATTA - URR SOHC /Kolda
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture
 - **R25** Etude de l'adaptabilite des varietes de maïs dans le Sud Bassin Arachidier - Abdou NDIAYE - URR SBA
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture
 - **R26** Contribution des micro-organismes (rhizobiums et champignons cellulolytiques) a l'amelioration de la fertilité des sols - Mamadou GUEYE - URA-PV
 Execution du programme
 Elaboration du rapport final
 Presentation des resultats
 Clôture

R27 Etudes des methodes d'exploitation des ligneux en zone periurbaine influence sur la qualite du fourrage et la survie des peuplements - Safietou T FALL - URA-PA

Execution du programme
Elaboration du rapport final
Presentation des resultats
Clôture

- S22 Etude des possibilites de mise en valeur des bas-fonds du Sud Bassin Arachidier - Avec le Departement Geographie de l'Universite CAD, Abdou NDIAYE UCAD -Dept Geographie

Execution du programme
Elaboration du rapport final
Presentation des resultats
Clôture

- LIR-02 Etude sur la regeneration des sols degrades, Aminata Badiane

1 Follow-up on the various on site experimentations (January – June 98)

Survil des differents essais en milieu reel (Janvier – Juin 98)

2 Installation of new equipment in the Bambey Soil Laboratory (March 98)

Installation des nouveaux equipements au Laboratoire d'Analyses de Bambey (Mars 98)

3 Training of Bambey laboratory technician at Oregon State University – Soil and Plant Department (January – Mars 98)

Formation du Technicien de Laboratoire des Sols de Bambey a l' Universite d'Etat d'Oregon (Janvier – Mars 98)

4 Visite du Chercheur principal de OSU a Dakar et sur les sites du projet (Janvier, Mai 98)

Visit of OSU principal investigator to the project sites (January & May 98)

5 Realisation d'une cartographie de la distribution des peuplements de *Piliostigma reticulata* et de *Cordyla pinnata* et surtout des plants surviv (Mai 98)

Cartography of the distribution of selected plants (May 98)

6 Participation a l' Atelier final de presentation des resultats (Juillet 98)

Participation in the final result presentation workshop (July 98)

7 Elaboration du rapport final de la convention (Juin 98)

Elaboration of the final project grant report (June 98)

BUDGET CFA 26,296,970

P Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR CNBA

- PAR2- 6 Etude des effets de melange de phosphates naturels et de phosphogypse sur les sols et cultures (generation de technologies) Mankeur FALL

Execution du programme
Elaboration des fiches techniques
Elaboration des rapports finals
Presentation des resultats
Clôture

- PAR2- 7 Developpement de methodes alternatives de protection des recoltes vivrieres et des semences contre les insectes (generation, validation et transfert) Dogo SECK

Execution du programme
Elaboration des fiches techniques
Elaboration des rapports finals
Presentation des resultats
Clôture

185

- Q Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR SOHC
- **PAR4- 2** Synthèse des travaux sur les insectes ravageurs des cultures céréalières et de rente Djibril BADIANE
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

 - **PAR4- 3** Synthèse sur les recherches sylvicoles de la zone Alphousseyni BODIAN
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

 - **PAR4- 4** Synthèse des recherches sur les cultures fourragères au Senegal Oriental et en Casamance Ambroise DIATTA
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

 - **PAR4- 6** Synthèse des études sur la pathologie animale des ruminants de la zone Momar Talla SECK
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

 - **PAR4- 7** Synthèse des recherches en amélioration variétale de céréales Amadou FOFANA
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

 - **PAR4- 9** Prospection sur les insectes ravageurs des cultures céréalières et de rente Djibril BADIANE
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- **PAR4-11** Prospection et evaluation de varietes locales de cereales (mil, mais, sorgho et fonio)
Amadou FOFANA
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- **PAR4-13** Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du Taurin Ndama utilise en monoboef et en paire Momar Talla SECK
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- R. Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR SBA
- **PAR3-2** Etude des possibilites de mise en valeur des bas-fonds du Sud Bassin Arachidier - Abdou NDIAYE
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- W Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR MBC
- **PAR1- 2** Etude et mise au point de techniques de lutte appropriees contre les attaques de poisson sur le riz au niveau des vallees amenees Vaque NDIAYE
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- **PAR1- 4** Caracterisation de l'entomofaune parasite des manguiers et agrumes en Casamance Saliou DJIBA
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- **PAR1- 5** Amelioration des itineraires techniques de la patate douce Youga NIANG
 - Execution du programme
 - Elaboration des fiches techniques
 - Elaboration des rapports finals
 - Presentation des resultats
 - Clôture

- T Etudes sur la forêt naturelle (Ph D These – Ibrahima Thomas)
Will continue to work on research until current PIO/P expires July 1998 Will return to Senegal and work with advisor by email, and plans to return to US in Oct 1998 on new PIO/P to defend dissertation and complete degree by end December 1998
Budget is covered by current PIO/P until July 1998
Budget for return to US to defend dissertation estimated additional \$10,500 on new PIO/P
- U Etude sur la productivite du systeme coton/cereales (M S These Mour Gueye)
Scheduled to defend thesis May 1998, and will continue analysis of soil samples with major professor until PIO/P expires in July 1998
Budget will not need any increase in current PIO/P
Elaboration du rapport final du M S , et du synthese
Presentation des resultats
Clôture

ANNEXE 5 PROGRAMMES ET BUDGETS DES ACTIVITES 5

- A. S/V01 preparation et utilisation du compost enrichi au phosphate naturel sur le mil et le niébe dans CNBA (Madrigne Diagne)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- B S/V02 preparation et utilisation du compost sur des varietes de mil local et ameliorees dans CNBA (Aminata Badiane)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- C S/V02 utilisation de la haie vive/manioc sur la rotation mil/arachide dans CNBA (Aminata Badiane)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- D S/V02 utilisation de varietes ameliorees de mil dans CNBA (Aminata Badiane)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- E S/V03 haie vive comme brise vent pour le mil/legumes dans les sols sales dans SBA, avec la collaboration de groupements féminins (Malemi Diatta)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- F S/V04 etablissement et utilisation de varietes d'arbres dans les champs de paysans dans SBA (Babou Ndour)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- G S/V05 et V06 utilisation d'arbres comme brise-vent pour riz irrigue et maraîchage en saison seche au lac de Guers et a Nguer dans FLEUVE (Abdourahm Tamba)
Clôture
- H S/V07 etablissement et utilisation de varietes d'arbres dans les champs des paysans dans SBA (Malemi Diatta)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture
- I S/V08 utilisation de paquet integre de technologies agroforestieres dans SBA (Desire Sarr)
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture

- J S/V09 utilisation de strategie amelioree de gestion de terroir dans SBA (Modou Sene)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- K S/V10 utilisation de varietes ameliorees de riz en conjonction avec les digues anti-sels dans SOHC (Samba Thiaw)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- L S/V11 gestion integree de GRN, par les groupements feminins dans CNBA (Aminata Badiane)
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- M S/V12 utilisation des ecailles de poissons comme engrais organique sur le mil/sorgho dans CNBA (Mamadou Ndiaye)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- N S/V13 preparation et utilisation du compost enrichi au phosphate naturel sur le mil et le mebe dans SBA (Manievel Sene)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- O S/V13 utilisation du fumier de vache pour la fertilisation du sol (Manievel Sene)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- P S/V14 preparation et utilisation du compost pour mil/sorgho a Sedhiou dans BMC (Souleymane Diallo)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- Q S/V14 introduction de varietes ameliorees de mil et sorgho dans BMC (Souleymane Diallo)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture

- R S/V14 utilisation d'itineraires techniques ameliorees pour contrôler les infections de striga a Sedhiou dans BMC (Souleymane Diallo)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- S S/V15 utilisation de la diversification des cultures dans SBA (Manievel Sene)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- T S/V16 utilisation des structures de contrôle ameliorees de l'erosion dans le Bassin versant de Niore dans SBA (Modou Sene)
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
- U Production de fiches techniques a travers un processus de validation des technologies ameliore par l'Unite information Scientifique et Technique IST (Samba Aw)
 (pas de programme 1998)
- (V projets collaboratifs approuves en 1997/Visites de sites/ Theses/ Liaisons Internationales)
- V17/S17/S25 Transfert de varietes de riz dans les vallees salees du Pakao et du Kassa - Amadou BEYE
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
 - S18 Restauration agronomique des sols - SBA- Maleim DIATTA
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
 - PAR3/S19 Consolidation des acquis dans le cadre du projet ISRA/ARAF S/V08 (1994/1997)
 Valorisation et GRN dans la region de Fatick - Desire Y SARR
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture
 - PAR2/S20 Collaboration entre AHDIS et CNBA dans le Programme GRN (PAR2-3, PAR2-4 et PAR2-5) Desire Sarr
 Execution du programme
 Elaboration des rapports de synthese/articles/fiches techniques
 Presentation des resultats
 Clôture

- PAR2 S21 Collaboration entre RODALE et CNBA dans le Programme GRN (PAR2-3 a PAR2-7)
Desire Sarr
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- V23 Introduction de la culture fourragere de legumineuses annuelles en milieu paysan en vue de l'ameloration des productions cerealières et animales en Haute Casamance au Senegal Ambroise DIATTA
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- V24/S24 Effets des bois rameaux fragmentes et du compost de litiere de filao sur l'ameloration de la fertilite des sols et des rendements agricoles dans les cuvettes maraichères des Niayes Abdourahmane TAMBA
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- R18 Formation et Assistance Technique aux groupements de producteurs de semences des regions de Ziguinchor, centre Nord Bassin Arachidier et SOHC Arthur DA SYLVA
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- R24 Valorisation du potentiel pastoral pour le developpement de systemes cerealières performants et viables en zone subhumide du Senegal – Nuhine DIEYE
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- LIR-03 Etude de validation des varietes ameliores des legumes, C Alassane Fall
 - 1 Follow-up on the various on-farm and in-station crop trials (January - May 98)
Suivi des cultures des differents essais en milieu reel et en station (Janvier – Mai 98)
 - 2 Soil and plant chemical analysis and lab analysis of yield factors (April – May 98)
Analyses chimiques sol-plante et analyses de laboratoire des facteurs du rendement (Avril – Mai 98)
 - 3 Training of ISRA researcher (A Fall) at the Center for Plant Biotechnology Research of Tuskegee University and in the Department of rural Sociology (May – June 98)
Voyage d'Erudes au Center for Plat Biotechnology Research de Tuskegee University et au Departement de Sociologie rurale de T U (mai – Juin 98)
 - 4 Statistical analysis of agronomic and chemical data (June – July 98)
Exploitation statistique des donnees agronomiques et chimiques (Juin – Juillet 98)
 - 5 Participation in the Final NRBAR workshop (July 98)
Participation a l' Atelier finale de presentation des resultats (Juillet 98)

6 Final Report of LIR-03 project (June 98)
Elaboration du Rapport final de la convention (Jun 98)
BUDGET CFA 20,992,000

- LIR-01 Etude de validation des technologies agriculture/elevage, Abdou Fall
 - 1 Suivi de la Stabulation (Janvier-Juin 98)
Follow-up on the stabulation experiment
 - 2 Dressage collectif des femelles en attelage de paire et en « mono » (Mars 98)
Group training of female team of couple and « mono » draught animals (March 98)
 - 3 Formation des producteurs (jeunes, femmes) participant au programme (Mars 98)
Training of project female milking animals (March 98)
 - 4 Mise en place des etables fumieres (Fevrier 98)
Set-up of stables (February 98)
 - 5 Finalisation de l'analyse des donnees (Mai-Juin 98)
Completion of data analysis (May-June 98)
 - 6 Synthese et Rapport final (Jun 98)
Synthesis and Final project grant report (June 98)
 - 7 Participation a l'Atelier final de presentation des resultats (Juillet 98)
Participation in the Final Result presentation workshop (July 98)BUDGET CFA 28,579,867

- W Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR
CNBA
 - PAR2- 3 diagnostique sur les modes de transferts et evaluation socio-economique des technologies sur la GRN - Mbene D FAYE
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

 - PAR2- 4 Diffusion de technologies en milieu paysan le compostage enrichi - Aminata BADIANE
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

 - PAR2- 5 Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives defensives (validation et transfert) - Babou NDOUR
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- X Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR
SOHC
 - PAR4- 5 Exploitation et valorisation des donnees du CRZ sur la reproduction du taurn Ndama Mamadou A. BA
 - Execution du programme
 - Elaboration des rapports de synthese/articles/fiches techniques
 - Presentation des resultats
 - Clôture

- PAR4-10 Etude et amelioration des systemes de production et de la gestion des ressources naturelles
Suivi des elevages bovins villageois Mamadou A. BA
Execution du programme
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture

- PAR4-12 Test de techniques de lutte contre l'erosion hydrique par l'utilisation des haies vives
Alphousseyni BODIAN
Execution du programme
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture

Y Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR
SBA

- PAR3- 5 Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovations performantes Fatimata DIA
Execution du programme
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture

Z Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR
MBC

- PAR1- 3 Installation de collections d'arbres fruitiers et tests de varietes d'agrumes, de manguiers et de bananiers en milieu paysan Demba SIDIBE
Execution du programme
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture

PAR1- 8 en place d'une collection d'ecotypes locaux de cereales et de varietes ameliorees de riz
Transfert en milieu paysan de materiel adapte Amadou BEYE
Execution du programme
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture

AZ Ateliers de presentation des resultats des projets de recherche (Aminata Badiane)
(voir Annexe 1)

BZ Analyses socio-economiques des technologies developpees (M Kebe)
(voir Annexe 3A)

CZ Methodologie de recherche en milieu paysan (M S These – Mamadou Lo)
Returned with MS in May 1997
Elaboration des rapports de synthese/articles/fiches techniques
Presentation des resultats
Clôture



INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES
NATURAL RESOURCES-BASED AGRICULTURAL RESEARCH PROJECT
(NRBAR)

SIXTH BIENNIAL REPORT
FOR THE PERIOD 01 JANUARY TO 31 DECEMBER, 1995

in collaboration with
The United States Agency for International Development (USAID)
USAID Project Number 685-0285
and
The Consortium for International Development (CID)
USAID Contract Number 685-0285-C-00-2329-00

195

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Institut Senegalais de
Recherche Agricole



Consortium for
International Development



Howard
University

A COOPERATIVE PROJECT OF:



Tennessee State
University



Oregon State
University



Development Alternatives,
Inc.

SUMMARY

This report summarises progress during the period from 1 January to 31 December, 1995, according to the four major programs and the seven project resource components of the project

RESEARCH PLANNING The work of the research planning team has focused on the ex ante and ex post evaluation of technologies, evaluation of impact, external evaluations, strategic planning, a system for the administration and management of research stations, inventory management, ISRA conventions management, planning for a national system of agricultural research, the ISRA 1996 program and budget, monitoring and evaluation systems, and a researcher management information system. A socio-economic evaluation of the Kolda stabling technology was completed with a research report drafted and proposals for fiches techniques, an analysis of ISRA's strengths and weaknesses was completed and reviewed, the ISRA/Donor Mid-Term Review and the ISRA/NRBAR Mid-Term Evaluation were completed with the results being incorporated into the first draft ISRA Action Plan and the ISRA/NRBAR workplan, ISRA began strategic planning discussions with clients via the national and eight regional strategic planning committees, the basis for ISRA's new strategy was laid with the development of an ISRA "stratégie et Plan d'Actions 1995-96" in collaboration with staff and partenaires, the 1996 program and budget was drafted on the basis of autonomous management units, with achievable objectives set according to resources available and research priorities, an Action Plan for the development of research stations was developed, ex-ante INFORM 1995 data collection was completed, an ISRA monitoring and evaluation plan was revised, and eight researchers trained in the relevant tools, and the impact methodology report was finalised

NATURAL RESOURCES MANAGEMENT PROGRAMS The focus of the Natural Resources Program for 1995 has been on finalizing and approval of the Natural Resources Management Research Strategy, the initiation of some of the Strategy's activities, the review of present and assisting with the planning of future ISRA NRM Research activities so as to identify technologies that may be targeted for validation and recommendation, and providing program support to improve the quality of research and its analysis. Achievements included the finalisation and initial implementation by ISRA of its Natural Resources Management Strategy, with the strategy now operating as a DRCSP-wide policy, twenty-five researchers were trained in participatory research approaches, and the associated diagnostic work resulted in the funding of two collaborative research projects, policies and protocols for the 1995 ISRA Grants for Research in Senegal program have been developed, and have been put into operation, with nine research grants awarded, and numerous training and monitoring activities were completed in specific technical areas, related to cereals production and to the validation of more than twenty technologies which are currently the subject of NRBAR grants

OUTREACH The outreach program has focused on the following areas development of outreach packages for specific technologies, implementation of the collaborative research grants program, preparation of an inventory of NGOs with capabilities in natural resources management, the development of communications capacity in UNIVAL, and monitoring and evaluation of research grants Achievements included contracts were signed between ISRA and the CNCR, as well as CRDI, for improved dissemination and adaption of research results, seven priority activities were identified for implementation of the draft communications strategy by ISRA, two outreach packages were developed with Rodale, on composting and the use of fish scales for soil improvement, an Outreach Cellule de Reflexion was established and began establishing an institution-wide outreach focus at ISRA, UNIVAL signed an agreement with national and international extension organisations, policies and protocols for the 1995 collaborative research program have been developed, and have been put into operation, with seven new ISRA/partenaire collaborative research grants awarded, and an initial inventory of NGOs with capabilities in natural resources management was taken

FINANCIAL MANAGEMENT The focus of this program has been on ISRA strategic planning for ISRA's financial management, coordinating financial management activities, management of sources of funds, proposals for on-station financial system development, implementation and monitoring of Phase II of the Ernst and Young contract, and financial systems controls Achievements included the ISRA Strategic Plan for Financial Management, which included a logical framework and the 1995 Workplan, was completed and used as a basis for decision-making by ISRA, a program for the institutionalization of in-service training was finalized, ISRA requested and received an acceptable offer for the development of a station level financial management information system which would permit the exchange of information with the centralized accounting system, ISRA announced the adoption of fund accounting concepts in its strategic plan and sought to modify the proposed accounting system to assure fund transparency to the donors, and ISRA began discussions about the development of a system to manage multi-year grants, using the donor currency units, which could be linked to the accounting system

Under project resource component I , **RESEARCH PROGRAM SUPPORT**, during the period, updated grants policies and protocols were developed, and ISRA has awarded seven new Collaborative Research Grants and nine new grants for Research in Senegal, ISRA/NRBAR is now managing fifteen collaborative research grants and fifteen grants for research in Senegal

Under resources II **SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM** and III **LINKAGES TO INTERNATIONAL RESEARCH INSTITUTIONS** these funds are expected to be released directly to ISRA by USAID in 1996 following ISRA's financial certification

Under **IV PERSONNEL** resources, in addition to the fact that all long-term ISRA and CID personnel have been recruited and assigned, twenty-seven short-term consultants (TDYs) have been employed during 1995 and these have played the following crucial roles in the design of agroforestry trials, in the external evaluation of ISRA's management and research programs, in NRBAR project evaluation and management, in improving ISRA's ability to communicate with partenaires on new technologies, in research station management, in training of researchers in adaptive research methods, in gender analysis of research projects, in strategic planning, in developing cereals technologies, in establishing ISRA's monitoring and evaluation capacity, in establishing regional research priorities, in the establishment of a national agricultural research system (SNRA), in inventory management, in a synthesis of organic matter research in Senegal, in developing a collaborative research project on water management technologies in the Niuro Watershed, and in human resources planning

Under resource **Va LONG-TERM HIGHER DEGREE TRAINING**, ISRA'S life-of-project training plan for NRBAR long-term participant trainees is currently being implemented with the targetted number (5) of Ph D partipants, and 8 of the targetted 10 M S participants, already on training in the U S The remaining 2 M S positions will go to women below thirty years of age Participants' progress has been good, and it is anticipated that all participants will be able to complete their studies in the period allocated The annual Participant Training Seminar was held at Tucson on "Tools for Research Management" in December with the participation of the ISRA/DG In addition, under resource **Vb SHORT-TERM TRAINING OUTSIDE OF SENEGAL**, there were 12 events in which 12 ISRA personnel participated, and, under resource **Vc SHORT-TERM TRAINING IN SENEGAL**, there were 16 events in which more than 100 ISRA staff and partenaires participated Under **Vd LONG-TERM B S TRAINING FOR WOMEN IN SENEGAL**, ISRA/CID has successfully negotiated with two Senegalese educational institutions (Ecole Nationale Supérieure d'Agriculture (ENSA) and the Institut des Sciences de la Terre (IST) for the implementation of women's B S programs, a total of ten candidates were selected by these institutions and are successfully implementing their programs

Under resources **VI ISRA DIRECT SUPPORT** and **VII USAID DIRECT SUPPORT**, ISRA and USAID continue to provide the necessary personnel and physical facilities to successfully implement the project

The project support program is being implemented as planned, including meetings schedules and reporting exercises, with highest priority being placed on those activities which directly complement institutionalisation of the four programmatic thrusts of the project

Estimated project expenditures to 31 December, 1995, of \$6,602,483, equivalent to 42% of the \$15,673,714 contract budget, are at approximately the expected level. However, levels of expenditures during the period were 32% lower than those predicted in the workplan, primarily due to (a) the delayed implementation of the second half of the long-term training program in order to ensure that existing research programs are not disrupted by candidates' departures, (b) the inability of the project to finance large collaborative research grants in view of uncertainties regarding the project's termination date, (c) a period of reassessment of project activities, at ISRA under the new ISRA/DG and at USAID under the changes in USAID program management from a project to a "Results Package" orientation, and (d) ISRA's decision to delay the implementation of the station-level financial management program.

The main difficulty of implementing the program was limited staff time due to the demands of other technical and administrative duties, and the logistic difficulties of achieving extensive consultations prior to ISRA making fundamental structural and policy changes. As the strategic planning process gains momentum in ISRA, it is expected that priorities will become established such that practicable high-priority tasks are assigned and are expected to be completed. Delays in institutional reorganization, and in defining and establishing a financial management system, have significantly impeded progress. Two candidates remain to be selected for long-term higher degree training in the U.S.

Although these constraints have delayed implementation of some aspects of the program, the present rate of progress towards project objectives is consistent with achieving the goals of the project within the life of the project, and most major tasks of the 1995 Workplan are being successfully implemented.

TABLE OF CONTENTS

SUMMARY	(iv)
TABLE OF CONTENTS	(viii)
LIST OF ACRONYMS	(ix)
1 INTRODUCTION	
1 1 Background, Objectives and Anticipated Outputs	1
1 2 Project Resource Components	3
1 3 Project Programs	5
1 4 Overview	8
2 RESEARCH PLANNING	
2 1 Objectives and Planned Work Activities	9
2 2 Work Undertaken During the Period	9
2 3 Conclusions and Recommendations	14
3 NATURAL RESOURCES PROGRAMS	
3 1 Objectives and Planned Work Activities	16
3 2 Work Undertaken During the Period	16
3 3 Conclusions and Recommendations	22
4 OUTREACH	
4 1 Objectives and Planned Work Activities	24
4 2 Work Undertaken During the Period	26
4 3 Conclusions and Recommendations	33
5 FINANCIAL MANAGEMENT	
5 1 Objectives and Planned Work Activities	35
5 2 Work Undertaken During the Period	36
5 3 Conclusions and Recommendations	43
6 PROJECT SUPPORT ACTIVITIES	46
7 PROJECT RESOURCE COMPONENTS	52
Ia Collaborative Research Grants Program	53
Ib Grants to ISRA Researchers	61
II Support for ISRA's Natural Resources Program	69
III Linkages to International Research Institutions	69
IV Personnel	70
V Training	73
VI ISRA Direct Support	83
VII USAID Direct Support	83
8 FINANCIAL STATUS	84
ANNEX 1 SUMMARY OF ISRA/NRBAR SUPPORTED TECHNOLOGIES	

LIST OF ACRONYMS

ACP	Agence Comptable Particulière
AFID	Africaine D'Ingenierie pour le Développement
AT	Assistance technique
BAME	Bureau d'Analyses Macro-economiques
CDH	Centre pour le Developpement Horticole
CF	Conseiller Financier
CFA	Communauté Financiere Africaine
CG	Contrôle de Gestion
CGO	Comité de Gestion des Octrois
CID	Consortium for International Development
CIRA	Centre International de Recherches Agricoles
CNRA	Centre National de Recherches Agronomiques
CNRF	Centre National de Recherches Forestieres
COP	Chief of Party
CRODT	Centre de Recherches Océanographiques de Dakar-Thiaroye
CRSP	Collaborative Research Support Program
CST	Comité Scientifique et Technique
CV	Conseiller à la Vulgarisation
DAI	Development Alternatives Incorporated
DG	Direction Générale
DRCSI	Direction de Recherches sur les Cultures et Systèmes Irrigués
DRCSP	Direction des Recherches sur les Cultures et Systèmes Pluviaux
DRPF	Direction des Recherches sur les Productions Forestières
DRPH	Direction de Recherches sur les Produits Halieutiques
DRPV	Direction de Recherches sur les Productions Végétales
DRSAEA	Direction de Recherches sur les Systemes Agraires et l'Economie Agricole
DRSPA	Direction des Recherches sur la Santé et les Productions Animales
DS	Directeur Scientifique de l'ISRA, (ISRA Scientific Director)
EDP	Electronic Data Processing
EEP	Examen de l'Exécution du Programme
ENSA	Ecole Nationale Supérieure d'Agriculture
FA	Financial Advisor
GIS	Geographical Information System
GRN(SP)	Gestion des Ressources Naturelles (et Systèmes de Production)
GRNSPZS	Gestion des Ressources Naturelles et des Systemes de Production en Zone Sèche
GWC	Grants Working Committee
IARC	International Agricultural Research Centre
ICRAF	International Center for Research in Agroforestry
ICRISAT	International Center for Research in the Semi-Arid Tropics
IDA	International Development Agency
IITA	Institut International de Technologies Alimentaires
ILCA	International Livestock Center for Africa
INFORM	Information for Agricultural Research Management
INTSORMIL	International Sorghum and Millet Program

ISNAR	International Service for National Agricultural Research
ISRA	Institut Sénégalais de Recherches Agricoles (Senegal Agricultural Research Institute)
IST	Institut des Sciences de la Terre
KIT	Royal Tropical Institute, The Netherlands
LNERV	Laboratoire National d'Élevage et de Recherches Vétérinaires
M/E	Monitoring and Evaluation
MIS	Management Information Systems
NARS	National Agricultural Research System
NGO	Non-governmental Organisation (Organisation non-gouvernementale)
NRBAR	Natural Resources-Based Agricultural Research Project
NRI	Natural Resources Institute, The United Kingdom
NRM	Natural Resources Management
NRP	Natural Resources Planner
OA	Outreach Advisor
ONG	Organisation non-gouvernementale (Non-governmental Organisation)
OP	Organisation Paysanne (farmer organisation)
ORSTOM	Office de la Recherche Scientifique et Technique Outre-Mer
OSDIL	Organisation Sénégalaise pour le Développement des Initiatives Localisées
OSU	Oregon State University
PAPEM	Points d'Appui pour Essais Multilocaux
PIR	Project Implementation Review
PNVA	Programme National de Vulgarisation, (National Extension Service Proj)
PR	Planificateur de Recherche
PRN	Planificateur des Ressources Naturelles
PSAOP	Programme Services Agricoles et Organisations de Producteurs
PT	Participant Trainee
PVO	Private Voluntary Organisation
RP	Research Planner
SARH	Service de l'Administration et des Ressources Humaines
SARII	Senegal Agricultural Research II
SAS	Statistical Package for Social Sciences
SG	Sécretariat Général
S/E	Suivi et Evaluation
SIG	Système de Gestion Géographique Informatisée
SNRA	Système National de Recherches Agricoles
SOW	Scope of Work
SYSPAI	Computer-Based Payroll Management System
TA	Technical Assistant
TDY	Consultant de courte durée, (Short-term Consultant)
TOR	Terms of Reference
UNIVAL	Unité d'Information et de Valorisation
UPF	Unité de Programmation et Formation
URA	Unité de Recherche d'Appui
URR	Unité Régionale de Recherche
USAID	United States Agency for International Development
WARDA	West African Rice Development Association

1 INTRODUCTION

1 1 BACKGROUND, OBJECTIVES AND ANTICIPATED OUTPUTS

In order to continue the development of the Institut Sénégalais de Recherches Agricoles (ISRA) as an effective research institution, ISRA and the United States Agency for International Development (USAID) have designed the Natural Resources-Based Agricultural Research Project (NRBAR). The project is detailed in the Project Paper dated 23 July, 1991, and was initiated by the NRBAR Grant Agreement between the Government of Senegal and the United States of America dated 31 July, 1991. The project is scheduled to be completed on 31 July, 1998. A five-years contract for NRBAR services (USAID Contract number 685-0285-C-00-2329-00) was awarded to the Consortium for International Development (CID) by USAID in July, 1992.

The principal problems addressed by the project are Senegal's need for low-cost natural resources-based agricultural technologies in order to increase the productivity of agricultural systems, and the need for ISRA to have a strong institutional capacity to undertake natural resources-based research. The project is designed to focus particularly on improving resource management practices which enhance the productivity and sustainability of cereals-based cropping systems in areas of Senegal having greater than 400mm annual rainfall.

The anticipated outcomes of the project are (i) the generation and validation of improved natural resource technologies in the short-term through grants and other direct assistance to on-going research, and (ii) the generation and validation of improved natural resource technologies in the medium/long-term through training and institutional strengthening.

OBJECTIVES

There are four overriding project objectives, expressed in terms of ISRA's development during the project period:

- (1) an improved natural resources-based research program in place,
- (2) natural resources-based technologies validated and available for adoption,
- (3) a strong farmer-participatory research system in place for designing, testing and validating research, and
- (4) improvements in research and financial management.

ANTICIPATED OUTPUTS DURING THE LIFE OF THE PROJECT

1 Effective, adaptive research program focusing upon cropping systems and resource management in areas of (i) soil and water management, (ii) forestry and agroforestry, (iii) improved cultural practices for millet, sorghum, rice and corn, and (iv) applied economics for production, marketing and policy issues relating to cereals cropping systems, such that

1a at least 15 technology systems will be validated for on-farm use during the life of the project

2 Improved research planning, and improved research, financial and manpower management, such that

2a research programs have clearly-defined objectives achievable in the medium term,

2b systems are in place for periodically evaluating and revising research priorities and programs,

2c financial management systems are in place providing satisfactory accountability and control, and producing useful information to senior management,

2d a merit-based personnel evaluation and promotion system is in place, and

2e the size and composition of ISRA staff are aligned with research priorities and available resources

3 Improved research-extension linkages, including feedback from farmers to ISRA on research results and from ISRA to farmers on appropriate and sustainable technologies, such that

3a ISRA collaborates with at least 15 private voluntary organizations (PVOs), farmer organizations and input suppliers to evaluate technology (including the use of signed protocols), and

3b ISRA has developed methods for enhancing the roles of farmers' organizations, PVOs and private input suppliers to transfer improved technology to farmers

4 Strengthened linkages with key domestic and international research institutions on natural resource management, cropping systems and adapted technologies, such that

4a protocols with network collaborators clearly support ISRA's research priorities, and define roles, responsibilities and resources

5 Up-graded technical and administrative staff skills

1 2 PROJECT RESOURCE COMPONENTS

In order to achieve the above objectives, the project has seven major resource components, which can be summarised as follows

I RESEARCH PROGRAM SUPPORT a grants program to support effective ISRA/farmer collaboration and interdisciplinary research proposals from ISRA scientists, consisting of

la COLLABORATIVE RESEARCH GRANTS PROGRAM funds available under the CID contract total \$1,612,500 ISRA provides a research grants coordinator for this program, and both ISRA (researchers) and CID (Technical Assistance) provide expertise In addition, ISRA has established a Grants Committee, and CID is providing financial management services for the initial years of this program

lb GRANTS TO ISRA RESEARCHERS ISRA administers these grants through existing committees and CID provides financial management services for the initial years of the project Funds to be provided directly by USAID, during the later years of the project, will be released after ISRA's financial system has been certified There are three types of grants

lb 1 GRANTS FOR RESEARCH IN SENEGAL funds available under the CID contract total \$225,500, and USAID will directly provide an additional \$450,000

lb 2 SITE STUDIES funds available under the CID contract total \$101,250, and USAID will directly provide an additional \$45,000

lb 3 SABBATICALS funds available under the CID contract total \$53,500, and USAID will directly provide an additional \$320,000

II SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM a grants program to support ISRA's core funding Funds available directly from USAID total \$1,000,000 ISRA will administer these funds through existing committees, following ISRA's financial certification

III LINKAGES TO REGIONAL AND INTERNATIONAL RESEARCH INSTITUTIONS a grants program to develop and strengthen ISRA's links with international institutions Funds available directly from USAID total \$500,000 ISRA will administer these funds through existing committees, following ISRA's financial certification

IV PERSONNEL the NRBAR Project Director is the Director General of ISRA, Jacques Faye, with the NRBAR Deputy Director designated as the ISRA Scientific Director, Jean-Pierre Ndiaye Project personnel consist of ISRA permanent staff, with the following responsibilities Jean-Pierre Ndiaye for NRBAR Grants Management, Jacques

Faye and Jean-Pierre Ndiaye for management and research planning, Aminata Badiane for natural resources programs, Adama Faye for outreach, and Pierre Diène and Mamadou Nguer for financial management. Additional personnel consist of four long-term external Technical Assistance staff and a project administrator, an assistant grants administrator, CID and USAID support staff, and numerous short-term external staff. External staff are provided by the CID contract, as follows:

IVa LONG-TERM TECHNICAL ASSISTANCE

IVa 1 RESEARCH PLANNER Tom Cusack is responsible to the ISRA Scientific Director, and works primarily through the Direction Scientifique. Tom Cusack also serves as Chief of Party for execution of the CID contract.

IVa 2 NATURAL RESOURCES PLANNER Paul Anamosa is responsible to the ISRA Scientific Director, and works primarily through the Direction Scientifique.

IVa 3 OUTREACH ADVISOR Wendy Wilson is responsible to Adama Faye, the Director of the outreach unit, and works primarily within the Direction Scientifique.

IVa 4 FINANCIAL ADVISOR David Holmes is responsible to the Agent Comptable Particulier and works primarily through the Secretariat Général, the Contrôle de Gestion and the Agence Comptable Particuliere.

IVa 5 PROJECT ADMINISTRATOR Didi Leguede is responsible to the CID Chief of Party, and undertakes necessary logistical, administrative and technical support to project personnel. The project administrator is assisted by the Assistant Administrator, Mme Faty Ba.

IVa 6 GRANTS ASSISTANT MANAGER Massamba Dieng is responsible to the ISRA Grants Manager and to the CID Chief of Party, and undertakes necessary logistical, administrative and technical support to ISRA's management of NRBAR and other research grants.

IVb SHORT-TERM TECHNICAL ASSISTANCE 99 person-months during the period 1992-97

V PARTICIPANT TRAINING a grants program to support all project objectives. This program is funded under the CID contract, and is administered by ISRA and CID. CID will continue to provide financial management services during the life of the CID contract.

Va LONG-TERM TRAINING funding of \$1,575,000 for approximately five Doctorate and 10 Masters Degrees.

Vb SHORT-TERM TRAINING AND CONFERENCES funding of \$700,000 for approximately 35 programs outside of Senegal

Vc SHORT-TERM TRAINING IN SENEGAL funding of \$192,677 for approximately 50 programs

Vd LONG-TERM B S TRAINING FOR WOMEN funding of \$410,000 for 10 participants

VI DIRECT SUPPORT BY ISRA ISRA will continue to provide resources valued at more than \$3,500,000 during 1991 - 1998 in order to support all facets of the project The salaries of collaborating ISRA staff (including the Project Director and the Deputy Director), the provision of office space, and access to appropriate ISRA facilities and equipment currently represent most of these resources

VII ADDITIONAL MATERIAL SUPPORT BY USAID USAID assigns in-house personnel to assist with project implementation, especially a NRBAR Project Officer and an Assistant Project Officer USAID has also funded a technology inventory study, is presently funding a financial study, and will fund project audits USAID directly provides office furniture, household furniture and major appliances for Technical Assistants, two computers with associated equipment for ISRA staff and Technical Assistants, five project vehicles, and other logistic support when necessary CID provides under its contract with USAID other logistic support, office equipment, eleven computers, additional vehicles, and support for offices in the U S and in Senegal, including 24 person-months of a CID NRBAR Coordinator and 45 person-months of clerical support at Oregon State University Support is also being provided by Howard University, Tennessee State University, and Development Alternatives Incorporated, who are partners under the CID contract

1 3 PROJECT PROGRAMS

In order to use these seven categories of resources to achieve project objectives, the project is organized into four programs research planning and management, natural resources programs, outreach, and financial management Activities planned under each of these programs were detailed in the Annual Workplan Activities can be summarised as follows

RESEARCH PLANNING

The aim of this facet of the project is to strengthen ISRA's planning and management systems by

- (a) redefining the five-year plan,
- (b) establishing a program which matches priorities with human, physical and financial resource realities,
- (c) planning and implementing institutional reorganisation,
- (d) improving the research planning process with regard to the way decisions are made, budgeted for, and implemented,
- (e) improving manpower planning,
- (f) planning and coordination of ISRA-wide research and linkage activities at Departmental, station, on-farm and international levels,
- (g) reviewing priorities,
- (h) reviewing research methodology,
- (i) dissemination of results,
- (j) organising periodic peer and program reviews, and
- (k) undertaking other tasks consistent with project objectives

NATURAL RESOURCES MANAGEMENT PROGRAMS

The aim of this facet of the project is to strengthen ISRA's natural resources-based agricultural research activities by

- (a) planning, conducting and evaluating natural resources-based agricultural research,
- (b) developing a coherent strategy and program for natural resources-based agricultural research which fits into ISRA's long-term development strategy and plan,
- (c) developing inter-disciplinary, farmer-oriented and farmer-participatory approaches to research planning, execution and evaluation,
- (d) reviewing existing natural resources technologies available in Senegal and elsewhere, and
- (e) establishing a program to address priority natural resources management needs

OUTREACH

The aim of this facet of the project is to strengthen ISRA's links with its clients by

- (a) developing a system of protocols and grants with NGOs, farmers organisations, and extension agencies, such that farmers participate in research needs assessment, research priority setting, execution and validation,
- (b) organising its outreach program,
- (c) establishing adequate outreach procedures,
- (d) establishing monitoring systems, and
- (e) ensuring effective field testing and adoption of technologies

FINANCIAL MANAGEMENT

The aim of this facet of the project is to strengthen ISRA's financial management system by

- (a) developing adequate financial systems at ISRA,
- (b) increasing the effectiveness of the computerised accounting system,
- (c) strengthening indirect cost accounting processes,
- (d) generating timely financial analyses in forms appropriate to decision-makers at all levels, and
- (e) developing a system for tracking all donor and Government of Senegal contributions

PROJECT SUPPORT ACTIVITIES

The activities summarised above are supported by management, administration, and monitoring and evaluation activities, as well as by the provision of financial services. Leadership and overall project support is provided by the Project Director, the Deputy Project Director and the Grants Administrator, as part of their ISRA duties. In addition, CID NRBAR staff participate in project support activities, with effort being concentrated at the Chief-of-Party and Project Administrator levels.

1 4 OVERVIEW

This sixth Biannual Report of the NRBAR project covers progress achieved during the period 1 January to 31 December, 1995, corresponding to the period of implementation of the 1995 workplan. Biannual Reports, which summarise progress recorded in the NRBAR Monthly reports, Quarterly Reports, and other project reports, have been scheduled to be produced twice each year. The format of this report follows as closely as possible the format of the 1995 workplan, in order to ensure adequate cross-referencing.

Sections 2 to 5 of this report detail progress to date under the four major thrusts of the project: research planning and management, natural resources management programs, outreach, and financial management. Each of these Sections consists of a separate report from the responsible ISRA/NRBAR team members. Section 6 details project support activities, including orientation, administration, management, monitoring and evaluation, and financial services. Section 7 summarises progress under each resource component of the project, while Section 8 provides a summary of the budget and levels of expenditures to date.

The technical assistants have formed teams and work collaboratively with counterpart scientists and administrators in the relevant sections of ISRA. The emphasis is on strengthening ISRA as an institution, as well as providing direct assistance to technology development in the short-term for those areas targeted by the project. Multidisciplinary and farmer-participatory approaches to research are being emphasised.

This report has been produced as an integrated effort by ISRA, USAID and CID, activities have taken account of the results of the recent ISRA projet d'entreprise, plan d'actions 1996, and 1996 programmation/budgetisation exercises, and also have taken account of the recommendations of the ISRA/NRBAR Mid-Term Evaluation and of the ISRA Mid-Term Review/Action Plan.

2 RESEARCH PLANNING

2.1 OBJECTIVES AND PLANNED WORK ACTIVITIES

The aim of this facet of the project is to strengthen ISRA's planning and management systems. Scheduled research planning activities, summarised as (a) to (k) below, and described in detail on pages 9 to 17 of the 1995 Workplan, are particularly oriented to achieving Project Objective (4) and Anticipated Project Outputs 2a to 2e, in order to ensure the generation and validation of NRM technologies by ISRA. Activities described here have been implemented by the ISRA/NRBAR research planning team, led by the ISRA Scientific Director and consisting of the SG, ACP, CG, BAME, UNIVAL, UPF and the CID NRBAR Research Planner. Activities are in accordance with the NRBAR Project Accord and were developed in collaboration with the ISRA DG (who is also the NRBAR Project Director) and other ISRA colleagues, and with the World Bank Second Research Project.

2.2 WORK UNDERTAKEN DURING THE PERIOD

During 1995, the research planning team has emphasised the planning of a program of research management in the following areas: ex ante and ex post evaluation of technologies, evaluation of impact, external evaluations, strategic planning, a system for the administration and management of research stations, inventory management, ISRA conventions management, planning for a national system of agricultural research, the ISRA 1996 program and budget, monitoring and evaluation systems, and the INFORM management data system.

The following major activities have been undertaken by the research planning team during 1995:

(a) strategic planning,

The terms of reference and schedule for the ISRA Strategic Plan were completed in January, and reviewed by participants at the Mid-Term Review. Paul Perrault from ISNAR assisted with defining the process and procedures to be used. In April, the initial meeting of the National Strategic Planning Committee was held, with the Minister of Agriculture presiding and all of ISRA's main partenaires participating, and the eight regional committees/workshops were constituted and began their meetings. The format and contents of the strategic plan were detailed following a visit by M. Kébé and Tom Cusack of BAME to ISRA in May. An analysis of ISRA's strengths, weaknesses, opportunities and threats (SWOT analysis) was also completed with the assistance of the TDY Dr. Thiongane, and the results incorporated into the drafting of the strategic plan. Following the arrival of Jacques Faye as the new DG, a more rigorous approach to strategic planning was adopted with specialist working groups created for each major area of ISRA's work and with an additional emphasis on the creation of a Systeme National de Recherche Agricole (SNRA) through ISRA's leadership. An important aspect of this rigor was an open review of the diagnosis of ISRA's problems and a re-evaluation of the SWOT study. In consequence, a

"Stratégie et Plan d'Actions 1995-96" was developed through a core group of 20 ISRA senior researchers and administrators (the "groupe Prospective et Synthèse" (GPS)), with the following elements "un plan d'urgence October-December 1995", "un plan d'actions January-December 1996", "un projet d'entreprise October-December 1995", "un plan stratégique October 1995 - March 1996", and "une réflexion sur la culture d'entreprise January-December 1996" The "Stratégie et Plan d'Actions 1995-96" was discussed with ISRA staff and partenaires, revised as a result of these meetings, and the final draft was communicated to all ISRA staff and partenaires through the ISRA Newsletter and meetings with personnel By the Fourth Quarter, ISRA was working to a specific monitorable plan with each unit being held responsible for achieving results Also, ISRA agreed with its partenaires on the outline of a SNRA that would include the previously-excluded post-harvest technologies aspects

Projections of ISRA's human, financial and physical resources have not yet been detailed as part of the strategic plan The working groups produced initial outlines of their results, and are presently redrafting their reports

(b) establishing a program which matches priorities with human, physical and financial resource realities,

A initial strategic priorities study was drafted by the DS and BAME During the ISRA visit to ISNAR in May, methodology was developed for the prioritisation of natural resources activities and of research activities at regional level Ali Kissi of the Morocco national agricultural research system was employed as a TDY in July to assist with this work, as a result, the eight regional committees continued to develop their research priorities

The calendar, basic format and contents, and tables were developed for each ISRA unit to write its 1996 program and budget The first draft 1996 program and budget was completed, with effective meetings to ensure coordination between units and an equal understanding of the process by all units As a result, the mission of each unit has been defined, achievable objectives for each unit have been specifically detailed while taking account of the resources available and research priorities, and a research management monitoring tool - including a basis for the evaluation of researchers' activities - has been provided A simplified budget schedule was also developed for use at both research unit and research activity levels

(c) planning and implementing institutional reorganisation,

The new DG has successfully reorganised the management operations of the Institute into 17 units, each having specific programs with the unit heads being held fully accountable

Proposals for financial reorganisation were developed in January with the assistance of the NRBAR TDY Hilarion Bruneau, following a financial management workshop which brought together ISRA financial managers, USAID and E&Y staff This was reviewed by the Mid-Term Review This activity is discussed in detail later in this document in Section 5, Financial Management The ACP was assigned responsibility

for developing the NRBAR financial management program. Based on these results, the new ISRA CG and Internal Auditor began their work, with the confirmation that financial management at research stations must be urgently strengthened. Proposals were informally requested, and promising submissions made, from financial management firms for such on-station systems. By the end of the year, ISRA had completed a formal bidding process, and had received at least two excellent bids out of 24 expressions of interest, for the development of a station-level financial management system.

Proposals for administrative reorganisation were developed with the assistance of the NRBAR TDY, Hannibal Muhtar, and were reviewed at the mid-term review during the First Quarter, an Action Plan for the development of research stations was subsequently developed. A workshop on the station needs for financial management was held before the mid-term review, as described in the previous paragraph and in Section 5 of this report. Drafts of an organigram relating station management to other ISRA functions, and of specific TORs of station personnel and their tasks, were completed. International research station management visits and workshops have been postponed until 1996. In particular, a future visit will be made to the agricultural research system in Mali, where a similar reorganisation has just been initiated.

The ISRA 1996 infrastructure plan was completed as part of the draft strategic plan and the workplan for stations. A technical paper on the feasibility of consolidating ISRA sites in Cap Verte, and terms of reference for station managers and the overall ISRA infrastructure coordinator, were completed. A detailed "plan d'aménagement" for Bambey was completed and reviewed with ISRA managers.

An inventory of infrastructure and equipment at all ISRA sites has been developed through the E&Y contract, and this work was continued through a TDY, to ensure the inventory is validated, a management system is in place, and the data base is accessible to station and central managers. The technical survey of all inventoried materials will be completed with the assistance of a TDY during 1996. The results will be used as a basis for resource allocation decisions as a basis for the purchase of new equipment, sale of old equipment, and for rehabilitation of priority facilities. An ISRA inventory was established, transferred to micro-computers, and then reformatted and revised to allow it to be used by station managers through EXCEL. This work will continue through two more scheduled visits of an infrastructure consultant in 1996.

For Bambey, priority station equipment has been identified and ordered through international tender. However, the Bambey storage and maintenance areas have not yet been rehabilitated, and a maintenance and service plan for all stations is not expected to be in place until next year, along with a procedures manual for station operations written and operationalised. In connection with these activities, a training visit to the U S /Canada/Europe for up to four key station personnel is planned along with a further visit to Senegal by the TDY, Hannibal Muhtar.

During the second Quarter, station rehabilitation operations and budgets schedules for the 1995 season were finalised. During the fourth Quarter, following third Quarter decisions on which ISRA sites to develop and what level of resources should be

devoted to each, stations operations schedules and budgets were prepared for 1996 for all retained sites. The research budgets clearly distinguish between direct and indirect costs. These activities were supported by a TDY, and training of the station managers.

The ISRA procedures manual continues to be developed, but substantial progress is not expected until 1996, as a result of delays in key human and physical resources decisions, which are themselves delayed as there is a lack of adequate management information on which to base these decisions.

The improvement of key administrative and financial tasks continued with the assistance of the Ernst and Young contract (see Section 5).

(d) improving the research planning process with regard to the way decisions are made, budgeted for, and implemented,

The implementation of the INFORM research management data system continued with the completion of ex-ante 1995 data collection in the first 4 months, and the transmission of the data by diskette to ISNAR for further processing. These Phase 3 activities will be completed in the next Quarter. The TOR for the evaluation of Phase 3 with the assistance of a TDY, a revised proposal for the Phase 4 program for the institutionalisation of INFORM in ISRA, and a proposal for a training visit to ISNAR by 2 ISRA staff in August in order to develop the tools for using INFORM as a means of compiling the ISRA 1996 Annual Workplan, were completed. INFORM data for 1996 will be collected and analysed during the first part of 1996 in order to provide a secure basis for the 1996 programming exercise and for compiling the 1996 ISRA Workplan using the tools developed at ISNAR.

In the Fourth Quarter, the ISRA program and budget was completed in time for the CST. The potential for the output of INFORM to be used in monitoring and evaluation, financial management, annual planning and reporting documents, and in personnel evaluation, were assessed during the ISRA May visit to ISNAR, but it is unlikely that proposals will be finalised before the final Quarters of 1996.

During the first Quarter, a report on, and draft action plan for, developing ISRA-wide monitoring and evaluation capability was developed by ISRA with the assistance of a TDY, and was presented to the mid-term review, this was finalised during the Second Quarter, with the assistance of a TDY, as an ISRA M/E strategy, including reporting formats and procedures, to be included as part of the ISRA strategic plan. Eight ISRA researchers were trained, with the assistance of a TDY in June, in tools of M/E, and developed logframes for their research projects. A guide to developing logframes, and examples of logframes showing the logical linkages between Institute-level, Convention level and research project level objectives, were developed. An evaluation of the current operations of the ISRA/NRBAR monitoring and evaluation system was completed in June.

The ISRA research impact study continued with the completion of the methodology report, using cotton as an example, in the second Quarter. The final draft of the rice study was completed during the third Quarter, after having incorporated the review.

comments received on the 1994 draft report, this was assisted by a TDY and by a visit to Purdue University by ISRA staff

In addition, three senior research/administrative personnel participated in domestic and foreign courses on the development of non-technical management functions. Moussa Bakayokho participated in an international communications symposium in the U S in June, Pierre Dieng participated in a financial management seminar in Morocco in February, and the Internal Auditor participated in the International Auditors conference supported by USAID/RIG in May. Eight training exercises were conducted as part of the development of the strategic plan, and three related to participatory and collaborative research methods. Also, nine technical visits of senior ISRA staff to collaborate with staff of foreign research institutions were made (see Section Vb), and eight technical visitors came to ISRA from foreign research institutions on specific technical subjects or on combinations of technical and management subjects.

(e) improving human resources planning,

Further implementation of the NRBAR long-term training plan was postponed pending redrafting of training priorities at ISRA. This process was completed under the new ISRA DG, a revised NRBAR training plan was developed, and implementation began.

The ISRA personnel evaluation system, designed in 1992, was reviewed during the May visit to ISNAR, and a draft simplified system was proposed based on a modification of the INFORM form and personal action plans. The format developed as part of the ISRA 1996 program and budget exercise included a basic evaluation tool proposed as a development of the INFORM program.

(f) planning and coordination of ISRA-wide research and linkage activities at Departmental, station, on-farm and international levels,

The team participated in the ISRA mid-term review and the NRBAR mid-term evaluation. The major linkages thrusts are described in Section 4 of this report.

(g) reviewing priorities,

The research planning team members participated in various ISRA and unit level planning meetings, designed to provide a secure planning base for the 1996 program.

(h) reviewing research methodology,

The team continued to assist with reviews of the technology inventory reports, with the research impact methodology, and with the Ernst and Young financial study reports.

(i) dissemination of results,

Major activities have centered on the linkages events of activity (f) and on the research impact studies (under activity (d)). Major dissemination activities are discussed under Section 4 of this report.

(j) organising periodic peer and program reviews

Reviews of research in agroforestry and cereal selections were made with the assistance of the TDYs David Hibbs and David Andrews. The team participated in planning functions on ISRA grants committees for NRBAR resource components. In addition, a strategic planning and review meeting was held by BAME.

The ISRA Mid-Term Review, a comprehensive review of ISRA's development and possible future strategy, was undertaken in the first Quarter of 1995 (between ISRA, the World Bank, USAID and other donors). Fourteen mid-term review commissions completed, and made recommendations from their work, this information was widely circulated and discussed, and fourteen Action Plans were subsequently developed. This process was assisted by fifteen external collaborators, including Hilarion Bruneau, Hannibal Muhtar, Suchet Louis and Howard Elliot as NRBAR TDYs.

The ISRA/NRBAR Mid-Term Evaluation was completed at the same time as the Mid-Term Review. An Evaluation report in French was drafted, discussed with ISRA/NRBAR staff, and finalised in the Second Quarter. Some of the recommendations of the evaluation were already being implemented by the end of the Second Quarter, while the others were in the process of implementation by the end of the year.

(k) undertaking other tasks consistent with meeting project objectives in an efficient manner

A program was developed for BAME agro-economists to continue their work on the economic analyses of NRBAR grants technologies for the existing grants projects. Abdoulaye Fall and Monica Fisher completed field operations for a socio-economic analysis of the stabling technology in Kolda, the English research report was completed, and Abdoulaye Fall will complete the French report, incorporating additional data.

2.3 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The above activities and thrusts of the research planning program are in accordance with the NRBAR 1995 Workplan, and have involved in many cases the cooperation of the NRBAR natural resources, outreach, and financial and administrative teams, as well as USAID, World Bank, ISNAR and private consultant personnel. Priority workplan activities were implemented, although it is still not clear how the station level financial and administrative functions will be developed. The team is successfully developing a strong foundation for implementing a more focused research planning program.

The main difficulties of implementing the program was limited staff time due to the demands of administrative duties, uncertainties regarding the development of on-station management capacity, and uncertainties regarding expected changes in ISRA management. Crucial management decisions remain to be taken on financial management, assignment of responsibility for key tasks, and on improving ISRA's human, financial and physical resources data. Although these constraints have

delayed implementation of some aspects of the program, the present rate of progress towards project objectives is consistent with achieving the goals of the project within the life of the project

The pace of progress has accelerated during the last six months of the year, following the arrival of the new DG who immediately initiated improved management procedures

In addition to continuing the existing thrusts of the 1995 workplan in validating natural resources management technologies, research station management, ISRA's reorganisation, and developments in ISRA's financial management, the program for 1996 will concentrate on refocussing ISRA's overall strategy, based on improving the data available for management decision-making



INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES

**RECHERCHE APPLIQUEE EN AGRICULTURE ET SUR
LA GESTION DES RESSOURCES NATURELLES
(PROGRAMME ISRA/USAID PR1/NRBAR)**

RAPPORT TRIMESTRIEL: JANVIER - MARS 1998

QUARTERLY REPORT: JANUARY – MARCH 1998

En collaboration avec
l'Agence des Etats-Unis pour le Développement International (USAID)
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RAPPORT TRIMESTRIEL ISRA/USAID RP1/NRBAR JANVIER - MARS, 1998

Le present Rapport trimestriel fait brievement le point de la situation pendant la periode de janvier - mars 1998, il consiste en un resume, en versions française et anglaise, suivi par un tableau recapitulatif des resultats enregistres conformement aux indicateurs S02 et, ensuite, par trois rapports mensuels distincts couvrant chacun des mois du Trimestre

Les resultats revelent que les activites RP1/NRBAR se focalisent de plus en plus sur la documentation, l'evaluation et la communication des conclusions de la recherche en etroite collaboration entre l'ISRA et ses collaborateurs

Les activites du Trimestre ont ete axeés sur la poursuite de la mise en oeuvre de plus de cinquante contrats avec l'ISRA ainsi qu'avec les partenaires l'organisation du seminaire de restitution des resultats de Kolda sur les technologies liees a l'agriculture/elevage l'organisation du seminaire de restitution des resultats de l'atelier de Tambacounda sur les techniques rizicoles, les revisions du plan de travail du NRBAR et du programme de cloture du projet, la compilation des documents 1992-1998 relatifs aux annexes du rapport final du NRBAR le remplacement des avances de l'USAID a l'ISRA par des avances du DS, en se basant sur les frais generaux de l'ISRA non depenses et retournes dans le cadre des subventions du NRBAR, la mise en oeuvre de treize programmes de consultance a court terme destines essentiellement a aider l'ISRA a elaborer son rapport final, la mise en oeuvre de deux programmes de formation a court terme a l'etranger, la mise en oeuvre de treize programmes de formation a court terme au Senegal impliquant plus de 200 chercheurs/cadres de l'ISRA ainsi que de nombreux partenaires la mise en oeuvre aux Etats-Unis, de programmes de formation a long terme de niveau doctorat pour 8 chercheurs de l'ISRA, la mise en oeuvre, au Senegal de programmes de formation a long terme de niveau licence pour 10 etudiantes en Agriculture et Ressources naturelles, et, enfin, la mise en oeuvre d'activites administratives tels que les rapports d'activites et l'achat des fournitures

Parmi les Realisations faites pendant le Trimestre, on note les suivantes

- Charles Yamoah a finalise son evaluation technique des resultats des subventions NRBAR Le nombre de subventions evaluees s'eleve a 84 Les technologies ont ete dans les grandes lignes classees ainsi qu'il suit gestion du sol (fumier, compost, engrais, conservation des sols), production cerealiere (varietes ameliorees et meilleures techniques culturales) agroforesterie (brise-vent, haies vives, culture en couloirs, lutte contre l'erosion), et elevage Les resultats montrent que, a la fin mars 1998 84 technologies ameliorees avaient ete evaluees, 42 techniques avaient fait l'objet d'une validation technique, 29 technologies avaient fait l'objet d'une validation socio-economique 26 technologies avaient ete mises au point, 3 nouvelles technologies devaient être validees 43 technologies doivent être mieux elaborees plus de 100 rapports techniques avaient ete rediges et soumis aux partenaires ou examines avec ces derniers, 2 000 paysans avaient ete formes a l'utilisation des technologies ameliorees, 6 bulletins de vulgarisation avaient ete rediges et distribues conjointement avec les partenaires, et 6 cassettes video avaient ete produites avec l'assistance des partenaires
- Une analyse des resultats de la formation en champ de 30 subventions NRBAR par le Consultant Lamine Bocoum a revele que 7 801 producteurs avaient ete formes aux technologies ameliorees 67 techniciens formes pour les ONG 129 leaders ruraux avaient ete formes et 12 sites d'echanges de groupements paysans avaient ete visites
- Le seminaire sur l'agriculture/elevage, organise en fevrier, par le NRBAR, s'est tenu a Kolda avec la participation de plus de 50 chercheurs et partenaires Les resultats de 17 projets ont ete presentes Des evaluations conjointes des resultats ont ete effectuees avec les agriculteurs sur deux sites sur le terrain L'ISRA est actuellement en train d'elaborer le rapport qui doit constituer un document de validation essentiel
- Le seminaire NRBAR sur la technologie du riz s'est tenu, en mars, a Tambacounda avec la participation de plus de 50 chercheurs et partenaires Les resultats de 16 projets ont ete presentes et des evaluations conjointes des resultats ont ete effectuees avec les agriculteurs sur deux sites sur le terrain L'ISRA est actuellement en train d'elaborer le rapport final qui doit constituer un document de validation essentiel
- Le projet de Manuel sur les technologies relatives aux semences de riz a ete valide, conjointement par l'ISRA et le personnel du partenaire a l'occasion du seminaire de Velingara
- Le rapport final de la these de Boubacar Barry concernant les analyses de la relation entre la gestion recente de l'hydrologie et de la ligne de partage des eaux et l'utilisation des terres en Casamance a ete distribue Les resultats sont utiles aux recommandations relatives a la vulgarisation en vue de l'etablissement des calendriers

de culture et aux nouvelles varietes de riz ou d'autres cereales necessaires a une meilleure exploitation des conditions de plus en plus arides. Les resultats montrent l'effet des digues anti-sel et peuvent être utilisées en vue d'une planification plus efficace des nouvelles digues ainsi que d'une exploitation plus productive des digues existantes. Les resultats peuvent aussi permettre aux decideurs regionaux de definir les politiques et lignes directrices concernant les ressources naturelles.

- La these de doctorat de Mamadou Diop a ete distribuee sous sa forme definitive « Conception et Analyse des Systemes de Selection a Noyau ouvert pour le Betail au Senegal ». Cette recherche evalue les techniques de selection a noyau ouvert et ferme en cours d'elaboration et de validation a Kolda et Dahra et permettant d'ameliorer la productivite du betail dans les systemes cerealiers. Les resultats revelent que (a) le programme de promotion proprement dit pourrait être amelioré grâce a des changements specifiques des procedures de selection tels que l'explication des effets maternels, la prise en compte de l'important facteur que constitue, en matiere d'environnement, le mois de naissance et le recours a des procedures modeles mixtes, (b) un systeme de selection en noyau ouvert de 250 vaches, avec recensement des animaux de reproduction en station, est tres efficace aux plans aussi bien technique qu'economique et (c) la selection en station ne doit être a noyau ouvert que dans les premieres annees afin de conserver les avantages genetiques des animaux de reproduction en station.

- Deux rapports scientifiques elabores par Samba Fall, a l'issue de ses recherches de doctorat sur le NRBAR, ont ete diffuses. Il ressort de ces rapports que il est important de tenir compte, des le debut du processus d'elaboration des technologies, des vues des agriculteurs concernant les nouvelles technologies susceptibles d'être mises au point, de maniere similaire a celles preconisees et mises en oeuvre par le projet NRBAR, la vulgarisation est plus efficace lorsqu'elle se concentre sur les agriculteurs qui n'ont pas encore adopte les varietes ameliorées de riz, plutôt que sur des efforts visant a rendre l'adoption plus systematique au niveau de ceux ayant deja adopte la technologie en question. Les varietes ameliorées de riz devraient être uniquement vulgarisees dans les environnements productifs et socio-economiques (domaines vises par les recommandations) les plus utiles, plutôt que par le biais de recommandations de portee generale, les activites des equipes multidisciplinaires doivent être intensifiees par l'identification des domaines de recommandation vraiment appropries, en cooperation avec les agriculteurs, et par la prise en compte des points de vue des agriculteurs des le debut du processus de mise au point des technologies.

- La these de doctorat de Alioune Fall (Activite 3G des programmes de travail 1997 et 1998) a ete diffusee sous sa forme finale. Elle evalue la technologie de traction animale a l'aide de vaches de la race Ndama, en Casamance. Les resultats montrent que le degre d'utilisation est faible etant donne que presque tous les efforts se concentrent sur la preparation des sols, plutôt que sur la prise en compte, au minimum, des principales operations de desherbage, en raison de l'insuffisance des moyens, l'intensification de la recherche s'impose en ce qui concerne le reglement du probleme que constitue le deficit alimentaire des animaux de trait pendant la periode de pointe des operations de preparation des terres, la mise a l'essai d'un systeme d'attelage amelioré et une meilleure conception des outils, les agriculteurs doivent beneficier d'un renforcement de l'assistance technique par le biais d'une intensification et d'une amelioration des activites de formation, en particulier afin d'ameliorer les faibles competences dont ils disposent en matiere d'utilisation de cette technologie.

- La these de doctorat de Arona Ndiaye Samba « Influence de *Cordyla pinnata* sur la fertilite d'un sol ferrugineux tropical et sur le mil et l'arachide dans un systeme agroforestier traditionnel au Senegal », de septembre 1997, a ete diffusee et elle revele que le systeme traditionnel garantit une meilleure fertilite des sols sous-jacents au couvert. Il convient cependant de recourir a des methodes d'elagage specifiques afin de veiller a ce que cet effet fertilisateur entraîne de meilleurs rendements du mil et de l'arachide.

- La these de doctorat de Mamadou Ndiaye « Contribution des legumineuses arbustives a l'alimentation azotee du maïs » a ete diffusee au sein de l'ISRA. Il en ressort que les systemes de culture en couloirs/Bradyrhizobium sont prometteurs dans le Bassin arachidier et requierent rarement des intrants au prix eleve. La poursuite des validations en champ est recommandee.

- Le rapport final du Consultant Cheikh Sarr sur le fonds/fondation de la recherche precise dans ses conclusions qu'un fonds de la recherche constituerait un moyen viable pour ameliorer la durabilite du financement de la recherche ainsi que pour promouvoir les activites de recherche collaborative les mieux adaptees aux besoins des agriculteurs (comme dans le cas des subventions NRBAR). Toutefois, l'amelioration de la gestion financiere et administrative est necessaire.

- Une etude de la strategie d'evaluation du personnel de l'ISRA a ete finalisee par une equipe conjointe ISRA/ISNAR. Elle est arrivee aux conclusions suivantes : (a) la direction de l'ISRA doit s'engager en faveur de l'adoption d'un systeme d'evaluation interne et reguliere du personnel (ex : un systeme de notation annuelle).

visant à améliorer la productivité par une motivation des agents. En particulier, les dirigeants de l'ISRA doivent assumer leurs responsabilités dans l'évaluation de leurs collaborateurs, (b) l'INFORM a été testé avec succès et adapté à l'ISRA, mais il a été peu utilisé du fait de l'absence d'un ferme engagement des dirigeants de l'ISRA concernant l'obligation de rendre compte ou la transparence. Quoique d'importants éléments soient utilisés dans le cadre du système de programmation/budgetisation existant et qu'il en constitue la base, l'INFORM ne peut remplacer le système d'évaluation du personnel, (c) l'évaluation initiale de 1993 a été mise en œuvre de manière satisfaisante, n'a pas fait l'objet d'une exploitation formelle et ne doit pas être reprise - du moins tant que l'évaluation de la R&D n'aura pas été adoptée définitivement et que les ressources nécessaires au reclassement n'auront pas été garanties, (d) l'évaluation du personnel de soutien doit être mise en œuvre par les supérieurs hiérarchiques directs des personnels concernés, en tant que processus interne constant et, (e) les évaluations annuelles des performances doivent être basées sur les rapports d'activités et être surtout internes.

- Un guide pratique relatif à l'impact économique de la recherche agricole a été élaboré et diffusé par l'Université de Purdue, il est basé sur les exemples tirés des travaux de Sidibe/Sanders sur cet impact et utilise lesdits exemples.
- Finalisation de la compilation des documents relatifs à la période 1992-1997, par année pour toutes les activités de formation à court terme ainsi que pour les activités de formation à long terme aux États-Unis.
- Le premier projet de bibliographie du NRBAR a été finalisé.
- Le projet détaillé relatif à la clôture du NRBAR et au programme de travail de l'année 1998 de l'ISRA/CID a été réécrit et renégocié avec succès avec l'USAID.
- L'inventaire du NRBAR a été finalisé et transmis à l'USAID en vue de l'élaboration d'un PIL de transfert du matériel du NRBAR à l'ISRA et aux partenaires.
- Les rapports finals des projets de recherche continuent de nous parvenir et les dossiers de clôture ont été compilés pour ce qui concerne 19 subventions.

Aucune difficulté majeure n'a été rencontrée au cours du présent trimestre. Cependant

- Le départ de l'ISRA de plusieurs agents clés de l'ISRA/NRBAR pendant le premier trimestre de l'année rend encore plus difficile la mise en œuvre de l'ambitieux programme pour l'année 1998. En tout état de cause, il semble que le personnel de l'ISRA n'aura pas le temps de rédiger, puis de soumettre aux partenaires avant la date prévue pour la compilation du programme, soit à la mi-1998, l'important volume de données concernant la recherche, la vulgarisation et la formation générées par le biais du NRBAR.
- Du fait de l'absence de perspectives de financement pour l'après-1998 concernant les activités soutenues par le NRBAR, la majeure partie de l'impact potentiel des activités de projet sur la population rurale à court et à long terme ne pourra vraisemblablement pas se matérialiser.
- Cinq activités principales faisant l'objet de rapport et d'évaluation des résultats ainsi que de nombreuses autres activités ont été annulées en raison de l'indécision persistante sur la date de clôture du projet NRBAR et du contenu du programme au cours des derniers mois du projet.

Le programme du prochain trimestre va probablement se focaliser sur la clôture du projet, en particulier sur les rapports rendant compte des résultats du NRBAR, sur la compilation des documents du projet pour la période 1992/98 et sur la mise en œuvre et le suivi des programmes existants.

ISRA/USAID RP1/NRBAR QUARTERLY REPORT. JANUARY - MARCH, 1998

This Quarterly report summarises progress during the period January - March, 1998, and consists of a summary in French and English, followed by a summary table of results achieved according to the SO2 indicators, and then followed by three separate Monthly reports covering each of the three months of the Quarter

The results show that RP1/NRBAR activities are increasingly concentrated on the documentation, evaluation and communication of research findings, in effective collaboration between ISRA and its collaborators

Activities during the Quarter focused on continued implementation of more than fifty contracts with ISRA and with partenaires, implementation of the Kolda presentation of results workshop on agriculture/livestock-linked technologies, implementation of the Tambacounda presentation of results workshop on rice technologies, revisions of the NRBAR workplan and closure plan, compilation of 1992-1998 documents for the annexes of the NRBAR final report, replacement of USAID advances to ISRA with DS advances, based on ISRA's unspent returned overhead on expenditures under the NRBAR grants, implementation of thirteen short-term consultancy programs, primarily to assist ISRA with final reporting, implementation of two foreign short-term training activities, implementation of thirteen short-term training programs in Senegal involving more than 200 researchers/professional staff of ISRA, and numerous partenaires, implementation of the long-term Higher Degree training programs of 8 ISRA researchers in the U S , implementation of long-term B S level training for 10 women students in Agriculture and Natural Resources, in Senegal, and administrative activities such as progress reporting and commodity procurement

Achievements during the Quarter included

- Charles Yamoah completed his **technical review of the NRBAR grants results**. A total of 84 subventions were reviewed. Technologies were classified broadly as Soil management (animal manure, compost, fertilizer, soil conservation), Crop production (improved varieties and cultural practices), Agroforestry (wind breaks, live fencing, alley cropping, erosion control), and Livestock production. The results showed that, to end-March, 1998 84 improved technologies were being evaluated, 42 technologies were technically validated, 29 technologies were socio-economically validated, 26 technologies were developed, 3 developed technologies need further validation, 43 technologies need further development, more than 100 technical reports were written and presented to/discussed with partenaires, more than 2000 farmers were trained in the use of improved technologies, 6 extension bulletins were written and distributed conjointly with partenaires, and 6 video cassettes were produced with the assistance of partenaires
- an analysis of the **on-farm training results** of 30 of the NRBAR grants by the consultant Lamine Bocoum showed that 7,801 producers had been trained in improved technologies, 67 NGO technicians trained, 129 farmer leaders trained, and 12 farmer group exchange site visits implemented
- the **February NRBAR agriculture/elevage workshop** was held at Kolda with the participation of more than 50 researchers and partenaires. Results were presented for 17 projects. Joint evaluation of results with farmers was implemented at two field sites. ISRA is presently drafting the report, which will be an important validation document
- the **March NRBAR rice technology workshop** was held at Tambacounda, with the participation of more than 50 researchers and partenaires. Results were presented for 16 projects, and joint evaluation of results with farmers was implemented at two field sites. ISRA is presently drafting the final report which will be an important validation document
- the draft **manual on rice seed technologies** was validated, conjointly between ISRA and partenaire staff at the Velingara workshop

- the final **thesis** report of **Boubacar Barry**, on the analyses of the relationship between recent hydrology and watershed management, and land use, in the Casamance, was circulated, the results are useful for making extension recommendations for crop scheduling, and for new varieties of rice and other crops which are needed to better utilise the drier growing conditions. The results demonstrate the effects of anti-salt dikes, and can be used in the more effective planning of new dikes as well as in the more productive use of existing dikes. The results can also help regional decision-makers in establishing natural resources policies and guidelines.
- the **Ph D thesis** of **Mamadou Diop** was circulated in final form "Design and Analysis of Open Nucleus Breeding Systems for Cattle in Senegal". This research evaluates the open and closed nucleus technology methods of improving livestock productivity in cereals systems, which are presently being developed and validated at Kolda and Dahra. The results show that (a) the improvement program itself could be improved through specific changes in selection procedures such as accounting for maternal effects, incorporating the important environmental factor of month of birth, and using mixed model procedures, (b) an open-nucleus system of 250 cows, with recording in pre-nucleus herds, is technically and economically most effective, and (c) nucleus herds should be opened only in the early years, in order to conserve genetic gain in pre-nucleus herds.
- two scientific reports produced by Samba Sall as a result of his **Ph D research** on NRBAR, were circulated showing that it is important to include farmers' perceptions of potential new technologies early in the technology development process in ways similar to those advocated and practiced through the NRBAR project, extension is more effective if it concentrates on those farmers who have not yet adopted improved rice varieties, rather than trying to increase the intensity of adoption of those who have already adopted the technology, improved rice varieties should be extended only into those production and socio-economic environments (recommendation domaines) which are most relevant, rather than making blanket recommendations, more work is needed by multidisciplinary teams in defining more relevant recommendation domaines with farmers, and in incorporating farmers' perspectives into the development of technologies at an earlier stage.
- the **Ph D thesis** of **Aloune Fall** (Activity 3G of the 1997 and 1998 workplans) was circulated in final form. It evaluates the existing animal traction technology using the Ndama cattle breed in the Casamance Region. The results show that the level of utilisation is low as almost all effort is concentrated on land preparation rather than including at least the main weeding operations, due to lack of suitable equipment, more research is needed on the problem of solving the constraint of lack of feed for draft animals during the peak land preparation season, on testing an improved yoking system, and on improved design of implements and farmers need more technical assistance particularly for improving the low level of skills in their use of this technology, through increased and improved training operations.
- the **Ph D thesis** of **Arona Ndiaye Samba** "influence de *Cordyla pinnata* sur la fertilité d'un sol ferrugineux tropical et sur le mil et l'arachide dans un système agroforestier traditionnel au Sénégal" of September, 1997, was distributed and shows that the traditional system ensures higher soil fertility under and adjacent to the canopy but specific pruning methods are needed to ensure that this fertility effect results in improved yields of millet and peanut.
- the **Ph D thesis** of **Mamadou Ndiaye** "Contribution de légumineuses arbustives à l'alimentation azote du maïs" was circulated at ISRA, and showed that alley cropping/Bradyrhizobium systems were potentially effective in the Peanut Basin and require few expensive inputs. Further on-farm validation is recommended.
- the final draft report of the consultant Cheikh Sarr on a **research fund/foundation** concluded that a research fund would be a viable way of improving the sustainability of research financing, as well as aiding in promoting collaborative research activities which better respond to farmers' needs (as in the NRBAR grants). However, improvements in financial and administrative management are needed.
- a review of ISRA's **personnel evaluation strategy** was completed by a joint ISRA/ISNAR team with the following results: (a) ISRA management must commit themselves to a routine internal personnel evaluation system such as notation/annual evaluation which aims to improve productivity through motivation of personnel. In particular ISRA managers need to accept their personal

responsibilities in evaluating their staff, (b) INFORM was successfully tested and adapted in ISRA, but was little used, in the absence of a stronger commitment to accountability/transparency from ISRA managers. Although important elements of INFORM are used in, and provide the basis for, the existing program/budgeting system, INFORM cannot substitute for a personnel evaluation system, (c) the 1993 Evaluation Initiale was successfully implemented, was not formally used, and should not be repeated – at least until after the RD'E is finally adopted and the necessary resources with which to reclassify are guaranteed, (d) evaluation of support staff should be implemented as a routine internal task by immediate supervisors, and (e) annual performance evaluations should be based on activity reports and be largely internal

- a **practical guide to the economic impact** of agricultural research was produced and distributed by Purdue University, based on and using the examples of, the NRBAR impact work of Sidibe/Sanders
- completed compilation of documentation for the 1992-1997 period, by year, for all short-term training and for long-term training in the U S

- the first draft **NRBAR bibliography** was completed

- the ISRA/CID detailed **proposal for closure of NRBAR and 1998 workplan** were re-written and successfully renegotiated with USAID

- the NRBAR inventory was completed and sent to USAID for their drafting of a **PIL for transfer** of NRBAR materials to ISRA and partenaires

- **final reports** for research projects continue to be received, and **closure dossiers** were compiled for 19 grants

No major **difficulties** were encountered this Quarter. However

- the departure from ISRA of several key ISRA/NRBAR staff during this first Quarter is making it much more difficult to implement the ambitious 1998 program. In any case, it appears that ISRA staff will not have time to adequately write up and present to partenaires, the large volume of research, extension and training data generated through NRBAR prior to the completion date of the program in mid-1998

- because of the continued lack of prospective post-1998 funding for NRBAR-assisted activities, much of the potential impact of the project activities on the rural population in the short and the long term will likely not be realised

- 5 main activities for reporting and evaluating results, and numerous other activities have been cancelled as a result of the continued uncertainty over the timing of NRBAR closure and of program content during the remaining months of the project

Next Quarter's program is expected to focus on project close-out, particularly reporting on NRBAR results, and compiling of project documentation for the period 1992-1998, and implementation and monitoring of existing programs

FICHE DES RESULTATS - PRI/NRBAR 15MAI98 1/5 pages

OBJECTIFS/indicateurs	REALISATIONS	IMPACT/activites futures
RIB40 OBJECTIF NO 1 RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE 85 membres (par sexe et a differents niveau) du personnel de recherche formes, 60 chercheurs (par sexe) faisant de la recherche en station et en milieu paysan		
(1) la gestion scientifique élaboration du plan stratégique, détermination des priorités de la recherche, et mise en place d'un système de suivi-évaluation	Premier chiffrage du plan stratégique finalisé, priorités déterminées par Unité de recherche pour la période 1998 2003 draft final du projet d'entreprise élaboré, premier chiffrage du rapport 1996 et du Bilan 1990 94 finalisés, réunions mensuelles et trimestrielles de gestion tenues, plans de S/E finalisés pour le plan stratégique, et pour le SO2	Plan stratégique finalisé (déc97) Projet d'entreprise finalisé (déc97) Rapport d'INFORM 1997/1998 (déc97) Bilan 1990 94 et le rapport 1996 finalisés les documents finals envoyés à l'imprimerie Rapport final, draft, juin 1998
(2) la gestion administrative finalisation de l'inventaire des immobilisations, élaboration des procédures administratives élaboration d'un plan d'infrastructure, gestion des stations, et gestion des ressources humaines,	Inventaire test à Kolda finalisé, les comptables matières et les gestionnaires de station formés, manuel de procédures scientifiques élaboré avec un plan de S/E, fiches d'évaluation de personnel élaborées	Inventaire complété (jun98), Manuel de procédures de gestion des stations admin et financière finalisés Rapport final, draft, juin 1998
(3) la gestion financière gestion du budget 1997, mise en place d'un système de gestion financière et amélioration de la gestion comptable,	Bilan des Centres 1996 terminé formation des comptables le prestataire pour le nouveau système de gestion sélectionné et l'appel d'offre pour le matériel informatique lancé	Rapport final, draft juin 1998
(4) la recherche-développement restitution des résultats de la recherche élaboration d'une stratégie et une étude des besoins en information des clients	Restitution des résultats avec les partenaires Bambey/matière organique/mar97 Kaolack/agroforestrie et fertilisation des sols/déc97 Kolda/agriculture-élevage/feb98 et Tambacounda/riz/mar98, 2 comités régionales R/D établis, recrutement de Bocoum/spécialist en R/D et d'Abdou Fall comme CM/R/D pour remplacer Adama Faye évaluation des R04/R07 avec les pasteurs de la zone de Linguère 25-28mar/Kolda, un évaluation préliminaire des documents de dissemination des subventions NRBAR, atelier ISRA/partenaire à Velingara sur la production de semences de riz en casamance, ISRA/ISNAR atelier sur les leçons apprises en R/D dans les pays de l'Afrique de l'Ouest	Rapport final draft, juin 1998
(5) la gestion des ressources naturelles amélioration des liaisons avec les autres institutions de recherche élaboration d'une stratégie, et développement des analyses des sols,	3 contrats signés avec les institutions internationales de recherche dont un sur la développement des analyses des sols, 4 stratégies GRN élaborés, un pour chaque URR dans la zone d'intervention	Contrat avec UCAD, développement du programme GRN de 1998 Rapport final, draft, juin 1998
(6) l'amélioration des connaissances techniques des chercheurs et des administratifs	47 activités exécutés	15 activités Rapport final, draft, juin 1998

FICHE DE SUIVI - PR1/NRBAR 15MAI98 2/5 pages

Rapport Trimestriel RP1 NRBAR janvier - mars 1998

8

OBJECTIFS	ACTIVITES/REALISATIONS	ACTIVITES PREVUES
RIB3 4-OBJECTIF NO 2 EVALUATION DES -TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX Les rapports sur au moins vingt technologies existantes sont prevus pendant 1997	Rapports executes sur 84 technologies	Rapports sur 10 technologies Rapport final
(1) les etudes d'inventaire des technologies (deux activites),	R12 en draft finale, R16 demarre, l'inventaire au niveau du NRBAR termine, presentation des resultats aux ateliers	Un manuel de reference
(2) les etudes de l'impact des technologies au niveau du paysan utilisant des donnees globales (deux activites)	Premiers drafts sur le riz et le coton elabores, la collecte de donnees sur le mil, le sorgho, et le Mais en cours, presentation des resultats sur le riz a l'atelier de Kolda	Finaliser les drafts et elaborer les rapports sur les mil, sorgho, mais
(3) les etudes de l'impact des technologies au niveau du paysan utilisant des donnees des sites specifiques (cinq activites),	Activite 3F - Samba Sall/riz ameliorees en BMC, Mamdou Diop/noyveau ouverte, Aloune Fall/traction animale, Bassirou Diaw/le climat et la production halieutique, et Boubacar Barry/digues anti-sel completes avec restitution des resultats, drafts des rapports de R15, R02	Rapports finals
4) les evaluations de pratiques specifiques dans les autres projets de recherche (plus que quinze activites),	Rapports sur S/V01, 02, 03, 08, 11, 12 et sur R04, R07, R08, R09	13 autres rapports
(5) les evaluations specifiques dans les activites de diagnostic proposees par les URR sur les pratiques existantes des paysans (quatre activites)	En cours	Execution

FICHE DE SUIVI - PR1/NRBAR 15mai98 3/5 pages

OBJECTIFS	ACTIVITES/REALISATIONS	ACTIVITES PREVUES
RIB3 3-OBJECTIF NO 3 MISE AU POINT DE NOUVELLES TECHNOLOGIES EN GRN ET AGRICULTURE Des rapports sur au moins vingt nouvelles technologies mises au point sont prévus	4 rapports finalises, 26 technologies mises au point, 16 rapports annuels, presentation des resultats des 13 activites aux quatre ateliers NRBAR (de Kolda, Tambacounda, Kaolack et Bambey) Rapports trimestriels des activites	Au moins 16 rapports finals
(1) la fertilisation des sols en utilisant la matiere organique (cinq activites),	Rapport final du R01, et premier draft du R08, rapports trimestriels	Finalisation d'execution et les rapports finals
(2) l'agroforesterie (quatre activites)	Premier draft du R08, rapports trimestriels	Finalisation des 4 rapports
(3) les programmes GRN des URR cibles par le PR1 (quatre activites),	Les activites ont demarres, Rapports trimestriels disponibles	Finalisation d'execution et les rapports finals
(4) l'utilisation de fourrage (trois activites),	Rapport final du R07, rapport final de l'activite 4N (Sissokho M S), rapports trimestriels	Finalisation d'execution et les rapports finals
(5) le developpement des autres technologies specifiques (quatre activites)	Rapport sur R10, rapport final sur l'activite 4M (M Diop Ph D), sur R18 et PAR1-8, rapports trimestriels	Finalisation d'execution et les rapports finals

FICHE DE SUIVI - PR1/NRBAR 15MAI98 4/5 pages

OBJECTIFS	ACTIVITES/REALISATIONS	ACTIVITES PREVUES
RIB2 2-OBJECTIF NO 4 VALIDATION DES TECHNOLOGIES EN AGRICULTURE ET GRN Des rapports sur au moins dix technologies validées sont prévus pendant 1997, avec leurs fiches techniques	42 technologies techniquement validées, 29 technologies socio-économiquement validées, présentation des résultats des 21 activités aux quatre ateliers NRBAR (de Kolda, Tambacounda, Kaolack et Bambey) Rapports trimestriels des activités Rapports sur 32 technologies, un livre de diffusion sur le compostage élaborés, et un document sur les variétés améliorées du riz en casamance élaboré	Finalisations des rapports et les fiches techniques
(1) la fertilisation des sols en utilisant la matière organique (six activités),	Rapports techniques disponibles pour S/V01, 02, 03, 11, 12 Rapports d'évaluation d'impact disponibles pour S/V01, 02, 03 Cassettes vidéo pour quatre activités, rapports trimestriels	Finalisations des rapports
(2) l'agroforestrie (six activités)	Rapports sur S/V02, 03, S/V07, rapports trimestriels	Finalisations des rapports
(3) les programmes GRN des URR cibles par le PR1 (quatre activités),	Les activités ont démarrés, rapports trimestriels	Finalisations des rapports
(4) l'introduction de variétés améliorées (trois activités)	Rapports sur S/V01, S/V02, S/V17, S25, rapports trimestriels	Finalisations des rapports
(5) le développement des autres technologies spécifiques, liées avec la GRN (six activités)	Rapports sur R04, R06, R07, R09, , rapports trimestriels	Finalisations des rapports

FICHE DE SUIVI - PR1/NRBAR 15MAI98 5/5 pages

OBJECTIFS	ACTIVITES/REALISATIONS	ACTIVITES PREVUES
RIBI 0-OBJECTIF NO 5 ACCES DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES Au moins mille producteurs et dix ONGs seront formes pendant l'annee 1997	7,801 producteurs formes, 67 Techniciens des ONGs formes, 129 producteur-leaders formes, 12 visits d'echanges des producteurs	Execution de programme, rapport final
(1) la formation formelle et informelle des producteurs et des agents de vulgarisation aux nouvelles technologies	Les ONGs/No de producteurs Winrock, Rodale, ARAF, FJBS, Caritas, 10 ONGs/30 producteurs (S/V17), AJAEDO/OCRV, Sahel3000, AHDIS et 1364 producteurs Fertilisation 458 (AHDIS ecailles de poisson 99, compostage 187) , (Sahel 3000 compostage de filao 29) , (Rodale compostage 127) Agroforesterie 545 (AHDIS reboise H V 280) , (Africare Tech Pepi 249) , (Rodale Tech Pepi 16) Amenagement Terroir 361 (Africare A T gabion+cordon p 361)	Execution de programme, rapport final
2) la demonstration formelle et informelle des nouvelles technologies dans les stations de recherche,	OSDIL/Bambey et R04/07 a Kolda, avec echange des producteurs	Execution de programme, rapport final
(3) la demonstration formelle et informelle des nouvelles technologies dans les champs des ruraux	Africare/36 villages, AJAEDO/OCRV/25 demonstrations/visites, Rodale/5 villages/demonstrations, AHDIS/8 villages, ARAF/4 villages	Execution de programme, rapport final



INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES
NATURAL RESOURCES-BASED AGRICULTURAL RESEARCH PROJECT
(NRBAR)

QUARTERLY REPORT
FOR THE PERIOD 01 JANUARY TO 31 MARCH, 1995

in collaboration with
The United States Agency for International Development (USAID)
USAID Project Number 685-0285
and
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ISRA/NRBAR QUARTERLY REPORT JANUARY - MARCH, 1995

This is the English Draft of the first ISRA/NRBAR Quarterly Report. The requirement that USAID-funded projects write Quarterly Reports has recently been introduced by USAID. The writing of existing ISRA/NRBAR progress reports by the project, particularly the monthly reports and the Biannual Reports, will continue. The format of this report is consistent with the USAID Project Implementation Review reporting requirements.

The first part of this report summarises principal activities, achievements and difficulties during the Quarter, and briefly outlines the program for the next Quarter. The results show that NRBAR Workplan activities are being implemented as planned, with relatively minor delays, except in the case of progress towards financial certification which continues to be substantially behind schedule. The NRBAR Grants Committees met as planned, however, finalisation of the 1995 research grants program will not occur until next Quarter, due to the committees' wish to continue to improve the quality of proposals.

The second part of this report assesses project progress to date according to the five anticipated outputs, for each output, anticipated end-of-project status is described, accomplishments from the beginning of the project to the end of this reporting period are summarised, activities planned and accomplished during the most recent six months are detailed, and activities planned for the next six months are outlined. The results show that the overall status of the project remains very satisfactory; all major programs are being implemented as planned, such that the project's anticipated outputs will be achieved within the life of the project. The potential negative effects on overall project progress of the delay in ISRA achieving financial certification have been limited by taking appropriate counter-measures within the project.

The third part of this report relates project outputs directly to ISRA's objectives as described in the January 1995 draft of the ISRA Logframe, and to the appropriate USAID Strategic Objective. The results show that the project is not only central to the achievement of the objectives of both ISRA and USAID, but can already identify the specific technological impacts being targeted.

PART 1. SUMMARY OF QUARTERLY PROGRESS

PRINCIPAL ACTIVITIES

by ISRA/NRBAR staff during the Quarter included

- preparing for and implementing the ISRA mid-term review,
- preparing for and implementing the NRBAR mid-term evaluation,
- implementing the following TDY assistance
 - by Hannibal Muhtar (two visits) on research station and infrastructural management,
 - by Suchet Louis on agriculture/livestock planning,
 - by Monica Fisher on socio-economic analysis of the stabling technology in Kolda,
 - by David Hibbs on agroforestry research methods,
 - by Paul Perrault on strategic planning,
 - by Richard Caldwell on project administration, and
 - by Cathy Knott and Ramata Aw on Gender Analysis
- preparation of a monitoring and evaluation report for the mid-term review,
- implementation of the ISRA/USAID/E&Y financial management workshop;
- implementation of the plant genetic resources workshop,
- preparation for, implementation of and follow-up to the MARP workshop;
- activities on the Phase II contract work with Ernst and Young,
- preparation of an outreach book on compost management,
- definition of the ISRA financial strategy,
- project reporting,
- continued implementation of the NRBAR training, and future TDY programs,
- review of and assistance with the preparation of proposals submitted for the 1995 research grants program, and preparation and follow-up to the March Grants management meetings; and
- visit by Wendy Wilson to Niger to assess site study potential

ACHIEVEMENTS

during the Quarter included

- fourteen mid-term review commissions completed, and made recommendations from, their work,
- fourteen draft Action Plans were completed, based on the results of the mid-term review, such that the ISRA Action Plan was finalised and distributed,
- ISRA outlined a financial development plan, through a logframe directly related to a timetable for ISRA's financial certification, with the joint efforts of ISRA, USAID and Ernst and Young,
- other institutions are using ISRA/NRBAR developed tools for their programs: ISNAR is adapting the ISRA Financial logframe for their Financial Management Resource Book, and the World Bank funded post-PNVA project is using the ISRA/NRBAR subventions protocols as the basis for their grants program with farmers' organisations and NGOs,
- the GRN strategy was accepted as policy for the DRCSP;
- USAID, Ernst and Young, and ISRA agreed that the simple column system of encumbrance accounting was acceptable for ISRA

- the English Draft Fourth NRBAR Biannual Report was completed,
- the Grants Committees reviewed the initial ISRA/NRBAR 1995 Grants proposals, and made recommendations,
- successful implementation of the MARP Workshop, with training and preparation of diagnostic materials completed,
- the NRBAR financial management responsibility has been given to the ACP, and
- ISRA financial managers are accounting for the views of their staff and their clients in planning financial management changes.

DIFFICULTIES

this Quarter included

- problems of reconciling competing recommendations and actions proposed as a result of the various commissions of the mid-term review,
- continued delays in program implementation due to the energy needed to service the mid-term review;
- no formal mechanism was available for external consultants of the mid-term review to provide critical but confidential input to ISRA;
- it was not possible to commence normal 1995 accounting operations as operators had not been trained in using the system, and appropriate procedures have not yet been finalised or put in place
- the beginning of the 1996 budget process (scheduled for February) has been delayed due to delays in validation of the new procedures;
- budgeting continues to be implemented without adequate assessment of future sources of funds, and
- the ISRA Treasury management function remains unperformed.

NEXT QUARTER'S PROGRAM

includes:

- continued implementation of the projects's programs according to the 1995 Workplan; and
- finalisation of the 1995 research grants program

The **FINANCIAL STATUS** of the project remains satisfactory, measured expenditures on the CID contract for the Quarter were 1,045 thousand Dollars, compared to the amount of 873 thousand Dollars predicted in the 1995 Workplan. This over-expenditure has compensated for lower-than-planned expenditures which were incurred in earlier Quarters

PART 2: SUMMARY OF PROGRESS TOWARDS ANTICIPATED OUTPUTS

OUTPUT 1.

LIFE-OF-PROJECT DESCRIPTION

1. Effective, adaptive research program focusing upon cropping systems and resource management in areas of (i) soil and water management, (ii) forestry and agroforestry, (iii) improved cultural practices for millet, sorghum, rice and corn, and (iv) applied economics for production, marketing and policy issues relating to cereals cropping systems, such that:

- 1a. at least 15 technology systems will be validated for on-farm use during the life of the project.

30% ACCOMPLISHED TO 31MAR95

DESCRIPTION OF ACCOMPLISHMENTS TO 31MAR95

- ISRA has contracted with its researchers, and with ISRA researcher/partenaire teams, to undertake 14 adaptive research projects on cropping systems and natural resource management in the areas of (i) soil and water management (10 projects), (ii) forestry and agroforestry (7 projects), (iii) improved cultural practices for millet (8 projects), sorghum (4 projects), rice (3 projects) and corn (3 projects), and (iv) applied economics (5 projects, but all 14 projects will eventually have a contracted applied economics component) These contracts are funded from ISRA/NRBAR.
- ISRA is in the final stage of selecting and contracting with approximately 6 new multidisciplinary research teams, and with 6 new ISRA researcher/partenaire teams, to undertake new adaptive research projects in the above areas, beginning in 1995.
- As a result of the existing ISRA/NRBAR contracts, 18 technologies are currently being technically tested, and more than 25 socio-economically tested, for their on-farm validity
- Following ISRA's 1995 contracting program with new teams, and with further progress by ISRA on validating non-NRBAR funded natural resource management technologies, a total of approximately 35 new technologies will be on test for their on-farm validity by 1996

ACTIVITIES PLANNED FOR THE PERIOD OCT94-MAR95

- Implementation of the existing ISRA/NRBAR grants projects 2 meetings of the grants committee (November to agree the 1995 program, and March to select proposals), field work continues, and Annual and Quarterly Reports written for each project
- The 1995 ISRA/NRBAR collaborative research grants protocols designed, and initial choice of new grantees made for 1995
- The 1995 ISRA/NRBAR grants to ISRA researchers protocols designed, and initial choice of new grantees made for 1995

ACTIVITIES ACCOMPLISHED DURING THE PERIOD OCT94-MAR95

- Implementation of the existing ISRA/NRBAR collaborative grants projects 2 meetings of the grants committee were held (in November to agree the 1995 program, and in March to select proposals), field work continued, and Annual and Quarterly Reports were written for each project
- The 1995 ISRA/NRBAR collaborative research grants protocols were designed
- The final choice of new 1995 grantees for collaborative research was postponed until a further meeting of the committee in May, in order to allow additional proposals to be considered and existing proposals

- to be revised on lines recommended by the grants committee in March
- Implementation of the existing ISRA/NRBAR grants to ISRA researchers projects 2 meetings of the grants committee were held (in November to agree the 1995 program, and in March to select proposals), field work continued, and Annual and Quarterly Reports were written for each project
 - The 1995 ISRA/NRBAR grants to ISRA researchers protocols were designed
 - The final choice of new 1995 grants for ISRA researchers was postponed until a further meeting of the committee in May, in order to allow additional proposals to be considered and existing proposals to be revised on lines recommended by the March grants committee meeting

ACTIVITIES PLANNED FOR THE PERIOD APR95-SEP95

- Implementation of the existing ISRA/NRBAR collaborative grants projects. 2 meetings of the grants committee (May to select new 1995 proposals, and August/September to complete a field monitoring visit), field work continues, and Quarterly Reports (technical and financial for each of the First and Second Quarters of 1995) written for each currently-existing project
- Approximately 5 new collaborative research grants given to ISRA/partenaire teams
- Contracts with ISRA prepared and signed for each new collaborative grantee.
- Implementation of the existing ISRA/NRBAR grants to ISRA researchers projects 2 meetings of the grants committee (May to select new 1995 proposals, and August/September to complete a field monitoring visit), field work continues, and Quarterly Reports (technical and financial for each of the First and Second Quarters of 1995) written for each currently-existing project.
- Approximately 8 new collaborative research grants given to ISRA research teams for research in Senegal.
- Contracts with ISRA prepared and signed for each new grantee for ISRA research in Senegal.
- Request USAID approval for a transfer of contract funds from the short-term TDY line item to Research Program Support "Grants for Research in Senegal" line item, in order to continue NRBAR support to natural resource management research.

ASSESSMENT OF PROGRESS TOWARDS OUTPUT 1

- Activities during the previous six months have been accomplished as planned, with no major delays
- It appears that the project is on course to validate at least 15 technologies by the end of 1998, provided that ISRA continues to successfully implement the NRBAR grants programs, ISRA continues to implement similar research outside of NRBAR funding, and the quality of the research work is sufficient.
- Major constraints remain the limited availability of ISRA research staff to undertake appropriate natural resources management research or to undertake the preparatory work necessary before submitting a strong proposal, and the unavailability of NRBAR funds for Support for ISRA's Natural Resources and Outreach Programs
- It is likely that the NRBAR Support for ISRA's Natural Resources Program funds will not become available until practically the end of the project, as the anticipated date for ISRA's financial certification continues to be postponed
- The ability of ISRA researchers to undertake natural resources management research will nevertheless be increased by anticipated improvements in research management, by the results of training

activities such as the MARP, and by the availability of improved technical information (such as the results of the AFID and Institut du Sahel natural resource technology studies, and detailed literature reviews of specific technical areas) on which to base effective research projects

- It is essential that USAID approve a transfer of contract funds from the short-term TDY line item to Research Program Support "Grants for Research in Senegal" line item, in order to continue NRBAR support to natural resource management research, as contract funds for this purpose (already augmented in 1993) will be exhausted by the end of 1995; in the absence of ISRA's financial certification, the planned use of NRBAR funds of 450,000 U S Dollars (provided directly by USAID) for grants for research in Senegal remains blocked

- In the absence of ISRA's financial certification, the following NRBAR U S. Dollar funds remain blocked 450,000 for grants to research in Senegal, 45,000 for site studies, 320,000 for sabbaticals, 1,000,000 for Support to ISRA's Natural Resources Program, and 500,000 for linkages to regional and international research institutions In consequence, approximately 50% of the planned NRBAR funds destined for direct natural resource management research activities will not become available until too late (if at all) in the project to assist with their major objective that of achieving Project Output 1 On the other hand, it appears that the unavailability of these funds has not significantly reduced the ability of ISRA to attain Output 1, given the present limited capability of ISRA to absorb such funds

- ISRA's low absorption capacity is caused by limitations in its financial management system, its research management system, and in its administrative processes such as a lack of a merit-based career development system and ineffective station management Although ISRA is presently tackling these problems, partly through NRBAR assistance, progress has been slow and absorption capacity is unlikely to increase until the final year of the project The current ISRA strategy, of providing limited funds to directly support those specific adaptive research teams which have a good capacity to undertake effective research, is therefore expected to continue for the life of the project through a competitive research grants program In view of the limited availability of appropriate researchers, it is unlikely that ISRA could effectively absorb more than 10 new NRBAR grants per year during 1996-98, without substantial system improvements

OUTPUT 2:

LIFE-OF-PROJECT DESCRIPTION

2. Improved research planning, and improved research, financial and manpower management, such that:

2a. research programs have clearly-defined objectives achievable in the medium term,

2b. systems are in place for periodically evaluating and revising research priorities and programs,

2c. financial management systems are in place providing satisfactory accountability and control, and producing useful information to senior management,

2d. a merit-based personnel evaluation and promotion system is in place, and

2e. the size and composition of ISRA staff are aligned with research priorities and available resources.

30% ACCOMPLISHED TO 31MAR95

DESCRIPTION OF ACCOMPLISHMENTS TO 31MAR95

2

- An ISRA/NRBAR Procedures Manual was developed and approved by USAID in 1993, with the assistance of a NRBAR consultant
- ISRA has drafted a terms of reference for its strategic plan for the period 1996-2005, and is currently writing the first draft of the plan
- a detailed plan for the development of ISRA's research stations was prepared.
- a framework was established for the collection of baseline data on women in agricultural production in the project zone

2a :

- ISRA has developed and adopted a natural resources research strategy for rainfed agriculture.
- ISRA/NRBAR staff have jointly developed the 1993, 1994 and 1995 workplans which were approved by USAID. Monthly NRBAR progress reports and NRBAR Biannual Reports are also routinely produced and distributed
- 14 NRBAR research grants have been funded to achieve clear and reasonable objectives within the lives of the grants contracts

2b :

- ISRA has completed five external reviews of specific research programs, and expects to routinely evaluate each research program once every five years, with the assistance of external reviewers
- ISRA organizes an annual technical review of its research program each November.
- ISRA managed a major collaborative "mid-term review" in January 1995, and has since produced an Action Plan based on the results
- The NRBAR project was externally evaluated by ISRA and USAID in February 1995
- A NRBAR Project Monitoring and Evaluation Plan was developed and is presently being implemented. Logframes were developed by ISRA for the Institute, for some research actions, for specific conventions (IDA and NRBAR), and for specific ISRA units
- A study of ISRA's research impact has begun, and draft reports for millet, sorghum, maize, rice, and for research methodology (using cotton as an example) are available

2c

- ISRA is presently working with Ernst & Young to develop its financial management system, Step I of the Ernst and Young Financial Management Study Contract has been completed, and Step II is presently being implemented.
- ISRA completed an outline financial management strategy, and wrote an Action Plan for implementing financial management improvements via the Ernst & Young Contract or other means
- ISRA-wide consensus was achieved on Ernst and Young's contribution to ISRA's financial management plan at a November 1993 workshop. A consensus on ISRA's financial management needs was developed between USAID, ISRA and Ernst and Young, with the assistance of NRBAR staff, at a January 1995 workshop
- The 1992 external audit report was completed.

2d .

- ISRA have implemented an ISNAR-designed personnel evaluation system in CRODT.
- ISRA is presently preparing proposals for its personnel evaluation and promotion system under the strategic plan

2e .

- ISRA will define research priorities, its available resources, and make necessary assignments of physical, human and financial resources, according to the strategic plan which is presently being prepared

ACTIVITIES PLANNED FOR THE PERIOD OCT94-MAR95

- NRBAR 1995 workplan drafted by ISRA/CID
- NRBAR 4th biannual report drafted.
- The ISRA mid-term review implemented, and the resulting ISRA Action Plan developed
- The NRBAR mid-term evaluation implemented
- Continued implementation of the Ernst and Young contract.
- Development of an ISRA financial development plan
- ISRA approval of the DRCSP Natural Resources Management strategy
- An appropriate method of encumbrance accounting designed and agreed for the ISRA financial management system
- Begin writing of the strategic plan
- Write the NRBAR life-of-project workplan, following the results of the mid-term evaluation
- Develop Action Plan for development of research stations.
- INFORM data collected, analysed and report on for the DRCSP
- ISRA's monitoring and evaluation Action Plan written
- Write a 1995-99 plan for research impact studies
- Write first draft impact studies for each cereal
- begin Gender study

ACTIVITIES ACCOMPLISHED DURING THE PERIOD OCT94-MAR95

- NRBAR 1995 workplan was drafted by ISRA/CID
- NRBAR 4th biannual report was drafted
- The ISRA mid-term review was implemented, and the resulting ISRA Action Plan was written
- The NRBAR mid-term evaluation was implemented
- Implementation of the Ernst and Young contract continued
- Development of an ISRA financial development plan was achieved
- ISRA approved the DRCSP Natural Resources Management strategy.
- An appropriate method of encumbrance accounting was designed and agreed for the ISRA financial management system
- ISRA began writing of the strategic plan
- A 1995 Action Plan was developed for research stations.
- INFORM data was collected, analysed and reported on for the DRCSP
- ISRA's monitoring and evaluation Action Plan was written
- A 1995-99 plan for research impact studies was written.
- ISRA wrote first draft impact studies for each cereal.
- Implementation of the Gender Study began

ACTIVITIES PLANNED FOR THE PERIOD APR95-SEP95

- Finalize the NRBAR fourth and fifth Biannual Reports
- Finalise and obtain approval for the 1995 NRBAR Workplan.
- Complete writing of the first draft strategic plan and of the strategic priorities study
- Continue implementation of the Ernst and Young contract.
- ISRA adopts an organigram relating research station functions to the other units of the Institute and to partenaires
- An inventory of ISRA's infrastructure and equipment completed

- The INFORM phase 3 program evaluated, and the Phase 4 program designed and initial 1996 data collection begun
- The cereals impact studies completed
- Write the NRBAR life-of-project workplan
- Complete Gender Study

ASSESSMENT OF PROGRESS TOWARDS OUTPUT 2

- Activities during the previous six months have been accomplished as planned, with few delays; writing of the NRBAR life-of-project workplan has been postponed, as the results of the mid-term evaluation are not yet available.
- It appears that the project is on course to achieve Output 2 by 1998, provided that ISRA continues to successfully implement its Action Plans, and completes an appropriate Strategic Plan
- Although the major financial target of the project, the establishment of ISRA's viable financial management system such that ISRA can be financially certified, will probably be achieved before the end of the project, progress has been so slow that financial certification is now estimated for late 1996 or 1997, instead of the original estimate of 1993

OUTPUT 3:

LIFE-OF-PROJECT DESCRIPTION

3. Improved research-extension linkages, including feedback from farmers to ISRA on research results and from ISRA to farmers on appropriate and sustainable technologies, such that:

3a. ISRA collaborates with at least 15 private voluntary organizations (PVOs), farmer organizations and input suppliers to evaluate technology (including the use of signed protocols), and

3b. ISRA has developed methods for enhancing the roles of farmers' organizations, PVOs and private input suppliers to transfer improved technology to farmers.

40% ACCOMPLISHED TO 31MAR95

DESCRIPTION OF ACCOMPLISHMENTS TO 31MAR95

3:

- ISRA's implementation of the NRBAR grants program is based on the direct feedback from farmers to ISRA on research results and from ISRA to farmers on the specific subject technologies

3a .

- ISRA, through NRBAR sponsorship, presently collaborates with 5 PVOs and 2 farmer organisations using signed protocols. In addition to this, ISRA collaborates with more than 20 PVOs, farmer organisations and input suppliers, largely without signed protocols. It is anticipated that, by 1998, NRBAR will have sponsored more than 15 ISRA/partenaire collaborative agreements, as additional agreements are presently being negotiated

- Meetings between farmer organisations and ISRA were held to exchange information relevant to new natural resources technologies

3b :

- ISRA has developed, and currently implements, the NRBAR grants programs, which have enhanced the roles played by ISRA's partenaires in transferring improved technology to farmers.

- ISRA has begun contract negotiations with PNVA and CNCR, for collaborative work in improving the transfer of technologies from ISRA to farmers, including the development of a funding arrangement based on the NRBAR Grants model

ACTIVITIES PLANNED FOR THE PERIOD OCT94-MAR95

- MARP workshops planned and implemented
- 1995 collaborative research grants program developed.
- Continued implementation of the existing collaborative research grants and the grants for ISRA researchers program
- Joint ISRA/partenaire/farmer review of progress on the NRBAR grants projects
- Develop an ISRA communications strategy
- Training seminars for farmers' organisations on tracking agricultural research progress and providing input to research

ACTIVITIES ACCOMPLISHED DURING THE PERIOD OCT94-MAR95

- MARP workshops were planned and implemented.
- 1995 collaborative research grants program was developed, and final selection of partenaire grantees is scheduled for May
- Continued implementation of the existing collaborative research grants and the grants for ISRA researchers program.
- Joint ISRA/partenaire/farmer review of progress on the NRBAR grants projects were held regularly, according to a planned schedule
- ISRA Communications strategy drafted and in review

ACTIVITIES PLANNED FOR THE PERIOD APR95-SEP95

- follow-up activities to the MARP workshops implemented
- 1995 collaborative research grants program implemented with the selection of new 1995 grantees.
- Continued implementation of the existing collaborative research grants and the grants for ISRA researchers program.
- Continued joint ISRA/partenaire/farmer review of progress on the NRBAR grants projects were held regularly, according to a planned schedule
- Seminars for farmers on self-monitoring

ASSESSMENT OF PROGRESS TOWARDS OUTPUT 3

- Activities during the previous six months have been accomplished as planned, with few delays; selection of the 1995 NRBAR grantees has been delayed until May, to enable ISRA and its partenaires to revise existing proposals and to have more time to complete new proposals
- It appears that the project is on course to achieve Output 3 by 1998, provided that ISRA continues to successfully develop existing initiatives during the remainder of the project.

OUTPUT 4:

LIFE-OF-PROJECT DESCRIPTION

4 Strengthened linkages with key domestic and international research institutions on natural resource management, cropping systems and adapted technologies, such that:

4a. protocols with network collaborators clearly support ISRA's research priorities, and define roles, responsibilities and resources.

30% ACCOMPLISHED TO 31MAR95

DESCRIPTION OF ACCOMPLISHMENTS TO 31MAR95

4:

- An initial seminar took place in January 1993 to review project and discuss implementation strategy with NGOs and farmer organizations, key international and national research institutions participated
- ISRA has developed a contractual arrangement with ISNAR for the implementation of collaborative research management/INFORM activities ISRA staff have visited ISNAR using NRBAR funds five times since the beginning of the project, and ISNAR staff have worked in Senegal on seven occasions during the same period. Further exchanges are planned for the next six months of 1995.
- Winrock International and Rodale International have collaborated on the research and outreach components of the NRBAR grants program since 1993, contracts have been developed between these international research and development organisations and ISRA.
- ENSA and IST (University of Dakar) have signed contracts with ISRA, under NRBAR funding, to train seven and three women students to the B S level respectively These contracts specifically call for joint research efforts during the later stages of the students' training
- ISRA's links with its principal donors, especially the World Bank, USAID, IDRC, and the French scientific and research agencies, were considerably strengthened during the NRBAR-sponsored ISRA mid-term review which was implemented in the First Quarter of 1995. NRBAR, in addition, sponsors ISRA collaborative visits to these agencies, for example, visits by the DS and the DG to the World Bank in Washington
- Through NRBAR activities, ISRA's links with a wide range of U S research institutions have been established or strengthened for specific tasks, such as the University of Nebraska and INSORMIL for millet and sorghum research, the EROS data center for Geographical Information Systems, Oregon State University for agroforestry and gender analysis, the University of Purdue for research impact, Virginia Tech. for research priority-setting, and Tuskegee University for livestock and cereals crops linkages
- In addition to the above developments, nine ISRA long-term participants are currently studying at five U S. universities, involving in most cases the development of long-term research links - including exchange visits - between faculty and ISRA staff.
- ISRA is currently in the process of contracting with the Institut du Sahel to undertake natural resources management research; this follows previous collaboration on research planning
- ISRA researchers continue to be sponsored by NRBAR to pursue specific research interests with a wide range of other international research organisations. for example, visits by ISRA on-farm research specialists to CIRAD/France, visits by ISRA agroforesters to the Universities of Strasbourg and Stuttgart, and Mrs Aminata Badiane, ISRA soil scientist, participated in the International Congress of Soil Sciences in Mexico in July 1994.
- Professional training in the areas of research station development and research financial management have been, and will continue to be, undertaken as joint collaborative efforts with equivalent personnel from other West African agricultural research centers.

4a.

- It has not been possible to develop extensive protocols with network collaborators, as the necessary funds will not become available directly from USAID until after ISRA's financial certification, which is presently scheduled for late 1996 or 1997. However, specific limited protocols have been developed with national and international research institutions as described above

245

ACTIVITIES PLANNED FOR THE PERIOD OCT94-MAR95

- Continued implementation of the ENSA and IST training protocols
- Continued implementation of the NRBAR Grants protocols
- Continued implementation of linkages between ISRA and ISNAR, EROS, U S universities, INTSORMIL, USAID and the World Bank

ACTIVITIES ACCOMPLISHED DURING THE PERIOD OCT94-MAR95

- Continued implementation of the ENSA and IST training protocols
- Continued implementation of the NRBAR Grants protocols
- Continued implementation of linkages between ISRA and ISNAR (34 visits), EROS (1 visit), U S universities (many visits), INTSORMIL (1 visit), USAID and the World Bank (most particularly the joint review of ISRA in January 1995)

ACTIVITIES PLANNED FOR THE PERIOD APR95-SEP95

- Continued implementation of the ENSA and IST training protocols
- Continued implementation of the NRBAR Grants protocols
- Continued implementation of linkages between ISRA and those national and international research institutions indicated above, with the addition of a natural resources management element (including a signed protocol funded by the Institute du Sahel) to the existing collaboration with the Institute du Sahel

ASSESSMENT OF PROGRESS TOWARDS OUTPUT 4

- Activities during the previous six months have been accomplished as planned
- It appears that the project is not on course to achieve substantial official protocols (Output 4a) by 1998, as the necessary NRBAR funds will not become available until almost the end of the project, and alternative funding sources are generally not available. However, continued substantial progress is expected even in the absence of these funds, provided that ISRA continues to successfully develop existing national and international initiatives, by continuing to effectively use other NRBAR resources during the remainder of the project

OUTPUT 5:

LIFE-OF-PROJECT DESCRIPTION

5. Up-graded technical and administrative staff skills.

35% ACCOMPLISHED TO 31MAR95

DESCRIPTION OF ACCOMPLISHMENTS TO 31MAR95

- ISRA's life-of-project long-term training plan was developed and approved by USAID in 1993. This plan was revised in 1994 to account for the need to minimise disruption to research programs by key staff undertaking long-term training
- 5 participant trainees are currently studying for a Ph D, and 4 for the M S, at U S universities. The remaining 6 M S candidates have been selected by ISRA, although official notification has not yet been made, these M S. candidates will shortly begin English language training and are expected to depart for the U S in August.
- 13 short-term foreign training events, in which 35 ISRA staff participated, were implemented to date for specific technical areas related to project objectives.
- 23 short-term domestic training events, in which more than 150 ISRA staff and 60 partenaires participated, were implemented to date, to assist progress towards project objectives.

- a substantial amount of informal training has also been implemented, particularly with the collaborative work between ISRA staff, partenaires, and short and long-term technical assistance
- 10 women students are presently being funded by ISRA/NRBAR to complete B S programs at ENSA and IST in agricultural sciences

ACTIVITIES PLANNED FOR THE PERIOD OCT94-MAR95

- selection and commencement of English language training of the remaining 6 M S. participants
- continued training of the 5 Ph.D PTs
- continued training of the existing M.S participant trainees
- continued training of the 10 women B S. students
- continued informal training
- approximately 5 short-term foreign training events involving 20 ISRA staff
- approximately 15 short-term domestic training events involving more than 30 ISRA staff.

ACTIVITIES ACCOMPLISHED DURING THE PERIOD OCT94-MAR95

- An ISRA committee completed selection of the remaining 6 M S participants
- continued training of the 5 Ph D. PTs
- continued training of the existing M.S. participant trainees
- continued training of the 10 women B S students
- continued informal training.
- 4 short-term foreign training events were implemented involving 13 ISRA staff.
- 13 short-term domestic training events involving more than 100 ISRA and more than 30 partenaire staff.

ACTIVITIES PLANNED FOR THE PERIOD APR95-SEP95

- confirmation, approval by USAID, English language training, and placement at U S universities of the remaining 6 M.S participants
- continued training of the 5 Ph D PTs
- continued training of the existing M S. participant trainees
- continued training of the 10 women B S students.
- continued informal training
- approximately 5 short-term foreign training events involving 20 ISRA staff.
- approximately 15 short-term domestic training events involving more than 30 ISRA and partenaire staff.

ASSESSMENT OF PROGRESS TOWARDS OUTPUT 5

- Activities during the previous six months have been accomplished as planned, except for the significant delay in selection of the remaining 6 M S students, caused by the need for ISRA to ensure that existing research programs are not significantly disrupted by the departure of these students for long-term training. Commencement of English language training was not yet possible as these candidates have not yet been confirmed by ISRA
- It appears that the project is on course to achieve Output 5 by 1998, provided that ISRA/NRBAR continues to successfully implement the program. If agreement to extend the USAID/CID contract has not been reached by mid-August, then USAID will need to find another way of guaranteeing that the final year of the program can be implemented, if this cannot be achieved, then it will not be possible to send these students for training under NRBAR

OVERALL STATUS

The overall status of the project is very satisfactory, all major programs are being implemented as planned, such that the Planned End of Project Status will be achieved within the life of the project. Most of the targetted systems have now been established, and there will be more effort placed during the second half of the project life on ensuring that these changes become institutionalised and sustainable, partly through additional adaptation. If the current rate of progress continues, project targets, measured as EOPS or as Anticipated Outputs, will be reached or exceeded within the life of the project.

However, some activities originally planned to be completed early in the life of the project have been delayed, and this will limit and/or delay achievement of project impact in some areas. The most important delayed outcome is ISRA's expected achievement of financial viability in 1997 rather than in 1993, this has resulted in (a) large reductions in the availability of funds for ISRA research and for financing ISRA's institutional linkages, (b) difficulties of implementing and institutionalising research grants activities, and (c) difficulties of improving research program planning.

Fortunately it has been possible to limit the effects of the above constraints on progress towards project objectives, through the following means:

(a) The availability of CID contract funds for natural resources management research has been substantially increased by internal contract budget transfers, and the availability of funds per se does not appear to have been an important factor in limiting the volume of natural resource management research. Institutional linkages have been significantly developed by using the NRBAR training and TDY funds.

(b) An assistant grants coordinator has been employed for the remaining life of the project, to offset the greatly increased workload of administering and institutionalising the Grants under the unfavourable financial management environment in ISRA. The momentum of grants administration and institutionalisation has therefore been maintained, with the excellent commitment shown by the ISRA Grants Administrator.

(c) NRBAR has absorbed many of the research program expenses that had been originally planned under other - largely IDA - funds, for example the provision of computers for researchers under the NRBAR grants program, and the use of NRBAR "training" funds in the broad informal sense to ensure that essential research planning and implementation tasks, and outreach activities, are performed.

PART 3: THE CONTRIBUTION OF THE NRBAR PROJECT
TO THE OVERALL OBJECTIVES OF ISRA AND USAID

THE NRBAR PROJECT

The purpose of the NRBAR project is to generate, and assist with the dissemination of, natural resource management technologies which increase the productivity and sustainability of cereals-based cropping systems in areas of reliable rainfall (refer the NRBAR logframes in Annex C of the 23JUL91 NRBAR Project Paper, and in Table 1 of the NRBAR Monitoring and Evaluation Plan) The premise is that the major constraint to increased crop productivity is the lack of available natural resource management technologies.

Senegal's lack of appropriate technology is largely due to an historic underinvestment in the appropriate research and to institutional problems in ISRA These two basic constraints have been addressed in the NRBAR Project Paper, and were the basic premises upon which the project was designed Consequently, the anticipated outcomes of the NRBAR project are:

- generation of improved natural resources technologies relevant to farmers in the short-term, through grants and other assistance to on-going research, and
- generation of improved natural resources technologies relevant to farmers in the medium/long-term, through training and institutional strengthening of ISRA.

The project is currently making strong progress, as planned, towards these outcomes, except in the case of financial management improvements where progress has been slower than anticipated (The 31MAR95 NRBAR PIR summarises progress) A Table of current and anticipated grants titles is attached; as indicated in the workplan, the next Quarterly Report will identify NRBAR assistance to specific technologies, and relate these to increases in crop productivity Moreover, ISRA/BAME will shortly implement an impact study to measure the potential benefits of project-supported technologies in terms of number of farm families who benefit, hectares affected, and the net returns per family and per hectare This will ensure that project outcomes measurably contribute to the achievement of ISRA and USAID objectives.

ISRA OBJECTIVES

The NRBAR outcomes are clearly an important sub-set of the ISRA overall goal of "générer des technologies adaptées pour le développement des productions agricoles" and of the main short-term objective of "augmentation du nombre de technologies valorisées" (ISRA Cadre Logique, draft January 1995, page 1).

USAID OBJECTIVES

The principal USAID objective being addressed by the project is Strategic Objective 2: "increased crop productivity through improved natural resource management in areas of reliable rainfall" (refer USAID NRBAR PIR October 1994-March 1995) NRBAR outcomes are clearly directly focussed on this objective, as explained in the first paragraph of this section, as detailed in the attached Table, and as will be detailed for each specific technology in the next Quarterly Report. Approximately 90% of the project's focus has been in areas of reliable rainfall, and approximately 80% directly on crop

productivity, the remaining work, for example on livestock and forests, and work undertaken in areas of less reliable rainfall, is needed due to resource indivisibilities and resource system interactions

ISRA/NRBARSUBVENTIONS A LA RECHERCHE COLLABORATIVE

CODE	TITRE ET SITES DU PROJET	CHERCHEUR PRINCIPAL ET PARTENAIRE
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1993

S01	Valorisation des Ressources Naturelles Thiès Diourbel Fatick	Madiagne DIAGNE RODALE /Thiès
S02	Amélioration de la fertilité des sols Thiès Kaolack Diourbel - Fatick Tambacounda	Aminata BADIANE WINROCK /Dakar
S03	Valorisation des Technologies Agroforestières Mises au Point par la Recherche et Transfert en Milieu Réel Fatick	Maleini DIATTA OSDIL /DRCSF/Dakar

1994

S04	Amélioration et diversification des productions agricoles en milieu réel par le biais de l'agroforesterie Kaolack	Babou NDOUR WINROCK /Dakar
S05	Amélioration de la productivité Céréalière par la protection des cultures dans les cuvettes du Lac de Guers St Louis	Abdourahm TAMBA SAHEL 3000 /Dakar
S06	Etude de l'influence des brise vent sur la productivité agricole céréalière dans la vallée du Fleuve Sénégal Podor	Abdourahm TAMBA G P KIRAYE /Podor
S07	Projet de Recherche Collaborative en Agroforesterie Kaolack	Babou NDOUR AFRICARE /Kaolack
S08	Collaboration ISRA/ARAF Pour une meilleure Valorisation et Gestion des Ressources Naturelles Gossas	Désiré Y SARR ARAF /Gossas

1995

S09	Méthode d'évaluation d'une stratégie d'aménagement de terroir appliquée à deux villages du Sine Saloum Niour Kaffrine	Modou SENE CARITAS /Kaolack
S10	Mise au point d'itinéraires techniques pour l'intensification de la riziculture dans les vallées aménagées par le GADEC dans le Sénégal Oriental et la Haute Casamance Tamba Kolda Kaolack	Mour GUEYE GADEC /Tambacounda
S11	Gestion Intégrée des Ressources Naturelles par des groupements féminins dans le Département de Bambey Bambey	Aminata BADIANE FJBS /Bambey
S12	Valorisation des résidus de transformation du poisson fumé pour la fertilisation des terres Thiès - Fatick Diourbel	Mamadou NDIAYE AHDIS /Bambey
S13	Amélioration de la fertilité des sols de Ndof Fatick	Manievel SENE RODALE /Thiès
S14	Amélioration de la fertilité des sols et gestion des adventices par la production de céréales de plateau (maïs et mil) Sédhiou	Souleymane DIALLO OCRV /Sédhiou
S15	Diversification des cultures Kaolack	Famara MASSALY CARITAS /Kaolack

CODE	TITRE ET SITES DU PROJET	CHERCHEUR PRINCIPAL
1993		
R01	Etude sur l'utilisation agricole des écailles de poisson fumé comme amendement organique des sols du Sénégal Mbour Fatick	Mamadou NDIAYE DRCS/Bambey
R02	Etude de l'impact de la recherche le cas des Unités Expérimentales de Thyse Kaymor Sonkorong et Koumbidia Kaolack	Désiré Y SARR DRCS/Bambey
R03	Influence des itinéraires techniques sur la conservation de sols de plateau au milieu paysan (Basse Casamance) Ziguinchor	Mankeur FALL DRCS/Djibélor
R04	Valorisation du potentiel pastoral pour le développement de systèmes céréaliers performants et viables en zone sub humide du Sénégal la Haute Casamance Kolda Vélingara	Nouhine DIEYE DRSPA/Kolda
1994		
R05	Effets des techniques culturales sur la variabilité des rendements du sorgho pluvial et sur son effet allélopathique Kaolack Diourbel	Manievel SENE DRCS/Bambey
R06	Amélioration des pâturages naturels des zones d'élevage du Sénégal par utilisation de phosphates naturels Kolda Louga	Amadou T DIOP DRSPA/Dahra
1995		
R07	Valorisation du Potentiel des légumineuses fourragères en vue de l'amélioration des productions céréalières et animales en zone subhumide Kolda	Ambroise DIATTA DRSPA/Kolda
R08	Influence de quelques espèces ligneuses sur le redressement du statut organique et de la fertilité de vieux champs sur sol ferrallitique (rouge) en Casamance Ziguinchor Bignona	Souleye BADIANE DRPF/Djibélor
R09	Evaluation socio économique des étables fumières dans la région de Kolda Kolda et Tamba	Abdoulaye FALL DRCSI/BAME/St L
R10	Effet d'une stabulation améliorée des bovins sur leurs performances pondérales et sur la gestion de la fertilité des sols dans le centre du Bassin Arachidier Fatick	Fatimata DIA DRCS/DRSPA/KI
R11	Etude de l'efficacité du neem dans la protection et la conservation des sols contre l'infestation des nématodes phytoparasites ravageurs des cultures maraichères Dakar Mbour	Emile V COLY DRCSI/Dakar
R12	Inventaire des Technologies basées sur la Gestion des Ressources Naturelles et utilisées dans la production Agricole en Basse Casamance Ziguinchor Bignona Oussouye	Mabèye SYLLA DRCS/Djibélor
R13	Identification de technologies de la culture de mil/niébé en zone humide Tamba Kaolack	Mbaye NDIAYE DRCS/Bambey
R14	Etude de l'influence de la matière organique sur la croissance des arbres et le rendement des cultures dans le centre du Bassin Arachidier (Bambey) Bambey	Ibrahima DIAITE DRPF/Kaolack
R15	Etude comparée de l'adoption des technologies de gestion des sols dans les rizières de mangroves de Casamance et les périmètres irrigués de la Vallée de l'Anambé BAME/DRCSI Ziguinchor - Vélingara	Ibrahima DIA DRCSI/BAME/St L

COMPTÉ RENDU DE LA RÉUNION DE COORDINATION DE L'ISRA/NRBAR
TENUE LE 14 FÉVRIER 1996

Étaient présents

ISRA/DG, Jacques Faye
USAID/NRBAR Facilitator, Mawa Diop
CID/NRBAR COP, Tom Cusack



A RAPPORT D'ÉVOLUTION DU PROJET

1 L'examen rapide de l'exécution des programmes du projet a conclu que le projet progresse très bien. Les points spécifiques qui ont été soulevés au cours des discussions sont

Va FORMATION A LONG TERME s'il n'est pas possible de trouver une femme économiste suffisamment qualifiée pour le programme Masters, alors il sera possible d'envoyer deux agronomes aux États-Unis au lieu d'une économiste et d'une agronome

Vc. FORMATION A COURT TERME AU SENEGAL les dépenses de ce programme ont énormément augmenté étant donné que le programme de l'ISRA est devenu globalement très actif, l'exécution des activités du plan de travail de NRBAR étant devenue plus importante qu'avant. Malgré la non disponibilité des fonds de la Banque Mondiale, l'ISRA continue d'utiliser les fonds de NRBAR spécialement et uniquement pour les activités prévues au plan de travail de l'ISRA/NRBAR.

GESTION FINANCIÈRE Il a été noté que l'ISRA finalisera son plan de développement financier en Avril plutôt qu'en Janvier comme prévu, compte tenu du besoin de l'ISRA d'évaluer une alternative qui est présentement en train d'être testée à Bambey. NRBAR procurera le transport et le per diem au personnel de l'ISRA impliqué dans les activités du test. Tom devra en conséquence ajuster le plan de développement financier existant du NRBAR.

2 La réunion trimestrielle de coordination aura lieu à l'USAID le vendredi 01 mars 1996 de 9h00 à 12h30. Mawa confirmera dès que possible. Le sujet principal de discussion sera l'intérêt et la contribution du projet NRBAR à l'Objectif Stratégique 2 de l'USAID.

B PROGRAMME ET BUDGET GLOBAL DU PROJET ISRA/NRBAR

3 Les commentaires sur les propositions du 15 Dec 1996 ont été reçus de presque toutes les parties concernées et l'USAID enverra sa réponse en Mars en se basant sur le contenu des résultats dont elle dispose et les discussions sur les résultats des propositions du projet NRBAR.

4 USAID discutera de l'ensemble des résultats avec ses collaborateurs le 23 février 1996 à l'hôtel Novotel durant toute une journée et il a été convenu que les responsables du projet prendront part à cette réunion.

5 L'ensemble des résultats du projet NRBAR sera discuté au cours de la réunion trimestrielle de coordination du 01 mars 1996

C. DIVERS

6 Sur le plan financier, il est convenu qu'une "Etude" de l'USAID sur le système financier de l'ISRA et ses plans de développement aura lieu en Avril immédiatement après les résultats du test de Bambey Cette étude sera effectuée par un consultant qui connaît bien le système financier de l'ISRA USAID utilisera les résultats de cette étude pour décider si ISRA devra continuer à recevoir les fonds de CID pour (1) les coûts du système de développement financier des stations et pour (11) l'appui au programme GRN

Un plan final de la certification financière de l'ISRA sous le projet NRBAR, y compris le déblocage des fonds directement à l'ISRA par l'USAID sera également décidé en ce moment

7 **Le Plan de travail 1996 du NRBAR** sera finalisé d'ici la fin du mois de mars à la suite des discussions sur les résultats obtenus avec l'USAID, la réponse de l'USAID aux propositions du 15 déc 1995 et le document du Plan d'actions de l'ISRA y compris un cahier de charge pour chaque chercheur seront bientôt finalisés

8 Le partage de l'utilisation des véhicules du projet entre CID et le personnel de l'ISRA pour les activités sur le terrain relatives au projet NRBAR marche bien L'acquisition de nouveaux véhicules n'est pas urgente et l'utilisation globale du budget d'équipement du NRBAR n'a pas encore été décidée Il est possible que le NRBAR ne demande qu'un véhicule 4x4 tout terrain, 3 pick-up/véhicules berline de ville, 2 LAN servers et un équipement de projection pour les activités de formation et de communication de l'ISRA au lieu d'un grand nombre de véhicules 4x4

→ Adama, Aminata pour vos commentaires Tom 19dec96

TOM CUSACK/MASSAMABA DIENG REPORT OF VISIT TO BMC
10-13DEC96

PERSONNEL Tom Cusack, Massamba Dieng

PROGRAMME

10déc travel to Ziguinchor

11déc met with BMC research team, and separately with individual research project teams who have been or are expected to be involved in RP1/NRBAR funding

12dec visit to the field with Souleye Badiane on R03, and on R08 for possible extension (Massamba only, as Tom excluded by U S Official Security Policy)

13dec return to Dakar

TERMS OF REFERENCE AND RESULTS

1 FOLLOW-UP TO OCT96 PROGES MEETING

Meeting had proposed (1) compostage accéléré and (2) protection of rice from fish research projects (1) was considered, but could not be implemented as no source fungal material could be obtained (from Asia), and (2) is a proposal of the 1997 program at BMC

2 REVIEW OF EXISTING NRBAR GRANTS

R03 First tranche of funds given in 1993, and second tranche given in 1994, despite the absence of a financial or technical report Finance was then terminated, pending the required financial reports Field activities ceased when finance was terminated, but the dispositif was established - although with limited farmer training before the work ceased A financial report was eventually received Mankeur Fall was responsible for this project until he was transferred to Bambey in 1996 Massamba and Souleye confirmed with the farmers that the technology is still in place, that substantial farmer interest remains, and that this should be continued as a research site (at least from the point of view of an evaluation of the results achieved by the farmers concerned) The BMC team confirmed that this technology is a priority and would support such further work on this project The new sociologue, Cheik Omar Ba, would probably be available to assist Recommendations (1) Mankeur Fall, in collaboration with Souleye Badiane, to complete the 1993-96 technical report, (2) Jacob/Massamba to complete the 1993-96 financial report, (3) BMC to propose a new R03 manager effective from 01jan97, (4) BMC should consider proposing a prolongation of the project to jul98, under the 30dec96 chercheur protocols, in order to evaluate the existing billons which have been maintained on farmers' fields, to assess the implications of Allioune Fall's Ph D research for using animal traction, and to continue to work with the technologies at the same site, (or use funds from R08 to complete this project if the BMC decides it will only be an evaluation of what already exists), and (5) investigate why financial reports were not produced on time,

despite a promising establishment of the dispositif The technology comparison is (a) billon down slope (traditional), (b) billon across slope (potential improved technology), (c) no billons (traditional), and (d) across-slope billons in conjunction with trees planted

R08 the technology comparison is (a) alley cropping 5m*50cm with millet, maize and arachide rotation, and (b) no alley cropping (Need more detail on species and fiche technique being used) The DS proposes that the title be changed to more closely reflect the actual research activities, and that a pedologue joins the team The team agrees and proposes Khouma as the pedologue Souleye reports that the technology was well installed, although artificial enclosures of parcels were needed at the beginning, and have been budgeted for for 1997 This technology initially tried on station at Djibélor from 1985 and at Fanda on farmers' fields from 1993 Recommendations (1) Khouma joins the team as a pedologue, (2) title is changed from 1997, (3) expand the study to include Fanda results and evaluation, (4) expand the study to include results and comparative assessment of Djibélor results, (5) obtain the juin-septembre95 technical report for this project, and (6) visit the proposed 1997 sites on 28déc96

R12: reports, including proposed final report, discussed in detail and comments made on existing drafts Final research report expected in JAN97, with a research bulletin shortly afterwards, during the first trimestre The final technical/financial report of the project due in second Quarter They have worked with Samba Sall on his Ph D research here, and will incorporate that work, as well as the work of R15 Recommendations (1) the bulletin should be completed as an integral part of this project, before the end of the project, and (2) the project should be extended under R12 until JUL98, in order to ensure that the full reporting of existing results is done (to JUN97), and a second phase of data collection is completed (to JUL98)

R15 Lucien, on contract with ISRA, successfully handling the project under supervision of Cheik Omar Ba (new sociologue at ISRA/Djibélor) Problem of reimbursement of funds at DG as financial report given to ACP instead of Massamba and has been stuck there Comptable/BMC agreed to retake this from ACP on Monday next when he is in Dakar, and give to Massamba for immediate reimbursement, as Novembre Lucien and other inputs not yet funded due to this Implementation seems to be going well Method (a) rice technologies listed and characterised on 50 farms in Velingara and 50 in Ziguinchor, farmers characterised on these same farms, (c) list of technologies used by farmers and their characteristics, and (d) list of farmers with which technologies they use and their characteristics Field work continues until first trimestre of 1997 Recommendations (1) Ba installed from JAN97 as responsable, and (2) the full final report of the first phase of research is completed and circulated for comments in JUN97, before proceeding with the second phase, to ensure that the second phase is targetted towards priority technologies

S/V14 technologies (a) improved maize varieties JDB, Synthetic C compared to local maize, (b) as (a) but with and without compost, (c) striga on improved millet, with compost and pesticide, compared to no treatment, and (d) compost on local millet, compared to no compost. Responsible left for St Louis, and need a pedagogue. Khouma is expected to take over from JAN97 as both responsible and pedagogue. Very strong support from the farmers and the ONG (who was at the meeting), and from the research team, for an enlargement of the project in 1997, to include more villages. The ONG representative said that his network could easily accommodate this increase. Lamine Sonko is effectively handling the continuation of this work. This project is presently being modified at the request of the DS, and the additional work needs to be added at this time. Recommendations (1) visit the existing and proposed future sites on 28DEC96, before (2) enlargement of the villages under the project, (3) Khouma becomes officially responsible for this project from JAN97, (4) Khouma to urgently request DS approval for the project modifications, and (5) review the reasons why financial papers flowing through the official ISRA channels get blocked, but financial papers flowing directly to NRBAR do not.

3 REVIEW OF POTENTIAL FUTURE GRANTS UNDER THE GRN FUNDS

Reviewed the existing fiche technique (06dec96 draft), and the compte rendu of the 09dec96 GRN evaluation meeting, in detail and concluded that

- (1) compostages accélérées will not be implemented as no source material available
- (2) prospection/cereales locales will be redrafted and submitted next week to DS
- (3) riz ameliore/Pakao-Kassa will become a subvention aux chercheurs
- (4) inventaire GRN will continue as R12 prolongation, instead of as GRN funds
- (5) riz/attaques de poisson will be retained, if recommended revisions made

The team will revise their GRN submission to include other GRN priority concerns, and this will be discussed at a meeting on 27dec, after the return of Khouma. The responsables will reply in writing to the 09dec96 notes, before the 27dec96 meeting.

4 REVIEW OF POTENTIAL FUTURE GRANTS UNDER OTHER FUNDS

The team reported that they are working on some potential projects, apart from (3) and (4), above. These will be ready before the 27dec96 meeting.

5 OTHER

- agreed that Khouma and the team would meet with NRBAR team on 27dec, and then go to field on 28dec. Tom to request USAID approval for his field participation
- need better definition of technologies under test
- need to incorporate and link research proposals with the BMC strategic plan, BMC program/budget for 1997

- although the team had oral approval for the research being discussed from the DS during the first arbitrage at BMC, and during the second at the DG, there are no compte rendu of these agreements. Written notes of at least the outcomes of these meetings would be useful.

- need status of technical reporting and status of financial reporting

6 CONCLUSION

This was an excellent visit, with great enthusiasm shown by the researchers and their partenaires for the work.

TOM CUSACK/MASSAMABA DIENG REPORT OF VISIT TO BMC
26-30DEC96 (CONTINUATION OF 10-12DEC96 MEETING)

PERSONNEL Tom Cusack, Massamba Dieng
PROGRAMME

26dec travel to Banjul

27dec travel to Ziguinchor, met with Khouma and then the BMC team under Khouma

28dec visit to the field with Souleye Badiane and the research/NGO team on S/V14 and R08

29dec rest day, report writing

30dec return to Dakar

TERMS OF REFERENCE AND RESULTS these were a continuation of the previous meeting, but with (a) the participation of M Khouma who was absent for the first meeting, (b) discussion of the completely-revised draft GRN proposal (which had been completed by the team since the last meeting) and (c) an additional day of field-work. The minutes of the previous meeting were reviewed and corrected as follows

1 FOLLOW-UP TO OCT96 PROGES MEETING no changes to the notes, but additional decisions as follows: it was decided that the compostage accelere would be studied/evaluated as a potential technology to be developed by undertaking a visite de site to The Philippines. This was written up by the BMC team and submitted to the DS for consideration under 1997 NRBAR funding (Annex 1)

2 REVIEW OF EXISTING NRBAR GRANTS

R03 no change to the notes, but further decisions taken based on them, following Khouma's input and the field visit of 12dec: (3) BMC to propose a new R03 manager effective from 01Jan97 (*Souleye Badiane proposed, with the evaluation being done by Ba, with the assistance of a stagiere to be funded out of R08, to be completed prior to June, 1997*), (4) BMC should consider proposing a prolongation of the project to Jul98, under the 30dec96 chercheur protocols, in order to evaluate the existing billons which have been maintained on farmers' fields, to assess the implications of Allioune Fall's Ph D research for using animal traction, and to continue to work with the technologies at the same site, (or use funds from R08 to complete this project if the BMC decides it will only be an evaluation of what already exists) (*no extension decision will be taken until the above report of evaluation is completed, but this should be before the beginning of the planting season, so could be implemented if the team receive a positive evaluation*). A further discussion of the billon technology showed that the BMC considered this a

priority research topic, and that the evaluation would include a review of billons used by farmers in the zone

R08 cultures en couloirs notes were unchanged but further decisions Recommendations (1) Khouma joins the team as a pedologue (*Khouma agreed, saying that he would make the necessary time available*), (2) title is changed from 1997, (3) expand the study to include Fanda results and evaluation, (4) expand the study to include results and comparative assessment of Djibélor results (*also, there are reportedly 3 years of results at Kolda, which should be included*), (5) obtain the juin-séptembre95 technical report for this project (*this was obtained by Massamba*), and (6) visit the proposed 1997 sites on 28dec96 (*in fact, we only visited the sefa site as no time during this second visit for the main sites, but it was clear that much more data is available for this set of technologies than was formerly thought, and this should be incorporated into the study, this topic should be the target of field visits during our next trip*) Additional decision the 1997 budget will reflect these additional tasks under this subvention

R12: no further changes to previous notes - except Final research report expected in **MAR97, not JAN97** Recommended that the annual report of FAO should be included

R15 no change

S/V14 reviewed field sites with NGO, following recommendations of last visit Recommendations (1) visit the existing and proposed future sites on 28DEC96, *this was done at Sefa, Bloc, Mandina and adjacent villages with the result that there is an urgent need for fiche techniques, for relating the size of pits/volume of compost to the area to be fertilised, and for explaining why some farmers advocate two applications instead of one on the same crop There is great farmer interest, but there is a long way to go with the R/D work before the technology will be well adapted on a large number of fields*

before (2) enlargement of the villages under the project (*agreed, but will depend on the researchers' and NGO's assessment of if they have the resources to adequately manage it*), (3) Khouma becomes officially responsible for this project from JAN97, (*Khouma agreed*) (4) Khouma to urgently request DS approval for the project modifications, (*Khouma has done this*) and (5) review the reasons why financial papers flowing through the official ISRA channels get blocked, but financial papers flowing directly to NRBAR do not (*it wsa decided that the ACP should be sent copies of the acccounting info, so that he is aware of the transfer of funds, but that he will not be asked to implement the transactions as there is not yet an indigenous system*)

3 REVIEW OF POTENTIAL FUTURE GRANTS UNDER THE GRN FUNDS

Reviewed the existing fiche technique (06dec96 draft), and the compte rendu of the 09dec96 GRN evaluation meeting, in detail and concluded that

- (1) compostages accélérées will not be implemented as no source material available, *(but see above for a pre-evaluation visite de site proposal)*
 - (2) prospection/cereales locales will be redrafted and submitted next week to DS *(this has already been done as a part of the new GRN proposal)*
 - (3) riz ameliore/Pakao-Kassa will become a subvention aux chercheurs *(no, collaborative)*
 - (4) inventaire GRN will continue as R12 prolongation, instead of as GRN funds
 - (5) riz/attaques de poisson will be retained, if recommended revisions made
- The team will revise their GRN submission to include other GRN priority concerns, and this will be discussed at a meeting on 27dec, after the return of Kouma *(done)*

4 REVIEW OF POTENTIAL FUTURE GRANTS UNDER OTHER FUNDS

The team reported that they are working on some potential projects, apart from (3) and (4), above. These will be ready before the 27dec96 meeting *(these were not yet ready, in view of the priority work given of the GRN funds)*

5 OTHER

- no change to notes of previous meeting, but additions
- Massamba worked with the researchers on completing their summary fiches for 1996 and for 1997

6 CONCLUSION

This was an excellent visit, with great enthusiasm shown by the researchers and their partenaires for the work, however, there continues to be a need for the research program to be succinctly justified according to ISRA, URR, and Zone Development plans, and for real outputs to be targetted and monitored

The preparation of maps prior to the visit was useful, but these maps need to be integrated into the planning and implementation next time

ISRA
RAPPORT SOMMAIRE POUR LES VISITES DE SITE

Madame

3

PROJET/SOURCE DE FINANCEMENT PR1/NRBAR

NOM DU PARTICIPANT Tom Cusack ISRA UNITE: DG

AGENTS RESPONSABLES- DS ISRA UNITE. DG/DS

DEBUT DU PROGRAMME. DATE. 21fév97 HEURE 07h00

FIN DU PROGRAMME DATE. 28fév97 HEURE 13h00

MISSION ET TERMES DE REFERENCE.

OBJECTIVES

- 1 follow-up to previous monitoring visits
- 2 review existing and recently-terminated NRBAR grants, including visits to field sites where appropriate
- 3 review procedures and research protocols for 1997 research under NRBAR grants
- 4 prepare for the visit of evaluation of the DS in mid-March
- 5 finalise the proposed NRBAR workplan program for 1997

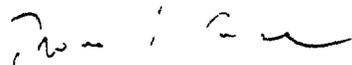
TACHES ACCOMPLIES

- developed and agreed with URR/Tamba and URR/Kolda on strategy of management of NRBAR GRN and other 1997 grants
- developed and agreed a monitoring plan for the integration of the Diop and Sissokho theses work into the 1997 URR plan
- reviewed the Missira research site
- reviewed the Ashburner report with Kolda managers, and developed programme and monitoring plan for future inventory work at Kolda
- developed TOR with Fofana for 2 1997 visits of David Andrews on cereals varieties technologies
- reviewed the NRBAR GRN proposals and the comments of the committee with researchers and partenaires, and discussed possible improvements prior to the DS visit
- reviewed field sites for R04, R07 and S/V10, including farmer evaluations
- reviewed milk processing facilities in Kolda and Tamba with partenaires
- reviewed the NRBAR collaborative et chercheur proposals and the comments of the committee with researchers and with partenaires and discussed possible improvements prior to the DS visit
- discussed outstanding requirements to fulfil existing subventions contracts
- developed TOR with the team for 1997 visit of Monica Fisher on stabling
- discussed and agreed next steps to begin the TU/ISRA international linkages work related to Kolda and elsewhere, on stabling and on vegetables, including mar/avr visit of Suchet Louis
- further developed the NRBAR grants workshop proposal
- partly developed 2 new grants proposals with ISRA/SODEFITEX

DOCUMENTS JOINTS trip report

TRAVAIL DE SUIVI PREVU see trip report

SIGNATURE



DATE

06MAR97

TRIP REPORT FOR TOM CUSACK TO SOHC 21-28FEB97

Personnel. Tom Cusack, with Adama Faye for 25-28FEB

PROGRAMME

21FEB AM to Tamba, PM meeting with Samba Thiaw, Alassane
22FEB AM visited Missira research site, PM travel to Kolda via Southern Route
23FEB AM completed travel to Kolda, PM report preparation
24FEB AM met with URR team on NRBAR subventions admm. and theses management, long call with DG, met Fofana separately
25FEB AM met with URR team and Adama, lunch with Ambroise and family/Adama, PM with Alphousseyn Bodian, then field visit to R04 and R07 villages
26FEB AM met with Saheu and Khandju on station and financial management, lunch with Ba and family/Adama, PM with Kolda milk processor and ONG VSF, round-up meeting with the URR team, dinner with Ambroise and Family/Adama
27FEB AM travel to Tamba, visit to field with Samba Thiaw/GADEC on S/V10, meetings with SODEFITEX personnel, visit to Tamba milk processor
28FEB AM travel Tamba-Dakar

RESULTS

Tamba 21FEB discussed GRN grants management and DS/GRN meeting notes, assisted with opening of Bank Account at Tamba for USAID funds, arranged to go to field with GADEC on 27FEB, not 22FEB, as originally planned and GADEC personnel not available today, DS visit to finalise the 1997 research program - protocoles de recherche needed before DS arrives, as he will review them, and need to show that resources for the work proposed are available, with final fiches personnel and fiches techniques agreed. URR to make and computerise fiches budgetaire for each activity retained by DS, initially using the 700,000CFA given by the DS for the First Quarter. Massamba and Mme Ba to assist the DS on his visit, to work with URR team. Maize seed/SODEFITEX problem to be reviewed by Fofana next week at Kolda. 4 sub-stations in Tamba are East Bakel (lost, farmers have taken over, and difficult to find the original site on the ground), South-East Missira (still retained, but given to prefet to manage with farmers, as not used recently by ISRA), West Senthu Malem (still retained, but given to Maribut to manage with farmers, as not used recently by ISRA), South-West Velmgara (in good shape)

Tamba 22FEB visit to Missira ISRA site (already visited recently by Ammata's infrastructure team) No clear boundary, no fences, dry well with tree growing in it, antique farm machinery under some trees, and two collapsed buildings, some lines of neem and a forestry areas(?) may partly mark boundaries. This site appears to be well cultivated, but is derelict from the protected research site point-of-view, is very accessible in all weathers. Good potential as protected research site, but would need substantial investment and maintenance, could serve as jointly-managed on-farm research site for ramfed crops

22/23FEB travel to Kolda via Simenti and Lenkering lots of burnt forest and brush areas, generally sparsely-populated, lots of burnt-out bamboo

Kolda 24FEB AM meeting with Ambroise Diatta and team. management of GRN, and new subventions, emphasised the need for a Quarterly plan de survi for 1997 for each activity, a good rapport technique and rapport financier in April for the First Quarter in order to ensure continuing funding, and the immediate arbitrage by the Kolda chef on dividing up the GRN funds already given between the different activities retained, so implementation can begin

immediately Conclusion Tom and Massamba to visit each URR at least once per Quarter, and visit all research sites at least once per year

M.S. THESIS OF CISSOKHO what provision for integration of results into URR, valorisation, etc , after his return (before June97), and what arrangements for his work for the 1997 season? None, at the moment Therefore agreed that his draft thesis should be sent to ISRA before his defense, to have ISRA input, perhaps someone from ISRA can assist with the defense Subject of thesis method of ensilage using two source materials - natural vegetation and paie de sorgo, this fits in with existing research, to mise au point these 2 technologies

M/E PLAN for CISSOKHO'S WORK

Q1 first draft thesis in English completed and sent to ISRA/DS for comments, ISRA gives comments

Q2 final English draft of thesis defended by Cissokho, Cissokho returns to Kolda and finalises his 1997 research program, as well as beginning his French research report based on his thesis

Q3 implementation of 1997 research project, first draft French research report completed

Q4 implementation of 1997 research project, final French research report produced, Journal article (French/English) written and submitted

Ph.D THESIS OF MAMADOU DIOP priority research for this URR, mise au point of the open nucleus breeding technology for N/dama cattle at Kolda, based on selecting "superior"(1) village cows and mating with the bulls kept on station, progeny then returned to village, and performance tested. This is also being done for the Dahra herd, as part of his thesis Abdou Fall is presently in Edinburgh (until May) analysing similar data Will be interesting to compare results

M/E PLAN for MAMADOU DIOP'S WORK:

Q1 first draft thesis in English completed and sent to ISRA/DS for comments, ISRA gives comments

Q2 final English draft of thesis defended by Diop, Diop returns to ISRA (assigned for part of time at Kolda for rest of 1997?) and finalises his 1997 research program, as well as beginning his French research report based on his thesis

Q3 implementation of 1997 research project, first draft French research report completed

Q4 implementation of 1997 research project, final French research report produced, Journal article (French/English) written and submitted

Conclusion on Theses work well integrated into the priority research work of the URR, but there is presently no provision for valorising this work upon their (imminent) return

CALL FROM DG long discussion in preparation for the DG's visit to USAID tomorrow

INVENTORY 24 and 26FEB discussed with Sahou Nyang and Mamour Kandji on results of Ashburner visit and follow-up Conclusions 1 the report adequately reflects the concerns expressed and outcomes required, 2 the inventory - although not perfect - was complete (except for magazines), 3 more training needed, and 4 there are various items such as water-heaters which appear to be mis-classified at present They received their copies of Ashburner Report while I was there They agreed that need to establish a system of gestion des immobilisations to protect the inventory already set up in January, as it will be Sahou's responsibility to maintain control. Different approaches to management discussed with roles of comptables matieres, but agreed that need simple and immediate system in place at Kolda Accountants need simple list of inventory once per year (at end-of-year) for financial statement purposes, but this is based on the work of the comptable matiere throughout the year in managing the inventory and movements of materials Problems of the Centre not protected, and would be too expensive to protect it, whereas Velmgara is well protected Comptable matiere centralisateur is Gningue and works with station coordinator to assure the

ISRA-level inventory, while centre c.m.s work with station managers in the same way.
Conclusion. Saliou will take lead in developing and implementing procedures immediately, and
M/E PLAN FOR KOLDA INVENTORY

Q1 complete fiches for inventory/movement of materials, and have procedures in place

Q2 complete the inventory of magazines, and clean them out, with reform list, complete the proposal for the house inventory, rapport trimestriel

Q3 assist with inventories of other centres, rapport trimestriel

Q4 annual inventory report, rapport trimestriel

PROBLEMS OF TWO URR SITES AT TAMBA AND KOLDA. agreed that the financing should continue for 1997, based on the submissions of the two sites, separately, as with the 2 cheque system already established for the GRN funds for the first Quarter, and this should include the separate management of fuel tickets That means that the technical and financial reports will go direct from Kolda and Tamba separately, even though the coordination for the whole URR as such will be through Tamba We therefore need to separate out the diagnostics responsibilities between Kolda and Tamba, and keep the decision to reimburse Kolda separate and not depending on performance of the Tamba work. There will still be a problem of shared resources e.g. the new NRBAR vehicle, new photocopier, what volume of funds/tickets to give Tamba/Kolda? For item GRN17 coord. of project need specific program and budget before DS arrives, especially why a photocopier

FOFANA 24 and 26feb reviewed variétés améliorés apparently currently available to farmers - mil (Sunna3), sorgo (CE145-66, F2-20), mais (JDB-jaune, SYNT-C), Fonio (none). Varieties tested and recommended for farmers but not made available were some for sorgo and Maka, Early Thai (jaune) and Mayogulke for mais, reports of tests of all these varieties available from 1991, so need to copy and evaluate these reports as a basis for further research and/or R/D work. Why were these latter varieties not multiplied and distributed - do they need to be included in on-farm trials for this year under GRN/NRBAR, if seed is available?

Why is it that SODIFITEX believes that JDB no longer exists and/or the true stock is not being distributed, and therefore wishes to import Mahian jaune varieties? It appears that supplies of "JDB" to farmers in Tamba in 1996 were false, is anyone at ISRA seriously following up on that? Is there any follow-up to the 20jan97 note of Massaly on this?

(Annexe 1) Abdou Ndiaye is the selectionneur, and is available at SBA. Fofana to organise a trip to Abdou Ndiaye, Kolda, SODEFITEX, etc to sort out seed of available tested varieties, and select some for inclusion in the 1997 research field program. A trip to Sikasso/Mali is still possible, to return with selected varieties for on-station and (restricted) on-farm trials with SODEFITEX Reviewed his GRN 04 and 05 proposals, and the comments of the committee, Fofana will write the above discussion up as his revised proposition for NRBAR/GRN 04, this was outlined and discussed later in the visit (Annexe 2) It is clear that USAID cannot fund the basic prospection which was proposed, given the lack of valorisation of existing research in this area, and the problems cited above All of the proposals are valuable - it is a question of priorities, in order to provide material for farmers as soon as possible Kolda is badly protected for trial work, as too many donkeys, etc, and possible soils problems such as salinisation, but Velmgara is good Lack of TA at Kolda some need to be transferred from Bambey

Conclusions from today researchers want to travel, there are not sufficient cars available anyway, researchers are reluctant to synthesise/write up their work, as prefer to spend money in the field (per diem attractions and flexible use of vehicles?), the Unite has limited resources of personnel/finance/infrastructure/vehicles, but seems unable to effectively plan to use these resources to address their priorities, NRBAR protocols have not - in general - been seriously

studied, researchers seem unable/unwilling to write the required research protocols, with realistic plans de survi.

VISIT OF CONSULTANT DAVID ANDREWS approved by the DS last year, and waiting to implement it. Best time would be April/May for 2-3 weeks and again in October, Fofana drafted a TOR during the visit (Annexe 3), and this was discussed, including suggestions to include (a) work with the ISRA groupe ressources génétiques et variétés améliorées (Fofana is coordinator), (b) finalising of research protocols for the 1997 research program (May), (c) assisting with harvest observations and analysis (October), (d) training in methodology of field selection and analyses of results, (e) external evaluation of the NRBAR grants projects for all cereal varietal matters, (f) review of the draft strategic plan for varietal development, (g) follow-up report on Andrew's earlier consultancies, and (h) give advice on the JDB/Mali variety issue. I returned with a fax from Fofana to send to Andrews (Annexe 4)

25FEB KOLDA. with URR Team and Adama discussed problems of moyennes - there is plenty of funding, but insufficient human resources and infrastructure to do the work proposed.

For example, the team recognised that it will not be possible to spend the 88m.CFA of NRBAR/GRN at SOHC this year. Research staff must prioritise their proposals to restrict their programs to something which can yield results by the end of the year. It is not sufficient just to go on travel, have many meetings and write general objectives, field work and syntheses must yield results. This was discussed in context of the GRN meeting notes where each proposal was reviewed with each responsible and with the team as a whole, and detailed notes were taken by Adama, syntheses should include an animation scientifique, on GRN15, not possible to directly fund SODEFITEX, but most input costs can be included in the ISRA budget - Alphousseini Bodian to check if this is OK with SODEFITEX, on GRN16, le test sur le fumier annule. Discussed what preparation needed before the DS visit, especially in terms of research protocols, final programs/budgets for ISRA and partenaires for each activity, and the need to propose efficient and realistic use of the available resources.

ALPHOUSSEYNI BODIAN discussed GRN problems of the zone (bush-burning, depletion of soil fertility and structure, erosion, bamboo disappearance), no haie vivre in the Zone, but is being introduced, the difference between sylviculture and agroforestry, discussed detail of experimental design for GRN15 and why it is necessary to have the trial alongside a cultivated, unprotected area for farmer comparison in the field.

FIELD VISIT - R04 FIRST PEUL VILLAGE WITH OLDER VILLAGE HEAD he released a litany of problems in peular - need stables throughout the year, better stables, transport for fumier to fields, better water source, paie, market apparently saturated in Kolda so need to find other outlets, maladie related to stables, why can't the farmers be trained in pest control of animals and processing the milk instead of these activities being restricted only to veterinarians? The team replied as best they could, agreed to look into the milk market problem. A GIE/Federation exists, so could be subject of a collab project, especially with CNCR and Direction d'élevage which have large funds available. Also, can send an economist to study the market in Kolda. A review of the stables in the village showed that the fosse was not generally being constructed due to collapsing without concrete reinforcement, farmers had adapted slightly different methods of stabling depending on individual circumstances, there was strong demand from non-participants to become involved, and this technology is now facing "maturity" problems of lack of improved markets and other infrastructure which could prevent further expansion of the technology.

FIELD VISIT - R04 SECOND VILLAGE WITH YOUNG FARMERS' GROUP they mostly spoke French, and this was a more open meeting, very enjoyable. Since 1993, number of participants in this village alone had increased from 2 to 13, with others interested in joining, and the number of cows involved has increased from 20 to 120. Problems of milk

market restrictions, milk quality, water supply for the village as a whole, stables needed to be cemented to retain urine and limit sand content, off-season feed for cows is difficult to conserve, as would like to keep the pampered herd separate and stabled throughout the year. All of this discussion relates to the overall envelope of complementary technologies: the stable (R04), water supply, off-season feed (R07 and Cissokho thesis), improved quality stock (M. Diop thesis and Abdou Fall work in Edinburgh), disease prevention and treatment (Ba proposal for GRN), applications of fertilizer to crops (many subventions), in addition to the markets for outputs, and quality control. Discussed the fact that this could be a useful TU/ISRA project for youth, including the transformation side. Discussed the various benefits of live-weight gain and meat sales, increased and better calves, etc. in addition to more milk.

FIELD VISIT - R07 THIRD VILLAGE WITH SINGLE FARMER PARTICIPANT was very pleased with his conserved forage, which appears to be well stocked and in good condition. Discussed ways in which the fodder could be analysed and effectively used to measure its effects on various aspects of animal production.

Conclusion of field visit: farmers appeared very satisfied with the R04 and R07 technologies, others are applying to join, maturity problems now need to be tackled as these limit to a certain extent the further adoption of the technology.

26FEB VISIT TO KOLDA MILK PROCESSOR AND ONG VSF began in FEB96 by pasteurising 30 litres per day, from deliveries direct from the participant farmers with stables, and is now at 149 litres per day (3,500 litres were processed in October, for example). Makes sachets, and sells as retail outlet, he hasn't considered institutions, but they would certainly be a source of demand. Could process a max. of 200 litres per day, but difficult to maintain quality of final product as hand-stirring of the hot milk is done, and heating is on an open gas ring, and milk quality from farmers is not very good, and sometimes must be rejected. Much discussion on proposed improvements of the system. At VSF obtained copies of farmer/ISRA contracts with processor (Tom to send copies to ISRA/Kolda and Adama on his return to Dakar - Annexe 5), met two French technicians, who were sponsoring milk improvements and assisting with the establishment of processing facilities. Discussed quality problems of milk and of the processing, of diversifying into new markets (institutions, Zig, etc.), and into new products (cheese, yogurt, butter, etc.) as well as plans for a pasteuriser to be purchased and certification of the quality to reassure customers. There has been no problem with public health and the milk currently pasteurised, to date, but there have been significant disorders prior to sale for reasons of poor quality of raw milk (discussed various reasons) and possibly less-than-optimal processing (inflated lat caillée sachets, etc.), but post-processing management is not well controlled, with sachets left in the sun, or in anotherwise exposed place, instead of storage in a cool, dust-free area. VSF will be in Dakar 6/7/8mar (next week) at 246008, and we will meet to discuss potential for investing in 6mCFA pasteuriser for Kolda.

26FEB FINAL URR TEAM MEETING reviewed the new recherche collaborative/chercheur proposals, and comments of committee de la DS in general, there is a problem of inflated budgets with these proposals, particularly with the large equipment items, which need to be very well justified given the limited period of the grant. The equipment purchases proposed for partenaires are particularly difficult to justify. C97-03 CSIVAD and VSF involved - need roles and responsibilities of all three defined, and revised budgets for CSIVAD and ISRA, need socio-economic study of the system being proposed, reduce the sites of 3 villages if possible, VSF bought "improved" goats for the villagers, and are supervising stables, so the grant will emphasise the feed question, as part of the integrated "improved goat production" package, could be problems of consumption of goat milk, or alternative meat producing qualities from the system. C97-05 already discussed, above with Alphousseny Bodian.

R04 final report due - Dieye will do it on his return in April/May, but R97-05 is continuation of R04, and needs to be more precise for the period to be covered by the new contract (e.g. research protocol for feed substitution with sesame cake), it is necessary to have an approved final report for R04 before R97-05 is implemented. R97-07 is complementary with R07

VISIT OF CONSULTANT MONICA FISHER agreed that this would be during the June/Aug97 period, after Dieye has written the final R04 report including the specific fiches techniques being worked out, and would include developing draft fiches techniques for the rest of the technology package, and a socio-economic synthesis (including any necessary additional field data collection) of the whole package, and a market study

THE PROPOSED TU/ISRA INTERNATIONAL RESEARCH PACKAGES explained by Adama, Tom to send copies to Kolda when he returns to Dakar Tom to request Suchet Louis (TU coordinator) to visit ISRA ASAP to finalise the program and budget

Refer Livestock stabling technology proposal. limited discussion possible, as Abdou had not circulated the proposal to the URR. Refer page 7 objective 3 1, and ex post parts of 3 4, can be implemented immediately, but final design is needed after the comments of the Kolda team.

Abdou Fall/Adama/Safietou to coordinate this with Suchet Louis Can this include the young farmers' stabling groups for cows, beef and goat milk/meat? - and sponsor similar new women's groups? Will milk and meat processing be added as a consideration? What will be the relationship between this and the other stabling research and development activities? We need a plan de survi for the TU/ISRA work.

Refer the under-utilised vegetable crops proposal no discussion possible, as A. Fall had not briefed the URR on this proposal. Appears to have great potential in Kolda, Zig and Tamba, for example, with GADEC and the women's vegetable groups for irrigation of winter veg The details need to be worked out properly, before this can be funded.

FINAL POINTS OF THE KOLDA TEAM MEETING, 26FEB the team wanted to know exactly what was required of them before the DS visit - Adama explained that the DS would like to see research protocols completed for those activities retained by the URR, and to see how the URR will use its scarce resources to implement these priority research projects Given this basis, the DS and the Unite can agree - during the visit - on the final research program for 1997, and the fiches personnel for each researcher Discussion of the GRN cheque for 1 300 000CFA, being too little It was explained that this was (a) only for the First Trimestre which was almost over, so should be sufficient, (b) that advances were not allowed because this was a cost-reimbursement program, (c) this advance was a way of testing the system and if successful will justify the large advances expected during the rest of the year, and (d) the second tranche would be sent to the URR as soon as the DS received an acceptable financial and technical report for the Trimestre jan-mar97 Kolda, and possibly other URRs, urgently need photocopiers and a field vehicle, we should try to ensure that these can be purchased under NRBAR and supplied as soon as possible Can photocopiers be purchased on the remaining NRBAR commodity budget, or via the GRN or subventions? A vehicle will shortly be delivered to the URR, although it is not clear if this will be assigned to Kolda or to Tamba

DISCUSSION OF THE PROPOSED NRBAR GRANTS WORKSHOP in view of the lack of progress on completing the outstanding dossiers and the pressure of existing commitments by research staff, it will not be possible to implement the proposed workshop in mar97, as planned The raw material for the workshop is simply not available The dossiers for each of the terminated grants need to be completed, sent to the DS committee for review, and then the workshop planned based on the results of the review Tentative dates all dossiers sent to DS by mid-May, meeting of committee by mid-June, with workshop proposal accepted by end-June Reviews of the other, on-going, grants completed during jul-sep97, with position papers

written. The workshop will therefore most likely be implemented in October/November 97, and will be preceded by a pre-workshop and farmer evaluations in each of the 4 URRs. The proceedings of these 5 workshops will be published, and will provide the basis for international presentations of the results by the relevant researchers, and on the admin/research management/process side by Adama Faye and Massamba Dieng (the Grants managers). The international presentations will be made any time after the publication of the proceedings. In addition, those researchers who would be able to capitalise on this work by analysing and writing-up complementary research data abroad, in order to adequately present a development or validation of a new technology, will be provided with NRBAR sabbatique funds.

VISIT TO S/V10-ISRA/GADEC MEDINA GOUNAS SITE 27FEB with Samba and agent de GADEC. Reviewed the system of use of dambo intensive veg and fenced for irrig of veg by women from hand-dug wells in upper parts near villages in winter, with rice in river beds currently unused, lower down. The rice area has small barrages, which appear to be operating with partial efficiency, but one predicts that little water control possible with the system at present, and erosion under the structure appears destructive of the structure itself and of the area of rice cultivation. The efficiency of these structures should be monitored during the next wet season, as the improved rice varieties are planted. Met the women farmers, who appeared most industrious and enthusiastic about the veg enterprise. Met a few rice farmers, but did not pursue the agronomy questions, most discussion on the efficiency of the barrage in the village, and proposed improvements (stop the leakage and raise the height). The farmers insisted that the rice area had significantly increased, erosion reduced, and wells on the margins reflecting a generally higher water-table.

MEETING WITH ADAMA AND SODEFITEX (CHEIKH SAYE, HEAD OF LIVESTOCK, AND ABDOULAYE MBODJ DEPT HEAD) pasturisation in Tamba began recently, and not sufficient to meet demand, discussed prices/volumes, and Adama noted the details. Again, question of developing the market further and assuring raw milk quality at farm level. Also, acidity problems if try to process more than 40 litres at a time. They report that very good response from farmers who use stables when consignment rejected on basis of quality. These two agents appear well organised and efficient. Insemination program continues to improve quality of stabled stock, for the overall cotton/cereals/livestock system. Cost of cottonseed cake is 50cfa per kilo for encadrement and 53cfa for others, these are equivalent to what the rest of the market will bear in Senegal for this product, but there are internal SODEFITEX admin. procedures (all purchases centralised in Dakar, etc) which make purchases more complicated by farmers at Tamba. SODEFITEX has Jachere/PASE/FAD support as well as NRBAR. New NRBAR collab project with SODEFITEX, to be written by Seye/Adama, for a similar project to R04, beginning this year. Seye to produce program/budget for his farmer groups by 08mar and fax to Tom, then Adama to complete the ISRA part by 21mar and fax to Seye. Adama discussed with Seye on an April ITA mission to Tamba to develop a milk processing project and to evaluate the present problems. Adama will write down the specification for cow ear-tags, and send it to Suchet so that he can bring them out with him. Can Suchet be involved himself in this project? It is proposed that a research/development committee be established to advise on the above projects at Tamba.

27FEB MEETING AMADOU BALDE (SODEFITEX) AND TOM. Balde confirmed that the proposed NRBAR/SODEFITEX arrangement is no problem for him, as he has funds to cover his side for GRN15 with Bodian. Agreed on redesign of the research protocol, agreed that the next visit would be to the selected erosion sites at Kedougou and Tamba with Bodian, (me to telephone him 2 weeks ahead), including examples of this technology already in place. Will include farmer training and farmer visits to other erosion controlled and un-controlled sites.

0603TRIP DOC

Article 3 V S F s'engage

- A encadrer, informer et former les agropasteurs contractuels en matière de conduite, d'alimentation, d'hygiène et d'organisation de la collecte du lait, en collaboration avec l'ISRA.
- A faciliter l'approvisionnement en intrants, en essayant de trouver une solution pérenne à ce problème
- A assurer une formation en comptabilité et gestion
- A promouvoir toute technique susceptible d'améliorer la qualité du lait
- A préfinancer 50 % des intrants pour les deux premiers mois de stabulation

Article 4 Le responsable de l'unité de pasteurisation s'engage

- a payer le lait 190 F par litre, si le lait répond aux exigences des contrôles (cf article 1)
- A tenir un cahier de livraison co-signé par le ou les livreurs et par lui-même
- A veiller à une bonne hygiène de l'unité de pasteurisation
- A promouvoir les produits qu'il met en vente
- A payer mensuellement les sommes dues aux éleveurs, et à ne donner aucune avance intermédiaire

Fait à Kolda le 17 janvier 1996

Le président du GIE
L'agropasteur

le Responsable ISRA

Le coordinateur du Projet de
Développement de l'Élevage

Le Responsable de l'Unité de
pasteurisation

Amical

REPUBLIQUE DU SENEGAL
MINISTERE DE L'AGRICULTURE
INSTITUT SENEGALAIS DE
RECHERCHES AGRICOLES
I.S.R.A /SEMENCES

N° 000017UPSE

Bambey, le 20 JAN 1995

- Me Dame 3 Copies
- Classement

Monsieur Demba F. MBA
Chef de l'URR/SOHC
à Tamba

MEMO

Objet Besoins de la SODEFITEX en semences de maïs

Comme suite à notre entretien téléphonique du Jeudi 7 Janvier 1995 je prie de bien vouloir trouver ci-dessous quelques observations et suggestions

- 1) L'organisation actuelle de la filière semencière confie la production des semences de prébase à l'ISRA et celle des bases et certifiées aux privés semenciers individuels () agréés par la Division des Semences/Direction de l'Agriculture
- 2) A défaut d'une satisfaction des besoins en semence des utilisateurs par les privés producteurs ceux-ci peuvent s'adresser à ISRA/SEMENCES
- 3) Je ne partage pas cette idée d'introduire une variété de maïs jaune à partir du Mali pour plusieurs raisons

- il existe des variétés de maïs jaune (JDB et Early-Trait) mise au point par la recherche, homologuées par la Division des Semences et qui donnent de bons résultats au Sénégal-Oriental. A ma connaissance il y a eu des problèmes avec la variété JDB (il s'agit plus de conséquences de l'achat de mauvaises semences (faible levée faible vigueur des plantules) que d'une quelconque inaptitude de la variété

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ARRIVEE
Souda
208
1-27

- Les besoins exprimés de 40 tonnes peuvent être satisfaits par une production en contre-saison sur 14 hectares avec un rendement moyen minimum de 3 t/ha. Cette production peut être réalisée par la SODEFITEX sur des périmètres irrigués disponibles dans la zone. A défaut elle peut mener un programme spécial au niveau de la région de Saint-Louis. ISRA/SEMENCES peut l'assister et l'encadrer pour la conception et la mise en œuvre du programme. Si pour diverses raisons elle ne souhaite pas intervenir dans la production elle pourrait signer un contrat de prestation avec ISRA/SEMENCES.
- Une mission de prospection de prospective de la SODEFITEX avec deux chercheurs au Mali ne permettra guère de se prononcer sur les chances de réussite de l'introduction de la variété Malienne du Sénégal.
- Enfin, l'introduction peut comporter des risques phytosanitaires.

IL est donc possible de trouver une solution pour la satisfaction des besoins exprimés par la SODEFITEX sans recourir à l'introduction de variétés étrangères dont la SODEFITEX est d'ailleurs coutumière du fait. ISRA/SEMENCES est en mesure de contribuer à la solution de ce problème et sera à l'écoute de la SODEFITEX pour tout développement ultérieur.

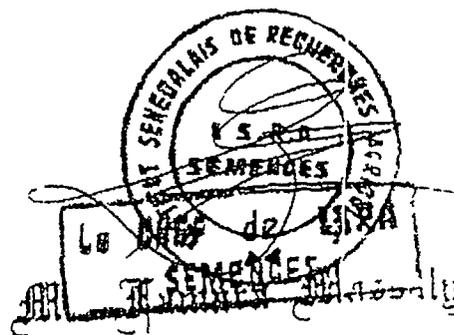
Copies :

DG/ISRA

SG/ISRA

DISEM/DA

Abdou NDIAYE (URR/SBA)



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= *Expérimentation* ...

Project

ESSAIS DE DEMONSTRATION (MAÏS-SORGHO)

OBJECTIF Comparer les meilleures variétés disponibles pour la zone avec la variété paysanne

LOCALISATION

- Région Tambacounda
- Région Kolda

MATERIEL VEGETAL

* Sorgho
 - Regions Tambacounda et Kolda CE 145-66 et F2-20

- * Maïs
- Region Kolda
 - +Maïs blanc Poza Rica et Synt C
 - +Maïs jaune Maka, Early Thai et JDB
 - Region Tambacounda
 - +Maïs blanc Synt C et Mayo Galké
 - + Maïs jaune Early Thai et JDB



Handwritten notes:
 - *Sub 3 D. in 700 - 2000*
will them in the part of
part of direct

DISPOSITIF

- * 4 sites/ région/ speculation
- 3 paysans/ site/ speculation
- Parcelles de 200M2/ variété
- Ecartements
 - +Sorgho 80 cm x 40 cm
 - +Maïs 90 cm x 25 cm

CONDUITE DE LA CULTURE

Voir fiches techniques

OBSERVATIONS

- Poids de graines par parcelle
- Appreciation du paysan

Handwritten notes:
 - *pour l'analyse des ...*
 - *(...)*

à faire ...

17 - - - - -
FAX TO DAVID ANDREWS at

28 Feb 97
→ f...
→ n...
- G...
I I

00-1-402 472 7904

KOLDA, FEBRUARY 19TH, 1997

Amadou 4

Dr DAVID J ANDREWS
DEPARTMENT OF AGRONOMY
UNIVERSITY OF NEBRASKA LINCOLN, NE
USA

Dear ANDREWS,

First of all, let me wish you a good and happy new year 1997 I wonder if you received my last letter I am still waiting for your answer

I talked lately to Tom Cussack of NRBAR about a future trip to Senegal for you during this year After a small talk, Tom and I, we agreed that it will be better to plan two trips one before the rainy season and the other at the end probably on September or October Let us know if this plan will be good for you. During these trips, I think we will discuss about writing millet and sorghum project to seek for financing I realized that it is practically impossible to work on breeding, especially on millet and sorghum, without a strong financing Do we have a chance with INTSORMIL?

As you recommended your last trip report, I like to take a study leave to Nebraska this year if possible During my stay I plan to be acquainted with biotechnology I already a theoretical course in Morocco in 1994 Can you organize this for me? NRBAR is ready to finance it.

I talked to a responsible of the NGO WOLD VISON He said that after the test of early varieties(GB 8735 and ICTP 8203) in 1995, the farmers are asking for them. Unfortunately, in 1996 nothing was done with farmers and I am afraid this will be the same situation this year if we don't take our own initiative It is why I decide to work personally with the ONG in order to push these varieties For that I will need seeds of ICTP 8203 I did not receive what ICRISAT sent me last year

Hoping to read you soon, Sincerely yours

Amadou Fofana CRZ B P 53 KOLDA
SENEGAL

Amir *Tamba - UG* *1997*
with Aden / Kolda
X-m 6 II
6/9 Aden

CONTRAT DE COLLABORATION POUR LA CAMPAGNE DE STABULATION LAITIERE

Le present contrat est établi entre

- le GIE - Monsieur du village de
- M Souleymane DIALLO, responsable de l'unité de pasteurisation,
- l'Institut Senegalais de la Recherche Agricole-Kolda (ISRA/K)
- et le Projet de Developpement de l'Elevage VSF - AFDI (PDE)

Le contrat prend effet a partir du et jusqu'au 31 juillet
1997

Article 1 Les eleveurs s'engagent

- A stabuler leurs meilleurs animaux laitiers, et a livrer une quantite minimum de 1 litre de lait par jour et par animal stabule
- A livrer le lait avant 13 heures 30, et a assister aux contrôles de qualite du lait realises a l'unité
- * Le lait presentant un defaut de qualite, sera refuse et non inscrit dans les cahiers de livraison
- * a utiliser les recipients adequats, et a les laver regulierement suivant le protocole etabli
- A stocker une quantite de fourrage suffisant a garantir l'alimentation des animaux pendant la duree de stabulation
- A respecter le rationnement preconise par l'ISRA ou le Projet de Developpement de L'Elevage
- A garantir une collecte de lait en conformite avec les regles d'hygiene, qui seront proposees et a ne pas utiliser d'additif dans le lait
- A prendre en charge les intrants veterinaires qu'ils utiliseront

Article 2 L'ISRA Kolda s'engage

- A prendre en charge les aspects recherche en zootechnie, alimentation, hygiene, pathologie et valorisation de la matiere organique d'origine animale (fumier d'etablie)



Institut Sénégalais de
Recherches Agricoles

UFC - 2111
+ 1000 (4)

**PROJET DE RECHERCHE AGRICOLE BASEE SUR LA
GESTION DES RESSOURCES NATURELLES
(NRBAR)**

USAID/ANR/CID, B P 49, DAKAR, SENEGAL
Téléphone (221) 32 17 88 Fax (221) 32 17 84

TO MAWA DIOP, NRBAR PROJECT OFFICER, USAID
FROM TOM CUSACK, CHIEF OF PARTY, CID/NRBAR
C C M MBAYE NDOYE, DIRECTEUR ADJOINT NRBAR
DATE 26MAY93
SUBJECT REQUEST FOR USAID APPROVAL OF CANDIDATES SELECTED FOR
M S AND PH D TRAINING UNDER NRBAR

I attach the LIFE-OF-PROJECT TRAINING PLAN FOR ISRA LONG-TERM PARTICIPANT TRAINEES UNDER THE NATURAL RESOURCES-BASED AGRICULTURAL RESEARCH PROJECT, including a list of 14 candidates and 2 alternate candidates selected by ISRA for participant training as Jefferson Fellows under the NRBAR Project

I am writing to request approval for these candidates, so that they can proceed with making arrangements for their studies as soon as possible

ISRA agrees to release these employees from their official duties to pursue English language (both in Senegal and in the U S) and technical training and agrees to continue to pay their salaries during this period ISRA will make every effort to re-employ these individuals upon return to Senegal in a position at the same or higher level than the position vacated for purposes of training

Each candidate has been informed that only in exceptional circumstances will Jefferson Fellows' families be allowed to travel to the U S

You will note that our plan includes the signing of conditions-of-training documents for all trainees Furthermore, Oregon State University, as managers of NRBAR participant training, have proposed to develop and use a memorandum of understanding with each major professor specifying the conditions and expectations of ISRA/USAID and seeking their support for upholding these rules

David Acker, the recent TDY, provided very valuable assistance to the ISRA/NRBAR team in completing the training plan, particularly by interviewing all available candidates and defining the training implementation plan (with budget)

Best regards

**LIFE-OF-PROJECT TRAINING PLAN FOR
ISRA LONG-TERM PARTICIPANT TRAINEES
UNDER THE NATURAL RESOURCES-BASED
AGRICULTURAL RESEARCH PROJECT**

Prepared by:	ISRA
Submitted for approval to:	USAID Mission Training Committee
Date of Submission:	May 26, 1993

Table of Contents

I.	Introduction
II	Project Description
III	Conditions of Training <ul style="list-style-type: none">A. Conditions from the NRBAR AccordB. Conditions from USAID/Senegal General PolicyC. Conditions from ISRA's General PoliciesD. Conditions from ISRA's NRBAR Policies
IV	Selection of Long-term Participant Trainees, 1992-93
V.	Analysis of Selection Results
VI.	Implementation Plan
VII.	Conclusions
APPENDIX 1:	Memorandum from Scientific Director to Directeurs de Recherches
APPENDIX 2:	Results of the ISRA Selection Committee
APPENDIX 3:	ISRA's Draft Training Plan
APPENDIX 4:	ISRA's Announcement of the Finalist Candidates
APPENDIX 5:	Initial Dossiers for Ph.D. Candidates
APPENDIX 6:	Initial Dossiers for M S Candidates
APPENDIX 7:	Preliminary Training Plan for Women in ISRA
APPENDIX 8:	Transmittal Letter to USAID
APPENDIX 9:	Disciplines of Candidates
APPENDIX 10.	Start-up Plan for NRBAR Jefferson Fellows Graduate Education Programs in the U S
APPENDIX 11:	NRBAR Training Implementation Schedule
APPENDIX 12:	Plan for English Language Preparation for NRBAR M S Students
APPENDIX 13:	Request for Proposals for Three Month English Language Course in Dakar
APPENDIX 14:	What Steps Will Be Taken to Ensure Trainees Return at the Completion of Their Training
APPENDIX 15:	Indicative Estimated Budget for 5 Ph.D. Trainees
APPENDIX 16:	Indicative Estimated Budget for 10 M S. Trainees

LIFE-OF-PROJECT TRAINING PLAN FOR ISRA LONG-TERM PARTICIPANT TRAINEES UNDER THE NRBAR PROJECT (26MAY93)

I. INTRODUCTION

In conjunction with a review of human resources, an ISRA training plan is currently being developed in preparation for the ISRA Five-year Plan. A NRBAR Training Plan is also being developed by the NRBAR team. Prior to the completion of these plans, ISRA has given highest priority to developing a NRBAR Long-term Training Plan, in view of the urgent need for placement of long-term participant trainees ("Jefferson Fellows") during 1993 and 1994. Thus, the first draft of the ISRA/NRBAR Training Plan for Long-Term Participant Trainees, consists of a project description (Section II), followed in Section III by a review of conditions of training set by ISRA and USAID, by a summary of the ISRA LT PT selection process during 1992-93 in Section IV, by an analysis of the results of the search in Section V, by an implementation plan in Section VI, and by the conclusions in Section VII.

II. PROJECT DESCRIPTION

In order to continue the development of the Institut Sénégalais de Recherches Agricoles (ISRA) as an effective research institution, ISRA and the United States Agency for International Development (USAID) have designed the Natural Resources-Based Agricultural Research Project (NRBAR). The project is detailed in the Project Paper dated 23 July, 1991, and was initiated by the NRBAR Grant Agreement between the Government of Senegal and the United States of America dated 31 July, 1991. The project is scheduled to be completed on 31 July, 1998. A five-years contract for NRBAR services (Contract number 685-0285-C-00-2329-00) was awarded to the Consortium for International Development (CID) by USAID on 21 July, 1992.

The principal problems addressed by the project are Senegal's need for low-cost natural resources-based agricultural technologies in order to increase the productivity of agricultural systems, and the need for ISRA to have a strong institutional capacity to undertake natural resources-based research. The project is designed to focus particularly on improving resource management practices which enhance the productivity and sustainability of cereals-based cropping systems in areas of Senegal having greater than 400mm annual rainfall.

There are four overriding project objectives, expressed in terms of ISRA's development during the project period:

- (1) an improved natural resources-based research program in place,
- (2) natural resources-based technologies validated and available for adoption,
- (3) a strong farmer-participatory research system in place for designing, testing and validating research, and
- (4) improvements in research and financial management

In order to achieve the above objectives, the project has seven major resource components, which can be summarised as follows

- (1) **RESEARCH PROGRAM SUPPORT** a grants program to support effective ISRA/farmer collaboration and interdisciplinary research proposals from ISRA scientists, consisting of a Collaborative Research Grants program and a Grants to ISRA Researchers program,
- (2) **SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM** a grants program to support ISRA's core funding,
- (3) **LINKAGES TO REGIONAL AND INTERNATIONAL RESEARCH INSTITUTIONS** a grants program to develop and strengthen ISRA's links with international institutions,
- (4) **PERSONNEL** the NRBAR Project Director is the Director General of ISRA, with the NRBAR Deputy Director designated as the ISRA Scientific Director. Project personnel consist of ISRA permanent staff, five long-term external Technical Assistance staff seconded to ISRA, and numerous short-term external staff,
- (5) **PARTICIPANT TRAINING** a grants program for long-term and short-term training of ISRA staff,
- (6) **DIRECT SUPPORT BY ISRA** for example, salaries of staff, the provision of office space, and access to appropriate ISRA facilities and equipment, and
- (7) **ADDITIONAL MATERIAL SUPPORT BY USAID** for example, the assignment of personnel, funding of technology inventory and financial studies, purchase of equipment and vehicles. CID also provides U S support through the CID/USAID contract

In order to use these seven categories of resources to achieve project objectives, the project is organized into four programs: research planning and management, natural resources programs, outreach, and financial management.

The participant training program is expected to support project objectives by upgrading key technical and administrative skills of ISRA staff. Of highest project priority are those technical skills related directly to developing natural resource technologies in the project area, of second priority are those skills related directly to developing other natural resources technologies, and third priority skills are those only indirectly related to developing natural resources technologies. Highest priority is also given to the development of administrative skills, of both technical and administrative staff, in order to ensure operational efficiency.

III. CONDITIONS OF TRAINING

ISRA and USAID have developed guidelines for the implementation of their training programs in general, and for the implementation of the NRBAR training program in

particular These guidelines are summarised below

A CONDITIONS FROM THE NRBAR ACCORD

The NRBAR accord between the Government of Senegal and the U S Government describes the policies and procedures for long-term training under NRBAR These conditions can be summarised as follows

- 1 approximately 5 Ph D s and 10 M S s, if possible including 2 women Ph D s and 3 women M S s
- 2 in relevant disciplines such as (agro)forestry, agronomy-crops, soils, soil and water management, rural sociology, natural resources economics, biometrics and statistics, agricultural engineering, and agricultural extension-education
- 3 not including bio-technology and tissue culture training
- 4 CID will assist ISRA in implementing the program
- 5 candidates should have a proven research/education track record
- 6 candidates should be selected to fill critical skills needs in ISRA

B CONDITIONS FROM USAID/DAKAR GENERAL POLICY

In addition, the USAID/Dakar Mission Order VIII - 2 2 1 describes the policies and procedures for long-term training under projects such as NRBAR These conditions can be summarised as follows

- 7 candidates will be known as "Jefferson Fellows"
- 8 a life-of-project participant training plan must be developed prior to disbursement of long-term training funds
- 9 each candidate may work towards only a single Degree
- 10 each candidate must sign a "conditions-of-training" form (AID-1381-6) before departure candidates to return to Senegal immediately after training and post-training work activities to accord with their newly-acquired skills
- 11 if feasible, candidates will conduct their thesis research in Senegal
- 12 only in exceptional circumstances will candidates' family members be allowed to accompany Jefferson Fellows while in the U S
- 13 each candidate must show adequate proficiency and aptitude in the English Language, with USIS recommendations if necessary

14 candidates must be approved by the USAID/Dakar Mission Training Committee

15 each candidate must possess a B S or equivalent Degree

16 each candidate must have at least two years of work experience

17 each candidate must have received a letter from ISRA stating that ISRA agrees to the requested training, is willing to release the candidate for academic and English language training, will pay salary during all training, and will make every effort to place the participant in an appropriate position upon return from training

C CONDITIONS FROM ISRA'S GENERAL POLICIES

ISRA's established training policies include the following conditions for long-term participant training

18 ISRA will not support staff to undertake long-term training if they already hold a French Doctorate (troisième cycle) or other Doctorate level qualification,

19 ISRA will not support staff for long-term training if they are too old to contribute to ISRA for a significant period after returning from training,

20 Priority for training will be given to those staff who have consistently shown an interest in obtaining further training, and who have been waiting to receive training funds for the longest period,

21 Candidates should not be sent for training if such absence from ISRA will severely damage the existing research program, or if the training will not help to satisfy the critical skills needs of ISRA

22 Long-term trainees should implement their thesis research in Senegal, wherever possible

D CONDITIONS FROM ISRA'S NRBAR POLICIES

Finally, ISRA has set the following additional policies for operation of the NRBAR training program

23 Only research staff will be considered for long-term participant training, however, those staff members proceeding on long-term training will undertake management training as a minor component of their overall studies program,

24 Highest priority for short-term participant training will be given to administrative staff, in order to develop the required administrative/management/financial skills, as well as to those research staff working on natural resources concerns in the project area

25 Candidates must show that their intended research will have a strong link with the development of natural resources in the project area, in priority topics of the Direction concerned

IV. SELECTION OF LONG-TERM PARTICIPANT TRAINEES, 1992-93

Following consultations between ISRA, USAID and CID, a call for proposals for long-term NRBAR training was circulated to all Directeurs de Recherches in November 1992. This was followed up by reminders from the Scientific Director (for example, see Appendix 1), and presentations to the ISRA Comité de Gestion during November, December and January. 37 applications were received, these were tabulated and evaluated by the Comité de Sélection on February 1, 1993, as described in Appendix 2. The Comité referred to the existing draft training plan for the Directions de Recherche (Appendix 3) during their deliberations, to ensure that selected candidates would be best placed to contribute to the natural resources program as a whole and to ensure that all potential candidates had applied for the NRBAR positions. After further deliberations at ISRA-DG during February to May, the selected list of M S and Ph D candidates was released on 3 May, 1993 (Appendix 4), along with dossiers on each candidate, these dossiers are presently being completed, and current records are attached to this report as Appendix 5 for Ph D candidates and as Appendix 6 for M S candidates.

V. ANALYSIS OF SELECTION RESULTS

The Comité de Gestion selected candidates on the basis of the conditions indicated in Section III of this report, by using an informal scoring method. These results are presented in Appendix 2, and the top-scoring individuals were in fact proposed as candidates, with two further top-scoring Ph D candidates not being proposed due to the limitation of only 5 Ph D places being available (Appendix 4).

The following analysis considers the selection results more formally with reference to the specific conditions summarised in Section III of this report which have been laid down by ISRA and USAID for the NRBAR long-term participant training program.

1. 5 Ph D s and 10 M S s have been selected. In fact, only 9 M S candidates are being proposed at this time, as one of the selected candidates was withdrawn due to ineligibility (see the analysis of condition 15). Only one female researcher is currently available for long-term Ph D or M S training, and she has been nominated. A detailed analysis of the professional female population of ISRA is provided in Appendix 7. In order to provide an enlarged pool of female candidates for M S and Ph D training in the future, the project is presently developing a B S program in agricultural subjects for Diploma-level female staff of ISRA or for promising female candidates from outside of ISRA.

2. Candidates are proposed in the following disciplines (Appendix 9): Ph D forestry, agricultural engineering, agricultural microeconomics, plant virology, and bovine genetics; M S agronomy (2), animal science (2), soil/water resources, natural resource economics, forestry, fisheries management, physical oceanography, and animal health. These correspond closely with the "preferred" disciplines, and all have a relationship with the development of natural resources in the project area. Unfortunately, it appears that sociologists, statisticians, extensionists and further soils/water management personnel are not available, this will become clear once the present assessment of long-term training needs of ISRA is completed as part of the ISRA training plan.

- 3 Chosen disciplines of study do not include bio-technology or tissue culture
- 4 CID is continuing to assist ISRA in planning and implementing the training program
- 5 Only those candidates who have demonstrated good academic performance and on-site research abilities have been selected
- 6 & 21 The proposed candidates will fill some of ISRA's critical skills needs, in accordance with the analysis of Appendix 9 A more complete analysis will be undertaken in later drafts of this plan, as the ISRA training plan becomes more substantially completed
- 7 Candidates are described as "Jefferson Fellows" in ISRA's request for approval letter to USAID
- 8 A life-of-project training plan has been drafted (this document) for long-term participant trainees prior to disbursement of funds A life-of-project training plan for short-term trainees will be drafted prior to the end of 1993
- 9 Each candidate has been nominated for only one Degree
- 10 ISRA's request for approval to USAID includes a commitment that each candidate will sign a "condition-of-training" form prior to departure
- 11 & 22 ISRA staff usually conduct thesis research in Senegal, in accordance with ISRA's established policies
- 12 ISRA's request for approval to USAID includes a commitment that each candidate will be informed that only in exceptional circumstances will Jefferson Fellows' families be allowed to travel to the United States
- 13 Each candidate who does not hold a Degree from an English-speaking country will be assessed by USIS and only those approved for U S training in terms of English aptitude will continue to participate in the program of language training Each candidate must demonstrate sufficient command of the English language prior to enrolling for a Degree program
- 14 The list of candidates have been submitted to USAID/Dakar for approval, along with supporting materials
- 15 Each candidate possesses a B S or equivalent Degree One candidate, Ms Mariame Diop, who was originally selected for M S training (see Appendices 2 and 6), was later withdrawn as she did not possess a B S level qualification
- 16 Each candidate has more than two years of work experience with ISRA
- 17 ISRA's request for approval to USAID includes a commitment that each candidate will receive a letter from ISRA stating that ISRA agrees to the requested training, is willing to release the candidate for academic and English language training, will pay salary during all training, and will make every effort to place the participant in an appropriate position upon

return from training

18 No candidate already holds a Doctorate level qualification

19 No candidate is expected to have reached the age of 42 years prior to departure for training

20 Priority for training has been given to those staff who have consistently shown an interest in obtaining further training, and who have been waiting to receive training funds for the longest period

21 The temporary absence from ISRA of the selected candidates is not expected to severely damage the existing research program, and the areas of study are priority needs areas for ISRA

22 Long-term trainees will implement their thesis research in Senegal, wherever possible, and this will be stated in writing to each candidate prior to departure

23 Only research staff have been considered for long-term participant training, and the long-term training program for each candidate will include management training as a minor component of their overall studies program

24 Not applicable

25 Candidates must obtain prior approval from the ISRA Scientific Director for their intended thesis research. Each candidate will be informed by letter prior to departure that their thesis topics must be linked to the development of natural resources in the project area

VI. IMPLEMENTATION PLAN

The details of the implementation plan appear in Appendix 10 - 16. APPENDIX 10 is the Start-up Plan for NRBAR Jefferson Fellows Graduate Education Programs in the U.S. This plan shows the sequence of key actions required during the first two years of Jefferson Fellow management. APPENDIX 11 is the NRBAR Training Implementation Schedule. This table displays the scheduling of the three groups of trainees including the staggering of the two M.S. groups.

APPENDIX 12 is the Plan for English Language Preparation for NRBAR M.S. Students. All of the M.S. students will require some English language instruction. This plan specifies the activities envisioned in preparing them for study in the U.S. APPENDIX 13 is a Request for Proposals for Three Month English Language Course in Dakar. We are seeking bids from local providers of English language instruction with the anticipation that initial English language instruction will occur in Dakar. The bids will allow the project to determine whether it is cost effective to offer such training in Dakar.

APPENDIX 14 is entitled What Steps Will Be Taken to Ensure Trainees Return at the Completion of Their Training. The return of fellows after training is key to sustained

285

institutional development As such we have specifically addressed ways in which a high rate of return can be expected

APPENDIX 15 is an Indicative Estimated Budget for 5 Ph.D. Trainees APPENDIX 16 is an Indicative Estimated Budget for 10 M.S. Trainees

VII. CONCLUSIONS

ISRA is presently in the process of writing a human resources plan as part of the 1995-99 Five-Year Plan In the meantime, it is necessary to produce this initial draft this ISRA/NRBAR training plan for long-term participant trainees, in view of the need to successfully place candidates at U.S. universities during 1993 and 1994

The selection process appears to have given ample opportunity for each interested researcher to submit an application, and for adequate review by a group of senior researchers and management staff of all applications in the context of the overall needs of ISRA and of the NRBAR project This process has been documented in this report

The final choice of NRBAR Jefferson Fellows appears to be consistent with the overall goals of NRBAR, it may be difficult to find a closer fit to NRBAR objectives for long-term participant trainees, in view of the very small number of eligible candidates, essentially there are very few ISRA researchers less than 35 years old - with more than half of senior personnel being older than 39 years, and most of the researchers in areas specifically targeted by the project are either already in training or already hold a Doctorate level qualification

Tom

25AVR94

PROGRAMME POUR LA MISSION DE PAPA A. SECK: 21MAI94-15JUIL94

Veillez trouver ci-joint le programme de votre voyage que nous avons discuté avec Mme Collion. Comme vous le savez ce programme a été planifié dans les plans de travail de 1994 de l'ISRA/Banque Mondiale et de l'ISRA/NRBAR. Ce voyage sera financé par le projet NRBAR.

Les objectifs globaux de ce programme sont les suivants:

- identifier les techniques de gestion moderne qui pourraient être appliquées utilement à l'ISRA,
- développer un plan détaillé pour l'étude sur les priorités de recherche,
- développer un budget et un plan de travail pour la durée du projet NRBAR,
- développer un plan de travail détaillé pour définir le plan stratégique de l'ISRA,
- revoir le progrès accompli à ce jour dans l'exécution des projets de la Banque Mondiale et de NRBAR, et
- développer un plan de travail détaillé pour l'exécution des systèmes "INFORM" et "d'évaluation du personnel de l'ISRA"

ITINERAIRE: (voir Annexe 1 pour les réservations déjà faites)

20MAI	DEPART DAKAR
23MAI	ARRIVEE A PITTSBURG, préparatifs pour le séminaire francophone en management du développement
25MAI	début du séminaire
01JUIL	fin du séminaire
02JUIL	PITTSBURG A WASHINGTON/DC
03JUIL	réunions/visite avec Mme. Collion
04JUIL	journée de repos
05JUIL	WASHINGTON/DC A VIRGINIA POLYTECHNICAL INSTITUTE, réunions avec George Norton, Mme. Collion, et Tom Cusack sur les études de priorités
06JUIL	VIRGINIA POLYTECHNICAL INSTITUTE A WASHINGTON/DC
07JUIL	réunion à la Banque Mondiale avec Mme. Collion et Tom Cusack
08JUIL	WASHINGTON/DC A OREGON STATE UNIVERSITY, avec Tom Cusack
09JUIL	réunions avec Ibrahima Thomas, David Acker, etc
10JUIL	journée de repos
11JUIL	réunion de l'équipe de gestion NRBAR du côté USA
12JUIL	suite de la réunion, DEPART OREGON
13JUIL	ARRIVEE A ISNAR/HOLLANDE
14JUIL	réunions à l'ISNAR
15JUIL	HOLLANDE A DAKAR

CSU
Dakar

→ JPK

under 10 - July
in May - Di-hand like it

PROGRAMMES

LE SEMINAIRE FRANCOPHONE EN MANAGEMENT DU DEVELOPPEMENT (voir annexe 2 pour des information détaillées):

Historique résulte d'une discussion avec et recommandation faite par Mme. Collion lors de sa visite à l'ISRA en février et de son message télex adressé au DG (voir annexe 3). Cette mission est incluse dans le plan de travail de l'ISRA/NRBAR pour 1994 (page 11, section 2 (d):(4)).

Seck But principal: renforcer la capacité managériale de Papa Seck et, par la même occasion, de l'ISRA, avec des méthodes de management moderne.

Réalisations prévues: un rapport de Papa Seck sur les principales notions de gestion présentées durant le cours et sur ses recommandations pour la gestion de la Direction Scientifique, surtout en ce qui concerne la planification stratégique.

AVEC MME COLLION A LA BANQUE MONDIALE

*Collion
Seck
Cusack* Historique: Mme. Collion a demandé que le DS visite la Banque Mondiale durant au moins un ou deux jours pendant son séjour aux Etats-Unis en juillet, puisque la revue mis-parcours du projet Banque Mondiale n'aura pas lieu en juin et juillet mais plutôt vers la fin de l'année. Cette activité a été planifié dans les plans de travail de 1994 de l'ISRA/Banque Mondiale et de l'ISRA/NRBAR.

Buts principaux: revue du progrès accompli dans les plans de travail de l'ISRA/Banque Mondiale/NRBAR, revue des activités futures, planifier les activités de planification de la recherche d'une manière plus approfondie pour le reste de l'année.

Réalisations prévues: revoir le plan d'action pour la planification de la recherche de 1994 et discuter du progrès accompli à ce jour.

VIRGINIA POLYTECHNICAL INSTITUTE:

*Collion
Seck
Cusack* Historique comme promi pendant la visite de la Banque Mondiale en février, Mme. Collion a organisé une réunion avec George Norton, elle-même, Papa Seck and Tom Cusack au bureau de Norton situé près de Washington. Cet entrevue est une partie intégrante du travail sur les priorités et les stratégies de recherche. Norton est chef de file sur le plan mondial dans le domaine de l'établissement des priorités pour les systèmes de recherche agricoles nationales, et il est prêt à collaborer avec l'ISRA. Cette activité a été planifiée dans le plan de travail de l'ISRA/NRBAR pour 1994.

Buts principaux: revue du progrès accompli à ce jour sur le plan stratégique de l'ISRA et détailler les besoins de l'étude sur les priorités.

Réalisations prévues: plan d'action détaillé pour l'étude sur les priorités de recherche, programmé pour la deuxième partie de 1994.

OREGON STATE UNIVERSITY

Historique: une réunion de l'équipe de gestion NRBAR du côté USA est prévue, chaque année, au niveau de l'Université de l'Etat d'Orégon (voir section 6, page 76, du plan de travail NRBAR 1994). Les représentants du CID, le DS, un représentant de l'USAID, et le chef d'équipe CID sont les participants cibles pour cette réunion.

*Disp
State (2
Cusack)*
Buts principaux: revue de l'esquisse de la deuxième édition du budget CID pour la période de 1994 à 1997, revue des tendances des dépenses sur NRBAR à ce jour, revue du progrès accompli sur l'atteinte des objectifs et identifier les principales actions pour le programme de 1995-98.

Réalisations prévues: rapport initial sur le plan de travail de NRBAR 1995-98, avec budget, et rapport du progrès accompli à ce jour ainsi qu'une revue des grandes questions.

ISNAR

*Cusack
State (later)*
Historique ISRA collabore déjà avec l'ISNAR sur la planification stratégique, sur INFORM et les exercices d'évaluation du personnel. Les plans de travail de l'ISRA/Banque Mondiale et de l'ISRA/NRBAR incluent des propositions pour une participation de la Direction Scientifique en 1994 dans ces activités. Plus spécifiquement une visite à l'ISNAR est planifiée pour une planification et une exécution plus efficaces de ces programmes.

Buts principaux: revue du progrès et détailler les activités ISRA/ISNAR à venir.

Réalisations prévues: rapport détaillé sur les activités pour les trois programmes ciblés.

TO MAWA, PR1 FACILITATOR, USAID
CONTRACT NO 685-0285-C-00-2329
REPORT OF THE FOUR NRBAR TDY PRESENTATIONS, 22JUL98

FROM TOM CUSACK, CID COP
22JUL98

Tan

In view of the difficulty of scheduling the usual ISRA/USAID review meetings, exit meetings for the 4 consultants who will shortly be leaving the project were arranged as a single event 14h30-15h30 on 22jul98. The objective of the meeting was to give USAID staff the opportunity to learn of the excellent work of these consultants and their counterparts, and to provide comments. The consultants are in the process of writing their final reports, in collaboration with their ISRA counterparts. These reports should be available next week. In the meantime, I attach as an annex to this report the outlines of the four presentations.

Richard Dick international linkage OSU/ISRA

Charles Yamoah review of technical results for NRBAR subventions

Michael Satin socio-economic analyses of agroforestry technologies

Mamadou Sidibe research impact studies

Cusack opened the meeting by explaining that this was essentially the end of the normal NRBAR TDY program. Following the departure of these consultants, the program is expected to consist of

- assistance with the French documentation for final reporting. Nicolas Dupuy until September and Bocoum until 15aug,
- Jean Kearns for project evaluation and the final annual joint review scheduled for 15sep,
- possibly a local communications assistant for reporting of results to the general public (agreed in the 1998 workplan, but ISRA has not yet selected a candidate)

From Richard Dick's presentation, and subsequent discussion, it was noted that

- (1) 105 grants totalling \$2.7m were awarded to researchers and partenaires through a peer-reviewed process, and were administered through the ISRA/DS's conventions committee
- (2) evaluation of the grants programs shows that they were generally successful in achieving research and dissemination results, were usually – but not always – based on appropriate experimental designs, and sponsored effective collaboration between ISRA and partenaire staff,
- (3) concern that many grants programs results may have less than maximum impact stems from (a) in many cases research programs have been on the ground for only one season due to release of funds from USAID being 3 years later than anticipated, and it is not clear if even priority activities can be continued given ISRA's lack of funds from other sources for at least the 1998 growing season, and (b) more effort needs to be placed on producing communications products for the large number of effective grants projects,
- (4) in addition to the production of extension bulletins, fiches techniques and videos the Yamoah and Dupuy assistance to ISRA has allowed the production to date of at least 10 international research products from the grants programs, and an additional 20-30 products will be forthcoming if momentum in this area is maintained, and
- (5) on the ISRA/OSU international research linkages project (a) results from one year of research on the role of trees and shrubs in the traditional parkland system of the peanut basin show that farmer management of volunteer shrubs and trees on arable land has been virtually ignored by agricultural scientists even though the positive impact on soil improvement and on soil moisture already appears significant from the preliminary results, (b) the purchase and installation of soils analyses equipment at Bambey has resulted in the soils lab being fully functional (c) two soils technicians from ISRA were trained at OSU and are now effectively using the improved soils techniques they have learned and (d) future prospects for this very promising avenue of research were presented including the current negotiation between ISRA, OSU and NGOs on continuing the research, using mainly IDRC funds the completion of three Journal articles from the results to date and a discussion of unanswered questions in this area

Cusack added that the research activities element of NRBAR must be seen as a continuum, at one extreme are cases of NRBAR-funded activities completing research which had been initiated well before NRBAR, while at the other extreme, some research activities were initiated as new programs under NRBAR, so have only 1 year of data, as in the cases of the GRN and international linkages grants

From Charles Yamoah's presentation, and subsequent discussion, it was noted that

- (1) a summary of major technical findings from the plant/soils elements of the grants projects shows that the following technologies have been strongly validated 2 t/ha manure with rock phosphate, 1t/ha of compost with 1 t/ha of manure, 2 t/ha of compost with less than 100kg/ha NPK, 2-4 t/ha of fish manure, improved varieties of millet, sorghum, rice, maize, peanut and cowpea, and many agroforestry species shown to be adapted to local conditions,
- (2) a detailed discussion of the effects of organic and inorganic fertilisers on millet yields showed the increased efficacy of compost with or without associated amendments, increases in grain yields are matched by increases in stover yields, risk analysis shows that compost gives a more stable response compared to inorganic fertiliser over a wide range of conditions and across sites, at recommended application rates, compost gives superior yields compared to animal manure, although responses vary greatly across sites given the varying quality of the compost used (due to differences in source materials and in compost management)

These results generated considerable technical discussion, in particular for identifying the most promising areas of further research and extension in the organic fertiliser area

From Michael Satin's presentation and subsequent discussion, it was noted that

- (1) the live fencing and windbreak technologies, as currently being extended in Kaolack through ISRA and Africare efforts, have been socio-economically validated through the partial budget analyses,
- (2) substantial benefits from these technologies are received by both males and females, with females receiving greater benefits from live fencing, while males from windbreaks,
- (3) increased adoption of live fencing by farm households is associated with the availability of literacy training, extension information, and income and credit (females are particularly apt to adopt live fencing when exposed to extension information), and
- (4) increased adoption of windbreaks is associated with literacy training, cooperative membership, and extension information (males are particularly apt to adopt windbreaks at higher income levels)

A useful discussion of adoption rates valuations of farm labor, and of recommendations for improving adoption rates was cut short due to time constraints

From Mamadou Sidibe's presentation, and subsequent discussion, it was noted that

- (1) seven key improved technologies developed and adapted by ISRA for millet, rice and cotton production showed excellent returns on investment, even when all extension costs are included,
- (2) the improved millet varieties Souna 3 (developed by ISRA) and IBV 8001/8004 (developed by ICRISAT and adapted by ISRA) showed rates of return of 22-31%, depending on the extent of farmer production of seed
- (3) the improved rice varieties Sahel 108 (short-term variety) and Sahel 201/202 showed rates of return of approximately 100-150%, depending on the extent of double-cropping possible
- (4) an improved cotton input package adapted by ISRA/SODEFITEX from foreign packages showed a rate of return of approximately 40% or somewhat higher with the availability of well-developed cottonseed processing facilities and
- (5) these investments in research and development by USAID and other donors over the last twenty years have been very profitable through their substantial impacts on agricultural productivity at the household level

Best regards

TO MAWA FROM TOM 21APR98
FINAL REPORT OF THE MICHAEL SATIN TDY AUGUST, 1998

I attach 5 copies of the final report of this activity, for your information and comments

This very productive study shows that

- The adoption of live fencing and windbreaks is potentially profitable for farm households in Kaolack,
- Females have a higher adoption rate and tend to benefit more from live fencing, compared to males, particularly if they are members of village associations,
- Benefit streams favour males in the case of windbreaks,
- Farm family characteristics which favoured increased adoption of these agroforestry technologies were access to extension information, participation in literacy and numeracy training, family income independent of the head-of-household, and access to credit

If possible, Michael Satin will return to Kaolack in June, to complete two collaborative research papers on these results with Malamy Diatta, Astou Sene, and Africare, one would be in French, oriented to Senegalese clients, while the other would be in English for publication in international Journals

Best regards

c c DS, Modou Sene/Chef/ISRA/Kaolack, Malamy Diatta/ISRA/Kaolack,
Africare/Kaolack, Moustapha Kebe/Chef/BAME, Jim Fickes/CBNRM, Didi, Rocky

TO MAWA, PRI FACILITATOR, USAID
FROM TOM CUSACK, CID COP *Tom*
CONTRACT NO 685-0285-C-00-2329
14JUL98

FINAL REPORT OF THE CONSULTANT LAMINE BOCOUM, JUN97-MAY98

I attach 5 copies of the final report of this consultant, who has provided effective assistance to the ISRA outreach unit ("cellule recherche-developpement")

These reports, already distributed at ISRA, summarise the consultant's work, with particular emphasis on the principal outputs

- The installation of seven regional outreach units which bring together regional research, extension and farmer representatives for the planning, monitoring and evaluation of ISRA's work at the regional level
- Assistance with preparing for, implementing, and reporting on the ISRA/ISNAR-sponsored international workshop which reviewed and developed lessons learned from the recent West African experience of research/extension/farmer linkages Workshop participants made recommendations for future actions in this area
- Assistance with preparing for, implementing, and reporting on three ISRA regional workshops (at Kaolack, Kolda and Tambacounda) where researchers, farmers and NGOs shared and jointly evaluated collaborative research results, and proposed future joint activities
- Assistance with the development at ISRA of a data-base of NGOs/farmer organisations which have collaborated with (and who could potentially collaborate with) ISRA
- A review of the outputs of the NRBAR grants programs, particularly related to the training of farmers and of partenaires

Best regards

Distribution of the 15 copies made at NRBAR

5 USAID

1 DS

1 Aminata Badiane

1 Abdou Fall

1 Bocoum

3 Rocky Rainey (final reporting)

1 Didi (activity file)

1 Cusack TDY file

1 Cusack shelf

TO MAWA FROM TOM 23MAR98
TDY REPORT OF TED BRUSH, FOR ASSISTANCE TO ISRA ON PERSONNEL
EVALUATION, FEBRUARY, 1998

Tom

MR BAR

I attach 5 copies of this report, which has already been widely circulated at ISRA, for your information and comments Thank you for your assistance with this mission

This was a most useful consultancy, which was crucial in assisting ISRA with developing its personnel evaluation strategy, through a critical review of ISRA's and other research institutions' experience in this area A follow-up NRBAR workshop is planned at ISRA to define the criteria of annual evaluation of researcher performance

This personnel evaluation study was completed during February through a joint effort of Brush and the ISRA personnel team, with the following summary results

- (a) ISRA management must commit themselves to a routine internal personnel evaluation system such as notation/annual evaluation, which aims to improve productivity through motivation of personnel In particular, ISRA managers need to accept their personal responsibilities in evaluating their staff,
- (b) INFORM was successfully tested and adapted in ISRA, but was little used, in the absence of a stronger commitment to accountability/transparency from ISRA managers Although important elements of INFORM are used in the existing program/budgeting system, INFORM cannot substitute for a personnel evaluation system,
- (c) the 1993 Evaluation Initiale was successfully implemented, was not formally used, and should not be repeated – at least until after the RD'E is finally adopted and the necessary resources with which to reclassify are guaranteed
- (d) evaluation of support staff should be implemented as a routine internal task by immediate supervisors, and
- (e) annual performance evaluations should be based on activity reports and be largely internal

Best regards

c c Didi, Rocky

DISTRIBUTION OF 30 GREEN COVER REPORTS
5 USAID, 2 ISNAR, 2 CNCR, 2 WORLD BANK
2 DG, 2 DS, 2 CS, 2 SG, 2 Louis Sene, 2 Modou Thiam
1 Didi
1 Rocky
1 library
1 Cusack shelf
1 Cusack TDY
1 Cusack Appui Institutionnelle
1 Rapport Final du projet

TO MAWA, PR1 FACILITATOR, USAID
FROM TOM CUSACK, CID COP
CONTRACT NO 685-0285-C-00-2329
30JUL98

FINAL REPORT OF THE CONSULTANT MAMADOU SIDIBE, JULY 98

I attach 5 copies of the final report of this consultant who has provided effective assistance to the ISRA BAME in preparing a draft synthesis report of the research impact studies undertaken by ISRA and Purdue University during the past several years. The report summarises the consultant's work, undertaken in close cooperation with Mousapha Kebe Director of BAME and Senior Economist at ISRA. M Kebe will use the report as a basis to prepare the final presentation of these activities for the NRBAR seminar in August

The report notes that

- (1) seven key improved technologies developed and adapted by ISRA for millet, rice and cotton production showed excellent returns on investment even when all extension costs are included,
- (2) the improved millet varieties Souna 3 (developed by ISRA), and IBV 8001/8004 (developed by ICRISAT and adapted by ISRA) showed rates of return of 22-31%, depending on the extent of farmer production of seed
- (3) the improved rice varieties Sahel 108 (short-term variety) and Sahel 201/202 showed rates of return of approximately 100-150% depending on the extent of double-cropping possible,
- (4) an improved cotton input package adapted by ISRA/SODEFITEX from foreign packages, showed a rate of return of approximately 40% or somewhat higher with the availability of well-developed cottonseed processing facilities and
- (5) these investments in research and development by USAID and other donors over the last twenty years have been very profitable through their substantial impacts on agricultural productivity at the household level

Best regards

Distribution of the 18 copies made at NRBAR

5 USAID

1 DS

1 Moustapha Kebe

1 Aminata Badiane

1 Abdou Fall

1 Mamadou Sidibe

3 Rocky Rainey (final reporting)

1 Faty (activity file)

1 Cusack TDY file 1 Cusack shelf

2 NRBAR library



Institut Sénégalais de
Recherches Agricoles

**PROJET DE RECHERCHE AGRICOLE BASEE SUR LA
GESTION DES RESSOURCES NATURELLES
(NRBAR)**

USAID/ANR/CID, B P 49, DAKAR, SENEGAL
Téléphone (221) 32 17 88 Fax (221) 32 17 84

TO MAWA DIOP, NRBAR PROJECT OFFICER, USAID
C C M MBAYE NDOYE, DIRECTEUR ADJOINT, NRBAR
C C DAVID ACKER, CID NRBAR COORDINATOR

FROM TOM CUSACK, CHIEF OF PARTY, CID/NRBAR *TC*

DATE 19APR93

SUBJECT REQUEST FOR USAID APPROVAL FOR AUGMENTATION OF FUNDS FOR
THE "GRANTS FOR RESEARCH IN SENEGAL" PROGRAM

Following our recent meetings with the ISRA/NRBAR Deputy Director, when ISRA (1) demonstrated its disappointment with the low level of operational funds available from NRBAR to go directly to ISRA researchers for natural resources research and (2) gave its approval for the attached proposal to augment such funds, I am writing to request USAID approval for the transfer of the \$210,000 in the CID contract from SABBATICALS to the GRANTS FOR RESEARCH IN SENEGAL program. This would result in an increase in the level of funds in the GRANTS FOR RESEARCH PROGRAM available for disbursement to ISRA by CID from \$67,500 to \$277,500 for 1993 and beyond.

The total level of funds available under the CID contract would not be affected by this switch, and it is envisaged that the total level of life-of-project funds disbursed through each grants program would also not be affected. For example, it is envisaged that \$210,000 from the \$450,000 retained by USAID for use under the GRANTS FOR RESEARCH IN SENEGAL program in later years of the project could be utilised for the SABBATICALS program in years 4 and 5 of the project.

Best regards



Institut Sénégalais de
Recherches Agricoles

SECTION DES RESSOURCES NATURELLES
(NRBAR)

USAID/ANR/CID, B P 49, DAKAR, SENEGAL
Téléphone (221) 32 17 88 Fax (221) 32 17 84

A M MBAYE NDOYE, DIRECTEUR ADJOINT NRBAR
C C MAWA DIOP, RESPONSABLE DU PROJET NRBAR, USAID

DE TOM CUSACK, CHEF D'EQUIPE CID NRBAR 

DATE 7AVR93

OBJET NOTE SUR LA FINANCEMENT DU PROGRAMME D'APPUI AU
PROGRAMME RESSOURCES NATURELLES A L'ISRA

Veillez trouver, ci-joint, une fiche d'information sur l'appui au programme
ressources naturelles, en anglais et en français J'ai élaboré cette fiche après notre
dernière réunion

Merci, et je vous en souhaite une bonne réception

NOTE SUR LE FINANCEMENT DU PROGRAMME
D'APPUI AU PROGRAMME RESSOURCES NATURELLES DE L'ISRA
(Cusack 7AVR93)

1 Le Plan de Travail 1993, qui était approuvé par l'USAID, dit que (page 56) "Le financement dans le cadre de ce programme sera directement fourni par l'USAID, après certification financière de l'ISRA (121D)"

2. Il est prévu que la certification financière sera réalisée en 1995 ou 1996. Par conséquent, la disponibilité de ces fonds doit être envisagée pour 1996

3 Le projet NRBAR mettra un financement assez important à la disposition des ONGs (pour l'ISRA), et donnera un soutien indirect au programme des ressources naturelles de l'ISRA (mission d'appui, liaisons internationales, formation, etc.). En ce moment, il est prévu de donner seulement \$67 000, directement au programme des ressources naturelles de l'ISRA, pendant les années 1993-1995, cela n'est pas en adéquation avec les autres composantes du projet, si on doit valider à peu près 15 systèmes technologiques avant la fin du projet. Il est difficile pour les assistants techniques et les homologues de travailler ensemble sur la planification et l'exécution des expérimentations, s'il n'y a pas suffisamment de fonds de fonctionnement

4. Pour augmenter le niveau de fonds disponible directement au programme des ressources naturelles de l'ISRA pendant 1993-96, il y a au moins deux possibilités

(a) augmenter le niveau de fonds disponibles pour les SUBVENTIONS POUR LA RECHERCHE AU SENEGAL de \$67 000 à \$277.000, en utilisant des fonds des PROGRAMMES SABBATIQUE, ou

(b) augmenter le niveau des fonds disponibles pour les SUBVENTIONS POUR LA RECHERCHE AU SENEGAL de \$67 000 à \$404,500, en utilisant des fonds de ce programme (\$450 000), réservés par l'USAID

5. Même s'il est trop tard pour augmenter ces fonds avant le commencement du saison 1993, il est important de trouver immédiatement une solution pour 1994, puisque les chercheurs ont déjà commencé à préparer leurs propositions pour la saison 1994.

Note on funding of SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM
(Cusack 6APR93)

In order to assist with clarification of use of NRBAR funds for the above program, I offer the following observations.

1. The Accord between the Government of Senegal and USAID states that:

- A funds will be allocated based on:
 - (1) review of ISRA's core funding,
 - (11) funds available from other donors,
 - (111) GRN priorities expressed in ISRA's annual review,
 - (1v) progress in improving ISRA's financial management/admin
- B. the TA team will
 - (1) review priorities with ISRA
 - (11) authorize funds as appropriate.
- C. each year, the GRN research plan will be
 - (1) finalized by the ISRA/TA team,
 - (11) submitted to CST as part of ISRA's overall plan,
 - (111) externally reviewed.
- D. funds will be annually reimbursed to ISRA on the basis of the availability of
 - (1) an ISRA indirect cost rate (1a) which has been predetermined and (1b) which has USAID Mission approval,
 - (11) ISRA certified financial statements for the period for which reimbursement is sought.

2. Statements in the Project Paper correspond closely to the above; statements in the CID/USAID contract are similar, although items B and D are omitted.

3. During the period of development of the 1993 NRBAR Workplan, ISRA, USAID (Mawa Diop) and the TA team have discussed possible ways in which the terms of the accord could be met during 1993. It was generally agreed that terms A(1), A(11), A(111), and C(11) had been met (at levels appropriate for the initial months of the project) by ISRA's 1993 Workplan submission to the CST in November 1992. A(1v) is difficult to measure at this stage; ISRA has shown willingness to cooperate in the relevant financial and administrative improvements. Terms B(i) and B(ii) would be satisfied by the proposed method of grant management and disbursement (according to detailed workplans and budgets - including overhead - for specific research programs). Regarding C(1), the 1993 GRN plan was finalized in the absence of collaboration with TAs, because the TAs had not yet arrived at post; however, this collaboration was planned as under Term B(1) at the level of the Directions. External review (Term C(111)) is proposed in the 1993 Workplan. Terms D(1) and D(11) cannot be met in 1993, and possibly not until 1996, without some relaxation.

4. It appears that all terms of the accord would be satisfied by NRBAR activities planned for 1993, except for Terms D(1) and D(ii). It appears that the D terms will be satisfied by 1996, if expected progress on the project is achieved. Also by 1996, other terms would be satisfied to much higher levels.

5. If the intention is to effectively use the \$1 million allocated by USAID to this program during the project period, then it will be necessary to begin disbursements in 1993 or in 1994

6 It was proposed in the draft 1993 workplan which was presented to the launching workshop that an initial tranche of these funds be managed by CID for specifically-designed NRM projects, until ISRA could achieve financial certification. The advantage of this approach is that NRM funds could begin to be disbursed to ISRA during 1993, only priority projects would be funded on a case-by-case basis, and the ISRA/TA team would have a productive basis on which to validate the necessary technologies over the project period. ISRA had already planned for use of these funds in 1993 (planning was done prior to the arrival of the TAs), and use of funds in 1993 would provide the intended outcome from ISRA's point of view. The disadvantage of using these funds in 1993, or at any other time prior to ISRA's financial certification, is that CID, or for example a local financial institution, would themselves need to be paid to provide the required financial service, the cost of this financial service is estimated to be approximately 25% of the amount disbursed. For example, given the estimated use of funds by ISRA of 54,000,000 CFA during 1993, only 40,000,000 would be actually disbursed to ISRA with the remaining 14,000,000 going to an outside body. It appears that the only way that ISRA can ensure that all of the \$1 million budgeted can actually be spent by ISRA, is by delaying the program until financial certification is achieved.

7. The approach proposed in the initial draft of the workplan was not approved by USAID, and the wording in the USAID-approved English version of the 1993 Workplan runs as follows: "Funds under this program will become available directly from USAID, following ISRA's financial (121D) certification."

8 If funds under this program are not disbursed until 1996, then NRBAR's direct financial support to ISRA researchers for their NRM program will be limited to approximately \$23,000 per year during 1993, 1994, and 1995 (i.e. at only 10% of the level anticipated at project design). In view of the limited resources of ISRA, it will prove difficult to achieve priority project outputs under these circumstances.

9. With this background, it is essential that ISRA, USAID and CID meet to discuss and agree on a strategy. The existing difference in view between ISRA and USAID on the required strategy has delayed putting into place the administrative mechanisms necessary for managing the program. It is therefore probably too late to begin serious planning for the 1993 growing season under this type of funding. However, it is essential to define an agreed strategy for the 1994 season and beyond, that can be included in the 1994 ISRA (and NRBAR) Workplan, in time to put the necessary mechanisms in place.

10. The availability of these funds would be particularly valuable for ISRA/TA collaborative planning of 1993 and 1994 NRM trials.

11. One suggestion would be to immediately increase the level of funds available under GRANTS FOR RESEARCH IN SENEGAL from \$67,500 to \$277,500, by transferring the \$210,000 under SABBATICALS (already in the CID contract, but not designated to be used until 1995/96) into the GRANTS FOR RESEARCH IN SENEGAL program. This would enable ISRA researchers to access more GRN research funds (instead of 2-3 grants per year, there could be for example 10 grants per year), provided that appropriate research proposals were forthcoming. (Alternatively, existing funds - presently totalling \$450,000 - under GRANTS FOR RESEARCH IN SENEGAL which are not within the CID contract, could be transferred into the CID contract.)

12. It is difficult to see how the project can fully utilise its considerable peripheral resources (TDYs, sabbaticals, site studies, ST training, etc.) to focus on ISRA's GRN activities, if GRN programs themselves are not able to operate due to the SUPPORT FOR ISRA'S NATURAL RESOURCES program not coming on stream until 1996. What is the use of NRM research planning in 1993 if such research programs cannot be implemented until 1996?

\grnm11 apr

05 juillet 96 PLAN DE TRAVAIL USAID RP1/NRBAR 1996 98 ACTIVITE SUBVENTION GRN/NRBAR JUL96 JUN98 URR1 B/M CASAMANCE p 1/2					
ACTIVITES	RESULTATS ATTENDUS	INDICATEURS DE SUIVI	ECHEAN	RESPONSAB	BUDGET \$
program/budget 1996 98 de l'appui GRN/NRBAR/URR1	plan de travail 96 98	rappport du plan/budget	SEP96	chef/Unite	(250000)
tests/experimentations (RI B 3 3)	5 nouvelles techniques de GRN mises au point avec la potential productive dans l'URR	rappports de recherche sur technol /GRN	-JUN98	chef/Unite	
diagnostic pluridisciplinaire (RI B 3 4 B 4 0)	identification des contrantes agricoles de l'URR avec partenaires	rappports de diagnostic, 1996, 1997 1998	JUN98	chef/Unite	
plnification strategique (RI B 4 0)	les programmes de l'URR bases sur les objectifs bien clairs et executables a moyen terme	plan strategique finalse DEC96	JUN98	chef/Unite	
etudes thematiques (RI B 3 3 B 3 4 B 4 0)	identification des techniques performantes prioritisation des actions de recherche, consolidation des acquis	rappports de recherche sur themes	JUN98	chef/Unite	
etudes de methodologie (RI B 4 0)	amelioration des methodologies de al recherche	rappports de methodologie	JUN98	chef/Unite	
mise au point des technologies (RI B 2 2, B 1 0)	4 technologies de GRN validees au niveau de l'URR	fiches techniques pour technol /GRN	JUN98	chef/Unite	
bases de donnees (RI B 3 4 B 3 3 B 4 0)	disponibilite des informations necessaire pour atteindre les objectifs de la recherche/l'URR	rappports techniques des donnees	JUN98	chef/Unite	
demande de remboursement (troisieme trimestre 1996)			SEP96	chef/Unite/DS	
premiere tranche de fonds CID (\$37 500) deboursee			SEP96	Cusack	37500
programmation/budgetisation 1997 de l'appui GRN			OCT96	chef/Unite/DS	
demande de remboursement (quatrieme trimestre 1996)			DEC96	chef/Unite DS	
deuxieme tranche de fonds CID (\$37,500) deboursee			DEC96	Cusack	37500
rappport de progres sur l'appui au program GRN			MAR97	chef/Unite	
demande de remboursement (premiere trimestre 1997)			MAR97	chef/Unite/DS	
troisieme tranche de fonds CID (\$37,500) deboursee			MAR97	Cusack	37500
demande de remboursement (deuxieme trimestre 1997)			JUN97	chef/Unite/DS	
quatrieme tranche de fonds CID (\$37,500) deboursee			JUN97	Cusack	37500

05 juillet 96 PLAN DE TRAVAIL USAID RP1/NRBAR 1996 98 ACTIVITE SUBVENTION GRN/NRBAR JUL96-JUN98 URR1 B/M CASAMANCE p 2/2

ACTIVITES	RESULTATS ATTENDUS	INDICATEURS DE SUIVI	ECHEAN	RESPONSAB	BUDGET \$
rapport de progres sur l'appui au program GRN			-SEP97	chef/Umte	
demande de remboursement (troisieme trimestre 1997)			SEP97	chef/Umte/DS	
cinquieme tranche de fonds CID (\$37,500) deboursee			SEP97	Cusack	37500
programmation/budgetisation 1998 de l'appui GRN			OCT97	chef/Umte/DS	
demande de remboursement (quatrieme trimestre 1997)			DEC97	chef/Umte/DS	
sixieme tranche de fonds CID (\$37,500) deboursee			DEC97	Cusack	37500
rapport de progres sur l'appui au program GRN			-MAR98	chef/Umte	
demande de remboursement ((premiere trimestre 1998)			MAR98	chef/Umte/DS	
septieme tranche (finale) fonds CID (\$25,000) deboursee			MAR98	Cusack	25000
rapport final sur l'appui au program GRN			-JUN98	URR/DS/Cusac	

TO MAWA, PRI FACILITATOR, USAID
FROM TOM CUSACK, CID COP
CONTRACT NO 685-0285-C-00-2329
14JUL98

(then → subventions file)
Tom

FIVE COPIES OF THE REPORT OF THE JUNE98 MEETING OF THE DS'S CONVENTIONS COMMITTEE FOR THE FINAL REVIEW OF THE NRBAR SUBVENTIONS PROGRAM

I attach 2 copies of the final report of this very important meeting. The DS has sent yourself and Alioune separate copies in your roles as participants, and I have given you an extra copy today, so the USAID total will be five copies.

The conventions committee itself consists of the core technical specialists (Heads of Departments) of the ISRA/DS, with other researcher and partenaire representatives included for specific conventions. In the case of NRBAR, NGO, USAID and CID staff are also included as members or as observers.

For this last meeting on the NRBAR Convention, the committee was expanded to include senior ISRA research staff and many of the principal partenaires with which ISRA has worked under the NRBAR subventions.

The 35 participants thoroughly reviewed each subvention, and the process itself, from the technical, administrative and financial viewpoints. This was followed by discussions on lessons learned and recommendations. The meeting also served as an effective information exchange event between ISRA researchers themselves, and between ISRA and partenaire staff for the specific research results of NRBAR subventions.

The results showed that the NRBAR subventions have been effective in producing and communicating a wide range of results relevant to farmers' needs, have significantly contributed to strengthening ISRA/partenaire linkages, and have been managed as an integral part of ISRA (despite the requirement that NRBAR funds could not be administered directly by ISRA).

A particularly interesting part of the meeting was a presentation by the group of NGO representatives, which concluded that NRBAR had been very effective in

- (a) strengthening their institutional capacity through materials supplies and training of staff,
- (b) technical support for diffusion activities and
- (c) assistance for NGO/ISRA cooperation in research planning to ensure that farmers' needs are reflected in the development of ISRA's strategic plan.

A subsequent discussion centered on why approximately 50% more farmers had been trained than anticipated and concluded that this was due to (i) the spontaneous interest of those villagers not directly involved in the technologies concerned being much greater than anticipated and (ii) the ISRA/partenaire links being more productive than anticipated.

Discussions centered on ways in which the process or the results themselves could be improved, with many useful recommendations being made particularly in the context of the new subventions program of the upcoming World-Bank funded project which drew inspiration from the NRBAR subventions.

Best regards

Copy DS Rocky Didi

ANNEX C

NRBAR FINAL REPORT



INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES

**NATURAL RESOURCES-BASED AGRICULTURAL RESEARCH PROJECT
(NRBAR)
1992-1998**

FINAL REPORT

FEBRUARY 1999

In collaboration with
The United States Agency for International Development (USAID)
USAID Project Numbers 685-0285 and 685-S02

and

The Consortium for International Development (CID)
USAID Contract Number 685-0285-C-00-2329-00

PREFACE

This report presents the results of an integrated effort by the Institut Sénégalais de Recherches Agricoles (ISRA), the Consortium for International Development (CID), and the United States Agency for International Development (USAID), assisted by a large number of collaborators, in implementing the program of work described in the Natural Resources-Based Agricultural Research Project (NRBAR) Grant Agreement Number 685-0285 and in the Strategic Objective Grant Agreement Number 2. This report is produced in English, but also contains detailed summaries of results in French which are located in the resume section and in the tables attached to Chapters 3-7. The Bibliography contains a full listing of the more than 500 main reports produced by the project.

The successful outcome of this truly collaborative enterprise over the years 1992 to 1998 is due to the efforts and support of all the principal participants, ranging from the thousands of farmer-collaborators to the Senegalese Government Ministers of Agriculture, Research, and Livestock. Given the impracticality of individually acknowledging such a wide range of participants who have played key roles, we would like to thank all participants, who are listed in this report and in the reports of the bibliography, for all their efforts and their team orientation in achieving the necessary results.

In order to successfully sustain such a consistent effort over such a long period, it was crucial to have had the invaluable leadership and support of successive Director Generals of ISRA, Mouhamadou Habib Ly, Jacques Faye, and Moussa Bakhayokho, and of USAID staff, particularly the USAID NRBAR Facilitator, Mawa Diop.

AVANT-PROPOS

Ce rapport presente les resultats d'un travail commun de l'Institut Senegalais de Recherches Agricoles (ISRA), le Consortium for International Development (CID) et le United States Agency for International Development (USAID), aides par un nombre important de partenaires, en vue de l'implementation d'un programme de travail decrit par le Projet de Recherche Agricole Basee sur la Gestion des Ressources Naturelles (NRBAR) Accord de Subvention n° 685-0285 et le Strategic Objective, Accord de Subvention n° 2 La bibliographie contient une liste complete de plus de 500 rapports principaux emmanant de ce projet

Le succes de ce travail de collaboration de 1992 a 1998 est le fruit des efforts et du soutien de tous ses participants, depuis les milliers d'agriculteurs jusqu'aux Ministres de l'Agriculture, de la Recherche, et de l'Elevage du Gouvernement Senegalais Devant le nombre important de personnes ayant eu un rôle essentiel dans ce projet, il nous est impossible de leur exprimer individuellement notre gratitude Nous voudrions neanmoins remercier toutes les personnes, listées dans ce rapport et dans les rapports de la bibliographie, pour leurs efforts et leur travail d'equipe ayant aboutis a des resultats concluant

Afin de maintenir un tel effort sur une si longue periode, il a ete crucial d'avoir l'encadrement et le soutien des directeurs successifs de ISRA, Mouhamadou Habib Ly, Jacques Faye et Moussa Bakhayokho, et du personnel de l'USAID, et particulierement Mawa Diop, coordinateur du USAID NRBAR

Dr Thomas J Cusack
Chief of Party / chef d'equipe
Consortium for International Development

SUMMARY

This final report of the Natural Resources-Based Agricultural Research Project (NRBAR) summarizes the results obtained during the life of the project, 1992-98. Activities were focussed on the Institut Senegalais de Recherche Agricole (ISRA) and its collaborators. The project was funded primarily by the Government of Senegal and by the United States Agency for International Development (USAID), through a contract with the Consortium for International Development (CID). Results are presented in this report according to the five major objectives and to the seven major resource components of the project. The five major objectives were institutional research capacity strengthened, existing technologies assessed, improved technologies developed, improved technologies validated, and improved farmer exposure to improved technologies. The seven major resource components were research program support through collaborative and researcher grants, grant support to ISRA's regional natural resources programs, grants for linkages to international research institutions, personnel, including long-term and short-term technical assistance, long and short term training in Senegal and elsewhere, and complementary support by ISRA, USAID and CID.

Overall, the results indicate that all project objectives related to agricultural and natural resources management (AG/NRM) technologies had been achieved prior to the project end-date of 30 September, 1998. With the assistance of the contractor, ISRA and its collaborators completed detailed evaluations for 30 technologies out of the 108 technologies studied, developed 37 technologies, and provided assistance for the development of a further 37, validated 43 technologies at farm level, and provided assistance for the validation of a further 30, trained 8,813 farmers in new technologies, trained the administrators and technicians of 59 non-governmental organizations (NGOs) and farmer organizations, trained 473 farmer-leaders, and implemented 75 farmer exchange visits. These achievements will continue to be augmented, due to the project's groundwork of ensuring that many priority activities will continue into the post-project period.

Results related to improvements in ISRA's institutional capacity also indicate that project objectives have been attained. With the assistance of the contractor, more than 2,000 ISRA staff and staff of collaborating institutions completed training, including 81 researchers. ISRA completed a detailed 20 year mission statement, and a five-year strategic plan, with the full participation of ISRA's clients and benefactors. ISRA established outreach, natural resources management, and monitoring/evaluation units. ISRA implemented a competitive research grants program, with the formal participation of 14 collaborating institutions in 24 contracts. ISRA adopted improvements in research station, administrative and financial management, and 15 ISRA researchers trained for graduate degrees in the United States (U S).

The project terminated with a large national seminar where more than 160 participants were informed about, and jointly evaluated, NRBAR results. Participants included more than 70 ISRA staff and more than 80 of ISRA's collaborators, including three Government Ministers, the USAID Mission Director, the Chairman of the Agricultural Committee of the National Assembly, representatives of aid agencies, NGOs, farmers' organizations, related institutions such as the University of Dakar, and many senior technical officials. Two hundred thirty-two of the more than 1,000 documents produced with project assistance were displayed, and made

available for review during the seminar. Seminar participants concluded that the substantial investment of ISRA and USAID in the NRBAR Project had been very successful, however, the recommendations emphasized the need to better diffuse the extensive results documented during the final years of the project, as the value of research results largely depends on the extent to which they are transmitted and interpreted to possible users.

Project achievements are summarized in the following text and in the attached summary table, according to the five main objectives. Objectives represent the five Intermediate Results targets of Results Package Number 1, described in the Strategic Objective Grant Agreement Number 2 between USAID and the Government of Senegal.

OBJECTIVE INSTITUTIONAL RESEARCH CAPACITY STRENGTHENED

ISRA staff are evidently better trained at all levels, their orientation is much more towards clients, and research teams take more regional responsibility for their research and administrative activities, as a result of NRBAR support. ISRA developed and published its 15-year Mission Statement, its 5-year Strategic Plan, and its Annual Technical Research Reports for 1990-94, 1995, 1996, and 1997. ISRA created outreach, natural resources, and monitoring and evaluation units, and managed more than 100 contracts with multidisciplinary research teams and 14 partner organizations for applied research programs. Well-documented improvements occurred in the areas of research planning and management, research station management, and financial management. More than 2,000 ISRA staff and more than 2,000 staff of ISRA's partners were trained in priority areas, including 5 Doctor of Philosophy (Ph.D.) and 10 Master of Science (M.S.) degree students in the U.S., and Bachelor of Science (BS) level training in AG/NRM of 10 Senegalese women at two Senegalese institutions.

OBJECTIVE EXISTING AG/NRM TECHNOLOGIES ASSESSED

Thirty technologies were evaluated in detail, as case studies or as sector-wide economic impact studies, and a further 108 technologies were evaluated as part of diagnostic and other research studies. Major areas of technology evaluation were 5 technologies in soil management (simple composting, enriched manure, enriched compost, improved manure, and anti-salt dykes), 14 technologies in crop improvement (3 improved rice varieties, 3 improved varieties of millet, 7 improved varieties of cotton, and millet/cowpea intercropping), 8 agroforestry technologies (live fences, wind-breaks, management of bush regeneration, alley-cropping, perennial alley-cropping, agro-sylvopastoral improvements, improved rangelands, and improved communal lands), and 3 animal production technologies (feed-lot fattening of cattle, stabling, and animal traction). The results of these studies have been useful to research teams in designing new programs, and to researchers and clients in the management and dissemination of existing technologies.

OBJECTIVE IMPROVED AG/NRM TECHNOLOGIES DEVELOPED

Thirty-seven technologies were developed, with assistance provided for the development of a further 37. Most effort focussed on technologies to improve soil fertility for cereals production. There were four major areas of technology development: improved soil management through compost-related technologies, natural phosphate soil amendments, green manure, and animal manure; improved crop production through improved varieties of millet, maize, sorghum, sweet potato and cowpeas; pest control using natural and artificial pesticides; and seedbed management.

techniques, agroforestry through live fencing for windbreaks, for field enclosures, for forage and to control erosion, selection of rangeland tree species for soil improvement, alley-cropping, and halophyte technologies, and livestock through forage conservation, open-nucleus breeding, and stabling

OBJECTIVE IMPROVED AG/NRM TECHNOLOGIES VALIDATED

Forty-three technologies were validated at the farm level, with assistance provided for the validation of a further 30. Most effort focussed on technologies to improve soil fertility for cereals production. There were four major areas of technology validation: improved soil management through compost-related technologies, natural phosphate soil amendments, smoked fish residues as manure, animal manure, and anti-erosion structures; improved crop production through improved varieties of rice and millet, crop diversification, intercropping, pest control through use of natural and artificial pesticides, and seedbed management techniques; agroforestry through live fencing for windbreaks, for field enclosures, for forage and to control erosion, and seedbed management; and livestock through the supplementary feeding and stabling of cattle.

OBJECTIVE INCREASED FARMER EXPOSURE TO IMPROVED AG/NRM TECHNOLOGIES

A partial end-of-project survey of NRBAR research activities showed that 8,813 farmers, 473 farmer leaders, and 59 extension technicians were trained in improved technologies through the NRBAR grants. In addition, more than 75 farmer visits were implemented. Training events were concentrated in the areas of active validation: 2437 farmers in organic fertilisers, 2692 farmers in anti-erosion structures, 2391 farmers for agroforestry, 973 for crop improvement, and 320 for livestock. The proportion of women participants varied between 39% and 72%, depending on the technology under consideration. Overall, researchers have provided the necessary sustained technical support to extensionists and farmer collaborators, many agriculture and natural resources training materials were developed, duplicated, and made available to technicians and farmers, and more than 14 extension and farmer organizations were strengthened through training and technical assistance.

Project objectives were achieved through the implementation of seven major resource components, as follows:

I RESEARCH PROGRAM SUPPORT a grants program to support effective interdisciplinary research and dissemination through formal ISRA collaboration with its clients, consisting of

Ia the COLLABORATIVE RESEARCH GRANTS PROGRAM, which contractually linked ISRA and its collaborators in research, dissemination and training activities through discrete projects. The central role and impact of this program on attainment of ISRA/NRBAR objectives are very evident: a collaborative grants management system was established, 24 formal contracts were signed between ISRA's multi-disciplinary research teams and 14 NGOs, farmer groups, and the University of Dakar for the joint implementation of on-farm experiments and studies, and, by project end-date, 43 AG/NRM technologies had been validated, with 18 developed. Extensive farmer and technician training, and evaluations of existing technologies, were important and integral parts of these activities. This program achieved its objectives of

developing a system of grants management which increased the number of on-farm trials, and particularly increased client participation in the design, implementation and evaluation of ISRA's experiments

Ib the GRANTS TO ISRA RESEARCHERS PROGRAM, which directly funded ISRA staff Twenty-seven activities were implemented with the formal contractual participation of multidisciplinary research teams, and the informal participation of numerous collaborators This program has achieved its objectives of assisting research teams to continue and complete priority research activities in the natural resources area The impact of this program on attainment of ISRA/NRBAR objectives is substantial 27 agreements were signed with ISRA's multidisciplinary research teams for implementation of on-farm and on-station experiments and studies, and, by project end-date, 8 AG/NRM technologies had been validated, with 6 developed Extensive farmer and technician training, and evaluations of existing technologies, were key components of these activities

II SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM this grants program, which consisted of 35 activities based at the 4 regional research centers within the project intervention zone, has achieved its objectives of directly contributing to the development and validation of technologies, and of strengthening ISRA's overall natural resources management research program Despite the fact that funds were not released for this program until after the USAID restructuring in late-1996, it was possible to effectively implement a level of effort close to that originally planned The impact of this program on attainment of ISRA/NRBAR objectives has been substantial, particularly when events are considered in relation to complementary activities such as the short-term consultants, the NRBAR collaborative grants projects, and short-term training programs Areas where impact is most obvious are the core natural resources programs of the 4 regional research centers of the project zone were sustained, in the absence of other major funding sources, priority natural resources research activities were implemented, leading to useful technology being developed, validated and evaluated, collaborative research linkages were strengthened through 11 collaborative studies with NGOs and the University of Dakar, and through 12 other studies directly with farmers, and extensive training of technicians and farmers in new technologies A particularly successful activity was the certification of 10 new rice varieties for the Casamance, and associated extensive farmer training in seed production techniques, including the production of a training manual for future training events

III LINKAGES TO REGIONAL AND INTERNATIONAL RESEARCH INSTITUTIONS a grants program to develop and strengthen ISRA's links with international research institutions The three activities linked ISRA research teams with Tuskegee and Oregon State Universities, and appear to have achieved their objectives of directly contributing to the development and validation of technologies, and of strengthening ISRA's international institutional cooperation Despite the fact that funds were not released for this program until late-1996, it was possible to effectively implement the level of effort originally planned The impact of this program on attainment of ISRA/NRBAR objectives has been substantial, particularly when events are considered in relation to complementary activities such as the short-term consultant and short-term training programs Areas where impact is most obvious are a study of the effects of farmer management of volunteer trees and shrubs in the traditional parkland system of the Peanut Basin shows that these technologies are much more valuable than previously thought, and follow-up

work is being negotiated with international donors, and the Kolda stabling technology was successfully transferred to 15 young/women farmers, including intensive on-site training

IV PERSONNEL Technical assistance was designed to help ISRA design and carry out a natural resources-based agricultural research program, and to strengthen ISRA's capacity to plan, manage and carry out research programs This has been successfully accomplished through an extensive program of both long-term and short-term consultants

IVa LONG-TERM STAFF the NRBAR Program Director was the Director General of ISRA, currently Moussa Bakhayokho, with the NRBAR Deputy Director designated as the ISRA Scientific Director, currently Jean-Pierre Ndiaye Project personnel consisted of more than sixty ISRA staff, with the following researchers currently covering specific areas of responsibility Jean-Pierre Ndiaye for strengthening of institutional research capacity and NRBAR Grants Management, Mustapha Kebe, Director of the Bureau d'Analyses Macro-economiques, for assessment of existing natural resources management technology, the Charge de Mission/Gestion des Ressources Naturelles, Aminata Badiane, for development of improved natural resources management technology, and the Charge de Mission/Recherche-Developpement, Abdou Fall, for validation of improved AG/NRM technology, and for increased farmer exposure to improved AG/NRM technology External long-term technical assistance consisted of 9 local staff, and a total of 17 person-years for 4 long-term advisors the research manager/chief-of-party, Thomas Cusack, the natural resources planner, Paul Anamosa, the outreach advisor, Wendy Wilson, and the financial advisor, David Holmes The impact of this program has been comprehensive and pervasive, long-term personnel have provided leadership and technical expertise in the attainment of all project objectives Particular areas of impact for long-term personnel were providing the necessary leadership and support to ISRA and USAID in designing and implementing all project activities, establishing the three NRBAR grants research programs, establishing the outreach and natural resources units within the Direction Scientifique, upgrading financial management, and in completing the ISRA strategic plan and Mission Statement

IVb SHORT-TERM STAFF the program, which consisted of 121 events involving 57 consultants, achieved its objectives of providing crucial help to ISRA in designing and carrying out a natural resources based agricultural research program, and in strengthening ISRA's capacity to plan, manage and carry out research programs The impact of this program has been comprehensive and pervasive, particularly when events are considered in relation to complementary activities such as the short-term foreign training, and the short-term training in Senegal, programs Short-term personnel, under the direction of appropriate ISRA and CID long-term personnel, have provided leadership and technical expertise in the attainment of all project objectives Particular areas of impact for short-term personnel included research impact studies, monitoring and evaluation systems, communication of research results, strategic planning, socio-economic evaluation of technologies, training in specific technical areas, development of international linkages for specific technology development, syntheses of research results, and project administration The emphasis of the consultants' program evolved over the life of the project from an initial concentration on institutional strengthening in management areas, to institutional strengthening in technical areas, and finally to events for analyses of data and results, or other complements to NRBAR grants activities, this change corresponded both to the needs of the NRBAR Grants project cycle, and to the additional emphasis placed on technical

results by ISRA and USAID since 1996

V PARTICIPANT TRAINING a program to support all project objectives through four types of training

Va LONG-TERM TRAINING IN THE U S a program for ISRA researchers to study for and obtain up to five Ph D and ten M S Degrees in the U S The impact of this program on attainment of ISRA/NRBAR objectives has already been significant Direct contributions to ISRA/NRBAR objectives include 5 in-depth evaluations of existing technologies or policies, 3 technology development studies, and 2 scientific research studies A further five studies are expected to give similarly useful results upon completion This international training and experience has allowed these key ISRA researchers, including 3 women (for the Masters Degrees), to improve performance in priority areas of natural resources research, and to establish international professional networks All returned students have completed Journal articles and/or extension papers based on their research, which in most cases was implemented in Senegal The subjects of these studies were, at Ph D level 1 economics, 1 soils, 1 engineering, 1 animal science, and 1 forestry, and at M S level 3 soils, 3 agronomy, 1 forage agronomy, 1 economics, and 2 oceanography Students were distributed over 9 universities throughout the U S

Vb SHORT-TERM TRAINING AND CONFERENCES OUTSIDE OF SENEGAL this program, which consisted of 50 events involving 68 ISRA staff, has achieved its objectives of providing useful international training and experience for ISRA staff, allowing them to improve performance in priority areas Forty-three (63%) of the participants participated in international training courses for researchers in specific priority fields 6 in statistics, 5 in economics, 7 in agroforestry/forestry, 4 in soils, 9 in systems/outreach, 5 in agronomy, 3 in animal production, and 4 in rangeland management Twenty-four (35%) of the participants participated in international training courses or visits for administrators 6 for NRBAR and other project management activities, 5 for human resources management, 5 for research station management, 4 for research planning, 3 for financial management and 1 for communications In addition, 2 technicians participated in international training courses for nursery management of halophytes, and for soils/plant laboratory analyses techniques Women participants were 18% of the total, compared to the proportion of women researchers at ISRA which is 6% Destinations of participants were diverse 23 to Europe (excluding the International Service for National Agricultural Research (ISNAR)), 19 to the U S , 9 to ISNAR in Holland, 8 to other African countries, and a further 9 to Canada, Israel, Mexico or Turkey Twenty-three participants visited international research institutes, 18 visited U S universities, 14 visited universities or national research institutions outside of the U S , and 5 visits were made to NRBAR or World Bank project management sites in the U S

Vc SHORT-TERM TRAINING IN SENEGAL this program, for staff of ISRA and its collaborating institutions in Senegal, consisted of 182 events involving approximately 1400 ISRA staff and approximately the same number of staff from ISRA's partners The program has achieved its objectives of providing useful training and experience for ISRA staff, allowing them to improve performance in priority areas, particularly in partnership with clients and other collaborators A particular emphasis was placed on incorporating ISRA's partners, conjointly, into the training program, more than 50% of the major events were specifically oriented towards

partners Areas where impact is most obvious are the support given to the development, implementation and review of the NRBAR grants program, the successful participation of clients in the development of the ISRA strategic plan, on-site training in statistics and on-farm research methodology, farmer exchange visits on priority technologies, and the series of large NRBAR workshops held in each regional center for the presentation and evaluation of research results

Vd LONG-TERM B S TRAINING FOR WOMEN IN SENEGAL a program for Senegalese women to increase the number of women professionals available for future graduate training opportunities in Agricultural/Natural Resources subjects Support was provided for 7 students at the Ecole Nationale Supérieure d'Agriculture (ENSA) and 3 students at the Institut des Sciences de la Terre (IST) at the University of Dakar The final diploma will be the *Ingénieur Agronome* at ENSA and the *Ingenieur Géologique* at IST, and is expected to be conferred on the candidates when they complete their studies shortly after the project end-date

VI and VII ADDITIONAL SUPPORT BY ISRA, USAID AND CID

ISRA has provided the salaries of collaborating ISRA staff, most infrastructure costs, office space, and access to appropriate ISRA facilities and equipment It is estimated that the value of these contributions exceeds the annual targeted level of \$500,000 USAID assigned in-house personnel to assist with project implementation, funded both a technology inventory study and a financial management consultancy contract, provided office furniture and equipment, household furniture and major appliances, project vehicles, and other logistic support when necessary CID provided under its contract with USAID other logistic support, office equipment, computers, additional vehicles, and support for offices in the U S and in Senegal

The project support program was successfully implemented, including scheduled meetings and reporting exercises, with highest priority being placed on those activities which directly complemented the achievement of NRBAR objectives In addition to expenditures incurred at the USAID Mission, total project expenditures over the 1992-98 period are estimated at approximately \$15m through the CID contract, and \$4m through direct ISRA contributions Of particular importance has been the close collaboration of ISRA, CID and USAID staff in producing the annual workplans and progress reports, implementing the joint annual reviews, redesigning the NRBAR program in 1995-96 according to the restructured programs at both ISRA and USAID, and implementing the 4 large regional validation seminars and the national closing seminar during 1997-98

In conclusion, the results show that the NRBAR program has been a substantial and successful investment by both ISRA and USAID in a more sustainable future for rural development in Senegal Substantial positive impacts of these results are expected over the next decade, as ISRA continues to increase its provision of priority natural resources research and outreach services for the benefit of the rural population in Senegal

SUMMARY TABLE OF NRBAR OBJECTIVES AND MAJOR ACCOMPLISHMENTS

OBJECTIVE INSTITUTIONAL RESEARCH CAPACITY STRENGTHENED (page 1)	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
<p>-85 personnel trained -60 researchers working on station and on farm</p>	<p>-Implemented 148 training activities (2000 participants from ISRA and partner organizations) -81 researchers, 7 of whom were women, implemented research activities on station and on farm</p>
<p>a) Scientific management</p>	<p>-Produced and distributed the ISRA Strategic Plan 1998-2003, including the determination of detailed research priorities by sector, and a comprehensive ISRA Mission Statement for the period 1998-2015, with the collaboration of ISRA's clients and donors -Produced and distributed the annual ISRA reports for 1995, 1996 and 1997, and the final report of the ISRA 5-year plan 1990-1995 -Reduced the number of major research sites, to reflect lower overall funding levels, and to strengthen regional programs -Established a Monitoring and Evaluation Unit, including a data-base, produced monitoring and evaluation plans at project, regional and national strategic plan levels, and 57 researchers used the logical framework methodology in program planning -Established and managed a competitive research grants system for ISRA and its collaborators, which provided the basis for the new Fund for Agriculture and Food Research supported by the World Bank -Implemented 2 evaluations of ISRA, and 6 evaluations of specific research programs -Installed Geographic Information Systems at 2 research centers -Developed and agreed a proposal for a Fund for Agriculture and Food Research, to support the sustainability of ISRA's funding</p>
<p>b) Administrative management</p>	<p>-Established a technical services system of station managers, including an infrastructure plan -Implemented and reported on the physical inventory of buildings and equipment -Produced a scientific procedures manual, including a personnel monitoring and evaluation plan -Produced procedures manuals for administration, human resource management, research station management, and for an annual personnel evaluation system -Implemented an audit of human resource management</p>
<p>c) Financial management</p>	<p>-Completed a shared strategy for establishing a viable financial management system acceptable to donors and clients -Determined a viable indirect cost rate for ISRA research contracts -Developed terms of reference for contractors to establish the new financial management system -Established an improved and transparent accounting system for the management of the World Bank Second Agricultural Research Project (PRAII)</p>

OBJECTIVE INSTITUTIONAL RESEARCH CAPACITY STRENGTHENED (page 2)	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
d) Outreach	<ul style="list-style-type: none"> -Implemented 4 regional seminars, together with collaborators and farmers, for reporting and evaluating research results on specific themes -Established two regional outreach committees -Evaluated outreach activities which were incorporated into the NRBAR research grants program -Established a collaborative research subcontracts system, and implemented 25 subcontracts between ISRA and 14 partners, and 17 complementary activities implemented with the participation of producers, small businesses, and farmers' organizations -Evaluated the effects of natural resource management technologies on rural women of the peanut basin -Assisted in implementing an ISRA/ISNAR workshop on lessons learned from outreach experiences in West Africa -Established an ISRA outreach unit, including support to researchers for on-farm research activities and a data-base of collaborating institutions
e) Natural resource management	<ul style="list-style-type: none"> -Established a competitive researcher contracts system, and implemented 27 contracts with ISRA researchers -Developed a national research strategy for rainfed cropping systems -Developed and implemented a research contract with the University of Dakar (UCAD), and 3 contracts with international research institutions -Developed regional natural resource management strategies and contract programs for four zones of intervention of the project, and implemented 35 NRM activities with researchers and their regional collaborators -Completed comprehensive technical reviews of research results in soil/plants and animal production subject areas -Completed 2 comprehensive synthesis documents on research results related to soils management and organic matter -Established a natural resources management unit at national level
f) Increased technical knowledge of researchers and administrators	<ul style="list-style-type: none"> -Implemented long term training programs for ISRA researchers in the U S for 10 M S Degrees and 5 Ph D Degrees -89 researchers and administrators completed short-term training outside Senegal -Implemented 34 short-term training events in Senegal and 177 other smaller training events (servicing more than 2000 participants from ISRA and its partners) -Implemented long term training programs at two Senegalese Institutions, at B S level, for 10 women -Implemented additional in-service training through technical assistance

211

OBJECTIVE EXISTING AG/NRM TECHNOLOGIES ASSESSED	
AREA/ INDICATOR	MAJOR ACCOMPLISHMENTS
6 major reports on existing technologies -40 reports on studies of at least 40 existing technologies	-Produced 11 major reports on 30 existing technologies in the areas of soils management, crop improvement, agroforestry, and animal production -Produced 65 study reports on 108 technologies
a) Impact studies of technologies using sectoral data	-Completed research impact studies for rice, cotton, and millet -Completed a study of impact methodologies
b) Impact studies of technologies using site-specific data, from NRBAR sub-contracts research and technology inventories	-Completed studies of socio-economic impacts of technologies from NRBAR research projects (references S/V1, S/V2, S/V3, S/V7, S/V8, and R02, R04) -Completed 6 inventory reports (references R12, R15 and PAR2-3) -Completed 2 other evaluation reports (references PAR3-3, PAR3-6) and adoption reports (reference R15) -Completed a diagnostic study report of the Casamance region (reference PAR1-6)
c) Theses from long-term training the impact of technologies at farmer level, using site-specific data	-Completed 6 impact studies, for Improved rice varieties in the Casamance Region (Samba Sall) Open nucleus breeding systems for cattle (Mamadou Diop) Animal traction (Ahoune Fall) Climate and fisheries production (Bassirou Diaw) Anti-salt dams (Boubacar Barry) The implications of cereals policies for food security in Senegal (Ahoune Dieng)

OBJECTIVE IMPROVED AG/NRM TECHNOLOGIES DEVELOPED	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
-Reports on at least 20 new technologies under development	-Produced 42 reports, showing that 37 technologies were developed in the areas of soils management, crop improvement, agroforestry, and animal production, and that a further 37 technologies were under development
a) Grants to ISRA researchers	19 reports specific to references R01, R04, R05, R07, R08, R09, R18, R20, R22, R23, R27, and 11 other reports
b) Collaborative research subcontracts	1 report (reference S22)
c) International linkages	3 reports (reference LIR02)
d) Support to NRM	5 reports (references PAR1-2, PAR2-2, PAR4-2, PAR4-7, PAR4-13)
e) Theses from long-term training	3 reports animal production (Mamadou Diop and Mamadou Sissokho), and crop production (Mour Gueye)

OBJECTIVE IMPROVED AG/NRM TECHNOLOGIES VALIDATED	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
Reports on 20 validated technologies	-Produced 39 reports, showing that 43 technologies were validated in the areas of soils management, crop improvement, agroforestry, and animal production, and that a further 30 technologies were in the process of being validated
a) Grants to researchers	5 reports (references R04, R24)
b) Collaborative research subcontracts	19 reports (references SV01, S/V02, S/V03, S/V05, S/V07, S/V08, S/V09, S/V11, S/V12, S/V13, S/V14, S/V15, S/V23, S/V25)
c) International linkages	2 reports (references LIR01, LIR03)
d) NRM grants	6 reports (references PAR2-5, PAR4-10, PAR4-12)
e) Thesis from long-term training	1 report crop production (Mamadou Lo)
f) Workshops for presenting research results	-6 reports on research results presented at seminars with partners at Bambey (on organic matter), Kaolack (agroforestry and soil fertility), at Kolda (integration of agriculture and livestock production), and at Tambacounda (rice), and the joint annual review USAID/ISRA 1997

OBJECTIVE INCREASED FARMER EXPOSURE TO IMPROVED AG/NRM TECHNOLOGIES	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
Training of at least 2000 producers and 10 NGOs	-Trained 8813 producers, 59 technicians from NGOs, and 473 leading farmers -Implemented 75 farmer exchanges -Trained 34 NGO and farmer organizations
a) Formal and informal training of producers and lead farmers in improved technologies	-75 farmer exchanges organized -473 lead farmers trained -8813 producers trained -134 formal demonstrations in farmers' fields
b) Formal and informal training of outreach agents in new technologies	Formally trained 59 NGO technicians
c) Technical assistance to producers and outreach agents	Substantial technical support provided by ISRA during the execution of 84 research projects
d) Support to partner organizations	Supported technical and managerial improvements in 34 partner organizations who collaborated with ISRA on NRBAR activities

NOTES reference codes are used throughout this report, and are as follows
S/V Collaborative Research Grants (Chapter 7 Ia)
R Grants to ISRA researchers (Chapter 7 Ib)
PAR Grants Support for Natural Resources Management Chapter 7 II)
LIR Grants for linkages to international research institutes (Chapter 7 III)
Theses presented by the name of the participant in Chapter 7 Va)

Résumé

Le rapport final du Projet de Recherche Agricole Basee sur la Gestion des Ressources Naturelles (NRBAR) fait le bilan des resultats obtenus au cours de sa periode d'execution, allant de 1992 a 1998 L'activite NRBAR etait axee sur l'Institut Sénégalais de Recherches Agricoles (ISRA) et sur ses partenaires Les resultats sont presentes et mis en regard avec les cinq (5) grands objectifs et les sept (7) composantes ressources majeures du projet

Globalement, les resultats montrent que tous les objectifs du projet relatif aux technologies de gestion des ressources naturelles ont ete depasses des evaluations detaillees de trente (30) technologies ont ete finalisees sur les cent huit (108) etudiees , trente sept (37) technologies ont ete developpees auxquelles s'ajoutent trente sept (37) autres technologies en cours de developpement , quarante trois (43) technologies ont ete validees au niveau paysan et trente (30) autres sont en cours de validation grâce a l'encadrement du projet , huit mille huit cent treize (8813) paysans ont ete formes a de nouvelles technologies auxquels s'ajoutent les formation de cinquante neuf (59) techniciens d'Organisations Non Gouvernementales, quatre cent soixante treize (473) paysans leaders et l'organisation de soixante quinze (75) visites d'echanges avec les producteurs Les resultats relatifs au renforcement des capacites institutionnelles de l'ISRA montrent aussi que les objectifs du projet ont ete atteints plus de 2000 agents de l'ISRA et des partenaires formes parmi lesquels 81 chercheurs, elaboration d'un programme a quinze (15) ans (projet d'entreprise) et d'un plan strategique a cinq (5) ans avec la participation effective des partenaires , établissement a l'ISRA de cellules recherche/developpement, gestion des ressources naturelles et suivi-evaluation , mise en place d'un programme de subventions de recherche competitives avec la participation effective de quatorze (14) partenaires dans l'execution de vingt quatre (24) contrats , ameliorations de la gestion des stations de recherche, de la gestion administrative et financiere , et formation diplomante aux Etats-Unis (10 Master of Science et 5 PhD)

Le projet s'est acheve par un seminaire national ou plus de soixante (70) agents de l'ISRA et plus de quatre vingt (80) partenaires, trois (3) Ministres, la Directrice de l'USAID, le President de la Commission Developpement Rural a l'Assemblée Nationale, les representants des principales agences de developpement, les Organisations Non Gouvernementale (ONGs), les organisations de producteurs, les institutions partenaires et de hauts fonctionnaires de l'administration senegalaise, ont evalue ensemble les resultats du NRBAR Deux cent trente deux (232) sur plus de mille documents produits pendant la duree du projet NRBAR ont ete exposes et ont ete consultes pendant la duree du seminaire La leçon majeure tiree de ce seminaire a ete que les investissements substantiels de l'ISRA et de l'USAID realises dans le cadre du projet NRBAR ont ete tres positifs Toutefois, les recommandations ont mis en evidence la necessite de mieux diffuser et valoriser le grand nombre de resultats obtenus au cours des dernieres annees du projet, dans la mesure ou la valeur des resultats de la recherche depend dans une large part de la façon dont ils sont disseminés et compris par les utilisateurs potentiels

Les realisations du projet sont resumes et presentes ci-apres en regard des cinq (5) principaux objectifs fixes Ces objectifs constituent les resultats intermediaires du Paquet de Resultats Numero 1, proposes dans l'Accord de Subvention Numero 2, entre l'USAID et le Gouvernement du Senegal

RENFORCEMENT DES CAPACITES INSTITUTIONNELLES DE RECHERCHE

Grâce au soutien du NRBAR, les agents de l'ISRA sont mieux formés à tous les niveaux, leur orientation est davantage tournée vers les clients qu'auparavant, et les équipes de recherche impliquent plus les autorités régionales dans les activités de recherche et administratives. L'ISRA a développé et publié un programme à quinze (15) ans ou projet d'entreprise, son plan stratégique à cinq (5) ans, et ses rapports techniques annuels pour les périodes 1990-1995, 1995, 1996 et 1997. L'ISRA a créé des cellules de recherche/développement, ressources naturelles et suivi-évaluation, et a géré plus de cent (100) contrats avec des équipes pluri-disciplinaires de recherche et quatorze (14) organisations partenaires pour les programmes de recherche appliquée. Des améliorations bien lisibles sont apparues dans les domaines de la planification et de la gestion de la recherche, de la gestion des stations de recherche et dans la gestion financière. Plus de deux mille (2000) agents de l'ISRA et le même nombre de partenaires de l'ISRA ont été formés dans les domaines prioritaires, comprenant aussi le soutien à la formation diplômante (5 PhD et 10 Ms) aux Etats-Unis et la formation de dix (10) étudiantes sénégalaises (niveau supérieur) en gestion des ressources naturelles.

EVALUATION DE TECHNOLOGIES EN AGRICULTURE ET GRN UTILISEES PAR LES RURAUX

Trente (30) technologies ont été évaluées en détail (études de cas ou études d'impact socio-économique) et cent huit (108) autres technologies ont été évaluées à travers les diagnostics participatifs, les études d'inventaire et autres recherches. Les principaux domaines d'évaluation des technologies ont été : 14 technologies en amélioration des cultures (3 variétés améliorées de riz irrigué, 3 variétés améliorées de mil, 7 variétés améliorées de coton, association mil/niébe), 5 technologies en gestion du sol (compost simple, fumier enrichi, compost enrichi, fumier amélioré, digue anti-sel), 8 technologies en agroforesterie (haie vive, brise-vent, cultures en bandes pérennes, régénération naturelle, cultures en couloirs, aménagement agro-sylvo-pastoral, parcs améliorés, foyers améliorés), et 3 technologies en productions animales (embouche bovine, étable fumière, traction animale). Les résultats de ces études ont été très utiles aux équipes de recherche dans la définition de nouveaux programmes de recherche et aussi bien pour les chercheurs que les clients dans la gestion et la diffusion/dissémination des technologies existantes.

DEVELOPPEMENT DE TECHNOLOGIES AMELIOREES EN GRN ET AGRICULTURE

Trente sept (37) technologies ont été développées et trente sept (37) autres sont en cours de développement. La plupart des efforts ont été orientés sur les technologies d'amélioration de la fertilité des sols pour les productions céréalières. Les principaux domaines d'étude pour le développement de technologies étaient : (i) la gestion améliorée des sols : technologies liées au compost, fertilisation des sols par les phosphates naturels, engrais vert et fumier, (ii) l'amélioration des cultures : variétés améliorées de mil, de maïs, de sorgho, de patate douce et de niébe, lutte contre les prédateurs par l'utilisation de produits naturels et chimiques et les techniques de conservation des semences, (iii) l'agroforesterie : haies vives utilisées comme brise-vent, haies vives défensives, fourragères et anti-érosives, sélection d'espèces ligneuses.

fertilisantes, cultures en couloirs et utilisation d'espèces halophytes, et (iv) les productions animales conservation du fourrage, sélection bovine à noyau ouvert et étables fumières

VALIDATION DES TECHNOLOGIES AMÉLIORÉES EN AGRICULTURE ET GRN

Quarante trois (43) technologies ont été validées en milieu paysan et trente (30) autres sont en cours de validation grâce à l'appui apporté. Les efforts ont été concentrés sur les technologies d'amélioration de la fertilité des sols pour les productions céréalières. Les domaines majeurs concernés pour la validation des technologies étaient (i) l'amélioration de la gestion du sol technologies du compost, amendements du sol par les phosphates naturels, utilisation des résidus de transformation du poisson fumé comme engrais, fumier, aménagements anti-érosifs, (ii) l'amélioration des cultures variétés améliorées de riz et de mil, diversification des cultures, association culturale, lutte biologique et chimique contre les prédateurs, technologies de conservation des semences, (iii) l'agroforesterie haies vives brise-vent, haies vives défensives, fourragères et anti-érosives, pépinières, (iv) les productions animales supplémentation alimentaire et stabulation du bétail

ACCÈS DES RURAUX AUX TECHNOLOGIES AMÉLIORÉES EN AGRICULTURE ET GRN

Une étude préliminaire sur les activités de recherche du NRBAR a montré que huit mille huit cent treize (8813) producteurs, quatre cent soixante treize (473) paysans leaders et cinquante neuf (59) techniciens de la vulgarisation ont été formés aux technologies améliorées à travers les subventions NRBAR. De plus, plus de soixante quinze visites d'échange ont été organisées pour les producteurs. Les sessions de formation ont concerné principalement les différents domaines suivants 2437 producteurs formés aux technologies de fertilisation organique, 2692 aux aménagements anti-érosifs, 2391 aux technologies agroforestières, 973 à l'amélioration des cultures et 320 aux technologies de productions animales. Globalement, les chercheurs ont mis à la disposition des vulgarisateurs et des producteurs tout le soutien technique nécessaire. De nombreux supports de formation (fiches techniques) en ressources naturelles et en agriculture ont été développés, dupliqués et sont maintenant disponibles pour les techniciens et les producteurs. Plus de quatorze (14) vulgarisateurs et des organisations de producteurs ont été appuyés et renforcés.

Les réalisations des sept (7) composantes ressources majeures du projet sont présentées et résumées ci-après par type d'accord de subventions NRBAR.

I APPUI AU PROGRAMME DE RECHERCHE ce programme de subventions visait à appuyer les recherches inter-disciplinaires et la dissémination des résultats à travers une collaboration effective entre l'ISRA et ses partenaires. Il se subdivisait en

Ia UN PROGRAMME DE SUBVENTIONS DE RECHERCHES COLLABORATIVES, qui liaient de manière contractuelle l'ISRA et ses partenaires dans des activités de recherche, de diffusion et de formation à travers des projets définis. L'impact de ce programme sur la réalisation des objectifs du projet ISRA/NRBAR est important (i) un système de gestion des subventions collaboratives a été mis en place, (ii) vingt quatre (24) contrats formels ont été

signes entre les équipes de recherches pluri-disciplinaires de l'ISRA et quatorze (14) Organisations Non Gouvernementales, organisations de producteurs, et l'Université de Dakar pour l'organisation commune d'essais et d'études en milieu réel, et (iii) plus de quarante trois (43) technologies ont été validées dont dix-huit développées. La formation continue de producteurs et de techniciens, les évaluations de technologies existantes étaient aussi des parties intégrantes majeures de ces activités. Le programme a atteint ses objectifs de développement d'un système de gestion des subventions qui a entraîné un accroissement du nombre d'essais en milieu réel, et en particulier un accroissement du partenariat dans la définition, la mise en œuvre et l'évaluation des essais de l'ISRA.

Ib UN PROGRAMME DE SUBVENTIONS AUX CHERCHEURS DE L'ISRA, qui étaient directement attribuées aux agents de l'ISRA, travaillant souvent avec des partenaires. Vingt sept (27) activités mises en œuvre avec la participation formelle et contractuelle d'équipes pluri-disciplinaires de recherche et la participation informelle d'un grand nombre de partenaires ont permis d'atteindre les objectifs fixés en aidant les équipes de recherche à poursuivre et à compléter les activités prioritaires de recherche dans le domaine des ressources naturelles. L'impact de ce programme sur la réalisation des objectifs de l'ISRA/NRBAR est substantiel. (i) vingt sept (27) accords signés avec les équipes pluri-disciplinaires de recherche de l'ISRA pour la réalisation d'essais et d'études en milieu réel et en station, (ii) et plus de huit (8) technologies ont été validées avec plus de six (6) développées. La formation continue de producteurs et de techniciens et les évaluations de technologies existantes ont été des éléments clés de ces activités.

II UN PROGRAMME D'APPUI EN GRN POUR L'ISRA ce programme de subventions, comprenait trente cinq (35) activités domiciliées au niveau de quatre (4) centres de recherche régionaux de la zone d'intervention du projet. Ce programme a atteint ses objectifs en contribuant directement au développement et à la validation de technologies et en renforçant les programmes de recherche sur la gestion des ressources naturelles à l'ISRA. En dépit du fait que les fonds ont été disponibles seulement à la fin de l'année 1996 pour ce programme, il a été possible d'exécuter effectivement ce qui avait été initialement planifié. L'impact de ce programme sur la réalisation des objectifs ISRA/NRBAR a été substantiel, en particulier quand les activités sont mises en rapport avec des activités complémentaires comme les missions de consultation à court terme, les projets de subventions collaboratives NRBAR et les programmes de formation à court terme. Les domaines où les impacts sont les plus évidents sont (i) les programmes pilotes sur les ressources naturelles menés au niveau des quatre (4) centres régionaux de recherche de la zone d'intervention du projet ont été soutenus et exécutés malgré l'absence d'autres ressources financières dans ces centres, (ii) les activités de recherches prioritaires basées sur les ressources naturelles ont été réalisées, aboutissant au développement, à la validation et à l'évaluation de technologies, (iii) les relations de partenariat mises en place avec la recherche collaborative ont été renforcées à travers onze (11) études collaboratives avec les ONGs et l'Université de Dakar et à travers douze (12) autres études menées directement avec les paysans, et (iv) la formation continue de techniciens et de producteurs a vu de nouvelles technologies. Une activité particulièrement couronnée de succès a été l'homologation de dix (10) nouvelles variétés de riz en Casamance et la formation continue des producteurs à la production de semences incluant l'édition d'un manuel de formation pour les prochaines activités de formation.

III LIAISONS AVEC DES INSTITUTIONS DE RECHERCHE NATIONALES ET INTERNATIONALES ce programme de subventions visait a developper et a renforcer les liaisons de l'ISRA avec les institutions de recherche internationales Les trois (3) activites, liant des equipes de recherche de l'ISRA avec deux (2) universites americaines, ont atteint leurs objectifs en contribuant directement au developpement et a la validation de technologies, et en renforçant la cooperation de l'ISRA avec les institutions internationales En depit du fait que les fonds n'etaient pas disponibles jusqu'en fin 1996, il a ete possible d'aboutir a la realisation des objectifs initialement planifies L'impact de ce programme sur la realisation des objectifs ISRA/NRBAR a ete substantiel, en particulier lorsque les activites sont mis en rapports avec des activites complementaires telles que les etudes de consultants et les formations a court terme Les domaines ou les impacts ont ete les plus importants sont (i) une etude des effets de la gestion des paysans sur la regeneration des arbres et arbustes dans les systemes agroforestiers traditionnels du bassin arachidier montrant que ces technologies ont beaucoup plus de valeur que ce qui avait ete pense auparavant (la poursuite du travail est en cours de negociation avec des bailleurs internationaux), (ii) a Kolda, la technologie de l'etabli fumiere a ete transferee a quinze (15) jeunes femmes de producteurs et a fait l'objet d'une formation continue en milieu reel

IV PERSONNEL une assistance technique a ete apportee pour aider l'ISRA a concevoir et a executer un programme de recherche basee sur les ressources naturelles et a renforcer ses capacites a planifier, a gerer et a conduire les programmes de recherche Cela a ete accompli avec succes a travers un large programme d'assistance par des consultants a long et a court terme

IVa EQUIPE A LONG TERME Le Directeur du Programme RP1 est le Directeur General de l'ISRA, actuellement Moussa Bakhayokho Le Directeur adjoint du NRBAR est le Directeur Scientifique de l'ISRA, Jean Pierre Ndiaye Le personnel du projet est compose de plus de soixante (60) agents de l'ISRA dont les principaux responsables sont les suivants Jean Pierre Ndiaye pour le renforcement de la capacite institutionnelle de recherche et la gestion des subventions NRBAR/RP1, Moustapha Kebe pour l'acces des ruraux aux technologies ameliorees en GRN et en agriculture, Aminata Niane Badiane pour le developpement de technologies ameliorees en GRN et en agriculture et Abdou Fall pour la validation et la diffusion a un plus grand nombre de producteurs de technologies ameliorees en GRN et en agriculture L'assistance technique externe a long terme etait composee d'une equipe locale de 9 personnes et d'un total de 17 annees-personne pour 4 conseillers a long terme un chef d'equipe gestionnaire de la recherche, un planificateur en ressources naturelles, un conseiller en recherche/developpement et un conseiller financier L'impact de ce programme a ete clair et perspicace Le personnel a long terme a, de façon determinante, eu un rôle de leadership et d'expertise technique pour la realisation de tous les objectifs du projet Les domaines particuliers de l'impact pour le personnel a long terme concernent son rôle de leadership et de soutien a l'ISRA et l'USAID dans la definition et la realisation de toutes les activites du projet (i) mise en place de trois (3) programmes de subventions de recherche NRBAR, (ii) mise en place de cellules chargees des ressources naturelles et de la recherche/developpement au niveau de la direction scientifique, (iii) amelioration de la gestion financiere, et (iv) finalisation du plan strategique et du projet d'entreprise

IVb EQUIPE A COURT TERME ce programme compose 121 activites, impliquant cinquante sept (57) consultants, a atteint ses objectifs en accordant une aide importante a l'ISRA dans la mise en place et l'execution du programme de recherche basee sur les ressources naturelles et dans le renforcement de la capacite de l'ISRA a planifier, a gerer et a mener a bien des programmes de recherche L'impact de ce programme a ete clair et perspicace, particulierement quand les activites sont considerees en rapport avec des activites complementaires comme les formations a l'etranger a court terme et les programmes de formation a court terme au Senegal Le personnel a court terme, sous la responsabilite d'un agent de l'ISRA concerne et d'un membre du personnel de CID, a joue indiscutablement un rôle de leadership et d'expertise technique dans la realisation de tous les objectifs du projet Les domaines particuliers d'impact pour le personnel a court terme englobent (i) les etudes d'impact de la recherche , (ii) les systemes de suivi/evaluation , (iii) la formation dans des domaines techniques specifiques , (iv) le renforcement de la cooperation internationale pour le developpement de technologies specifiques , (v) les synthèses des resultats de la recherche , et (vi) l'administration du projet L'appui du programme des consultants a ete consacre au debut au renforcement institutionnel dans les domaines de la gestion, puis au renforcement institutionnel dans les domaines techniques et enfin aux etudes pour les analyses des donnees et des resultats et pour d'autres volets des activites des subventions NRBAR Cette evolution correspondait a la fois aux besoins dans le cadre du deroulement des subventions du projet NRBAR et a l'accent mis sur l'obtention de resultats techniques par l'ISRA et l'USAID a partir de 1996

V LES PARTICIPANTS A LA FORMATION ce programme de formation visait a appuyer tous les objectifs du projet

Va FORMATION A LONG TERME AUX ETATS-UNIS ce programme de formation a permis a cinq (5) chercheurs de l'ISRA d'obtenir un PhD et a dix (10) autres d'obtenir un Master of Science L'impact de ce programme sur la realisation des objectifs ISRA/NRBAR a ete clairement significatif Les contributions directes aux objectifs ISRA/NRBAR ont ete l'evaluation en detail de cinq (5) technologies existantes ou politiques de developpement agricole, des etudes sur le developpement de trois (3) technologie et deux (2) etudes de recherche scientifique Cinq (5) autres etudes en cours d'achevement sont attendus Cette formation et cette experience internationale ont permis d'ameliorer les performances des chercheurs de l'ISRA (incluant 3 femmes en formation MS) dans les domaines prioritaires de recherche sur les ressources naturelles et dans la mise en place de collaborations internationales Tous les diplômes ont, a leur retour, rediger des articles scientifiques et diffuser les resultats de leurs recherches, qui pour la plupart ont ete mises en œuvre au Senegal Les sujets de ces etudes etaient au niveau PhD economie (1), pedologie (1), ingenierie (1), science animale (1), et foresterie (1) , et au niveau MS pedologie (3), agronomie (3), agrostologie (1), economie (1) et oceanographie (2) Les participants a ces formation a long terme ont ete repartis au niveau de 9 universites a travers les Etats-Unis

Vb FORMATION A COURT TERME ET VOYAGES D'ETUDE HORS DU SENEGAL ce programme, regroupant cinquante activites impliquant soixante huit (68) agents de l'ISRA, a atteint ses objectifs en allouant une formation adequat et une experience aux agents de l'ISRA qui leurs ont permis d'ameliorer leurs performances dans des domaines prioritaires Quarante trois (63%) des participants ont suivi des sessions de formation internationale pour les

chercheurs dans des domaines prioritaires spécifiques 6 en statistiques, 5 en économie, 7 en agroforesterie/foresterie, 4 en pédologie, 9 en recherche/développement, 5 en agronomie, 3 en productions animales, et 4 en gestion du terroir Vingt quatre (35%) des participants ont suivi des sessions de formation internationale ou des visites destinées aux administratifs 6 pour la gestion des activités du NRBAR et autre projet, 5 pour la gestion des ressources humaines, 5 pour la gestion des stations, 4 pour la planification de la recherche, 3 pour la gestion financière et 1 pour l'amélioration des communications inter-instituts De plus, deux (2) techniciens ont participé à des sessions de formation internationale à la gestion des pépinières d'espèces halophytes et aux techniques d'analyses de laboratoire dans le domaine sols/plantes Les lieux de formation des participants ont été diversifiés, 23 en Europe (ISNAR exclu), 19 aux États-Unis, 9 à l'ISNAR en Hollande, 8 dans des pays africains autres que le Sénégal, et 9 autres participants au Canada, en Israël, au Mexique et en Turquie Vingt trois (23) participants ont visité des instituts de recherche internationaux, 18 ont visité des universités américaines, 14 ont visité des universités ou des institutions nationales de recherche autre part qu'aux États-Unis et 5 visites ont été réalisées aux bureaux du NRBAR ou de la Banque Mondiale aux États-Unis

Vc FORMATION A COURT TERME AU SENEGAL ce programme destiné aux agents de l'ISRA et à ses partenaires, s'est subdivisé en 182 activités impliquant approximativement 1400 agents de l'ISRA et à peu près le même nombre de ses partenaires Le programme a atteint ses objectifs en apportant une formation ciblée et une expérience aux agents de l'ISRA qui leur ont permis d'améliorer leurs performances dans des domaines prioritaires, particulièrement dans le domaine du partenariat avec ses clients et autres partenaires Un accent particulier a été porté à l'implication des partenaires de l'ISRA dans le programme de formation Plus de 50% des activités majeures de ce programme étaient orientées vers les partenaires Les domaines où l'impact est le plus net sont le soutien au développement, la réalisation et la revue du programme des subventions NRBAR, la participation effective des partenaires à l'élaboration du plan stratégique de l'ISRA, la formation aux méthodes statistiques et à la méthodologie de recherche en milieu réel, les visites organisées d'échanges sur les technologies prioritaires, et les nombreux ateliers organisés par NRBAR dans chaque centre régional pour la présentation et l'évaluation des résultats de la recherche

Vd FORMATION A LONG TERME POUR LES FEMMES AU SENEGAL cette formation sur des thématiques liées à l'agriculture et aux ressources naturelles a permis d'augmenter le nombre de femmes capables d'exercer de futures formations de haut niveau dans les domaines concernés La formation a consisté à appuyer sept (7) étudiantes de l'École Nationale Supérieure d'Agriculture (ENSA) et 3 étudiantes de l'Institut des Sciences de la Terre (IST) à l'université de Dakar Le diplôme obtenu sera celui d'ingénieur agronome à l'ENSA et d'ingénieur en géologie à l'IST Il est attendu pour les candidates lorsqu'elles auront mené à terme leurs études en Novembre 1998

VI et VII SOUTIEN SUPPLEMENTAIRE PAR L'ISRA, USAID et CID l'ISRA a pris en charge les salaires de ses agents collaborateurs du projet, la plupart des coûts d'infrastructure, les locaux, et l'accès à son équipement approprié Il est estimé que la valeur de ces contributions dépasse le niveau annuel de 500 000 \$ L'USAID a fourni le logement du personnel d'assistance à la réalisation du projet, a financé un contrat de consultation pour à la fois un inventaire technique et la gestion financière, a octroyé des fournitures et équipements de bureau, des



meubles et appareils electriques, les vehicules du projet, et tout le support logistique lorsque necessaire CID a assure le financement, sous contrat avec l'USAID, d'autres supports logistiques, des equipements de bureau, des ordinateurs, des vehicules supplementaires et a soutenu les bureaux des Etats-Unis et du Senegal

Le programme de soutien au projet a ete realise comme prevu, incluant les plans de travail et les rapport d'activite, avec une plus grande priorite accordee aux activites qui conduisent directement a la realisation de l'objectif assigne Les depenses totales du projet pour la periode 1992-1998 sont estimees a 15 000 000 \$ vers le contrat du CID, et 4 000 000 \$ vers l'appui direct de l'USAID Les faits plus marquants ont ete la collaboration etroite entre l'ISRA, CID et l'USAD dans la preparation des plans de travail annuel et dans la preparation des rapports d'activites, dans la realisations des revues annuels conjointes, dans la redefinition du programme NRBAR en 1995-1996 en accord avec la restructuration des programmes a l'ISRA et a l'USAID et dans l'organisation de quatre (4) seminaires regionaux de validation des resultats ainsi que dans celle du seminaire national de clôtüre

En conclusion, les resultats montrent que le programme NRBAR a ete un bon investissement a la fois pour l'ISRA et l'USAID preparant un avenir meilleur pour le developpement rural au Senegal Des impacts positifs substantiels de ces resultats sont attendus au cours des dix (10) prochaines annees dans la mesure ou l'ISRA continue a apporter une place prioritaires aux activites de recherche basee sur les ressources naturelles et la recherche/developpement pour le benefice de la population rurale au Senegal

OBJECTIFS ET REALISATIONS MAJEURES DU PROJET NRBAR

RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE	
DOMAINE/INDIC'EUR	REALISATIONS MAJEURES
85 personnels formés et 60 chercheurs travaillant en station et en milieu paysan	<ul style="list-style-type: none"> - 148 activités de formation (2000 participants ISRA et partenaires) - 81 chercheurs, dont 7 femmes, menant des activités de recherche en station et en milieu paysan
(a) Gestion scientifique	<ul style="list-style-type: none"> -Elaboration et édition du Plan strategique pour la periode 1998-2003, y compris le determination des priorites par centre, et du Projet d'Entreprise 1998-2015, avec la collaboration des partenaires -Elaboration et édition des rapports annuels 1995, 1996 et 1997, et du Bilan du Plan Quinquennal 1990-95 -Diminution du nombre des centres principales de recherche, en accord avec le niveau de financement de l'ISRA et la regionalisation -Etablissement d'une cellule de suivi (avec une base de donnees), elaboration des plans de Suivi/Evaluation aux niveaux nationales, regionales, et projet, l'utilisation du cadre logique par 57 chercheurs -Etablissement et gestion d'une systeme des subventions competitives, qui était l'origine du nouveau fond de recherche agricole -Execution de 2 evaluations de l'ISRA, et de 6 evaluations des programmes de recherche -Mise en place d'un SIG au niveau de 2 Centres -Elaboration et accord sur une proposition pour un fonds de recherche agricole et agro-alimentaire, avec l'appui prevu de la Banque Mondiale
(b) Gestion administrative	<ul style="list-style-type: none"> -Etablissement d'un systeme des gestionnaires des stations et d'un coordonnateur de gestion des stations, et d'un plan d'infrastructures -Elaboration d'un rapport sur l'inventaire physique des immobilisations -Elaboration d'un manuel de procedures scientifiques avec plan de suivi- evaluation du personnel -Elaboration des criteres et de fiches annuelles d'évaluation du personnel, des manuels de procedures de gestion administrative, de gestion des ressources humaines, de gestion des stations, et d'un systeme d'évaluation annuelle des performances du personnel - Execution d'un audit de la gestion des ressources humaines
(c) Gestion financiere	<ul style="list-style-type: none"> - Finalisation des bilans financiers annuels des centres et de l'ISRA - Selection du prestataire pour le nouveau systeme de gestion et
	<ul style="list-style-type: none"> pour le materiel - Elaboration d'un strategie pour l'établissement d'un systeme de gestion financiere avec un cadre logique - Amelioration au systeme comptable pour la gestion du PRAII

RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE	
DOMAINE/INDIC'TEUR	REALISATIONS MAJEURES
(d) Recherche/ Developpement	<ul style="list-style-type: none"> - Organisation de 4 seminaires de restitution des resultats avec les partenaires - Mise en place de 2 comites regionaux Recherche/Developpement - Evaluation des documents de diffusion des resultats de recherche NRBAR - Elaboration des protocoles pour les subventions de recherche collaborative, et execution des 25 sous-contrats entre l'ISRA et 14 de ses partenaires, et 17 activites complementaires des groupes de chercheurs - Evaluation des effets des technologies GRN sur la situation des femmes du Bassin Arachide - Assistance a un atelier ISRA/ISNAR sur les experiences en R/D en ouest Afrique - Etablissement d'une cellule de recherche developpement, avec une base de donnees et l'appui aux chercheurs sur la methodologie de recherche au milieu real
(e) Gestion des ressources naturelles	<ul style="list-style-type: none"> -Elaboration des protocoles pour les subventions aux chercheurs, et execution des 27 projets de recherche -Elaboration d'une strategie de la Direction des recherches sur les cultures et systemes pluviaux -Signature de 3 accords de convention avec des institutions internationales de recherche dont un sur le developpement des analyses des sols, et un accord avec l'UCAD -Elaboration des protocoles pour les subventions GRN au niveau des 4 Centres, et l'execution des 35 activites GRN au niveau des Centres avec chercheurs et partenaires, elaboration de 4 strategies en gestion des ressources naturelles dans les quatre zones d'intervention du projet - Revues techniques sur les resultats de recherche sols/plantes et productions animales - Elaboration des 2 documents de synthese sur la gestion de la matiere organique - Etablissement d'une cellule GRN
(f) Amelioration des connaissances techniques des chercheurs et des administratifs	<ul style="list-style-type: none"> - 10 formations de longue duree M S et 5 Ph D aux Etats-Unis - 89 participants a la formation de courte duree hors du Senegal - 34 formations de courte duree au Senegal et 177 formations ponctuelles d'appui (>2000 participants ISRA et partenaires) - Formation longue duree au Senegal de 10 femmes (niveau licence) - Formation informelle vers l'assistance technique

EVALUATION DES TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX

DOMAINE/INDIC' TEUR	REALISATIONS MAJEURES
<p>- 6 rapports majeurs sur les technologies existantes</p> <p>- 40 rapports d'étude sur au moins quarante technologies existantes</p>	<p>- 11 rapports majeurs sur 30 technologies existantes dans les domaines l'amélioration de la gestion du sol, l'amélioration des cultures, l'agroforesterie, et les productions animales</p> <p>- 65 rapports d'étude sur 108 technologies</p>
(a) les études de l'impact des technologies utilisant des données globales	<p>- Réalisation des études d'impact sur le riz, le coton, et le mil</p> <p>- Réalisation des études méthodologiques d'impact</p>
(b) les évaluations de pratiques spécifiques au cours des projets de recherche, et les études d'inventaire des technologies, au niveau du paysan, utilisant des données des sites spécifiques	<p>- Etudes d'évaluation des impacts socio-économiques des technologies sur les projets (références S/V1, S/V2, S/V3, S/V7, S/V8, et R02, R04)</p> <p>- 6 rapports d'inventaires (références R12, R15 et PAR2-3)</p> <p>- 2 autres rapports d'évaluation (références PAR 3-3, PAR3-6) et d'adoption (référence R15)</p> <p>- rapport de diagnostic participatif du Casamance (référence PAR1-6)</p>
(c) Les Thèses de formation de longue durée, Etudes de l'impact des technologies au niveau du paysan utilisant des données des sites spécifiques (six activités)	<p>- Etudes de l'impact sur</p> <ul style="list-style-type: none"> ● le riz amélioré en Casamance (Samba Sall) ● le schéma d'amélioration génétique à noyau ouvert - bovin (Mamadou Diop) ● la traction animale (Alhousse Fall) ● le climat et la production halieutique (Bassirou Diaw) ● les digues anti-sel (Boubacar Barry) ● l'offre et la demande céréalières au Sénégal implications pour l'autosuffisance alimentaire (Alhousse Dieng)

MISE AU POINT DE NOUVELLES TECHNOLOGIES EN GRN ET AGRICULTURE

DOMAINE/INDIC'TEUR	REALISATIONS MAJEURES
- Rapports sur au moins vingt nouvelles technologies en cours de développement	- 42 rapports montant que 37 technologies étaient développées, et 37 nouvelles technologies en cours de développement, dans les domaines l'amélioration de la gestion du sol, l'amélioration des cultures, l'agroforesterie, et les productions animales
(a) subventions aux chercheurs	- 19 rapports (références R01, R04, R05, R07, R08, R09, R18, R20, R22, R23, R27), et 11 autres rapports
(b) subventions collaboratives	- 1 rapport (référence S22)
(c) liaison internationale	- 3 rapports (référence LIR02)
(d) subventions GRN	- 5 rapports (références PAR 1-2, PAR2-2, PAR4-2, PAR4-7, PAR4-13)
(e) les Theses de formation de longue duree	- 3 rapports productions animales (Mamadou Diop et Mohamadou Cissokho), et production vegetales (Mour Gueye)

VALIDATION DES TECHNOLOGIES EN AGRICULTURE ET GRN

DOMAINE/INDIC'TEUR	REALISATIONS MAJEURES
- Rapports sur vingt technologies validées	- Elaboration de 39 rapports montant que 43 technologies étaient validées dans les domaines l'amélioration de la gestion du sol, l'amélioration des cultures, l'agroforesterie, et les productions animales
(a) subventions aux chercheurs	- 5 rapports (références R04, R24)
(b) subventions collaboratives	- 19 rapports (références S/V01, S/V02, S/V03, S/V05, S/V07, S/V08, S/V09, S/V11, S/V12, S/V13, S/V14, S/V15, S/V23, S/V25)
(c) liaisons internationales	- 2 rapports (références LIR01, 03)
(d) subventions GRN	- 6 rapports (références PAR 2-5, PAR4-10, PAR4-12)
(e) un These de formation de longue duree	- 1 rapport production vegetales (Mamadou Lo)
(f) Ateliers de presentation des resultats des projets de recherche	- 6 rapports sur 4 seminaires de restitution des resultats avec les partenaires a Bambey (sur la matiere organique), a Kaolack (sur l'agroforestrie et la fertilisation des sols), a Kolda (sur l'integration agriculture/elevage), et a Tambacounda (sur le riz), et la revue annuelle conjointe USAID/ISRA, 1997

ACCES DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES	
DOMAINE/INDIC'TEUR	REALISATIONS MAJEURES
- Formation d'au moins deux mille producteurs et dix ONGs	- Formation de 8 813 producteurs, de 59 techniciens des ONGs et de 473 paysan-leaders - Organisation de 75 visites d'échanges avec les producteurs - Formation des 34 ONGs et organisations paysans
(a) la formation formelle et informelle des producteurs et des paysan leaders aux nouvelles technologies	- 75 visites d'échanges organisées - 473 paysans leaders formés - 8 813 paysans formés - 134 démonstrations dans les champs des producteurs
(b) la formation formelle et informelle des agents de vulgarisation aux nouvelles technologies	- formation formelle des 59 techniciens ONG
(c) l'appui technique aux producteurs et techniciens de vulgarisation	- appui pendant l'exécution des 84 projets de recherche
(d) l'appui aux organisations des partenaires	- appui aux 34 organisations

NOTE les codes des references

SV subvention collaborative (Chapitre 7 Ia)

R subvention aux chercheurs (Chapitre 7 Ib)

PAR subvention du programme d'appui GRN (Chapitre 7 III)

LIR subvention des liaisons internationales (Chapitre 7 Va)

TABLE OF CONTENTS

PREFACE	(ii)
AVANT-PROPOS	(iii)
SUMMARY	(iv)
RESUME	(xv)
TABLE OF CONTENTS	(xxviii)
LIST OF ACRONYMS	(xxix)
LIST OF TABLES AND FIGURES	(xxx1)
1 INTRODUCTION	
1 1 Background	1
1 2 Objectives	2
1 3 Program Resource Components	2
1 4 Overview of this report	5
2 STRENGTHENING OF INSTITUTIONAL RESEARCH CAPACITY	6
3 ASSESSMENT OF EXISTING AG/NRM TECHNOLOGY	11
4 DEVELOPMENT OF IMPROVED AG/NRM TECHNOLOGY	36
5 VALIDATION OF IMPROVED AG/NRM TECHNOLOGY	50
6 INCREASED FARMER EXPOSURE TO IMPROVED AG/NRM TECHNOLOGY	61
7 PROJECT RESOURCE COMPONENTS	76
I Research Program Support	
Ia Collaborative Grants Program	78
Ib Grants to ISRA Researchers	100
II Support for ISRA's Natural Resources Program	116
III Linkages to International Research Institutions	138
IV Personnel	141
IVa Long-term	141
IVb Short-term	143
V Training	165
Va Long-term Higher Degree Training	165
Vb Short-term training and conferences outside of Senegal	174
Vc Short-term training in Senegal	191
Vd Long-term B S training for women in Senegal	218
VI & VII ADDITIONAL DIRECT SUPPORT BY ISRA, USAID, AND CID	221
8 PROGRAM SUPPORT ACTIVITIES	222
BIBLIOGRAPHY	226
ANNEX 1 FINAL PROJECT INVENTORY	313

LIST OF ACRONYMS

ACP	Agence Comptable Particuliere
AFID	Africaine D'Ingenierie pour le Developpement
AG	Agriculture
AI	Audit Interne
AT	Assistance technique
BAME	Bureau d'Analyses Macro-economiques
BMC	Lower and Middle Casamance
B S	Bachelor of Science
CDH	Centre pour le Developpement Horticole
CF	Conseiller Financier
CFA	Communaute Financiere Africaine
CG	Contrôle de Gestion
CGO	Comite de Gestion des Octrois
CID	Consortium for International Development
CIRA	Centre International de Recherches Agricoles
CM	Charge de Mission
CNBA	Center and North Peanut Basin
CNRA	Centre National de Recherches Agronomiques
CNRF	Centre National de Recherches Forestieres
COP	Chief of Party
CRODT	Centre de Recherches Oceanographiques de Dakar-Thiaroye
CRSP	Collaborative Research Support Program
CS	Special Advisor to the ISRA DG
CST	Comite Scientifique et Technique
CV	Conseiller a la Vulgarisation
DG	Direction Générale
DS	Directeur Scientifique de l'ISRA, (ISRA Scientific Director)
EDP	Electronic Data Processing
EEP	Examen de l'Execution du Programme
ENSA	Ecole Nationale Superieure d'Agriculture
FA	Financial Advisor
GIS	Geographical Information System
GRN (SP)	Gestion des Ressources Naturelles (et Systemes de Production)
GRNSPZS	Gestion des Ressources Naturelles et des Systemes de Production en Zone Seche
GWC	Grants Working Committee
IARC	International Agricultural Research Centre
ICRAF	International Center for Research in Agroforestry
ICRISAT	International Center for Research in the Semi-Arid Tropics
IITA	International Institute for Tropical Agriculture
INFORM	Information for Agricultural Research Management
INTSORMIL	International Sorghum and Millet Program
ISNAR	International Service for National Agricultural Research
ISRA	Institut Senegalais de Recherches Agricoles (Senegal Agricultural Research Institute)

IST	Institut des Sciences de la Terre
IST	Unite Information Scientifique et Technique de l'ISRA
KIR	Key Intermediate Result
LNERV	Laboratoire National d'Elevage et de Recherches Veterinaires
M/E	Monitoring and Evaluation
MIS	Management Information Systems
M S	Master of Science
NARS	National Agricultural Research System
NGO	Non-governmental Organisation (Organisation non gouvernementale)
NRBAR	Natural Resources-Based Agricultural Research Project
NRM	Natural Resources Management
ONG	Organisation non gouvernementale (Non-governmental Organisation)
OP	Organisation Paysanne (farmer organisation)
OS2	Objectif Strategique No 2
OSDIL	Organisation Senegalaise pour le Developpement des Initiatives Localisees
OSU	Oregon State University
Ph D	Doctor of Philosophy
PAPEM	Points d'Appui de Pre vulgarisation et d'Experimentation Multilocale
PAR/GRN	Programme d'Appui a la Recherche en GRN
PIR	Project Implementation Review
PNVA	Programme National de Vulgarisation Agricole
PRAII	Second Agricultural Research Project of the World Bank
PR1	Paquet pour Resultats No 1
PVO	Private Voluntary Organisation
R	Grant for ISRA Researcher
R-D	recherche-developpement
RI	Resultat Intermediaire
RP	Result Package
SARH	Service de l'Administration et des Ressources Humaines
SARII	Senegal Agricultural Research II
SBA	Southern Peanut Basin
SG	Secretariat General
S/E	Suivi et Evaluation
SIG	Systeme d'Information Geographique
SNRA	Systeme National de Recherches Agricoles
SO	Strategic Objective
SOAG	Strategic Objective Agreement
SOHC	Eastern Senegal and Upper Casamance
SOW	Scope of Work
S/V	Collaborative research grant
SYSPAI	Computer-Based Payroll Management System
TA	Technical Assistant
TDY	Consultant de courte duree, (Short-term Consultant)
UCAD	Univeresity of Dakar
URA	Unite de Recherche d'Appui
URR	Unite de Recherche Regionale

UNIVAL	Unite d'Information et de Valorisation
UP	Unite de Production
UPF	Unite de Programmation et Formation
USAID	United States Agency for International Development
WARDA	West African Rice Development Association
ZSP	rangeland zone
(partenaire)	(Institution collaborating with ISRA)

LIST OF TABLES AND FIGURES

Summary Table of NRBAR Objectives and Major Accomplishments	x1
Summary Table Objectifs et realisations majeures du projet NRBAR	xxiii
Figure 1 The Components of Strategic Objective Number 2	3
Table 2 1 List of Institutional Strengthening Activities	8
Table 2 2 Renforcement de la capacite institutionnelle de recherche	9
Table 3 1 List of Technology Evaluation Activities	12
Table 3 2 Evaluation des technologies existantes utilisees par les ruraux	13
Table 4 1 List of Technology Development Activities	37
Table 4 2 Inventaire des technologies developpees	39
Table 5 1 List of Technology Validation Activities	51
Table 5 2 Inventaire des technologies validees	53
Table 6 1 Acces des ruraux aux technologies GRN ameliorees	62
Table Ia 1 The List of Collaborative Research Grants, 1993-98	80
Table Ia.2 Subventions pour la recherche collaborative	82
Table Ib 1 The List of Grants to ISRA Researchers	102
Table Ib 2 Subventions aux chercheurs de l'ISRA	104
Table II 1 The List of Natural Resources Support Activities	119
Table II 2 Programme d'appui a la GRN	121
Table Vb Formation a court terme a l'etranger	184

1 INTRODUCTION

1.1 BACKGROUND

In order to improve the provision of priority natural resources research and outreach services for the benefit of the rural population of Senegal, the Institut Senegalais de Recherches Agricoles (ISRA) and the United States Agency for International Development (USAID) designed the Natural Resources-Based Agricultural Research Project (NRBAR). The project is detailed in the Project Paper dated 23 July, 1991, and was initiated by the NRBAR Grant Agreement 685-0285 between the Government of Senegal and the United States of America dated 31 July, 1991.

The principal problems addressed by the project were Senegal's need for low-cost natural resources-based agricultural technologies in order to increase the productivity of agricultural systems, and the need for ISRA to have a strong institutional capacity to undertake natural resources-based research. The project was designed to focus particularly on improving resource management practices which enhance the productivity and sustainability of cereals-based cropping systems in areas of Senegal having greater than 400mm annual rainfall.

The anticipated outcomes of the project were (i) the generation and validation of improved natural resource technologies in the short-term through grants and other direct assistance to ongoing research, and (ii) the generation and validation of improved natural resource technologies in the medium/long-term through training and institutional strengthening.

During the 1995-96 period, USAID/Senegal and its collaborators met numerous times to re-design their investments. One of the results of these meetings was the signing, on 27 September, 1996, of a new agreement between USAID and the Government of Senegal: the Strategic Objective Grant Agreement Number Two (SOAG No 685-SO2). Under the SOAG, the activities of the NRBAR and other agricultural sector projects were redefined and refocused towards the objective (SO2) "to increase crop productivity through improved natural resources management in zones of reliable rainfall in Senegal". The SOAG agreement replaced the earlier 685-0285 Agreement, and ended on 30 September, 1998.

The regions of Senegal which fall within the zone receiving more than 400mm of annual rainfall are Fatick, Kaolack, Thies, Diourbel, Tambacounda, Kolda and Ziguinchor, the equivalent agroecological zones as defined by ISRA are the Lower and Middle Casamance (BMC), the Upper Casamance and Eastern Senegal (SOHC), the Southern Peanut Basin (SBA), and the Central and Northern Peanut Basin (CNBA), with small parts of the Rangeland Zone (ZSP) and of the Niayes (ZN).

Four core values were defined for implementation of the SOAG: (a) activities must focus on the participation of clients in the planning, implementation and evaluation of activities, (b) the activities must have tangible and measurable results, such that their impact on clients can be evaluated, (c) individuals involved in implementation must be given the authority to make decisions and be held accountable for results, and (d) activities must be participatively managed and implemented, with clearly-defined roles and responsibilities.

In order to achieve the SOAG objective, the following four key intermediate results (KIRs) were targeted

KIR A land investments increased,

KIR B improved agricultural and natural resources management technologies (AG/NRM) mastered and used by farmers,

KIR C access to AG/NRM commodity and input markets increased, and

KIR D access to capital increased

Thirty-two Intermediate Results (IR) were defined as targets which would lead to achievement of the KIRs of the SOAG. The IRs were grouped into Results Packages (RP), which are the basis for application of resources and for measurement of progress towards the SO2. NRBAR activities were concentrated in KIR B which consisted of two Results Packages (Figure 1)

RP1 – applied research in AG/NRM, containing five IRs, and

RP2 – training of users and extension of AG/NRM technologies, containing four IRs

The ISRA/USAID program concentrated on the RP1 of KIR B, so was termed the “ISRA/USAID RP1/NRBAR Program”, instead of the original title of “NRBAR Project”. The five IRs of the RP1 constitute the five Program objectives, which are described in Section 1.2

A five-year contract for NRBAR services (USAID Contract number 685-0285-C-00-2329-00) was awarded to the Consortium for International Development (CID) by USAID in July, 1992, and this contract was extended for the “option year” until 16 July, 1998, and again until the end of the SOAG period, 30 September, 1998. In addition, the long-term training component of the program was extended to 31 December, 1998, outside of the CID/USAID contract, to enable the remaining long-term participant trainees to complete their Degrees

1.2 OBJECTIVES

The objectives and indicators of the ISRA/USAID RP1/NRBAR Program were as follows

IR B 4.0 INSTITUTIONAL RESEARCH CAPACITY STRENGTHENED

- 85 research staff (delineated by gender and level) trained
- 60 researchers (delineated by gender) conducting on-farm research

IR B 3.4 EXISTING AG/NRM TECHNOLOGIES ASSESSED

- 6 evaluation reports

IR B 3.3 IMPROVED AG/NRM TECHNOLOGIES DEVELOPED

- 20 improved technologies being developed in each of the years 1997 and 1998

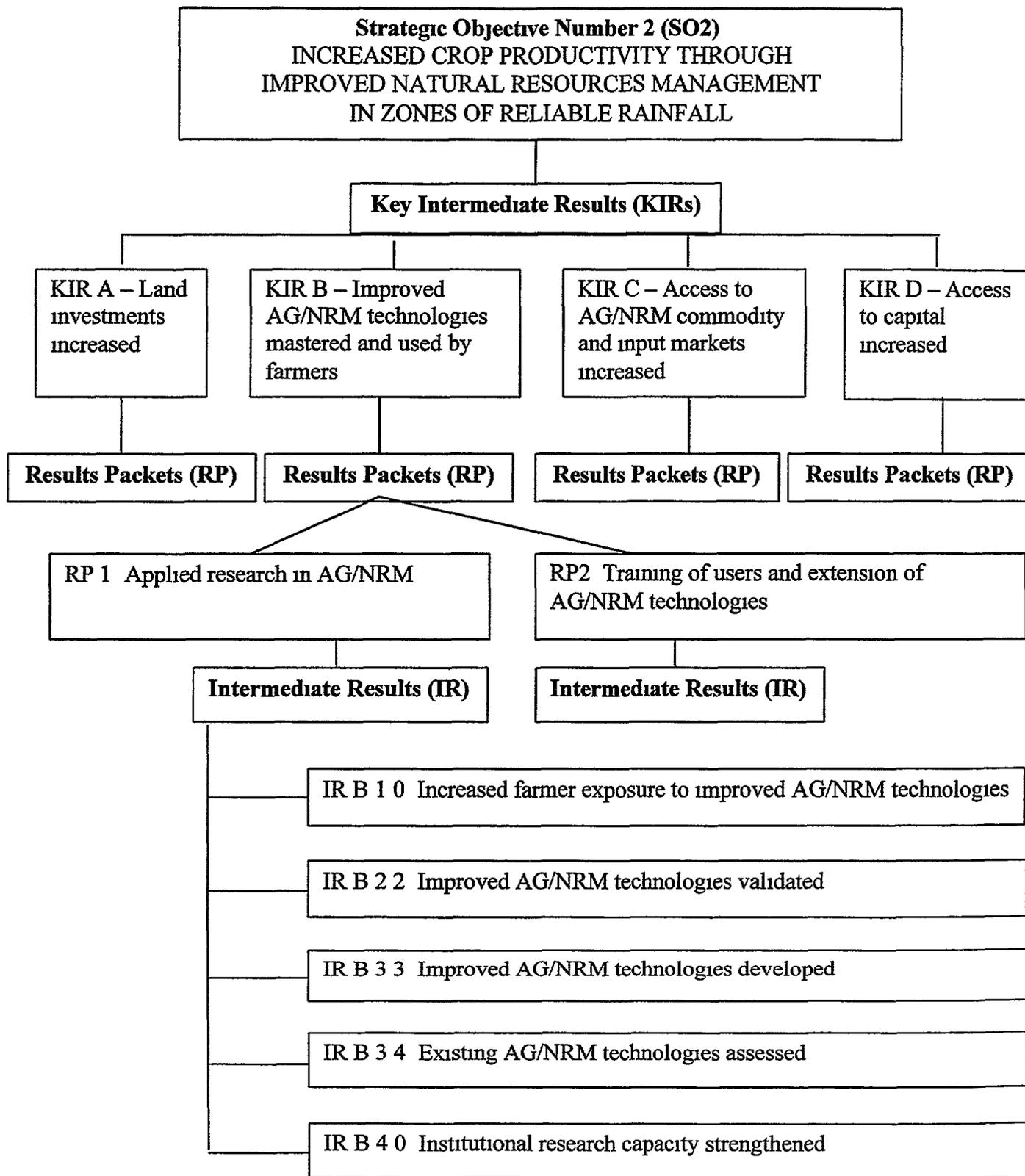
IR B 2.2 IMPROVED AG/NRM TECHNOLOGIES VALIDATED

- 5 improved technologies validated during each of the years 1997 and 1998

IR B 1.0 INCREASED FARMER EXPOSURE TO IMPROVED AG/NRM TECHNOLOGIES

- 30,000 farm families demonstrate their knowledge of improved AG/NRM technologies

FIGURE 1 THE COMPONENTS OF STRATEGIC OBJECTIVE NUMBER 2



1 3 PROGRAM RESOURCE COMPONENTS

In order to achieve the above objectives, the program had seven major resource components, which can be summarized as follows

I RESEARCH PROGRAM SUPPORT a grants program to support effective ISRA/partenaire collaboration, and interdisciplinary research and dissemination proposals from ISRA scientists, consisting of

Ia COLLABORATIVE RESEARCH GRANTS PROGRAM, which contractually links ISRA and its partenaires in research, dissemination and training activities through discrete projects, and **Ib GRANTS TO ISRA RESEARCHERS PROGRAM**, which directly funds ISRA staff, often working with partenaires, are of three types

Ib 1 GRANTS FOR RESEARCH IN SENEGAL, which finance research, dissemination and training activities of ISRA staff through discrete projects,

Ib 2 SITE STUDIES, which fund the exposure of ISRA and partenaire staff to NRM technologies outside of Senegal, and

Ib 3 SABBATICALS, which fund ISRA research staff visits to other research institutions, in order to make most use of NRM research data generated at ISRA

II SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM a grants program to each of the four regional ISRA research units in the program zone, to support their core NRM programs

III LINKAGES TO REGIONAL AND INTERNATIONAL RESEARCH INSTITUTIONS a grants program to develop and strengthen ISRA's links with international research institutions

IV PERSONNEL consisted of

IVa LONG-TERM staff, as follows the RP1/NRBAR Program Director is the Director General of ISRA, currently Moussa Bakhayokho, with the NRBAR Deputy Director designated as the ISRA Scientific Director, currently Jean-Pierre Ndiaye Project personnel consisted of more than sixty ISRA staff, with the following main responsibilities Jean-Pierre Ndiaye for strengthening of institutional research capacity and RP1/NRBAR Grants Management, Mustapha Kebe for assessment of existing AG/NRM technology, the CM/GRN, Aminata Badiane for development of improved AG/NRM technology, and the CM/R-D, Abdou Fall, for validation of improved AG/NRM technology and for increased farmer exposure to improved AG/NRM technology Additional personnel consisted of four long-term external Technical Assistants, a project administrator, a grants administrator, and other CID and USAID support staff, and numerous

IVb SHORT-TERM staff, consisting primarily of short-term consultants

- V PARTICIPANT TRAINING a grants program to support all project objectives, consisting of
 - Va LONG-TERM TRAINING IN THE U S for ISRA researchers, for five Doctorate and ten Masters Degrees,
 - Vb SHORT-TERM TRAINING AND CONFERENCES OUTSIDE OF SENEGAL for ISRA staff,
 - Vc SHORT-TERM TRAINING IN SENEGAL for ISRA and partenaire staff, and
 - Vd LONG-TERM B S TRAINING FOR WOMEN IN SENEGAL, for Senegalese women in AG/NRM subjects

VI ADDITIONAL DIRECT SUPPORT BY ISRA

VII ADDITIONAL SUPPORT BY USAID AND CID

1 4 OVERVIEW OF THIS REPORT

This final report of the ISRA/USAID RP1/NRBAR program covers progress achieved during the period 1 September, 1992 to 30 September, 1998 This report is based on progress recorded in the NRBAR Monthly reports, Quarterly Reports, and other project reports The format of this report follows as closely as possible the format of the 1997 and 1998 workplans, in order to ensure adequate cross-referencing

The following Chapters 2 to 6 of this report detail progress under the five major objectives of the program Chapter 7 summarizes progress under each of the seven resource components of the program Chapter 8 details program support activities, including administration, management, monitoring and evaluation, and financial services

The Bibliography lists the principal documents produced and distributed with the direct assistance of the project Many other related documents, ranging from Scientific Journal articles to extension materials, which are currently in preparation, will be produced by the relevant agencies after the project completion date Documents are listed in the Bibliography according to the themes of each of the Chapters, and following the same sequence of presentation as found in the body of this report, to ensure efficient cross-referencing

This report is based on the results of an integrated effort by ISRA, assisted by USAID and CID and other collaborators, to undertake the program of work described in the NRBAR Grant Agreement 685-0285 and in the SOAG No 685-SO2

2 STRENGTHENING OF INSTITUTIONAL RESEARCH CAPACITY

The anticipated outcomes of the project were (i) the generation and validation of improved natural resource technologies in the short-term through grants and other direct assistance to on-going research, and (ii) the generation and validation of improved natural resource technologies in the medium/long-term through training and institutional strengthening. Results relating to the first outcome are presented in Chapters 3-6 of this report. Results related to the second outcome are summarized in this Chapter.

The institutional strengthening objective is based on the need for ISRA to have a strong institutional capacity to undertake natural resources-based research. As ISRA is the principal institution in Senegal responsible for agricultural technology generation and validation, most emphasis has been placed on ISRA itself. However, the project has played a crucial role in developing linkages with other research institutions such as L'Ecole Nationale Supérieure d'Agriculture (ENSA), the University of Dakar (UCAD), and with a large number of NGOs and other partners who jointly assist with the validation and dissemination of technologies. The institutional research capacity of ISRA was significantly strengthened during the project period, primarily through the training and technical assistance activities described in Chapter 7.

As a result of NRBAR support, ISRA staff are better trained at all levels and are more oriented towards clients in research planning, implementation and review, and research teams take more responsibility for their research and administrative activities. Routine management processes have been positively impacted, for example, the 1996, 1997 and 1998 research programs have been prepared according to a rigorous system of planning, with the 1997 ISRA workplan showing that (1) each research program now has clearly-defined objectives achievable in the medium term, (2) a system is in place for the monitoring and evaluation of research programs, and (3) a basis for the evaluation of researchers and research activities has been established. ISRA is presently in a restructuring phase of assuring that programs are aligned with the available human, physical and financial resources, as exemplified by the imminent closure of the Ziguinchor and Kaolack stations as major research centers.

A list of activities undertaken for institutional strengthening is attached as Table 2.1. There have been six main areas of activity: research planning and management, research station management and administration, financial management, outreach, natural resources management, and improved skills. Project-related documents for each area of activity are listed in the Bibliography. The major results for each area of activity are summarized in the following text, and in Table 2.2.

RESEARCH PLANNING AND MANAGEMENT

ISRA developed and published its first detailed Mission Statement, following extensive consultation with clients, Government Officials and donors. ISRA also developed and published its Strategic Plan for the period 1998-2003, following an extensive period of consultation with its staff and partners through eight regional strategic planning committees. The Plan contains an extensive justification for its research priorities. Four major summary reports of ISRA research activities were developed and published covering the periods 1990-94, 1995, 1996, and 1997. The ISRA Scientific Director created an in-house grants management committee which

designed, managed, monitored, and reviewed three NRBAR research grants systems, comprising more than 100 contracts with multidisciplinary research teams and partners ISRA has been reorganized into multi-disciplinary research teams with full regional autonomy, and is presently consolidating its infrastructure and management functions at 5 centers, representing the major agro-ecologic zones of intervention A monitoring and evaluation unit was created, and has been successful in institutionalizing the logical framework method A proposal to create a national agricultural Research Fund was developed and approved at a national workshop, a legal framework is presently being drafted, so that a central fund supported by the World Bank and other donors can sustainably fund the national research system institutions using a system of protocols and competitive awards of grants derived from the NRBAR grants program ISRA also implemented two comprehensive evaluations during the period, conjointly with partners, and 6 thorough reviews of specific research programs, the results of these activities were incorporated into the annual workplans

RESEARCH STATION MANAGEMENT AND ADMINISTRATION

ISRA developed, through extensive staff input, a system of annual evaluation of researchers, with specific criteria of evaluation A human resources management audit was implemented A system of station managers was put in place for technical support services to researchers Procedures manuals for human resources, administration, station management, and scientific management were completed and validated An inventory was completed and used for developing an infrastructure plan

FINANCIAL MANAGEMENT

ISRA achieved improvements in its budget and accounts systems, indirect cost rates were established, a comprehensive plan for achieving a viable financial management system was developed, and annual financial accounts for research centers were finalised and used for future financial planning

OUTREACH

ISRA established an outreach unit, which was successful in implementing 4 large regional outreach seminars, based on the results of the NRBAR grants program A system of collaborative research grants was developed and implemented, including 24 formal sub-contracts between ISRA research teams and 14 NGOs and other partners The first 2 regional outreach committees were established, to formally include clients in the planning, monitoring, and evaluation of research activities at regional level

NATURAL RESOURCES MANAGEMENT

Five ISRA programs completed natural resources management research strategies, which provided the basis for subsequent funding of programs ISRA established a natural resources unit which developed 3 large projects with international research institutions, implemented 35 natural resources activities based at the 4 regional research centers of the NRBAR intervention zone, and implemented extensive technical reviews of research results in specific areas

TRAINING

The NRBAR-sponsored training programs were extensive and often intensive in specific priority areas. Fifteen ISRA research staff undertook training for the M S and Ph D degrees in the US, and ten promising Senegalese women were trained in natural resources subjects to BS level in Senegal. In addition, more than 2,000 ISRA staff and more than 2,000 partners were trained through more than 200 events financed in Senegal and outside of Senegal.

TABLE 2 1 LIST OF INSTITUTIONAL STRENGTHENING ACTIVITIES

RENFORCEMENT DE LA CAPACITE INSTITUTIONNELLE DE RECHERCHE	
	(a) la gestion scientifique
	(b) la gestion administrative
	(c) la gestion financiere
	(d) la Recherche-Developpement
	(e) la Gestion des Ressources Naturelles
	(f) l'amelioration des connaissances techniques des chercheurs et des administratifs
A	Elaboration du Plan Strategique harmonisation - finalisation et synthese (Papa Seck)
B	Programmation annuelle des activites de recherche determination des priorites (DS)
C	Mise en place d'un systeme d'information pour le suivi-eval de la recherche (Mme Ba)
D	Restitution des resultats de la recherche aux chercheurs, clients et bailleurs (DS)
E	Amelioration des connaissances techniques des chercheurs et techniciens (DS)
F	Amelioration des connaissances techniques des agents financiers (AI/ACP)
G	Amelioration des connaissances techniques des agents administratifs (SG/CG)
H	Etude sur le financement durable de la recherche (DG)
I	Amelioration des liaisons avec les autres institutions de recherche en GRN (DS)
J	Mise en place d'une base de donnees regionale (PAR3-7 Modou Sene)
K	Procedures administratives, financieres et comptables (AI)
L	Amelioration de la gestion financiere et comptable (AI)
M	Mise en place d'un systeme d'information geographique (PAR1-7 Mamadou Khouma)
N	Mise en place du budget 1998, et contrôle et suivi du budget 1998 (CG)
O	Gestion des centres et stations (SG)
P	Mission de contrôle et d'assistance aux Unites (AI)
Q	Gestion des ressources humaines (SG)
R	Evaluation de personnel performance et carriere (DG)
S	Methodologie d'analyse des sols (M S These Evelyne Ndiaye)
T	Methodologie d'analyse des sols (M S These Aïssatou Ndiaye)
U	Test Methodologique varietes de sorgho resistantes a la secheresse (Tanou Ba)
V	Etude Methodologique sur la productivite de bois (M S These Massamba Thiam)
W	Etude Methodologique sur la selection varietale de niebe (M S These Fana Sylla Ba)

TABLE 2 2: SUMMARY TABLE OF MAJOR ACCOMPLISHMENTS FOR STRENGTHENING OF INSTITUTIONAL RESEARCH CAPACITY

OBJECTIVE INSTITUTIONAL RESEARCH CAPACITY STRENGTHENED (page 1)	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
-85 personnel trained -60 researchers working on station and on farm	-Implemented 148 training activities (2000 participants from ISRA and partner organizations) -81 researchers, 7 of them women, implemented research activities on station and on farm
a) Scientific management	-Produced and distributed the ISRA Strategic Plan 1998-2003, including the determination of detailed research priorities by sector, and a comprehensive ISRA Mission Statement for the period 1998-2015, with the collaboration of ISRA's clients and donors -Produced and distributed the annual ISRA reports for 1995, 1996 and 1997, and the final report of the ISRA 5-year plan 1990-1995 -Reduced the number of major research sites, to reflect lower overall funding levels, and to strengthen regional programs -Established a Monitoring and Evaluation Unit, including a data-base, produced monitoring and evaluation plans at project, regional and national strategic plan levels, and 57 researchers used the logical framework methodology in program planning -Established and managed a competitive research grants system for ISRA and its collaborators, which provided the basis for the new Fund for Agriculture and Food Research supported by the World Bank -Implemented 2 evaluations of ISRA, and 6 evaluations of specific research programs -Installed Geographic Information Systems at 2 research centers -Developed and agreed a proposal for a Fund for Agriculture and Food Research, to support the sustainability of ISRA's funding
b) Administrative management	-Established a technical services system of station managers, including an infrastructure plan -Implemented and reported on the physical inventory of buildings and equipment -Produced a scientific procedures manual, including a personnel monitoring and evaluation plan -Produced procedures manuals for administration, human resource management, research station management, and for an annual personnel evaluation system -Implemented an audit of human resource management
c) Financial management	-Completed a shared strategy for establishing a viable financial management system acceptable to donors and clients -Determined a viable indirect cost rate for ISRA research contracts -Developed terms of reference for contractors to establish the new financial management system -Established an improved and transparent accounting system for the management of the World Bank Second Agricultural Research Project (PRAII)

OBJECTIVE INSTITUTIONAL RESEARCH CAPACITY STRENGTHENED (page 2)	
AREA/INDICATOR	MAJOR ACCOMPLISHMENTS
d) Outreach	<ul style="list-style-type: none"> -Implemented 4 regional seminars, together with collaborators and farmers, for reporting and evaluating research results on specific themes -Established two regional outreach committees -Evaluated outreach activities which were incorporated into the NRBAR research grants program -Established a collaborative research subcontracts system, and implemented 25 subcontracts between ISRA and 14 partners, and 17 complementary activities implemented with the participation of producers, small businesses, and farmers' organizations -Evaluated the effects of natural resource management technologies on rural women of the peanut basin -Assisted in implementing an ISRA/ISNAR workshop on lessons learned from outreach experiences in West Africa -Established an ISRA outreach unit, including support to researchers for on-farm research activities and a data-base of collaborating institutions
e) Natural resource management	<ul style="list-style-type: none"> -Established a competitive researcher contracts system, and implemented 27 contracts with ISRA researchers -Developed a national research strategy for rainfed cropping systems -Developed and implemented a research contract with the University of Dakar (UCAD), and 3 contracts with international research institutions -Developed regional natural resource management strategies and contract programs for four zones of intervention of the project, and implemented 35 NRM activities with researchers and their regional collaborators -Completed comprehensive technical reviews of research results in soil/plants and animal production subject areas -Completed 2 comprehensive synthesis documents on research results related to soils management and organic matter -Established a natural resources management unit at national level
f) Increased technical knowledge of researchers and administrators	<ul style="list-style-type: none"> -Implemented long term training programs for ISRA researchers in the U S for 10 M S Degrees and 5 Ph D Degrees -89 researchers and administrators completed short-term training outside Senegal -Implemented 34 short-term training events in Senegal and 177 other smaller training events (servicing more than 2000 participants from ISRA and its partners) -Implemented long term training programs at two Senegalese Institutions, at B S level, for 10 women -Implemented additional in-service training through technical assistance

3 ASSESSMENT OF EXISTING AG/NRM TECHNOLOGY

The evaluation of existing technologies, which is an essential step at the beginning and end of the research process, was undertaken through 19 activities, involving short-term technical assistance and training, and studies undertaken as an integral part of the NRBAR grants projects. These activities are summarized in the appropriate sections of Chapter 7, each activity can be reviewed in detail in the final activity reports available at ISRA and referenced in the Bibliography of this report. The list of activities and their titles are presented in Table 3.1

Thirty technologies were evaluated in detail, as case studies or as sector-wide economic impact studies, and a further 108 technologies were evaluated as part of diagnostic and other research studies. The results of the detailed studies are presented in Table 3.2. Major areas of technology evaluation were 5 technologies in soil management (simple composting, enriched manure, enriched compost, improved manure, and anti-salt dykes), 14 technologies in crop improvement (3 improved rice varieties, 3 improved varieties of millet, 7 improved varieties of cotton, and millet/cowpea intercropping), 8 agroforestry technologies (live fences, wind-breaks, management of bush regeneration, alley-cropping, perennial alley-cropping, agro-sylvopastoral improvements, improved rangelands, and improved communal lands), and 3 animal production technologies (feed-lot fattening of cattle, stabling, and animal traction).

The results of these studies have been useful to research teams in designing new research programs and in management and dissemination of existing technologies. Some examples of impact are

- Boubacar Barry returned to ISRA after successfully completing his Ph.D. in the U.S. on the analyses of the relationship between recent hydrology and watershed management, and land use, in the Casamance. The results are useful for making extension recommendations for crop scheduling, and for new varieties of rice and other crops which are needed to better utilize the drier growing conditions. The results demonstrate the effects of anti-salt dikes, and can be used in the more effective planning of new dikes as well as in the more productive use of existing dikes. The results can also help regional decision-makers in establishing natural resources policies and guidelines.
- As part of the Ph.D. thesis of Samba Sall, ISRA completed the evaluation of 11 improved rice varieties, and identified ways in which the adoption rates of such varieties could be improved.
- The main outcomes of the BAME/Purdue research impact studies were seven key improved technologies, which were developed and adapted by ISRA for millet, rice and cotton production, showed excellent returns on investment, even when all extension costs are included, the improved millet varieties Souma 3 (developed by ISRA), and IBV 8001/8004 (developed by ICRISAT and adapted by ISRA) showed rates of return of 22-31%, depending on the extent of farmer production of seed, the improved rice varieties Sahel 108 (short-term variety) and Sahel 201/202 showed rates of return of approximately 100-150%, depending on the extent of double-cropping possible, an improved cotton input package, adapted by ISRA/SODEFITEX from foreign packages, showed a rate of return of approximately 40%, or somewhat higher with the availability of well-developed cottonseed processing facilities, and these investments in research and development by USAID and other donors over the last twenty years have been very profitable through their substantial impacts on agricultural productivity at the household level.

In conclusion, the number of technologies which have been evaluated through NRBAR assistance, and those which continue to be evaluated, has exceeded the workplan indicators, and much of this priority work should be continued, to assist with research planning and with the tailoring of new technologies to better meet farmers' needs

TABLE 3.1 LIST OF TECHNOLOGY EVALUATION ACTIVITIES

EVALUATION DES TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX

- (a) les études de l'impact des technologies, utilisant des donnees globales,
- (b) les evaluations de pratiques specifiques au cours des projets de recherche, et les etudes d'inventaire des technologies, au niveau du paysan, utilisant des donnees des sites specifiques
- (c) les Theses de formation de longue duree

- A Impact economique de la recherche et de la vulgarisation sur le developpement agricole (M Kebe)
- B R12 l'inventaire des technologies GRN utilisees en Basse Casamance (Cheikh Omar Ba)
- C R02 une etude d'impact des Unites experimentales de Kaolack SBA (Desire Sarr)
- D R15 evaluation des technologies de gestion des sols dans les rizieres en MBC (Cheikh Omar Ba)
- E Ph D These (B Barry) l'impact des pratiques alternatives de digues anti-sel en BMC
- F Ph D These (S Sall) evaluation de l'adoption des varietes de riz ameliorees en BMC
- G Ph D These (A Fall) l'impact de la traction animale sur le riz, le mil et le maïs en BMC
- H les evaluations des pratiques prevalentes entreprises comme partie integrante de la mise au point et de la validation des technologies, sont decrites dans les Sections 4 et 5) (M Kebe)
- I les nouveaux projets de recherche qui etaient approuves pendant l'annee 1997 Recherche, Etudes de sites/Programmes Sabbatiques/Theses/Liaisons Internationales) (M Kebe)
 - R16 - Inventaire de Technologies basees sur la gestion des ressources naturelles et utilisees en Moyenne Casamance (CHEIKH OUMAR BA)
 - PAR2-3 Diagnostique sur les modes de transferts et evaluation socio-economique des technologies sur la GRN (CNBA - Mbene Faye)
 - PAR3-3 Analyse de l'impact socio-economique des principales technologies agricoles (SBA-Astou SENE)
 - PAR3-4 Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles -SBA (Desire SARR)
- J Diagnostic participatif des systemes agro-sylvo-pastoraux dans le Programme PAR/GRN de l'URR Centre Nord Bassin Arachidier CNBA (PAR2-2, Dogo Seck)
- K Diagnostic pluridisciplinaire des systemes de production dans le Programme PAR/GRN de l'URR Senegal Oriental Haute Casamance SOHC (PAR4-8, Demba Farba Mbaye)
- L Diagnostic pluridisciplinaire du secteur agricole regional dans le Programme PAR/GRN de l'URR Sud Bassin Arachidier SBA (PAR3-6, Mamieval Sene)
- M Approfondissement du Diagnostic partage dans le Programme PAR/GRN de l'URR Basse et Moyenne Casamance BMC (PAR1-6, Mamadou Kouma)
- N Etude sur l'auto-suffisance en cereales (M S These – Alioune Dieng)
- O Etude sur le climat lie avec la production halieutique (Bassirou Diaw)

TABLE 3.2 EVALUATION DES TECHNOLOGIES EXISTANTES UTILISEES PAR LES RURAUX (page 1-23)

Le projet ISRA/NRBAR s'est attache a identifier et a evaluer les technologies existantes, produits de la recherche, utilisees par les ruraux L'identification et l'evaluation de ces technologies ont ete realisees grâce a des etudes d'impact en utilisant des donnees globales, des evaluations de pratiques specifiques (au cours des activites de recherche), des etudes d'inventaire des technologies dans des sites specifiques, des theses (Ms ou PhD) Les informations recueillies dans le cadre du diagnostic participatif (ou partage) realise au niveau de chaque zone d'intervention du projet sont venues completer les etudes d'identification et d'evaluation des technologies traditionnelles et des pratiques prevalentes

Ia. Etudes de l'impact économique ou social des technologies utilisant des données globales

Technologies Varietes ameliorees de riz irrigue

L'evaluation ex-ante des varietés ameliorees permettant la double culture de riz dans la vallee etait l'objectif de cette etude L'utilisation de Sahel 108 (a cycle court) en saison sèche chaude et Sahel 201 ou 202 (cycle moyen) en saison humide rend la culture de riz hautement rentable (gain de productivite de 10% par rapport aux varietes locales pour Sahel 201 et 202 et de 11% pour Sahel 108) L'estimation des taux d'adoption a montre qu'ils seront de 15 à 25% en hivernage et de 5 a 40% en saison sèche pour les varietes ameliorees evaluatees Le taux de rentabilite interne moyen espere est d'environ 116% confirmant la pertinence des investissements realises La recherche varietale permettant la double culture de riz apparaît hautement rentable La poursuite ex-post des etudes de diffusion est fortement recommandee pour mieux apprecier les caracteristiques importantes de ces varietes de riz et mieux comprendre les autres composantes du paquet technologique susceptibles d'accelerer le taux d'intensite culturale

Technologies Varietes ameliorees de mil

L'evaluation ex-post de l'impact des varietes ameliorees de mil (Souna 3, IBV 8001 et IBV 804) etait l'objectif de cette etude La rentabilite des recherches menees a ete etablie bien que les resultats soient assez modestes Le TRI varie en fonction du taux de renouvellement des semences Le taux d'adoption des varietes ameliorees, depuis leur introduction (1972 pour Souna 3 et 1983 pour les IBV) reste approximatif Les gains de productivite sont de 32%, 7% et 27% respectivement pour le Souna 3, les IBV 8001 et 8004 par rapport a la variete traditionnelle Un des objectifs prioritaires de recherche est d'entreprendre des etudes ex-post sur les caracteristiques des technologies et des producteurs susceptibles d'influencer l'adoption des technologies introduites

Table 3 2 page 1

Technologies Varietes ameliorees de coton

L'évaluation ex-post de l'ensemble des innovations technologiques (varietes ameliorees, agronomie, phytotechnie et entomologie) etait l'objectif de cette etude. Les taux de rentabilite interne estime remunererent le capital investi a des taux acceptables (>12%). L'efficacite sociale de la filiere est accentuee par une plus grande ouverture vers le marche mondial. La prise en compte du marche des graines en tant que sous produit accentue la rentabilite sociale de la filiere cotonniere. L'analyse economique revele que la rentabilite sociale de la filiere est plus prononcee par l'adoption de politiques de prix se rapprochant des prix du marche international.

Principaux rapports realises dans le cadre de ce volet

The Economic Impact of Agricultural Research a practice guide (Purdue University)

Guide sur les methodes et applications pratiques de l'evaluation de l'impact de la recherche agricole (M Sidibe, J H Sanders, 1998)

Impact social de la recherche et du transfert de technologies sur le coton au Senegal (P A Seck, M Sidibe, A.M Beye, M Kebe, 1998)

Impact social de la recherche sur le riz dans la vallee du fleuve Senegal (A.A Fall, M Sidibe, M Fisher, 1996)

Technical change in Senegal's irrigated rice sector impact assesment under uncertainty (M Fischer, W Masters, M Sidibe)

L'impact economique de la recherche agricole et de la vulgarisation sur la culture du mil au Senegal (M Sidibe, M Kebe, 1998)

Synthese des etudes d'evaluation de l'impact economique de la recherche et du transfert des technologies au Senegal (M Sidibe, M Kebe, 1998)

Table 3 2 page 2

Ib Evaluations de pratiques spécifiques au cours des projets de recherche et les études d'inventaire des technologies, au niveau du paysan, utilisant des données spécifiques

1 Impacts socio-economiques des projets collaboratifs ISRA- NRBAR-ONG-OP sur les ménages ruraux et leurs groupements

L'ISRA a développé dans le cadre du projet NRBAR, différents projets collaboratifs avec des ONG parmi lesquelles Winrock International, le Fonds Chrétiens pour les Enfants (CCF), Rodale International, l'Organisation Sénégalaise pour le Développement des Initiatives Localisées (OSDIL) et Africare (semences améliorées, compost/fumier, associations culturelles, haies vives défensives, embouche, parcs améliorés). Ces projets ont tenté de valoriser en milieu paysan les technologies mises au point par la recherche (semences améliorées, compost/fumier, associations culturelles, haies vives défensives, embouche, parcs améliorés). Une série d'études ont été menées pour évaluer les impacts socio-économiques des projets sur les ménages et les groupements ruraux.

Projet collaboratif ISRA - NRBAR - Winrock International - CCF

Technologies variétés améliorées de mil, compost, haies vives

Entre 1993 et 1996, ce projet a vulgarisé l'utilisation des semences améliorées de mil (Souma III et IBV 8004), du compost et des haies vives/manioc. Le projet s'est soldé par des impacts positifs qui se traduisent par une nette amélioration des bilans céréaliers des différents types de ménages et la création de revenus supplémentaires. Avant le projet, la situation était caractérisée par un déficit céréalier variant entre -260 et -860 kg, ce qui équivalait à des besoins de consommation allant de 1,5 mois à 5 mois suivant les quatre types de ménages identifiés. La mise en œuvre du projet s'est traduite par une augmentation des productions de mil variant entre 600 et 700 kg, soit un accroissement tournant entre 37 et 46%. Cet accroissement a permis de combler 3,5 mois de déficit. Mieux encore, certains ménages ont pu assurer leur sécurité céréalière et dégager même des excédents de 440 kg. De plus, grâce à la vente de manioc et de semences améliorées, les ménages ont pu dégager des revenus supplémentaires variant de 52 250 à 143 130 F CFA. Les revenus tirés du mil ont été constants pour tous les types de ménage. Chaque ménage a vendu 50 kg de semences sélectionnées tirées de leur production à 275 F CFA/kg aux Projets de Développement de l'Enfant et de la Famille (PDEF) de leur localité. Ces revenus supplémentaires contribuent à la satisfaction de besoins divers pour le bien-être social. Par ailleurs, le projet a participé à la préservation des écosystèmes ruraux en améliorant le couvert végétal. Grâce à son volet haies vives d'*Euphorbia balsamifera* (Salane), il a permis en moyenne à chaque ménage d'aboutir à une régénération naturelle de 32 pieds et à une plantation de 21 pieds. Les taux d'adoption des technologies ont été globalement très satisfaisants. Le pourcentage de ménages utilisateurs d'au moins une des technologies est de 80% à Baback et 100% à Ndollor. Les contraintes d'adoption identifiées sont (i) le coût du ciment très élevé, le transport de la matière fumière et du compost, l'exode rural, (ii) le manque d'informations et la disponibilité insuffisante des semences améliorées, (iii) la disponibilité en terre très réduite, le transport, la main-d'œuvre et le matériel végétal insuffisants, pour les haies vives.

Table 3 2 page 3

Projet collaboratif ISRA - NRBAR - Rodale International

Technologies fumier et compost enrichi, association mil/miebe, embouche

Ce projet a teste en milieu paysan entre 1993 et 1996 les technologies suivantes

- l'utilisation de la matiere organique sous forme de fumier ou de compost avec de faibles doses d'engrais mineraux,
- l'association mil - miebe,
- l'embouche regeneratrice

En situation sans projet, tous les menages sauf un etaient deficitaires en cereales (surtout mil) Ce deficit allait de 225 kg a 1125 kg correspondant a des besoins de consommation variant entre 1,5 et 7,39 mois Avec le projet, grâce au fumier et au compost, la production de mil a augmente de 34% Cette augmentation a permis a certains menages de combler entierement leur deficit et a d'autres de le reduire jusqu'a -260 et -850 kg, ce qui equivaut a des besoins de consommation de 2,03 et 5,6 mois Concernant la production arachidiere, la situation avec projet se caracterise par une chute de 186 kg, soit une decroissance de 11% due essentiellement a un manque de semences Du point de vue revenu, l'impact du projet s'est traduit par la creation de revenus supplementaires generes par l'embouche En moyenne, chaque boeuf embouche pendant 3,5 mois a procure un revenu de 26 739 FCFA si aucun coût d'opportunitè n'est pris en compte (scenario I) et 3 735 FCFA dans le cas contraire (scenario II) Les taux de rentabilite s'elevent a 43% et 5 % respectivement dans les scenarios I et II La quantite de fumier produite est estimee a 1228 kg par boeuf embouche Cependant, du fait de la devaluation du franc CFA intervenue en 1994, les 50 000 FCFA de credit mis a la disposition des menages par le projet sont devenus insuffisants pour acheter un bon boeuf d'embouche Par consequent, les menages ont eu recours a l'embouche ovine qui s'adapte mieux au montant du credit en offrant des taux de rentabilite de 71 et 10% respectivement en considerant ou non les coûts d'opportunitè Les taux d'adoption en milieu paysan sont passes de 51% en 1993 a 57% en 1996 Cette faible evolution s'explique par (i) la non disponibilite du phosphate naturel a ajouter au fumier ameliore (ii) le manque d'eau, le coût de construction tres eleve de la fosse compostiere et le manque de charrette, pour le compost, (iii) les caracteristiques varietales non appreciees en ce qui concerne les cultures associees mil - miebe, (iv) l'insuffisance du credit pour l'embouche

Projet collaboratif ISRA - NRBAR - OSDIL

Technologies haies vives, brise vent, cultures en bandes perennes, regeneration naturelle, culture en couloirs, aménagements agro-sylvo-pastoral

Ce projet a tente de valoriser en milieu paysan entre 1993 et 1996 certaines technologies agroforestieres mises au point par la recherche (brise-vent, haies vives, cultures en bandes perennes, regeneration naturelle, cultures en couloirs et aménagement agro-sylvo-pastoral) Dans l'ensemble, les resultats sont concluants du point de vue du taux de survie des arbres plantes qui s'eleve en moyenne a 55 % Grâce au projet, certains menages et groupements ruraux ont pu enrichir, ou mieux, diversifier et accroître le potentiel ligneux de leurs exploitations agricoles En moyenne, chaque menage a obtenu 174 arbres et chaque groupement 476 arbres Avec ces arbres, les menages n'ont plus besoin d'exercer, une forte pression sur les savanes et forêts En effet, les exploitations agricoles tendent a devenir de

Table 3 2 page 4

ventables sources d'approvisionnement en produits forestiers (bois de service, fruits, produits de la pharmacopée et épinettes utilisées pour renforcer les haies) Cependant, excepté quelques groupements, l'objectif de production de bois de chauffage n'est pas encore atteint car les arbres sont encore jeunes pour la plupart En matière de potentiel fourrager, l'impact du projet n'apparaît réellement qu'avec la parcelle d'aménagement agro-sylvo-pastoral qui est devenue une zone de pâture L'effet du projet sur la fertilité des sols s'est avéré contradictoire En effet, pour les ménages, les technologies agroforestières ont eu un impact positif sur la fertilité de leur sol Cet impact s'est traduit par l'amélioration des rendements des cultures maraîchères Par contre, les groupements affirment que les technologies ont entraîné une baisse sensible de la fertilité de leur sol qu'ils expliquent par une trop forte densité de plantations épuisant les éléments fertilisants des sols et soumettant les cultures maraîchères à une forte concurrence nutritionnelle Par ailleurs, les technologies agroforestières et plus précisément les haies vives, en permettant une protection efficace contre les animaux en divagation et les vents, ont eu un impact positif sur les productions maraîchères des ménages Cet impact s'est traduit par une amélioration des revenus consécutive à l'augmentation et à la diversification des productions maraîchères De 13 520 F CFA en moyenne, le revenu annuel maraîcher du ménage est passé à 63 680 F CFA en situation de projet correspondant à un revenu supplémentaire de 50 160 F CFA en moyenne Pour ce qui concerne les groupements, l'impact du projet sur les revenus est nul voire négatif En plus de la forte concurrence nutritionnelle, les technologies agroforestières ont entraîné une prolifération de termites et de nematodes au niveau de leurs champs réduisant à néant les productions maraîchères Avant le projet, leurs revenus nets annuels variaient entre 30 000 et 90 000 F CFA. Les taux d'adoption sont très faibles Le nombre de ménages utilisateurs des technologies est passé de 2 au début du projet à 47 au total en fin de projet pour 8 villages La haie vive a été mieux appréciée et 21 sur 47 ménages l'ont adoptée Au total, 7 groupements ont adopté les technologies Plusieurs contraintes justifient cette faible adoption comme la divagation du bétail, l'absence d'une mise en défens des exploitations agricoles, l'insuffisance des plants disponibles, le manque d'informations, l'exode rural, la taille réduite des exploitations agricoles, la disponibilité limitée en terre, la non préférence des espèces proposées

Projet collaboratif ISRA - NRBAR - Africare

Technologies brise vent, parcs améliorés

Le Projet de Développement de l'Entreprise Agricole de Kaolack (KAED), exécuté par Africare, a organisé les groupements paysans en Entreprises à Base Agricole (EBA) dont certaines sont les bénéficiaires du projet collaboratif ISRA - NRBAR - Africare Ce projet a testé entre 1995 et 1997, en milieu paysan, des technologies agroforestières mises au point par la recherche (haies brise-vent et parcs améliorés) Du point de vue du taux de survie et des performances de croissance, les résultats obtenus dans les champs de démonstration des EBA sont concluants Le taux de survie moyen général passe de 79 % à 65 % entre 1995 et 1997 La hauteur moyenne des arbres s'élève à 110 cm, 27 mois après plantation témoignant d'une bonne adaptation des espèces En terme d'impact, grâce aux technologies agroforestières introduites, les EBA ont pu améliorer, ou mieux accroître et diversifier le potentiel ligneux de leur champ de démonstration En moyenne chaque EBA a obtenu 1 722 arbres Les membres des EBA affirment que ce potentiel ligneux commence à contribuer à la défense et à la restauration de la fertilité des sols Ils soutiennent aussi que dans un futur proche (2002), quand les arbres seront bien développés, les champs de démonstration pourront devenir une véritable source d'approvisionnement en divers produits forestiers (fruits, bois de chauffage et de

service, produits de pharmacopée et épines servant à renforcer les haies) Le projet a permis aussi aux EBA de se procurer des revenus supplémentaires Ces derniers proviennent des activités agricoles menées dans les champs de démonstration et de la vente de plants produits dans les pépinières Les revenus supplémentaires varient de 243 800 à 381 900 F CFA en moyenne par an L'EBA de Keur Layine Gueye se démarque nettement avec un revenu supplémentaire moyen annuel de 871 900 F CFA Ces revenus supplémentaires ont permis aux EBA (i) d'obtenir une certaine capacité d'autofinancement et de disposer de fonds de roulement devant servir à couvrir toutes leurs dépenses d'exploitation, (ii) d'améliorer leur cadre de vie socio-économique, (iii) d'ouvrir des comptes à la Caisse Nationale de Crédit Agricole du Sénégal (CNCAS) et/ou aux caisses mutuelles de crédit et d'épargne ce qui leur a permis de bénéficier de crédits utilisés pour mettre en place au niveau de leur village un système de crédits dont certains de type rotatif (*revolving*) En plus des intérêts tirés par les EBA, le système de crédit mis en place grâce aux revenus supplémentaires générés par le projet, a permis aux membres qui en ont bénéficié de mener des activités lucratives (petit commerce, embouche) et de se procurer des revenus Le calcul du ratio bénéfice net sur emprunt permet d'apprécier la rentabilité du système de crédits pour les membres des EBA Tous ces impacts s'inscrivent certes à l'actif du projet mais, il faut apprécier aussi à sa juste valeur l'appui considérable apporté par le KAED qui a précédé le projet ISRA - NRBAR - Africare dans la zone De même le dynamisme, la bonne volonté et l'engagement des populations rurales, et surtout des femmes, à améliorer leur cadre de vie socio-économique ont favorisé ces impacts Les taux d'adoption des technologies par les ménages varient de 31% à 80% d'un village à l'autre Il faut noter qu'aucun ménage n'est encore parvenu à clôturer entièrement son champ avec les haies brise-vent comme les champs de démonstrations des EBA Les contraintes d'adoption soulevées par les ménages sont la période de plantation, la configuration de l'hivernage, la taille des champs, la divagation du bétail, la présence des termites, la forte salinité de l'eau, la mevente des plants produits

Projet collaboratif ISRA - NRBAR -ARAF

Technologies compost, fumier amélioré, haies vives, régénération naturelle assistée, compost, fumier amélioré, foyers améliorés

Ce projet a préconisé aux paysans de la région de Fatick l'utilisation des technologies telles que les haies vives, la régénération naturelle assistée, le compost, le fumier amélioré et les foyers améliorés L'impact de ces technologies sur les bilans céréaliers, les revenus, le couvert végétal et les besoins de consommation en bois de chauffage des ménages ruraux a été évalué Les taux et les contraintes d'adoption des technologies ont été étudiés Les résultats obtenus révèlent que, globalement grâce au compost et au fumier amélioré, les ménages sont passés d'une situation sans projet caractérisée par un bilan céréalier déficitaire de -648 kg ce qui correspond à des besoins de consommation de 2,64 mois à une situation avec projet marquée par un bilan céréalier déficitaire de -629 kg équivalent à 1,74 mois Globalement, les taux de couverture des besoins par la production ou niveau de sécurité céréalière des ménages a évolué de 78% en situation sans projet à 85% en situation avec projet L'impact du projet s'est traduit donc par une augmentation de 7% du niveau de sécurité céréalière des ménages Le projet a aussi permis à quelques ménages de se procurer des revenus supplémentaires évalués en moyenne à 68 80 F CFA et à 51 800 F CFA respectivement en 1995 et 1996 Ces revenus proviennent de la vente des plants produits dans les pépinières En moyenne, le ménage a planté 180 arbres et assisté à la régénération de 82 plants composés principalement de *Faidherbia albida* Le nombre d'arbres plantés par groupement est estimé à 1000 Le suivi

Table 3 2 page 6

des taux de survie et de la croissance des especes plantees n'a pas ete fait Mais, d'apres les paysans, sur 10 plants mis en place seuls 3 ont survécu soit un taux de survie de 30% Les plants mis dans les champs (encore tres jeunes) n'ont jusqu'a present eu aucun impact sur la fertilite des sols et les productions ligneuses Grâce aux fourneaux ameliores vulgarises par le projet, les besoins de consommation en bois de chauffe des menages sont reduits de moitie Avant la construction des foyers ameliores, le ménage consommait en moyenne par jour pour la cuisson des trois repas, 52 rameaux pesant au total 23 kg pour une valeur de 330 F CFA Avec l'utilisation des foyers ameliores, la consommation du ménage a ete reduite a 23 rameaux (10 kg) pour un coût de 148 F CFA. Le taux d'adoption des technologies est de l'ordre de 45% Plusieurs facteurs sont evoques par les menages comme contraintes liees a l'adoption des technologies la divagation du betail, l'absence d'une mise en defens des champ, le manque d'eau, la salinite de l'eau et du sol, les termites du sol, le creusage des fosses, le manque d'outillage, l'eboulement des fosses, le manque de paille, le manque de main d'œuvre, le manque de charrette et la non disponibilite de la caisse de coffrage Pour lever ces contraintes, consolider les impacts et permettre aux menages de valoriser davantage les technologies proposees, un certain nombre de recommandations ont ete faites

- meilleure protection des sols par la plantation de haies vives autour des champs ,
- mise en place d'un systeme de credit de ciment pour le constructions des fosses compostieres et fumieres ,
- amelioration du niveau d'equipement des menages ruraux ,
- amelioration du niveau d'equipement hydraulique des villages ,
- augmentation du nombre de caisses de coffrage utilisees pour la construction des fourneaux amelioreses ,
- recherche approfondie sur la lutte biologique contre les termites du sol ,
- caracterisation demographique et socio-économique des menages ruraux avant l'execution de tout projet ,
- analyse pedologiques avant et après l'execution de tout projet de defense et de restauration de la fertilite des sols

Recommandations générales sur les projets collaboratifs

Les projets collaboratifs ont eu pour la plupart des impacts considerables tant sur les bilans cerealiers que sur les revenus des menages ruraux et leurs groupements Cependant, les niveaux d'adoption sont souvent faibles du fait de plusieurs contraintes La demarche demonstrative utilisee par les projets a permis de convaincre les menages et groupements ruraux, utilisateurs ou non des technologies de l'interêt de celles-ci Pour consolider les impacts des projets et amener les menages ruraux a valoriser davantage les technologies, il conviendrait donc de lever les contraintes identifiees Pour ce faire, les futurs projets devront contribuer a une meilleure valorisation des technologies par les menages ruraux et une meilleure organisation des projets de recherche/developpement

En matière de perspectives de recherche/développement quatre axes ont pu être dégagés

- Large diffusion des haies vives puisque cette technologie présente de bonnes perspectives en termes d'adoption et d'impacts,
- Former les paysans sur les techniques de gestion du potentiel ligneux intensité et fréquence des tailles,
- Faire une recherche approfondie sur l'association arbres et cultures maraîchères pour élucider la question relative à l'effet fertilisant de certaines espèces en l'occurrence le *Leucaena leucocephala*, effet nie par certains paysans,
- Recherche sur la lutte biologique contre les termites qui provoquent une grande mortalité des plants

Une large diffusion des documents produits serait de nature à permettre de mettre à la disposition des décideurs publics et privés une large gamme d'informations micro-économiques qui constituent une bonne source d'inspiration pour la conception de futurs projets et pour l'élaboration de politiques agricoles performantes

2 Impact socio-économique de la stabulation dans la région de Kolda

Technologie étable fumière

L'étude a montré que la technologie de l'étable fumière conduit à des augmentations de la production alimentaires et des revenus dans la région de Kolda. En 1996, les ruraux utilisant cette technologie ont obtenu des bénéfices nets de 19 600 CFA à 651 120 CFA. Les principaux bénéfices de la stabulation sont dus à la plus importante production de lait et aux gains de poids des animaux. Les principaux coûts sont le supplément alimentaires et les salaires des ouvriers agricoles. L'étude de 1995 avait montré que le coût annuel d'un emploi agricole était de 90 000 F CFA. Ainsi le bénéfice net de la stabulation était équivalent à ¼ à 7 fois la moyenne annuelle des revenus. L'étude de l'impact de la stabulation sur l'état nutritionnel de la population rurale a montré que la stabulation entraînait une augmentation de 1,532 l de lait pendant la saison sèche qui peut aider à compenser la situation alimentaire déficitaire qui apparaît en fin de saison sèche et en début de saison des pluies (période de soudure), le lait jouant un rôle important dans l'apport en protéines des populations rurales. Plusieurs facteurs relatifs à l'adoption de la technologie de l'étable fumière ont été identifiés : accès à l'information, la population familiale, la taille du troupeaux, les revenus du chef de famille, l'âge de la première femme. Plusieurs facteurs constituent des obstacles à la pratique de la stabulation : le manque de temps, d'argent, d'information, d'équipement et enfin le manque de motivation à produire du fumier de bonne qualité. Les recommandations suivantes ont été faites pour une plus grande accessibilité de la technologie

- accès amélioré à l'information ,
- accès au crédit ,
- implication des femmes de paysans ,
- meilleure communication entre recherche et ruraux ,
- poursuite des recherches en milieu paysan

3 Etude de l'impact de la recherche le cas des Unites Experimentales de Thyssé-Kaymor-Sonkorong et Koumbidia (Kaolack)

But de l'évaluation

Suivre l'évolution au cours du temps des technologies de GRN introduites par le projet Unites Experimentales

Apprecier l'impact de ces technologies grâce a l'évaluation du niveau actuel d'adoption continue depuis la fin du projet UE Dans les cas ou le taux d'adoption evalue est faible ou moyen, les contraintes a l'adoption sont donnees entre parentheses

Technologies, taux d'adoption continue, (contraintes)

Gestion du sol

Radou simple 94%

Epannage de fumier 90%

Grattage en humide 83%

Engrais mineral 75%

Fumure legere 75%

Reprise des billons en humide 71%

Buttage cloisonne 65% (sous-equipement, penibilite du travail, amplification de l'erosion)

Radou balng 63% (effet depressif sur levee et production suivant type de sol)

Semis perpendiculaire a la pente 50%

Buttage simple 49% (sous-equipement, penibilite du travail, amplification de l'erosion)

Parcage 35%

Redecoupage des terre 30%

Grattage en sec 27% (penibilite du travail pour les animaux)

Reprise billon en sec 27%

Essouchage 21%

Fumure forte 20% (difficulte d'approvisionnement)

Phosphatage de fond 20% (difficulte d'accès au produit)

Labour avec enfouissement 12% (sous-equipement, manque de temps, penibilite du travail, amplification de l'erosion)

Compost 5% (penibilite du travail, manques de connaissances)

Labour simple fin de cycle 3% (sous-equipement, manque de temps, penibilite du travail, amplification de l'erosion)

Amélioration des cultures

Semis mecanique 100%

Rotation culturale 95%

Agroforesterie

Haies vives ND

Reboisement 24%

Productions animales

Traction equine 94%

Traction bovine 64%

Traction asine 69%

Etables fumieres 8%

Toutes les technologies liees au labour et a la preparation du sol ont connu peu d'adoption (sous-equipement, manque de temps, penibilite du travail, amplification de l'erosion)
Les ecartements des semis ont ete adaptes et reduits (de 50% pour l'arachide) par les paysans
Les plantations en courbes de niveau et les haies vives sont les techniques les plus apprecies par les paysans
L'etude a montre des problemes techniques et socio-economiques dans l'adoption des technologies (argent, penibilite du travail pour les hommes et les animaux, connaissance technique)
De plus dans le cadre de la degradation du milieu physique et de la reduction de l'acces aux intrants et aux credits il est apparu que les technologies doivent être validees de façon individuelle et non en paquet comme c'était le cas avec le projet UE

4 Inventaire des technologies basees sur la gestion des ressources naturelles et utilisees dans la production agricole en basse Casamance

But de l'evaluation

En basse Casamance (region de Ziguinchor), des enquêtes ont ete realisees en milieu paysan dans des villages qui ont ete des sites de demonstration de technologies de GRN introduites par la recherche, diffusees par les partenaires du developpement, et celles initiees par les paysans eux-mêmes
Il s'agissait d'evaluer le niveau d'adoption continue
Dans les cas ou le taux d'adoption evalue est faible ou moyen, les contraintes a l'adoption sont donnees entre parentheses

Taux d'adoption continue moyen (pour toutes les sous zones de la region) par type de technologie, (contraintes)

Amélioration des cultures

Riz ameliore de 63 a 100%

Arachide ameliore de 80 a 100%

Mais ameliore de 50 a 100%

Traitement des semences 31% (difficulte d'acces aux fongicides)

Semis mecanique 8%

Demariage 71%

Sarclage 82%

Labour a plat de 8 a 100% suivant type de culture (plus faible pour arachide et riz de bas-fonds, plus eleve pour riz de plateau et de nappe)

Labour en billon de 78 a 100%

Labour de fin de cycle 25% en moyenne (sous equipement, main d'œuvre, argent)

Buttage simple 11%

Buttage cloisonne 7%

Dessouchage 3% (penibilite du travail, sous equipement)

Traction bovine 38%

Traction asine 2%

La plupart des technologies de gestion des ressources naturelles utilisees dans la production agricole, au nombre de 231, concerne la gestion des cultures
Elles sont au nombre de cent dix huit (118) soit 51% du total, dont 44% sont constituees par le materiel vegetal
Les varietes de riz sont au nombre de vingt huit (28)
Elles representent le gros lot du materiel vegetal (54%)
L'accent doit être mis sur le transfert des varietes deja existantes et tres peu diffusees, mais egalement sur la diversification par la selection et l'amelioration de nouvelles especes

Table 3 2 page 10

Gestion des sols

Engrais mineral 24% (coût eleve)

Paillage 18%

Parcage 48%

Fosse compostiere 7% (manque de main d'œuvre, meconnaissance de la technique)

Etable fumiere 10% (manque de betail et de moyens de transport)

Fosse fumiere 58%

Rotation culturale 70%

Billonnage 85% (penibilite, meconnaissance de la technique)

Buttage cloisonne 7% (coût, manque de main d'œuvre, sous equipement)

Brise vent 1% (manque de plants, meconnaissance de la technique)

Haies vives 1% (manque de plants et de motivation)

Reboisement 23% (manque de plants, de terre de plateau et de motivation)

Cultures en courbes de niveau 1%

Mise en defens 1%

Cordons pierreux 1%

Cultures en couloir 1%

Jachere ameliee 1%

Endiguements, Deviation des eaux de ruissellement 23%

Lutte traditionnelle contre le sel 86%

Les recherches sur les technologies de gestion des sols (27) doivent egalement se poursuivre pour consolider et ameliorer les acquis La fumure minerale est faiblement utilisee par les producteurs (doses en dessous des recommandations de la recherche)

Gestion de l'eau

Technologies mises en place par encadrement comme les barrages, aménagement bassin versant, digues anti-sel, digues de retenues

Gestion des ressources forestieres

Pepimeres 77%

Pare feux verts avec anacardier 30% (manque de plants, de terre de plateau et meconnaissance de la technique)

Pare feux nus 33% (manque de motivation, de materiels et de terre de plateau)

Feux precoces 18% (risque d'incendie)

Meule 4% (manque de maîtrise et de motivation)

Foyers ameliores 16% (meconnaissance)

Des efforts doivent être faits pour relever les taux d'adoption des technologies de gestion des aménagements hydro-agricoles (22) et des ressources forestieres (22) qui sont, en general, faibles Seulement dix sept (17) technologies de gestion des ressources animales utilisees dans la production agricole ont ete recensees Des efforts doivent être faits pour accroître leur nombre et relever leur taux d'adoption tres faible Les technologies de gestion des ressources halieutiques (25) ont, en general, des taux moyens d'adoption Neanmoins, les acquis doivent être preserves et ameliores

5 Etude comparée de l'adoption des technologies de gestion sols dans les rizières de mangroves de Casamance et les périmètres irrigués de la vallée de l'Anambé

Technologies, taux d'adoption continue, (contraintes)

- Riz amélioré 15% (non disponibilité des semences, accès au crédit, inadaptabilité des variétés)
- Engrais minéral 12% essentiellement dans bassin de l'Anambe
- Engrais organique 50%
- Semis en ligne 15%
- Semis à la volée 85%

Les enquêtes réalisées pour comparer des déterminants de l'adoption des technologies de gestion de la fertilité des rizières (variétés améliorées, fertilisation, techniques culturales, protection des cultures) en Basse Casamance et dans le bassin de l'Anambe ont montré qu'en fonction du type de technologies, les niveaux d'adoption sont très différents. Ces taux sont fonction de plusieurs facteurs liés à l'environnement socio-économique dans lequel évoluent les producteurs, mais également de la nature de l'environnement technique (caractéristiques de la technologie, l'état de la recherche, la qualité et l'efficacité du système de transfert technologique,). L'analyse descriptive n'a pas permis de cerner les corrélations fonctionnelles entre les facteurs déterminants, ni les décisions d'adopter ou de rejeter une technologie. Des analyses plus approfondies seront nécessaires et serviront à améliorer les efforts de recherche pour mieux cibler les utilisateurs des technologies, aussi, elles permettraient de mieux cerner les déterminants de cette adoption de manière à dégager certaines recommandations susceptibles d'améliorer le processus de diffusion de ces technologies.

6 Inventaire des technologies basées sur la gestion des ressources naturelles et utilisées en moyenne Casamance

But de l'évaluation

En moyenne Casamance, des enquêtes ont été réalisées dans les structures de recherche et de développement afin de faire l'inventaire des différentes technologies basées sur la gestion des ressources naturelles.

La plupart des technologies de gestion des ressources naturelles utilisées dans la production agricole, au nombre de 124, concerne la gestion des cultures. Elles sont au nombre de soixante-dix-huit (78) soit 63% du total. Le matériel végétal (variétés améliorées de riz, d'arachide, de maïs, de sorgho, de sésame, de mil, de niébé, maraîchage, arboriculture fruitière, itinéraires techniques) représente le plus grand nombre des technologies de gestion des cultures. Quinze (15) technologies de gestion des sols ont été répertoriées soit 12% du total (fertilisation organique, minérale, organo-minérale, jachère, haies vives). Pour le reste, neuf (9) technologies de gestion des aménagements hydro-agricoles soit 7% (endiguements, barrages), 8 des ressources forestières (6%, plantation, greffage brise-vent, culture en couloir), 12 technologies de gestion des ressources animales (10%, traitement sanitaire, alimentation, embouche) et 2 de gestion des ressources halieutiques (2%, filet monofilament et pirogue motorisée) ont été inventoriées. La majorité des technologies introduites dans la région proviennent des ONGs et des OP (45%), des projets de développement (33%), de la recherche (7%), des pratiques locales (7%), des centres de formation (3%), des services traditionnels (3%), des organismes privés (2%). Pour introduire les technologies en milieu réel, différents procédés ont été utilisés par les structures de développement parmi lesquels les réunions de sensibilisation (37%), les séances de formation (27%), les essais de démonstration

Table 3 2 page 12

(25%) et les seminaires (11%) Des enquêtes au niveau des producteurs sont necessaires pour finaliser cette etude

7 Approfondissement du diagnostic partagé

Le diagnostic de la zone basse et moyenne Casamance en termes de contraintes, de potentialites, de dynamiques de developpement local et regional a ete realise pour les caracteristiques physiques et agro-climatiques, demographiques, socio-économiques et la gestion des ressources naturelles et du terroir L'objectif de cette activite etait d'améliorer la caracterisation du milieu, d'approfondir la connaissance des systemes de productions vegetales (riz, mil, sorgho, mais, arachide, cultures maraîcheres et fruitieres), animales (bovins, ovins et caprins, volailles, porcins, lapins, apiculture) et halieutiques (pêche fluvio-marine, fluviale, estuarienne et maritime, pisciculture) et forestieres (produits forestiers ligneux et non ligneux) Il s'agissait aussi d'identifier les strategies adoptees par les paysans (dynamiques de developpement) A partir des contraintes de production identifiees, le diagnostic a permis de definir des priorites, des objectifs de recherche traduits en themes et activites de recherche pour une meilleure vulgarisation et formation Il a aussi permis d'avoir une bonne comprehension des systemes d'exploitation et de prodiguer sur place des conseils aux agriculteurs Enfin, il a permis de faire des propositions et des recommandations concernant la maîtrise de l'eau, les cultures, les sols, l'elevage, la pêche, les forêts et l'appui institutionnel

Recommandations

Maîtrise de l'eau

Poursuite et consolidation des aménagements (digues et diguettes)

Lutte contre la salinisation (digues anti-sel)

Fonçage de puits

Amenagement et gestion des bas-fonds

Lutte contre l'érosion hydrique et l'ensablement des rizieres

Les cultures

Riz amélioré (tolérant au sel, a cycle court)

Riz amélioré de plateau (a cycle court)

Lutte contre les adventices

Mise au point de petits matériels agricoles alternatifs

Techniques de recuperation des sols sales

Amélioration et organisation des filieres semencieres

Techniques culturales en arboriculture et maraîchage

Cereales et legumineuses ameliorees (a cycle court)

Fumure organique

Arbres fruitiers et varietes maraîcheres ameliorees

Formation a la technique de compostage

Diversification des cultures (introduction de varietes adaptees)

Amenagement des palmeraies

Palmiers a huile ameliorees

Itinéraires techniques pour la culture du sesame

Exploitation rationnelle des ressources forestieres

Lutte contre striga

Lutte biologique contre les cantharides

Organisations des producteurs

Les sols

Restauration de la fertilité

Lutte contre toxicité ferreuse et aluminique

Lutte contre érosion hydrique

Lutte contre salinisation et acidification des bas-fonds

Elevage

Lutte contre divagation des animaux

Amenagement des points d'abreuvement

Développement des cultures fourragères

Intégration agriculture/élevage

Bovins améliorés

Ration alimentaire améliorée en fonction des disponibilités

Survi sanitaire

Étables fumées

Pâturages améliorés (introduction d'espèces fourragères)

Zone de parcours

Ensilage et fenaison

Ruches améliorées

Pharmacies villageoises implantées

Pêche

Gestion des pêcheries améliorée

Formation aux nouvelles techniques de pêche

Filière améliorée

Pisciculture dans vallées aménagées

Forêts

Plan de conservation et d'exploitation

Mise en défens

Régénération assistée

Information sur nouveau code forestier

Palmeraies améliorées (huile et vin)

Anacardiés dans bassins versants et berges

Rajeunissement des palmeraies

Espèces forestières à croissance rapide

Lutte contre les feux de brousse

Appui institutionnel

Étude des filières de commercialisation

Formation des producteurs

Développement des pistes de production

Systèmes de crédit adaptés

Organisation des jeunes et des femmes

Sécurisation

Développement relations entre organisations et avec les ONG et les structures de développement

8 Diagnostic participatif Centre Nord Bassin Arachidier

L'inventaire des plantes parasites et leurs hôtes (cultivés et spontanés) et la caractérisation des groupements végétaux auxquels appartiennent ces espèces parasites, ont été réalisés. De plus, des enquêtes exploratoires et rapprochées dans des terroirs villageois du bassin arachidier ont

Table 3 2 page 14

ete menees Il ressort des inventaires floristiques que les plantes parasites recensees lors des prospections dans le territoire national appartiennent a six (6) genres repartis dans trois (3) familles La famille des *Scrophulariacees* est la plus riche en genres (3) et en especes (8) suivies par celle des *Loranthacees* (2 genres et 3 especes) et celle des *Cuscutacees* Certaines especes sont largement distribuees au Senegal et occasionnent des degats importants aux principales cultures vivrieres Parmi les plantes epirhises, *S hermonthica* est de loin l'espece la plus repandue dans les cultures et la plus nuisible *S gesnerioides* et *S aspera* trouvent aussi en milieu cultive des conditions favorables a leur developpement Les enquetes ont montre que

- les paysans connaissent les plantes parasites mais ignorent souvent leur biologie et mode de reproduction ,
- 50% des champs sont parasites ,
- la predominance de la culture du ml, plus sensible au *Striga* que le sorgho, augmente les risques de proliferation du parasite ,
- rien n'est fait par les producteurs pour eviter une augmentation du stock de graines de *Striga* dans les sols

Dans le domaine des techniques de lutte, il a ete mis en evidence

- l'impossibilite d'eradiquer rapidement *S hermonthica* et *S gesnerioides* (trois (3) annees n'ont pas suffi pour reduire la levee du parasite) ,
- le rôle de la pluviometrie qui module les performances de la culture et la nocivite du parasite ,
- la forte variation de la levee du *Striga* ,
- les periodes de grande nocivite du parasite Dans une parcelle fertile, le ml est essentiellement perturbe pendant la phase aerienne du parasite et si le sol est pauvre en elements nutritifs, le parasite est nuisible des sa phase souterraine ,
- le manque de resultats exploitables sur la selection de varietes resistantes surtout pour les cereales ,
- les bons resultats des techniques de lutte curative (sarclages et herbicides)

La situation et les perspectives de la traction des equides dans une partie du bassin arachidier ont ete etudiees (memoire de titularisation d'un chercheur de l'ISRA) Suite a cette etude, des investigations ont ete menees sur les differents systemes d'elevage du cheval au Senegal afin de preciser le rôle de cet animal dans la vie socio-economique et d'analyser les contraintes des modes d'exploitation en vigueur Ce diagnostic a permis de degager les tendances et perspectives par rapport aux modes de conduites actuels Peu de recherches et donc de technologies generees (amelioration genetique en 1948, chevaux anglo-arabe pour traction animale et sport)

Recommandations

- Recensement
- Renouvellement de l'equipements agricoles
- Amelioration genetique
- Alimentation amelioree (cultures fourrageres)
- Survi zootechnique et alimentaire

9 Etude diagnostique sur les modes de transferts et évaluation socio-économique des technologies sur la GRN (Centre Nord Bassin Arachidier)

Au total 29 technologies ont été inventoriées dont 19 présentent un taux moyen d'utilisation de 65%. Trois technologies introduites par ISRA/NRBAR sont connues par les producteurs des villages de la zone d'intervention de RODALE et d'ADHIS. Il s'agit des techniques du compost, d'épandage de résidus de poissons fumés et des haies vives. Les pratiques les plus connues sont celles introduites par la SODEVA qui fut la principale structure de vulgarisation des technologies agricoles.

Technologies adoptées

Épandage de fumier
Épandage d'ordure ménagères (endogène)
Brise vent
Reboisement
Mode d'épandage du fumier
Haies vives anti-érosives
Banque fourragères
Digues en pierre
Lutte contre feux de brousse
Conservation du fourrage

Technologies adoptées de façon intermittente

Régénération naturelle assistée (manque de sensibilisation des jeunes)
Épandage d'écaillage de poisson (compétition pour alimentation du bétail)
Production de bois villageois (pression foncière)
Parcage (manque de bétail, vol)
Rotation des cultures (manque de semences d'arachide)
Compost (compétition des résidus pour alimentation du bétail, coût)
Produits phytosanitaires (dépend des prédateurs)

Table 3 2 page 16

Technologies abandonnees et contraintes

Jachere (pression demographique et fonciere)

Epannage de coques d'arachide (competition avec alimentation du betail et manque de semences)

Outils traditionnels (utilisation des machines)

Delimitation des zones de parcours (pression fonciere)

Rotation des cultures (manque de semences d'arachide, pression fonciere)

Bois de village communautaire (difficultes de gestion)

Systeme de decantation de l'eau salee (construction de citerne necessaire)

Labour croise (remplace par grattage superficiel)

Labour profond (penibilite du travail, manque de paire de boeufs)

Engrais mineral (coût, accessibilite)

10 Analyse de l'impact socio-economique des principales technologies agricoles (Sud Bassin Arachidier)

But Analyser les conditions socio-economiques liees a l'adoption de la technologie des haies vives et identifier des strategies paysannes de mise en oeuvre

L'analyse socio-economique de la technologie des haies vives a combine l'evaluation paysanne par des enquetes elargies (collecte de donnees qualitatives et quantitatives aupres de 150 producteurs au niveau de 22 exploitations agricoles de 32 villages repartis dans 20 communes rurales de la zone sud bassin arachidier) et le suivi de la technologie sur une echelle plus reduite (collecte d'informations quantitatives fines pour des analyses economiques de rentabilite) Les resultats montrent que l'installation d'une haie vive pour les paysans ne se justifie que si elle permet de lutter contre l'erosion eolienne en saison seche, de proteger les champs de case des animaux divaguants et d'ameliorer la fertilite de sols grâce au maintien de la litiere et des engrais organiques epanches L'appropriation de cette technologie est souvent facilitee par la presence de l'encadrement (societe de developpement, ONG) et les possibilites de mise en valeur en saison morte (arboriculture frutiere et maraichage) L'emplacement des parcelles, la zone geographique, l'age et le type du sol sont aussi des facteurs determinants de la probabilite d'adoption de la technologie des haies vives L'objectif vise des haies vives de protection des parcelles de culture n'est pas encore atteint dans la majorite des cas exceptes dans les champs de case clôturés par les haies traditionnelles d'euphorbes, d'*Acacia macrostachya*, de *Jatropha curcas*, de *Bauhinia rufescens* Les contraintes a l'appropriation des haies vives sont la pluviosite, les charges additionnelles de leur installation et entretien (exigence en main d'oeuvre pour la trouaison et l'ouverture des tranches, la production de plants, le transport des plants, la taille de la haie, la plantation), l'inexistence auparavant d'une protection (mise en defens), le temps necessaire a l'efficacite de la haie et l'insuffisance des plants Les especes les plus prisees pour les haies vives sont celles qui ont une bonne defense naturelle (longues epines), resistent a la secheresse et ont des proprietes fertilisantes L'association avec des especes productives qui fournissent des services et contribuent a la production alimentaire et aux revenus familiaux seraient des atouts de plus A l'inverse, des especes ne sont pas souhaitees dans les haies comme celles qui occupent beaucoup d'espace, celles a branchage bas et etale, a racines traçante ou pouvant servir d'abris a des animaux nuisibles aux cultures ou qui sont appetees par le betail En cas de rejet de la technologie des haies vives, celui-ci est attribue au manque de terres (a 60%), a la non perception de l'interet (a 5%), a l'insecurite fonciere (a 10%) et au manque de connaissance (a

Table 3 2 page 17

18%) L'abandon de la technologie peut être motivé par la divagation du bétail et les forts taux de mortalité. Pres de 90% des producteurs ont accepté l'arrangement et la composition des haies proposées par la recherche. Ils suggèrent toutefois des modifications : introduction de nouvelles espèces, espacement, association, disposition des espèces et modalités de gestion (régime et périodicité des coupes).

11 Etude des facteurs limitants de la traction animale dans la mise en œuvre des techniques de travail du sol et test d'innovations performantes (Sud Bassin Arachidier)

Technologie de la traction animale

Diagnostic de l'évolution des pratiques paysannes, orientations nouvelles et les principales contraintes liées à l'utilisation de la traction animale (équins, bovins et ânes) par des enquêtes au niveau de 1861 exploitations agricoles de 2 régions (Fatick et Kaolack) du sud bassin arachidier. Ces enquêtes ont tenu compte des spécificités agro-écologiques et le niveau de l'exploitation (évolution des effectifs et des techniques culturales, type d'attelage, gestion des animaux et réalisation des activités culturales).

Les enquêtes ont montré que la traction animale apparaît comme une technologie bien implantée dans les exploitations du Sine Saloum (86,4% d'entre elles l'utilisent dont 26% avec des bovins soit 513 paires de bœufs). Toutefois, son développement ne s'est pas accompagné d'un véritable essor dans le temps par rapport à l'acquisition des animaux par les paysans et à l'application de certains itinéraires techniques. L'accroissement des effectifs est très variable à l'intérieur des différentes zones ciblées et des exploitations agricoles elles-mêmes. L'analyse de l'appropriation des animaux a montré une stagnation des effectifs voire une régression malgré l'augmentation d'adeptes enregistrée pour les équidés (80,6% des exploitations possèdent des équins). Il faut noter que l'accroissement de l'effectif des bovins n'est pas significatif avec 9% pour les bœufs en considérant l'évolution démographique et la demande accrue de terres arables (46% des exploitations détiennent des bœufs de traits). La diversité du matériel animal au sein des exploitations agricoles explique les différentes stratégies observées en matière d'itinéraires appliqués et de gestion des animaux. L'utilisation des vaches de trait semble être une alternative face à la difficulté d'appropriation des mâles dont les effectifs s'accroissent difficilement et sont inégalement répartis dans les exploitations (47,2% ont plus de 2 paires de vaches de traits). Les recommandations de la recherche allant dans le sens du développement des techniques de travail du sol doivent considérer et intégrer ces différentes dynamiques entre les zones et à l'intérieur des exploitations pour améliorer l'applicabilité et la faisabilité des technologies.

Les principales contraintes de la traction animale sont liées aux restrictions alimentaires auxquelles sont confrontés les animaux en fin de saison sèche. Cela ne favorisant pas par ailleurs un embonpoint des animaux compatible avec la force de travail requise pour les travaux culturels. L'application du travail du sol comme technique de lutte contre la dégradation et la baisse de la fertilité est limitée par différents facteurs comme la réduction de l'effort de traction compte tenu des restrictions alimentaires, le retard et l'arrêt précoce des pluies, le manque de matériel ou d'animaux et les pratiques paysannes. Cette étude montre que les techniques de travail du sol et les besoins d'énergie de traction qui en découlent ne sont pas réalisables pour beaucoup d'exploitants.

Recommandations

Des recherches pour la mise au point et la validation de techniques pour l'accès à une force de traction appropriée. Les tendances à l'utilisation des vaches doivent être accompagnées par la recherche (capacités de travail, production laitière, reproduction)

Diagnostic pluridisciplinaire du secteur agricole (Sud Bassin Arachidier)

But Analyse du fonctionnement de quelques exploitations agricoles dans la région de Kaolack. La détermination du fonctionnement des exploitations agricoles, l'élaboration d'une typologie et l'analyse du fonctionnement des exploitations agricoles par type et la définition d'orientations pour des actions de recherche ou de développement sont les objectifs visés.

Des enquêtes ont été réalisées dans des villages de sous-zones agro-écologiques du sud-bassin arachidier (bassin arachidier ancien, zone agricole et pastorale et zone de polyculture). Toutes les exploitations agricoles des villages de Sagnaneme et Medina Kebe ont été étudiées soit 154 exploitations au total.

Technologies

- Matériels agricoles (houe sine, semoir mécanique)
- Semences améliorées céréalières et arachidières
- Fumure minérale

Contraintes

De manière globale, au plan structurel, il a été noté que dans les 14 différents types de fonctionnement des exploitations qui ont été caractérisés, les équipements sont vieux et acquis depuis le programme agricole. Les agriculteurs rencontrent de grandes difficultés pour l'acquisition de nouveaux équipements. Ces difficultés sont dues au problème de crédit et à la faiblesse des capacités d'investissement des exploitations. Ces mêmes raisons limitent l'utilisation de semences certifiées de qualité et les engrais minéraux à l'exception des exploitations encadrées par CARITAS notamment et celles bénéficiant d'un contrat de production avec certaines sociétés agro-industrielles (NOVASEN, SONAGRAINE). La pratique consistant à faire des réserves personnelles de semences est très généralisée. Le cheptel de petits ruminants qui en principe est destiné à l'achat de semences ou d'engrais ou d'équipement est surtout utilisé pour combler le déficit vivrier ou d'autres besoins sociaux. La vente occasionnelle de bovins est une alternative au crédit d'investissements. Les doses d'engrais utilisées sont assez faibles (100 kg/ha) et atteignent rarement les 2/3 de la dose de fumure recommandée (150 kg/ha). Elles sont destinées de préférence aux céréales. Les exploitations bénéficiant d'un cheptel de trait et de production conséquent font recours à amendements organiques soutenus de leurs terres.

Table 3 2 page 19

Recommandations

Des recommandations ont été formulées et sont orientées vers

- des actions de développement pour le renouvellement et le renforcement des équipements (respect des normes équipements/ha),
- le développement de l'utilisation de semences certifiées de qualité,
- le développement d'un élevage mixte (bovins pour cheptel de trait, production de matière organique, augmentation des capacités d'investissements et petits ruminants pour achat de semences et engrais, besoins sociaux),
- la mise en place d'un système de crédit adapté pour achat intrants ou équipements,
- la mise en place de systèmes de culture ou d'aménagement/occupation de l'espace permettant la pratique de la jachère, des parcours, des parcs,
- la définition d'itinéraires techniques maintenant ou améliorant la fertilité et adaptés aux moyens des exploitations ou la politique agricole,
- l'association de la pastèque dans les systèmes de culture,
- la définition de normes équilibrées pour l'intégration agriculture/élevage

Diagnostic pluridisciplinaire et participatif des systèmes de production (Sénégal Oriental et Haute Casamance)

Des MARPs ont été effectuées dans plusieurs villages de la Haute Casamance et dans quelques villages du Sénégal Oriental. Le rapport de synthèse sur les résultats de ces MARPs n'est pas encore disponible.

Table 3 2 page 20

Ic. Les thèses de formation de longue durée

Impact des pratiques alternatives de digues anti-sel en Basse et Moyenne Casamance

Evaluation de l'effet des technologies anti-sel

Reduction de 80% de la forêt par defrichement et brûli n'entraînera pas une augmentation des production mais produira une grande quantite de sediment au debut et à la fin de la saison des pluies Ainsi les technologies anti-sel sont necessaires pour proteger les sols de plateau

Impact de la traction animale sur le riz, le mil et le maïs en Basse et Moyenne Casamance

Technologie de la traction animale

Contraintes

- La gamme d'équipements disponibles pour la traction animale est petite
- Equipements vetustes et deteriorés (mauvaise qualite du materiel utilise dans les equipements agricoles, penibilite du travail)
- Indisponibilite des pieces de rechanges et de matieres premieres
- 70% des ruraux disposent d'une seule paire de bœuf (sous-utilisation de la technologie, surexploitation des animaux et du materiel, travail du sol par les hommes)
- Tous les efforts sont concentres sur la preparation du sol et pas sur les operations de desherbage (absence d'équipement approprié)

Recommandations

- Recherche sur le probleme de l'alimentation du betail pendant la preparation des sols, sur les systemes d'attelage et les equipements ameliores
- Assistance technique des ruraux pour ameliorer le niveau de competence a la technologie de la traction animale en vue de l'amelioration des operations culturelles

L'offre et la demande céréalières du Sénégal, 1960-1995. implication pour l'autosuffisance alimentaire

But analyser l'offre et la demande cerealieres et leur relation en matiere d'autosuffisance (determiner l'offre locale et la demande cerealieres et leurs fluctuations par rapport au changement de prix des cereales, aux technologies , evaluer les impacts des politiques gouvernementales sur l'autosuffisance cerealiere/alimentaire et sur les systeme de production alimentaire au Senegal

Resultats

- La production cerealieres ne repond pas significativement a une augmentation de prix a la production
- Les superficies cultivees mil/sorgho et en riz ont pas un impact sur l'offre en cereales
- La consommation d'engrais sur mil/sorgho a un effet positif sur la production

Table 3 2 page 21

- L'offre de cereales est correle a la limite des terres disponibles
- Les productions cerealieres n'augmentent pas necessairement avec l'augmentation des prix au producteur (disponibilite des terres dans le cas du riz)
- Le riz est un substitut du mais et un complement du mil/sorgho en terme de demande de cereales

Recommandations en matieres de politique agricole (production, prix, techniques, commerce, varietes ameliorees de mil , sorgho, mais et riz)

- Promouvoir la production cerealiere sans augmenter le prix a la production
- Changement dans les habitudes alimentaire (substitution du riz par la mil/sorgho et le mais avec un impact sur balance commerciale)
- Encourager l'exportation des produits et intrants agricoles
- Augmenter a la fois la production cerealiere et la superficie agricole
- Ameliorer la competitivite des cereales locales

Evaluation de l'adoption des varietés de riz améliorées en Basse et Moyenne Casamance

But Tester l'hypothese selon laquelle l'exploitation agricole, les caracteristiques et les perceptions des paysans sur les caracteristiques specifiques des technologies conditionnent significativement la decision d'adopter une technologie

Resultats

- L'application d'engrais est un facteur determinant de la production
- Les varietes ameliorees sont superieurs aux locales dans des conditions favorables
- Une des cause des faibles progres dans la production du riz est la sous attention accordee au technologies impliquees dans l'amelioration de l'environnement physique
- Les caracteristiques specifiques pour l'adoption des varietes ameliorees par les paysans sont cycle court, bon tallage, bonne resistance au sel, bonne qualite alimentaire
- L'information, la regroupement en organisations de producteurs, l'accès au credit, l'âge sont des criteres specifiques qui expliquent significativement l'adoption de varietes ameliorees
- Les perceptions du paysan de l'interêt de la technologie specifique (varietes) sont les facteurs determinant l'adoption (a considerer dans les futures programmes de recherche)

Table 3 2 page 22

Conclusion

Parmi les technologies existantes utilisées par les ruraux qui ont fait l'objet d'une évaluation, trente (30) technologies ont été étudiées en détail (études de cas ou études d'impact sur les revenus des ruraux) **14 technologies en amélioration des cultures** (3 variétés améliorées de riz irrigué, 3 variétés améliorées de mil, 7 variétés améliorées de coton, association mil/mièbe), **5 technologies en gestion du sol** (compost simple, fumier enrichi, compost enrichi, fumier amélioré, digue anti-sel), **8 technologies en agroforesterie** (haie vive, brise-vent, cultures en bandes pérennes, régénération naturelle, cultures en couloirs, aménagements agro-sylvo-pastoral, parcs améliorés, foyers améliorés), et **3 technologies en productions animales** (embouche bovine, étable fumière, traction animale) Les inventaires et diagnostics participatifs ont permis d'identifier 108 technologies et d'apprécier leurs taux d'adoption et éventuellement les contraintes liées à leurs adoptions dont 47 technologies en gestion du sol, 38 en améliorations des cultures, 17 en agroforesterie et 6 en productions animales

Table 3 2 page 23

4 DEVELOPMENT OF IMPROVED AG/NRM TECHNOLOGY

The development of new technologies was undertaken through more than 41 activities, primarily through the NRBAR researcher grants, and the Ph D and M S research projects, covering a diversity of NRM-related topics. These activities are summarised in the appropriate sections of Chapter 7, each activity can be reviewed in detail in the final activity reports which are available at ISRA and are referenced in the Bibliography of this report. The list of activities and their titles are presented in Table 4 1

Thirty-seven technologies were developed, with support towards the development of a further 37. Most effort focussed on technologies to improve soil fertility for cereals production. Major areas of technology development were compost-related technologies, natural phosphate soil amendments, green manure, and animal manure, for improved soil management, improved varieties of millet, maize, sorghum, sweet potato and cowpeas, pest control through use of natural and artificial pesticides, and seedbed management techniques, for improved crop production, live fencing as windbreaks, for field enclosures, for forage and to control erosion, selection of rangeland tree species for soil improvement, alley-cropping, and halophyte technologies, for agroforestry, and forage conservation, open-nucleus breeding, and stabling, for livestock. A listing of technologies which have been, or are in the process of being, developed are presented in Table 4 2

A good illustration of the impact of those activities oriented towards technology development is the visit of the researcher Safietou Fall to the U S on short-term training in 1996. During a three-months period of intensive work, she was able to analyse, synthesise and document her recent research activities, and has subsequently released 4 publications, which provide important contributions to the design of recommendations for the use of improved technologies by farmers, as follows: (a) The effects of browse level on efficiency of feed utilisation in the cereals and peanut hay based diets of sheep and cattle were described for the browse species *A. albida* (pods), *Pithecellobium dulce*, *Adansonia digitata* and *Calotropis procera* (leaves), (b) The negative effects of increased concentrate use on fibre digestion in cereal-based diets of sheep and cattle were described, using feed materials commonly available in Senegal, suggesting that concentrates should be limited in order to ensure efficient utilisation of fibrous feeds, (c) the effects of incorporating fruits of *Faidherbia albida* into millet-based diets for stall-fed cattle were described, and it was concluded that (1) the optimum proportion of these fruits in the diet was 16%, (2) this new dietary component was more effective and less costly than concentrates, and (3) ISRA needs to provide substantial technical assistance at farmer level to ensure effective establishment and diffusion of this technology, (d) The crude protein degradability in the rumen of cereals-based diets fed to cattle was described, with the following conclusions: (1) variations in degradability depended on diet ingredients rather than on type of feed, (2) crude protein degradability in the rumen was satisfactory with molassed rice straw and with molassed millet straw rations, and (3) further work is needed to evaluate post-ruminal digestion of available protein sources

In conclusion, the number of technologies which have been developed through NRBAR assistance, and those which are in the process of development, have exceeded the workplan indicators, and much of this priority work should be continued, to further increase the number of technologies available for validation on farms

TABLE 4 1 LIST OF TECHNOLOGY DEVELOPMENT ACTIVITIES

A	R01 utilisation des ecailles de poisson comme engrais organique pour le mil et le sorgho dans CNBA (Mamadou Ndiaye)
B	R03 utilisation de Vetivera pour reduire l'erosion des sols dans BMC (Mankeur Fall)
C	R04 utilisation des etables fumieres pour augmenter la productivite agricole dans SOHC (Nouhine Dieye)
D	R05 utilisation de la matiere organique et de l'engrais pour reduire l'allilopathie du sorgho dans SBA (Manieval Sene)
E	R06 utilisation du phosphate naturel pour ameliorer les pâturages naturels dans la zone sylvo- pastorale (Amadou Diop)
F	R07 utilisation des legumineuses fourrageres pour ameliorer les productions cerealieres et animales dans SOHC (Ambroise Diatta)
G	R08 utilisation des arbres ligneux pour redresser le statut organique et la fertilité des sols dans BMC (Souleye Badiane)
H	R09 analyse socio-economique des technologies developpees (M Kebe)
I	R10 utilisation des étables fumieres pour augmenter la productivite agricole dans SBA (Fatmata Dia)
J	R11 utilisation du neem pour la protection et la conservation des sols contre les nematodes pour la culture du mil et du maraîchage dans CNBA (Emile Coly)
K	R13 utilisation du fumier de vache dans la culture mil/niébe dans CNBA (Mbaye Ndiaye)
L	R14 utilisation de matiere organique pour la croissance des arbres et des cultures dans les champs dans CNBA (Ibrahima Diaté)
M	Ph D These utilisation d'un centre noyau pour la multiplication du betail dans la zone sylvo-pastorale et SOHC (Mamadou Diop)
N	M S These test des techniques alternatives de conservation du fourrage pour la gestion villageoise du betail dans SOHC (M Sissokho)
(O	les nouveaux projets de recherche qui etaient approuves pendant l'annee 1997 Recherche (Chercheurs/Collaborative), Etudes de sites, Programmes sabbatiques liaisons internationales et Theses)
	• R17 Mise au point de techniques accelerees de compostage Mamadou KHOUMA URR BMC
	• R19 Gestion et conservation des ressources phyto-genetiques et de la biodiversité - SBA - Ibrahima DIAITE - URR SBA
	• R20 Etudes de techniques de recuperation des sols sales - Maleini DIATTA - URR SBA
	• R21 Influence des conditions hydriques et du travail du sol sur les effets ameliorateurs des amendements (organiques et inorganiques) - Modou SENE - URR SBA
	• R22 Amelioration du taurin Ndama par le schema genetique à Noyau Ouvert (SAGNO) Mamadou Alassane BA - URR SOHC /Kolda
	• R23 Determination de la période de semis et de la densité de peuplement des legumineuses fourrageres annuelles en association avec le maïs in "NRBAR R07" Ambroise DIATTA - URR SOHC /Kolda
	• R25 Etude de l'adaptabilite des varietes de maïs dans le Sud Bassin Arachidier - Abdou NDIAYE - URR SBA

- **R26** Contribution des micro-organismes (rhizobiums et champignons cellulolytiques) a l'amelioration de la fertilite des sols - Mamadou GUEYE - URA-PV
- **R27** Etudes des methodes d'exploitation des ligneux en zone periurbaine influence sur la qualite du fourrage et la survie des peuplements - Safietou T FALL - URA-PA
- **S22** Etude des possibilites de mise en valeur des bas-fonds du Sud Bassin Arachidier - Avec le Departement Geographie de l'Universite CAD, Abdou NDIAYE UCAD -Dept Geographie
- **LIR-02** Etude sur la regeneration des sols degrades, Aminata Badiane
- P Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR CNBA
- **PAR2- 6** Etude des effets de melange de phosphates naturels et de phosphogypse sur les sols et cultures (generation de technologies) Mankeur FALL
- **PAR2- 7** Developpement de methodes alternatives de protection des recoltes vivrieres et des semences contre les insectes (generation, validation et transfert) Dogo SECK
- Q Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR SOHC
- **PAR4- 2** Synthese des travaux sur les insectes ravageurs des cultures cerealieres et de rente Djibril BADIANE
- **PAR4- 3** Synthese sur les recherches sylvicoles de la zone Alphousseym BODIAN
- **PAR4- 4** Synthese des recherches sur les cultures fourrageres au Senegal Oriental et en Casamance Ambroise DIATTA
- **PAR4- 6** Synthese des etudes sur la pathologie animale des ruminants de la zone Momar Talla SECK
- **PAR4- 7** Synthese des recherches en amelioration varietale de cereales Amadou FOFANA
- **PAR4- 9** Prospection sur les insectes ravageurs des cultures cerealieres et de rente Djibril BADIANE
- **PAR4-11** Prospection et evaluation de varietes locales de cereales (mil, mais, sorgho et fomo) Amadou FOFANA
- **PAR4-13** Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du Taurin Ndama utilise en monoboef et en paire Momar Talla SECK
- R Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR SBA
- **PAR3-2** Etude des possibilites de mise en valeur des bas-fonds du Sud Bassin Arachidier - Abdou NDIAYE
- S Mise au point de nouvelles technologies GRN dans Programme PAR/GRN de l'URR MBC
- **PAR1- 2** Etude et mise au point de techniques de lutte appropriees contre les attaques de poisson sur le riz au niveau des vallees amenees Vaque NDIAYE
- **PAR1- 4** Caracterisation de l'entomofaune parasite des manguiers et agrumes en Casamance Saliou DJIBA
- **PAR1- 5** Amelioration des itineraires techniques de la patate douce Youga NIANG
- T Etudes sur la forêt naturelle (Ph D These – Ibrahima Thomas)
- U Etude sur la productivite du systeme coton/cereales (M S These Mour Gueye)

Table 4 2 Inventaire des technologies développées (techniquement ou autre test recommandé) (page + 1-11)

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Gestion du sol	Fumier amélioré	2 t/ha de fumier + phosphate naturel (équivalent à 30 kg/ha de P ₂ O ₅) sur sorgho CE 145-66	Meilleurs rendements (entre + 25,5 et 42,5%)	Centre Nord Bassin Arachidier
		2 t/ha de fumier + phosphate naturel (équivalent à 30 kg/ha de P ₂ O ₅) sur mil Souna 3 et variété locale	Meilleurs rendements (entre + 40 et 50%)	Centre Nord Bassin Arachidier
	Compostage/ décomposition matière végétale	Compostage accéléré	Accélération du compostage en tas de la paille de riz par le champignon <i>Trichoderma</i> (inoculum)	Basse Casamance
		Décomposition accélérée de matières végétales	Accélération de la décomposition de la biomasse de <i>Gliricidia sepium</i> et <i>Leucaena leucocephala</i> fixateurs d'azote par l'action du champignon cellulolytique <i>Trichoderma harzianum</i>	Toutes zones
	Compost amélioré	2 t/ha de compost + phosphate naturel (équivalent à 30 kg/ha de P ₂ O ₅) sur sorgho CE 145-66	Meilleurs rendements (entre + 25 5 et 42,5%)	Centre Nord Bassin Arachidier
		2 t/ha de compost + phosphate naturel (équivalent à 30 kg/ha de P ₂ O ₅) sur mil Souna 3 et variété locale	Meilleurs rendements (entre + 40 et 50%)	Centre Nord Bassin Arachidier
Compost enrichi	5 t/ha de compost + 150 kg/ha de 10-21-21 NPK + 100 kg/ha d'urée sur mais JDB	Meilleurs rendements (3,36 t/ha)	Basse Casamance	
Gestion du sol (suite)	Compost enrichi (suite)	5 t/ha de compost + 150 kg/ha de 10-21-21 NPK + 100 kg/ha d'urée sur mil Sagno	Meilleurs rendements	Basse Casamance

Table 4 2 page 1

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
		Compost enrichi en phosphate naturel	Fosses implantées et cycle de compostage enrichi en phosphate naturel réalisé essais agronomiques en cours	Centre Nord Bassin Arachidier
	Fumier	Fumier sur riz amélioré ROK 5	Meilleurs rendements	Sénégal oriental et haute Casamance
		Fumier sur riz amélioré DJ 684-D	Meilleurs rendements	Sénégal oriental et haute Casamance
		Fumier d'étable 10 t/ha sur maïs local	Productions comparables au fumier d'étable de la pratique paysanne	Sénégal oriental et haute Casamance
		Epannage superficiel de 2 t/ha	Meilleurs paramètres de croissance (survie, hauteur, diamètre nombre de brins latéraux) pour <i>Zizyphus mauritiana</i> , après 5 mois	Centre Nord Bassin Arachidier
		Epannage et incorporation de fumier	Meilleurs rendements de mil (IBV 8402)	Centre Nord Bassin Arachidier
	Compost	Compost sur riz amélioré ROK 5	Meilleurs rendements	Sénégal oriental et haute Casamance
		Compost sur riz amélioré DJ 684-D	Meilleurs rendements	Sénégal oriental et haute Casamance
		2 t/ha de compost sur sorgho CE 145-66	Meilleurs rendements (entre + 25,5 et 42,5%)	Centre Nord Bassin Arachidier
Gestion du sol (suite)	Compost (suite)	2 t/ha de compost sur mil Souna 3	Meilleurs rendements (entre + 40 et 50%)	Centre Nord Bassin Arachidier

Table 4 2 page 2

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
		2 t/ha de compost sur mil variété locale	Meilleurs rendements (entre + 40 et 50%)	Centre Nord Bassin Arachidier
	Phosphate naturel et/ou phosphogypse	Melange de 25% de phosphate de Taïba et 75% de phosphogypse sur mil	Meilleurs rendements en mil (entre + 6 et 17%)	Centre Nord Bassin Arachidier
		Mélange de 50% de phosphate de Taïba et 50% de phosphogypse sur arachide	Meilleurs rendements en gousses bigraines (+ 37%) et en fanes d'arachide	Centre Nord Bassin Arachidier
		Application de 400 kg/ha de phosphate naturel sur parcours naturel	Augmentation de la teneur en P du fourrage	Centre Nord bassin Arachidier et Haute Casamance
	Engrais vert	<i>Sesbama rostrata</i> sur riz amélioré ROK 5	Meilleurs rendements (3550 kg/ha)	Sénégal oriental et haute Casamance
		<i>Sesbama rostrata</i> sur riz amélioré DJ 684-D	Meilleurs rendements (2980 kg/ha)	Senégal oriental et haute Casamance
Aménagements physiques anti-érosifs	Caracterisations hydrologique et hydrogéologique du bassin versant de Koutango	Caractérisation réalisée et schéma d'aménagement préconisé	Sud Bassin Arachidier	
Amélioration des cultures	Mil amélioré	2 t/ha de compost amélioré ou fumier amélioré ou compost simple sur mil Souna 3	Meilleurs rendements de Souna 3 comparé au mil local	Centre Nord Bassin Arachidier
	Mais amélioré	Variété JDB	Meilleurs rendements de JDB (+ 35%) comparée aux variétés locales	Basse Casamance

Table 4 2 page 3

Domaine	Type	Caracteristiques	Effets directs	Zone d'application
Amélioration des cultures (suite)	Mais ameliore (suite)	Synthetic C	Meilleure stabilite du rendement et meilleure adaptabilité aux conditions defavorables par rapport a 7 autres varietes precoces a intermediaires	Sud Bassin Arachidier
	Sorgho ameliore	2 t/ha de compost ameliore ou fumier ameliore ou compost simple sur sorgho CE 145-66 ou sorgho local	Meilleurs rendements de CE 145-66 (entre + 25,5 et 42,5%)	Centre Nord Bassin Arachidier
	Niébé ameliore	Comparaison de Mouride, Bambey 21, Melakh, CB5, 58-57, Mougne, Diongoma, Baye Ngane, Ndiage Aw et Ndiambour	Mouride, Bambey 21, Melakh, CB5 et 58-57 mieux appreciées car necessitent moins de lutte contre les nuisibles	Sud Bassin Arachidier
		Rendements fourragers de la variété 58-74 en rotation avec une cereale en milieu paysan	Meilleurs rendements (10,5 t ms en moyenne) qu'en station	Haute Casamance
	Patate douce améliorée	Evaluation de 21 varietés comparées aux varietés Mandina et Fatato Koyo	Fanaye, Ndargu, Louga 5 et Clone 4 sont les meilleures varietés	Basse et Moyenne Casamance
	Association culturale	Melon semé une semaine avant la récolte du mil a une distance de 1,8 m entre les rangées et 0,9 m dans les rangées	Association avantageuse avec LER=1,56, bénéfiques nets pour le mil et la pastèque sont de 83500 et 89400 CFA par saison respectivement	Sud Bassin Arachidier
	Protection des cultures ou des denrées stockées	Lutte chimique au DECIS sur production du niébé (varietés Mouride, Diongoma et locales)	Meilleurs rendements	Centre Nord Bassin Arachidier
		Lutte chimique au 2,4-D + 100 kg/ha d'uree apres desherbage manuel du <i>Striga</i> des champs de mil	Meilleurs rendements pour 75% des champs traites	Basse Casamance

Table 4 2 page 4

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Amélioration des cultures (suite)	Protection des cultures ou des denrées stockées (suite)	Lutte biologique aux extraits de <i>Boscia senegalensis</i> pour la protection et des graines de niébé stockées (Bambey 21, Dioungoma, Melakh et Ndiambour)	Maintien de la faculté germinative après 6 mois en fût	Centre Nord Bassin Arachudier
		Lutte biologique aux poudres de graines de <i>Pachyrhizus erosus</i> pour la protection des graines de niébé (Bambey 21) et d'arachide (55-437)	Pas d'effet sur la faculté germinative	Centre Nord Bassin Arachudier
		Lutte biologique aux huiles extraites d'amandes de <i>Parinari macrophylla</i> , <i>Balanites aegyptiaca</i> , <i>Azadirachta indica</i> , <i>Arachis hypogea</i> contre les adultes de <i>C maculatus</i> (ravageurs des denrées stockées)	100% de protection immédiate (mortalité) pour l'huile <i>Azadirachta indica</i> de 2 ml/kg (après 72 h à 10 ml/kg, 96% de mortalité pour l'huile de <i>Balanites aegyptiaca</i> , 86,7% pour celle de <i>Arachis hypogea</i> et 54,7% pour celle de <i>Parinari macrophylla</i>)	Centre Nord Bassin Arachudier
		Lutte biologique aux huiles extraites d'amandes de <i>Parinari macrophylla</i> , <i>Balanites aegyptiaca</i> , <i>Azadirachta indica</i> , <i>Arachis hypogea</i> contre les descendants de <i>C maculatus</i> (ravageurs des denrées stockées)	Efficacité à 100% de l'huile de <i>A indica</i> sur émergence F1 (à 10 ml/kg, réduction des émergences de 99,8% pour l'huile de <i>Balanites aegyptiaca</i> , 99,6% pour celle de <i>Arachis hypogea</i> et 98% pour celle de <i>Parinari macrophylla</i>)	Centre Nord Bassin Arachudier
		Lutte biologique au contact des huiles de <i>Parinari macrophylla</i> , <i>Balanites aegyptiaca</i> , <i>Azadirachta indica</i> , <i>Arachis hypogea</i> sur adultes de <i>C serratus</i>	Mortalité de 96% après 72 h de contact avec l'huile de <i>A indica</i> à la dose de 10 ml/kg	Centre Nord Bassin Arachudier

Table 4 2 page 5

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Amélioration des cultures (suite)	Protection des cultures ou des denrées stockées (suite)	Lutte biologique à l'effet fumigeant de <i>Boscia senegalensis</i>	100% de mortalité sur <i>C. maculatus</i> à la dose de 0,67g/l Pour <i>C. serratus</i> l'activité biologique atteint 100% à partir de la dose de 1,33 g/l	Centre Nord Bassin Arachidier
		Lutte biologique au neem	Efficacité de la poudre de neem à 200 g/m ² sur les nématodes	Centre Nord Bassin Arachidier
		Lutte contre les poissons ravageurs du riz	Meilleurs rendements pour les parcelles endiguées	Basse et Moyenne Casamance
	Technique culturale	Labour perpendiculaire à la pente	Meilleures productions de mil	Basse Casamance
		Préparation mécanique du sol avec ou sans enfouissement de <i>Ghricidia</i>	Production de mil > à 2 t/ha	Basse Casamance
		Période et densité de semis du sorgho	Semis avant le 8 juillet et densité faible à moyenne	Bassin Arachidier
		Période de semis du niébé (58-74) en culture dérobée avec le maïs	Meilleurs rendements en grains de maïs et en fourrage de niébé pour semis 15 jours après celui du maïs	Senegal Oriental
Densité de semis de la dolique associée au maïs	Meilleurs rendements en grains de maïs et en fourrage pour une densité de 106 400 plants/ha à raison de 2 plants par poquet	Sénégal Oriental		
Densité de semis du niébé (58-74) associé au maïs	Meilleurs rendements en grains de maïs et en fourrage pour une densité de 106 400 plants/ha à raison de 2 plants par poquet	Senegal Oriental		

Table 4 2 page 6

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Agroforesterie	Haies vives défensives	<i>Acacia mellifera</i> , <i>A. rufescens</i> , <i>A. tortilis</i> , <i>A. nilotica</i> , <i>Bauhinia rufescens</i> et <i>Zizyphus mauritiana</i> espacés de 50 cm à l'intérieur des rangs	Taux moyen de survie des plantations de 64 à 99%, à suivre	Centre Nord Bassin Arachidier
	Haies vives anti-érosives et fourragères	<i>Acacia mellifera</i> , <i>A. laeta</i> , <i>A. tortilis</i> , <i>A. nilotica</i> , <i>Zizyphus mauritiana</i> , <i>Bauhinia rufescens</i> en haies monospécifiques	5 400 plants produits avec un taux de survie moyen de 91% après une année et supérieur à 80% un an et demi en milieu réel, à suivre	Centre Nord Bassin Arachidier
		<i>Acacia mellifera</i> , <i>A. laeta</i> , <i>A. tortilis</i> , <i>A. nilotica</i> , <i>Zizyphus mauritiana</i> , <i>Bauhinia rufescens</i>	Taux de survie moyen supérieur à 68% en parcelles paysannes à suivre	Centre Nord Bassin Arachidier
		2427 plants (10 espèces) en lignes isohypses et perpendiculaires à l'écoulement	Taux de survie moyen de 80% après 4 mois, à suivre	Centre Nord Bassin Arachidier
		<i>Acacia mellifera</i> , <i>A. nilotica</i> , <i>A. laeta</i> , <i>A. tortilis</i> , <i>Zizyphus mauritiana</i>	Taux de survie 27 mois après plantation variant de 78 à 95%, croissance en hauteur variant de 91 cm à 163 cm, hauteur de la première branche (ramification) de 8 à 15 cm, largeur de la haie de 67 à 152	Sud Bassin Arachidier
		<i>Acacia mellifera</i> , <i>A. nilotica</i> , <i>A. laeta</i> , <i>A. tortilis raddiana</i> , <i>Zizyphus mauritiana</i> , <i>A. albida</i> , <i>Parkansoma aculaeta</i> , <i>Acacia holosericea</i>	Excepté <i>Parkansoma aculaeta</i> , toutes les espèces ont un taux de survie supérieur ou égal à 90% après 6 mois	Sud Bassin Arachidier

Table 4.2 page 7

Domame	Type	Caracteristiques	Effets directs	Zone d'application
Agroforesterie (suite)	Haies vives anti-erosives et fourrageres (suite)	<i>Acacia mellifera</i> , <i>A adansonii</i> , <i>Bauhinia rufescens</i> et <i>Zizyphus mauritiana</i> testées en haies vives monospécifiques sur des parcelles céréalières et arachidières en pente en milieu rural <i>Jatropha curcas</i> utilisée pour les barrières végétales Sur les bordures des ravines, <i>Vetiveria nigriflora</i> et <i>Andropogon gayanus</i> Installation de diguettes filtrantes en aval des haies vives	Taux de survie variant entre 70 et 90% après un an, rétention de 9 8 tonnes de sable par la diguette favorisant le remblayage des ravines et diminuant l'ensablement de la vallée alluviale	Sénégal Oriental et Haute Casamance
		Evaluation d'espèces agroforestières	Espèces prometteuses <i>Acacia seyal</i> , <i>A mlotica</i> , <i>M inermis</i> , <i>P reticulata</i> et <i>Eucalyptus</i> Mélange de 3 espèces a sélectionné pour des plantation de bordures (<i>Acacia mellifera</i> , <i>Prosopis juliflora</i> et <i>P cineraria</i>) ainsi qu'une espèce seule (<i>Acacia mellifera</i>)	Sud Bassin Arachdier
	Haies vives brise-vent	<i>Anacardium occidentale</i>	Taux de survie des plantations (90%), à suivre	Centre Nord Bassin Arachudier
		<i>Acacia albida</i> , <i>Balanites aegyptiaca</i> et <i>Acacia senegal</i> en ligne et espaces de 10 m	Taux de survie des plantations (95%), à suivre	Centre Nord Bassin Arachudier
		Deux lignes d' <i>Eucalyptus camaldulensis</i> et une ligne de <i>Acacia holosericea</i> espacés de 2 m entre les lignes et de 1,5 m à l'intérieur des lignes	Potentialités de <i>Prosopis juliflora</i> , <i>Parkansonia aculaeta</i> , <i>D sisso</i> et <i>Leucaena leucocephala</i>	Zone fleuve

Table 4 2 page 8

Domaine	Type	Caracteristiques	Effets directs	Zone d'application
Agroforesterie (suite)	Haies vives brise-vent (suite)	Deux lignes d' <i>Eucalyptus camaldulensis</i> et une ligne de <i>Acacia holosericea</i> espaces de 2 m entre les lignes et de 1,5 m a l'interieur des lignes, plantees autour d'une parcelle irriguee villageoise de riz	Taux de survie de 100% apres 2 mois et hauteur de 210 cm pour <i>Eucalyptus</i> et 114,3 m pour <i>Acacia</i> , a suivre	Zone fleuve
		<i>Acacia mellifera</i> , <i>A nilotica</i> , <i>A laeta</i> , <i>A tortilis</i> , <i>Zizyphus mauritiana</i>	Taux de survie des espèces utilisées comme brise vent 27 mois après plantation sont <i>Acacia mellifera</i> (19%), <i>A nilotica</i> (28%), <i>A laeta</i> (43%), <i>A tortilis</i> (23%) et <i>Zizyphus mauritiana</i> (18%) <i>Acacia mellifera</i> , <i>A laeta</i> et <i>Zizyphus mauritiana</i> retenus aussi bien en plantation pure qu'en plantation mixte avec <i>A nilotica</i> et <i>A tortilis</i> (rangées de 300 m de long, 100 m entre les rangées et 10 m entre les arbres en ligne	Sud Bassin Arachidier
		<i>Acacia holosericea</i>	Taux de survie de 80% après 6 mois	Sud Bassin Arachidier
	Parc agroforestier	<i>Acacia mellifera</i> , <i>A nilotica</i> , <i>A laeta</i> , <i>A tortilis raddiana</i> , <i>Zizyphus mauritiana</i> , <i>A albida</i> , <i>Parkinsoma aculaeta</i> , <i>Acacia holosericea</i>	Recommande pou la restauration des sols et l'amélioration du parc agroforestier	Sud Bassin Arachidier
		<i>Acacia tortilis raddiana</i>	Taux de survie de 70% après 6 mois	Sud Bassin arachidier
	Cultures en couloir	<i>Leucaena leucocephala</i> espacés de 4 m entre les rangs et de 1 m à l'interieur des rangs soit 2 500 plants/ha	Production moyenne de 4,6 t/ha/an de biomasse et 790 perches	Centre Nord Bassin Arachidier

Table 4 2 page 9

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Agroforesterie (suite)	Cultures en couloir (suite)	<i>Leucaena leucocephala</i> espaces de 4 m entre les rangs et de 1 m à l'intérieur des rangs	Production de biomasse importante	Basse Casamance
		<i>Cassia siamea</i>	Effet sur culture de mil ou arachide remarquable	Basse Casamance
	Evaluation d'espèces halophytes	Tests sur <i>Acacia trachycarpa</i> , <i>A. tortilis</i> , <i>A. holosericea</i> , <i>A. nilotica</i> (var <i>adonsonii</i>), <i>A. senegal</i> , <i>A. laeta</i> , <i>Bauhinia rufescens</i> , <i>Prosopis juliflora</i> , <i>P. chilensis</i> et <i>Parkinsonia aculeata</i>	Taux de survie moyen de 60% (0% pour <i>A. holosericea</i> et <i>A. trachycarpa</i> et de 100% pour <i>A. laeta</i>), croissance en hauteur variant de 0 cm pour <i>A. holosericea</i> et <i>A. trachycarpa</i> à 170 cm pour <i>P. chilensis</i> , à suivre	Centre Nord Bassin Arachidier
	Pépinières	Production, plantation et suivi de <i>Tamarix aphylla</i> var <i>erectus</i> et <i>Atriplex lentiformis</i> dans 3 sites	Formation, bon taux de survie pour <i>Tamarix aphylla</i> (90 à 100%) et bonne croissance en hauteur (17 à 39 cm) après 8 mois dans un des sites	Sud bassin Arachidier
Jachères	Productions de sorgho en fonction de la durée de la jachère	Meilleures productions de sorgho sur les jachères de 4 à 5 ans	Bassin Arachidier	
Productions animales	Alimentation/ complément alimentaire	Séchage à l'ombre (ou en grange) du fourrage de <i>L. leucocephala</i>	Augmentation de la qualité des feuilles	Niayes et Centre Nord Bassin Arachidier
	Stabulation améliorée	Stabulation de 4 mois	Augmentation de la production de lait (412,6 l/vache) en 4 mois gain de poids, bénéfice net moyen de 33 193 F CFA	Sénégal Oriental et Haute Casamance
	Zootecnie	Attelage double boeufs	Augmentation de la durée hebdomadaire de travail	Sénégal Oriental et Haute Casamance

Table 4 2 page 10

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Autres	Systeme d'Informations Géographiques	Collecte d'informations et saisie dans base de données	Population par département, nombre d'habitants au km ² , nombre de ménages ruraux, nombre de têtes de bétail, nombre de bétail par ménage, ration alimentaire <i>per capita</i> , variabilité de la production céréalière, répartition ethnique, zonage agricole et carte des parcelles de la nouvelle station de Djibélor	Basse et Moyenne Casamance
		Fonds de cartes et élaboration de bases de données	Données sur les éléments cartographiques (limites et courbes de niveau, parcellaire, type de sols, infrastructure, hydromorphologie, végétation, types d'aménagement) au niveau du bassin de Diamaguène	Sud Bassin Arachidier

Table 4 2 page 11

5 VALIDATION OF IMPROVED AG/NRM TECHNOLOGY

The validation of new technologies was undertaken primarily through the NRBAR collaborative research grants, covering a diversity of NRM-related topics. These activities are summarised in the appropriate sections of Chapter 7, each activity can be reviewed in detail in the final activity reports, which are available at ISRA and are referenced in the Bibliography of this report. The list of activities and their titles are presented in Table 5.1

Although validation is a process which takes some years, and can never be considered to be 100% complete, validation for NRBAR purposes is considered to be achieved once ISRA and its partenaires (1) consider themselves to have undertaken adequate testing of the technologies under farmer-managed conditions, and (2) both the technical and socio-economic results, and farmer overall acceptance, are positive. The validation "decision" at the ISRA/partenaire level is usually taken at the time of a formal evaluation of the results of the research/development study(s), which includes researchers, partenaire organisations and farmers. (Earlier stages of the validation process include more restricted on-farm trials which are largely researcher-managed, and later stages of this process include the development of extension bulletins, fiche techniques, large-scale dissemination programs, national seed variety certification, impact studies, and other means of ensuring that the results achieve their intended impact on the population.) Important validation events sponsored by NRBAR included the four regional technology evaluation workshops during 1997/98 at Bambey, Kaolack, Kolda and Tambacounda.

Forty-three technologies were validated at farm level, with assistance given towards the validation of a further 30. Most effort focussed on technologies to improve soil fertility for cereals production. Major areas of technology validation were improved soil management, including compost-related technologies, natural phosphate soil amendments, smoked fish residues as manure, animal manure, and anti-erosion structures, improved crop production, including improved varieties of rice and millet, crop diversification, intercropping, pest control through use of natural and artificial pesticides, and seedbed management techniques, agroforestry, including live fencing as windbreaks, for field enclosures, for forage and to control erosion, and seedbed management, and livestock research, including supplementary feeding and stabling of cattle. A listing of technologies which have been, or are in the process of being, validated are presented in Table 5.2

A good illustration of the impact of those activities oriented towards technology validation is that in 1997 ISRA applied for, and received, national registration of 10 improved varieties of rice, following successful validation related to the various growing environments found in the Lower, Middle and Upper Casamance (NRBAR grants projects S/V17, S25, R18 and PAR1-8)

In conclusion, the number of technologies which have been validated through NRBAR assistance, and those which continue to be validated, has exceeded the workplan indicators, and much of this priority work should be continued, to further increase the number of technologies available for farmers.

TABLE 5 1 LIST OF TECHNOLOGY VALIDATION ACTIVITIES

A	S/V01 preparation et utilisation du compost enrichi au phosphate naturel sur le mil et le niébe dans CNBA (Madiagne Diagne)
B	S/V02 preparation et utilisation du compost sur des variétés de mil local et améliorées dans CNBA (Aminata Badiane)
C	S/V02 utilisation de la haie vive/manioc sur la rotation mil/arachide dans CNBA (Aminata Badiane)
D	S/V02 utilisation de variétés améliorées de mil dans CNBA (Aminata Badiane)
E	S/V03 haie vive comme brise vent pour le mil/legumes dans les sols sales dans SBA, avec la collaboration de groupements féminins (Maleim Diatta)
F	S/V04 établissement et utilisation de variétés d'arbres dans les champs de paysans dans SBA (Babou Ndour)
G	S/V05 et V06 utilisation d'arbres comme brise-vent pour riz irrigué et maraîchage en saison sèche au lac de Guiers et à Nguer dans FLEUVE (Abdourahm Tamba)
H	S/V07 établissement et utilisation de variétés d'arbres dans les champs des paysans dans SBA (Maleim Diatta)
I	S/V08 utilisation de paquet intégré de technologies agroforestières dans SBA (Desire Sarr)
J	S/V09 utilisation de stratégie améliorée de gestion de terroir dans SBA (Modou Sene)
K	S/V10 utilisation de variétés améliorées de riz en conjonction avec les digues anti-sels dans SOHC (Samba Thiaw)
L	S/V11 gestion intégrée de GRN, par les groupements féminins dans CNBA (Aminata Badiane)
M	S/V12 utilisation des écailles de poissons comme engrais organique sur le mil/sorgho dans CNBA (Mamadou Ndiaye)
N	S/V13 preparation et utilisation du compost enrichi au phosphate naturel sur le mil et le niébe dans SBA (Manievel Sene)
O	S/V13 utilisation du fumier de vache pour la fertilisation du sol (Manievel Sene)
P	S/V14 preparation et utilisation du compost pour mil/sorgho à Sedhiou, dans BMC (Souleymane Diallo)
Q	S/V14 introduction de variétés améliorées de mil et sorgho dans BMC (Souleymane Diallo)
R	S/V14 utilisation d'itinéraires techniques améliorées pour contrôler les infections de striga à Sedhiou dans BMC (Souleymane Diallo)
S	S/V15 utilisation de la diversification des cultures dans SBA (Manievel Sene)
T	S/V16 utilisation des structures de contrôle améliorées de l'érosion dans le Bassin versant de Niore dans SBA (Modou Sene)
U	Production de fiches techniques à travers un processus de validation des technologies améliorées par l'Unité Information Scientifique et Technique IST (Samba Aw)
(V	projets collaboratifs approuvés en 1997/Visites de sites/ Theses/ Liaisons Internationales)
	• V17/S17/S25 Transfert de variétés de riz dans les vallées salées du Pakao et du Kassa - Amadou BEYE
	• S18 Restauration agronomique des sols - SBA- Maleim DIATTA
	• PAR3/S19 Consolidation des acquis dans le cadre du projet ISRA/ARAF S/V08 (1994/1997) Valorisation et GRN dans la région de Fatick - Desire Y SARR

- **PAR2/S20** Collaboration entre AHDIS et CNBA dans le Programme GRN (PAR2-3, PAR2-4 et PAR2-5) Desire Sarr
- **PAR2 S21** Collaboration entre RODALE et CNBA dans le Programme GRN (PAR2-3 a PAR2-7) Desire Sarr
- **V23** Introduction de la culture fourragere de legumineuses annuelles en milieu paysan en vue de l'amelioration des productions cerealieres et animales en Haute Casamance au Senegal Ambroise DIATTA
- **V24/S24** Effets des bois rameaux fragmentes et du compost de litiere de filao sur l'amelioration de la fertilite des sols et des rendements agricoles dans les cuvettes maraicheres des Niayes Abdourahmane TAMBA
- **R18** Formation et Assistance Technique aux groupements de producteurs de semences des regions de Ziguinchor, centre Nord Bassin Arachidier et SOHC Arthur DA SYLVA
- **R24** Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone subhumide du Senegal – Nuhine DIEYE
- **LIR-03** Etude de validation des varietes ameliorees des legumes, C Alassane Fall
- **LIR-01** Etude de validation des technologies agriculture/elevage, Abdou Fall
- W Validation de technologies de GRN en milieu paysan Programme PAR/GRN - l'URR CNBA
 - **PAR2- 3** diagnostique sur les modes de transferts et evaluation socio-economique des technologies sur la GRN - Mbene D FAYE
 - **PAR2- 4** Diffusion de technologies en milieu paysan le compostage enrichi - Aminata BADIANE
 - **PAR2- 5** Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives defensives (validation et transfert) - Babou NDOUR
- X Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR SOHC
 - **PAR4- 5** Exploitation et valorisation des donnees du CRZ sur la reproduction du taurin Ndama Mamadou A BA
 - **PAR4-10** Etude et amelioration des systemes de production et de la gestion des ressources naturelles Suivi des elevages bovins villageois Mamadou A BA
 - **PAR4-12** Test de techniques de lutte contre l'erosion hydrique par l'utilisation des haies vives Alphousseym BODIAN
- Y Validation de technologies de GRN en milieu paysan dans Programme PAR/GRN de l'URR SBA
 - **PAR3- 5** Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovations performantes Fatimata DIA
- Z Validation de technologies de GRN en milieu paysan Programme PAR/GRN -l'URR MBC
 - **PAR1- 3** Installation de collections d'arbres fruitiers et tests de varietes d'agrumes, de manguiers et de bananiers en milieu paysan Demba SIDIBE
 - **PAR1- 8** en place d'une collection d'ecotypes locaux de cereales et de varietes ameliorees de riz Transfert en milieu paysan de materiel adapte Amadou BEYE
- AZ Ateliers de presentation des resultats des projets de recherche (Aminata Badiane)
- BZ Analyses socio-economiques des technologies developpees (M Kebe)
- CZ Methodologie de recherche en milieu paysan (M S These – Mamadou Lo)

**Table 5 2 Inventaire des technologies validées (techniquement et/ou socio-économiquement)
(page 1-8)**

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Gestion du sol	Fumier amélioré	2 t/ha de fumier + phosphate naturel (équivalent à 30 kg/ha de P ₂ O ₅) sur mil variétés IBV 8204 et Souna 3	Meilleurs rendements (1033 kg/ha en moyenne)	Centre Nord Bassin Arachidier
		2 t/ha de fumier + phosphate naturel (équivalent à 30 kg/ha de P ₂ O ₅) sur arachide variétés 55-432, Fleur 11 et GC 8-35	Meilleurs rendements (1073 kg/ha en moyenne)	Centre Nord Bassin Arachidier
		Mise en tas du fumier par les paysans	Nombre de groupements villageois utilisant la technologie passe de 31 en 1996 à 46 en 1997 et à 135 en 1998	Centre Nord Bassin Arachidier
	Compostage/ decomposition matière végétale	Construction de fosses et fabrication du compost	10 paysans formés	Centre Nord Bassin Arachidier
		Fosse compostière	Nombre passe de 47 (96/97) à 76 (97/98) dans site d'étude	Centre Nord Bassin Arachidier
		Compostage de litière de filaos	Formation de 2 villageois litière + 2% d'urée + phosphogypse en tas, auto-formation de 26 producteurs	Niayes
	Compost amélioré	2 t/ha d'un mélange à part égale de compost et de fumier sur mil	Meilleurs rendements (917 kg/ha en moyenne)	Centre Nord Bassin Arachidier
		2 t/ha d'un mélange à part égale de compost et de fumier sur arachide	Meilleurs rendements en grains (794 kg/ha en moyenne)	Centre Nord Bassin Arachidier
	Gestion du sol (suite)	Compost amélioré (suite)	2 t/ha de compost + 50 kg/ha d'urée sur mil Souna 3	Meilleurs rendements en mil (jusqu'à 4000 kg de matière sèche/ha)

Table 5 2 page 1

Domaine	Type	Caracteristiques	Effets directs	Zone d'application
		2 t/ha de compost + 50 kg/ha d'uree sur arachide 55-437	Meilleurs rendements en gousses d'arachide (700 kg/ha)	Centre Nord Bassin Arachidier
	Compost enrichi	2 t/ha de compost + 150 kg/ha de 10-21-21 NPK + 100 kg/ha d'uree sur mil (Souana 3 et IBV 8204)	Meilleurs rendements (1204 kg/ha en moyenne) et meilleur benefice net (37 000 F CFA/ha)	Centre Nord Bassin Arachidier
		2 t/ha de compost + phosphate naturel (equivalent a 60 kg/ha de P ₂ O ₅) sur mil Souana 3	Meilleur benefice net (37 000 F CFA/ha)	Centre Nord Bassin Arachidier
	Compost	2t/ha de compost sur mil ameliore Souana 3	Meilleurs rendements (1305 kg/ha) compares aux techniques traditionnelles	Centre Nord Bassin Arachidier
		2t/ha de compost sur mil amelioré Souana 3	Meilleurs rendements en grain (+100%) et en residus (4000 kg/ha)	Sud Bassin Arachidier
		10 t/ha de compost de litere de filaos sur pomme de terre	Réduction du nombre de grenailles et augmentation des gros tubercules, bénéfice net important	Niayes
	Residus de poisson fume	4 t/ha sur mil Souana 3	Meilleurs rendements (2400 kg/ha)	Centre Nord Bassin Arachidier
		4 t/ha sur sorgho	Meilleurs rendements (3 174 kg/ha)	Centre Nord Bassin Arachidier
		2 t/ha sur arachide 55-437	Meilleurs rendements (930 kg/ha)	Centre Nord Bassin Arachidier
Gestion du sol (suite)	Residus de poisson fumé (suite)	2 t/ha sur niébé	Meilleurs rendements (950 kg/ha)	Centre Nord Bassin Arachidier

Table 5 2 page 2

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
		4 t/ha sur mil Souna 3 applique en surface ou incorporé	Meilleurs rendements (entre 2400 et 2600 kg/ha)	Centre Nord Bassin Arachidier
		4 t/ha sur mais CP 75 appliqués en surface ou incorporé	Meilleurs rendements (entre 1640 et 1844 kg/ha)	Centre Nord Bassin Arachidier
		4 t/ha sur mil Souna 3 par rapport a fumure recommandée (150 kg/ha de 8-18-27 NPK + 100 kg/ha d'urée)	Meilleurs rendements pour residus sur mil (+ 85%)	Centre Nord Bassin Arachidier
		2 t/ha sur niébé Diongoma par rapport à fumure recommandée (150 kg/ha de 8-18-27 NPK + 100 kg/ha d'urée)	Meilleurs rendements pour niébé Mouride (+ 34%)	Centre Nord Bassin Arachidier
		2 t/ha sur niébé Mouride par rapport à fumure recommandée (150 kg/ha de 8-18-27 NPK + 100 kg/ha d'urée)	Meilleurs rendements pour niébé Diongoma (+ 140%)	Centre Nord Bassin Arachidier
	Aménagements physiques anti-erosifs	Radiers, cordons pierreux, seuils	Appropriation des techniques, bon taux moyen de réalisation, attérissement de 50 cm en fin de saison des pluies en moyenne	Sud Bassin Arachidier
		Diguettes anti-sel	Formation et mise en place	Sud Bassin Arachidier
	Mil amélioré	2t/ha de compost sur mil amélioré IBV 8004	Meilleurs rendements de la variété IBV 8004 de + 27 à 56% comparé au mil local et de +40% comparé à parcelles sans compost	Centre Nord Bassin Arachidier
Amélioration des cultures (suite)	Mil amélioré (suite)	2t/ha de compost sur mil amélioré IBV 8001	Meilleurs rendements de la variété IBV 8001 de + 27 à 56% comparé au mil local et de +40% comparé à parcelles sans compost	Centre Nord Bassin Arachidier

Table 5 2 page 3

Domaine	Type	Caracteristiques	Effets directs	Zone d'application
		2t/ha de compost sur mil amehiore Souna 3	Meilleurs rendements de la variété Souna 3 de + 40 a 64% compare au mil local et de + 53 a 67% compare a parcelles sans compost	Centre Nord Bassin Arachidier
		2 t/ha d'engrais + 100 kg de phosphate naturel de Taïba sur mil Souna 3	Meilleurs rendements de Souna 3 (+ 124%) compare a une variété locale	Sud Bassin Arachidier
	Riz amehiore	ROK 5 en bas-fonds	Meilleures rendements pour ROK 5 (4418 kg/ha) comparé à IRAT 10 et 144 B-9 sur plateau, DJ 12-519 en bordures de pentes, I KONG PAO et IPK en pente (- de 2000 kg/ha) avec 200 kg/ha de 8-18-27 et 50 kg/ha d'urée 15 et 30 jours apres germination	Sud Bassin Arachidier
		100 kg/ha d'azote sur DJ 8-341 et DJ 11-509	Meilleurs rendements pour DJ 8-341 (+ 167%) comparées a la variété de référence 144B/9 dans vallees saales sous différents niveaux d'azote (50, 100 et 150 kg/ha)	Basse Casamance
		WAR 1, WAR 77-3-2-2	WAR 1 et WAR 77-3-2-2 les plus productives (> 5000 kg/ha) comparées a Rok 5 a 50 ou 100% de fumure recommandée	Basse Casamance
Amélioration des cultures (suite)	Riz amehiore (suite)	WAR 1, WAR 77-3-2-2, WAR 81-2-1-3 et Rok 5 avec ou sans fumure recommandee à différents pH (1,38 à 7,77)	Bonne productivité (> 4000 kg/ha) pour toutes les variétés quel que soit le niveau de pH	Basse Casamance
		Variétés de riz de mangrove	Bonne productivite de 11 des 13 varietes testées, WAR 91-2-1-2 appréciée sur le plan organoleptique par les producteurs	Basse Casamance

Table 5 2 page 4

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
		Variétés de riz irrigue	Bonnes caracteristiques agronomique et meilleures productions de Sahel 201 et 202	Moyenne Casamance
		Variétés de riz pluvial avec irrigation complémentaire et submersion moyenne	Bonne stabilite de IR 2042-178-1, Tox 3093-35-2-3-3-1, Wabir 12979 et Cica 8 par rapport aux temoins DJ 684D, IR 1529-680-3 et ITA 123	Basse Casamance
		Homologation de la variété DJ 8-341 de riziculture pluviale stricte	Essais de démonstrations et fiche d'identite de la variété DJ 8-341	Basse Casamance
		Homologation de la variete DJ 11-509 de riziculture pluviale stricte	Essais de démonstrations et fiche d'identité de la varieté DJ 11-509	Basse Casamance
		Homologation de la varieté Tox 728-1 de riziculture pluviale de napp	Essais de démonstrations et fiche d'identité de la varieté Tox 728-1	Basse Casamance
		Homologation de la variete ITA 123 de riziculture irriguée et de bas-fond	Essais de démonstrations et fiche d'identité de la varieté ITA 123	Basse Casamance
		Homologation de la variété BG 90-2 de riziculture irriguée et de bas-fond	Essais de démonstrations et fiches d'identité de la BG 90-2	Basse Casamance
Amélioration des cultures (suite)	Riz amélioré (suite)	Homologation de la variété BW 248-1 de riziculture irriguée et de bas-fond	Essais de démonstrations et fiche d'identité de la varieté BW 248-1	Basse Casamance
		Homologation de la variete BR 51-46-5 de riziculture irriguée et de bas-fond	Essais de démonstrations et fiches d'identité de la variété BR 51-46-5	Basse Casamance
		Homologation de la variété WAR 1 de riziculture de mangrove	Essais de demonstrations et fiche d'identite de la variété WAR 1	Basse Casamance

Table 5 2 page 5

Domaine	Type	Caracteristiques	Effets directs	Zone d'application
		Homologation de la variete WAR 77-3-2-2 de riziculture de mangrove	Essais de démonstrations et fiche d'identité de la varieté WAR 77-3-2-2	Basse Casamance
		Homologation de la variete WAR 81-2-1-3-2 de riziculture de mangrove	Essais de demonstrations et fiche d'identite de la variete WAR 81-2-1-3-2	Basse Casamance
	Diversification des cultures	Production de cultures maraîcheres chou, salade, oignon, tomate	Bénéfice net de 9607 a 101 658 F CFA/personne	Centre Nord Bassin Arachidier
	Association culturale	Association mais JDB/miébé variété 58-74	Meilleurs rendements en grains de maïs (entre 1709 et 2676 kg/ha) et en fourrage (9,45 t ms/ha) pour semis du miebe 158 jours apres maïs et densité de 106 400 plants/ha) par rapport a JDB/dolique	Haute Casamance
	Protection des cultures ou des denrees stockees	Lutte chimique au DECIS sur le miébé (10 vairetés)	Meilleures rendements avec 2 application (1,5 kg m a /ha) par saison	Sud Bassin Arachidier Senegal Oriental
	Technique culturale	Operations culturales suivant les courbes de niveau	Systematisées en milieu paysan	Sud Bassin Arachidier
Amélioration des cultures (suite)	Technique culturale (suite)	Période de semis de DJ 12-519	Le 7 juillet apparaît la meilleure pour le semis de DJ 12-519	Basse Casamance
		Période de semis de Tox 728-1	Le 7 juillet apparaît la meilleure pour le semis de Tox 728-1	Basse Casamance
		Période de semis de DJ 11-509	DJ 11-509 peut être plantée a n'importe quand sauf en août	Basse Casamance

Table 5 2 page 6

Domaine	Type	Caractéristiques	Effets directs	Zone d'application
Agroforesterie	Haies vives defensives	<i>Acacia laeta</i> , <i>Acacia tortilis</i> et <i>Bauhinia rufescens</i> (croissance rapide et élagage naturel et <i>Acacia mellifera</i> et <i>Zizyphus mauritiana</i> (espèces à croissance lente et embranchement latéral) produites en pépinières villageoises et associées pied à pied	Formation aux techniques de pépinières Après 5 mois de plantation les taux de survie toutes espèces confondues sont compris entre 69 et 91% (moyenne de 78%) Le taux de survie par espèce tous sites confondus varie entre 80 et 96% (moyenne de 90%), <i>Z. mauritiana</i> présentant le moins bon taux (sol sableux), à suivre	Centre Nord Bassin Arachidier
	Haies vives anti-érosives et fourragères	<i>Acacia adansoni</i> , <i>Bauhinia rufescens</i> , <i>Acacia laeta</i> , <i>Ptilostigma reticulata</i> et <i>Zizyphus mauritiana</i>	Taux de survie allant de 63 à 100% après 2 ans	Sud Bassin Arachidier
		<i>Acacia adansoni</i> , <i>Bauhinia rufescens</i> , <i>Acacia laeta</i> , <i>Ptilostigma reticulata</i> , <i>Zizyphus mauritiana</i> , <i>Hardwickia binnata</i> , <i>Ghricidia sepium</i> et <i>Leucanena leucocephala</i>	Taux de survie allant de 41 à 99% après 2 ans, plus faible pour les 3 dernières espèces et les haies non regarnies en deuxième année	Sud Bassin Arachidier
Agroforesterie (suite)	Haies vives anti érosives et fourragères (suite)	<i>Prosopis juliflora</i> , <i>Acacia mlotica</i> et <i>Acacia tortilis</i>	Taux de survie supérieurs à 80% en rangées seules ou en association <i>P juliflora</i> a présenté le plus fort taux de croissance en plantation seule (80 cm) et en association (60 cm) et le plus grand diamètre (9 mm)	Centre Nord Bassin Arachidier
	Pépinières	Reboisement et suivi	12588 plantules mise en terres et 40% de survie	Centre Nord Bassin Arachidier
Productions animales	Alimentation/ complément alimentaire	500 g de ml, abreuvement 2 fois par jour + complément de résidus d'arachide et de niébé	Gains de poids	Centre Nord Bassin Arachidier

Table 5 2 page 7

Domaine	Type	Caracteristiques	Effets directs	Zone d'application
		2-3 kg/ha de résidu d'arachide + 250-500 g/animal/jour de son de mil + 250-500 g/animal/jour de tourteau d'arachide + complément en vitamines sous forme de bloc salé	Gain moyen de poids par animal et par jour de 74 g/j avec un maximum de 160 g/j, rentabilité variant de -6% à 45%, 67% des paysans avec un profit > à 33% et 33% avec un profit > à 20%	Centre Nord Bassin Arachidier
		Complément de tourteau d'arachide	Gain moyen quotidien de 788 g, efficacité zootechnique de 51%	Centre Bassin Arachidier
	Stabulation améliorée	Embouche de 72 à 90 jours	Gain de poids de 49,8 à 74,7 kg, taux de rentabilité de 7,65 à 47%, bénéfice net de 558 F CFA/j de travail	Centre Bassin Arachidier
		Fourrage améliorée par apport d'urée	Augmentation de 55,7% du niveau d'ingestion de la paille (5,65 kg/j/UBT pour le fourrage traitée)	Centre Bassin Arachidier

Table 5 2 page 8

6 INCREASED FARMER EXPOSURE TO IMPROVED AG/NRM TECHNOLOGY

Increased farmer exposure to improved agricultural and natural resources technologies was achieved primarily through the implementation of the collaborative research projects, with particular emphasis on the training of farmers and extension technicians. A consultant's study (Lamine Bocoum, May 1998) showed that 8,813 farmers, 473 farmer leaders, and 59 extension technicians had been trained in improved technologies through the NRBAR grants. In addition, more than 75 farmer visits were implemented. However, this study concentrated on the collaborative research grants projects, so it is clear that much higher numbers would be recorded as having been trained, if the other NRBAR grants projects such as researcher grants and natural resources support, had been surveyed in detail.

A listing of technologies which have been, or are in the process of being, the subject of training is presented in Table 6.1. Project documents related to this training are identified in the Bibliography to this report. Training events are concentrated in the areas of active validation: 2437 farmers in organic fertilisers, 2692 farmers in anti-erosion structures, 2391 farmers for agroforestry, 973 for crop improvement, and 320 for livestock. For the specific projects studied, 39% of all trainees in organic matter and improved varieties were women, 63% were women for agroforestry technologies, and 72% of trainees were women for livestock-related technologies.

An illustration of a successful formal farmer training event is the 1997 Velingara workshop, where more than 30 farmer representatives, and representatives of organisations involved in the production of rice in the Casamance, were trained in seed production and utilisation of 10 improved rice varieties, and related activities (S/V17, S25, R18 and PAR1-8). A training manual for use by farmers and extensionists was subsequently published, and is now in wide circulation.

The unexpectedly high number of farmers trained (more than double the targeted number) appears to be related to increased *partenaire* effort. The collaborative approach between ISRA and *partenaires*, which has been the main thrust of the project, has been much more productive than anticipated – researchers have provided the necessary sustained technical support to extensionists and farmers, under formal contracts, to validate promising technologies, thereby motivating the farmers and NGOs to provide more of their own resources and effort in mastering the new techniques. Just as significant is the quality of the training provided, which has been at field level, and sustained over a period of years, rather than as a short-term classroom-oriented effort. This training, although largely implemented specifically for the new on-farm production technologies themselves, has included specific assistance with commercialisation of the additional agricultural products generated from new technologies: for example, the development of retail outlets for fresh pasteurised milk in regional centers.

TABLE 6 1 ACCES DES RURAUX AUX TECHNOLOGIES GRN AMELIOREES (page 1-14)

Pendant la durée d'exécution du projet NRBAR, un grand nombre de formations aux technologies développées et/ou validées ont été réalisées pour en faciliter l'accès par les ruraux. Ces formations ont souvent fait partie intégrantes des activités menées aussi bien dans le cadre des subventions de recherche collaborative, que dans celui, avec moindre mesure il est vrai, des subventions aux chercheurs de l'ISRA et du soutien au programme d'appui à la gestion des ressources naturelles.

Le type et le nombre de formations (visites organisées ou formation individuelle) aux types de technologies développées et/validées sont inventoriés pour chaque subvention ou le volet formation a été intégré aux activités.

Ia Formations sur les technologies développées et/ou validées dans le cadre des subventions pour la recherche collaborative (SV)

SV01 Valorisation des ressources naturelles (régions de Thiès, Diourbel et Fatick) : validation en milieu paysan de l'efficacité du fumier amélioré et du compost amélioré sur la production du mil, de l'arachide et du niébe

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Rodale	Paysans leaders	Producteurs
(i) <i>Fumier amélioré</i>				
(ii) <i>Compost amélioré</i>				
(iii) <i>Supplémentation alimentaire</i>				
	3	3	7	40

SV02 Amélioration de la fertilité des sols (régions de Thiès, Kaolack, Diourbel, Fatick, Tambacounda) test en milieu paysan de variétés améliorées de mil et des technologies du compost

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Winrock	Paysans leaders	Producteurs
(i) <i>Compost enrichi</i>				
(ii) <i>Mil amélioré</i>				
(iii) <i>Compost simple</i>				
	-	8	35	316

SV03 Valorisation des technologies agroforestières mises au point par la recherche et transfert en milieu réel (région de Fatick)

Table 6 1 page 1

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) Haies vives défensives		Techniciens	Paysans leaders	Producteurs
(ii) Haies vives brise vent		Osdil		
(iii) Cultures en couloir				
(iv) Ligneux tolérants au sel				
	-	7	-	342

SV04 Amélioration et diversification des productions agricoles en milieu réel par le biais de l'agroforesterie (région de Kaolack)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) Haies vives anti-érosives		Techniciens	Paysans leaders	Producteurs
(ii) Pépinières		Winrock		
(iii) Maraîchage (diversification)				
	6	3	-	66

SV05 Amélioration de la productivité céréalière par la protection des cultures dans les cuvettes du Lac de Guiers (Saint-Louis)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) Haies vives brise vent		Techniciens	Paysans leaders	Producteurs
		Sahel 3000		
	-	1	-	10

Table 6 1 page 2

SV06 Etude de l'influence des brise vent sur la productivite ceraliere dans le vallée du fleuve (Podor)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Kiraye	Paysans leaders	Producteurs
(i) Haies vives brise vent	-	1	-	10

SV07 Projet de recherche collaborative en agroforesterie (Kaolack) réhabilitation des terres dégradés avec des espèces agroforestières

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Africare	Paysans leaders	Producteurs
(i) Haies vives brise vent (ii) Haies vives anti-érosives (iii) Parcs agroforestiers	3	3	-	912

SV08. Collaboration ISRA/ARAF pour une meilleure valorisation et gestion des ressources naturelles à Gossas

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Araf	Paysans leaders	Producteurs
(i) Compost simple	5	1	84	200

Table 6 1 page 3

SV09 Méthode d'évaluation d'une stratégie d'aménagement de terroir appliquée à deux villages du Sine Saloum (Nioro, Kaffrine)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) Aménagements mécaniques (radiers, seuils, cordons pierreux) (ii) Haies vives anti-érosives (iii) Opérations culturales suivant courbes de niveau		Techniciens Caritas	Paysans leaders	Producteurs
	12	3	40	2450

SV10 Mise au point d'itinéraires techniques pour l'intensification de la riziculture dans les vallées aménagées par le GADEC en zone Sénégal Oriental/Haute Casamance

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) Riz amélioré (ii) Compost simple (iii) Fumier simple (iv) Engrais vert (<i>Sesbania</i>)		Techniciens Gadec	Paysans leaders	Producteurs
	-	5	30	400

SV11 Gestion intégrée des ressources naturelles par des groupements féminins dans le département de Bambey

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) Compost amélioré (ii) Haies vives (iii) Maraîchage (diversification) (iv) Supplémentation alimentaire		Techniciens FJBS	Paysans leaders	Producteurs
	5	3	-	674

Table 6 1 page 4

SV12 Valorisation des résidus de transformation du poisson fume pour la fertilisation des terres Thies, Fatick et Diourbel

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Ahdis	Paysans leaders	Producteurs
(i) Résidus de poisson fume	-	1	2	289

SV13 Amélioration de la fertilité des sols de Ndof (Fatick) tests de variétés améliorées avec des amendements organiques et phosphates en parcelles paysannes dans le terroir de Ndof

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens Rodale	Paysans leaders	Producteurs
(i) Compostage				
(ii) Compost amélioré				
(iii) Fumier amélioré				
(iv) Traitement phytosanitaire	-	-	-	273

SV14 Amélioration de la fertilité des sols et gestion des adventices par la production de céréales de plateau (maïs et mil) à Sédhiou étude d'itinéraires techniques pour maintenir la production paysanne

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens ORCV/AJAEDO	Paysans leaders	Producteurs
(i) Compost enrichi				
(ii) Maïs amélioré				
(iii) Lutte contre Striga sur mil	3	1	5	596

Table 6 1 page 5

SV15 Diversification des culture (Kaolack) . évaluation des cultures et des systèmes de culture.

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) <i>Mil amélioré</i>		Techniciens	Paysans leaders	Producteurs
(ii) <i>Association culturelle (mil/melon)</i>		Caritas		
(iii) <i>Amélioration culture du riz amélioré (suivant toposéquence)</i>				
(iv) <i>Niébé amélioré</i>				
(v) <i>Haies vives anti-érosives et fourragères</i>				
	6	1	21	350

SV16 Aménagement anti-érosif et redressement de la fertilité des sols du bassin versant de Diamaguène en zone périurbaine

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) <i>Aménagement d'ouvrages mécaniques (radiers, cordons pierreux, fascines, seuils)</i>		Techniciens	Paysans leaders	Producteurs
(ii) <i>Haies vives anti-érosives</i>		Caritas		
(iii) <i>Opérations culturales suivant courbes de niveau</i>				
	10	2	21	75

SV17/S25 Transfert de variétés de riz dans les vallées salées du Pakao et du Kassa

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) <i>Riz pluvial amélioré</i>		Techniciens	Paysans leaders	Producteurs
(ii) <i>Riz de mangrove amélioré</i>		ORCV/ AJAEDO		
	8	3	35	533

S18/R20 Restauration agronomique des sols (sud bassin arachidier)

Table 6 1 page 6

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) <i>Diguette anti-sel</i> (ii) <i>Pepinieres et plantations</i>		Techniciens Africare	Paysans leaders	Producteurs
	5	3	-	112

S19/PAR3. Consolidation des acquis dans le cadre du projet ISRA/ARAF (SV08, 1994-1997) Valorisation et GRN dans la region de Fatick

Type de technologies développées et/ou validees	Type et nombre de formation aux technologies developpees et/ou validees			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) <i>Fosses compostiere</i> (ii) <i>Reboisement</i> (iii) <i>Etables fumieres</i> (iv) <i>Fumier ameliore</i>		Techniciens Araf	Paysans leaders	Producteurs
	ND	ND	ND	ND

ND Non Determine

S20/PAR2 Collaboration entre AHDIS et CNBA dans le programme GRN (PAR2-3, PAR2-4 et PAR2-5)

Type de technologies développées et/ou validees	Type et nombre de formation aux technologies développées et/ou validees			
	Visites organisées	Formation individuelle par catégorie de personne		
(i) <i>Compost enrichi</i> (ii) <i>Haies vives défensives</i>		Techniciens Ahdis	Paysans leaders	Producteurs
	2	2	-	538

Table 6 1 page 7

S21/PAR2 Collaboration entre RODALE et CNBA dans le programme GRN (PAR2-3 à PAR2-7)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées		
	Visites organisées	Formation individuelle par catégorie de personne	
(i) <i>Compost enrichi</i> (ii) <i>Haies vives défensives</i> (iii) <i>Application mélange phosphates naturels et phosphogypse</i> (iv) <i>Protection biologique des semences</i>		Techniciens Rodale	Paysans leaders Producteurs
	-	-	-
			100

V23 Introduction de la culture de légumineuses fourragères annuelles en milieu paysan en vue de l'amélioration des productions céréalières et animales en Haute Casamance au Sénégal

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées		
	Visites organisées	Formation individuelle par catégorie de personne	
(i) <i>Association mébé/maïs</i>		Techniciens	Paysans leaders Producteurs
	-	-	1
			71

SV24 Effet des bois raméaux fragmentés et du compost de litière de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraîchères des Niayes

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées		
	Visites organisées	Formation individuelle par catégorie de personne	
(i) <i>Compost de litière</i>		Techniciens Sahel 3000	Paysans leaders Producteurs
	-	3	26
			70

Table 6 1 page 8

405

Ib Formations sur les technologies développées et/ou validées dans le cadre des subventions aux chercheurs de l'ISRA (R)

R01 Etude sur l'utilisation agricole des résidus de poisson fume comme amendement organique des sols du Sénégal (Mbour, Fatick, 93/94)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Residus de poisson fume</i>	-	-	-	4

R04 Valorisation du potentiel pastoral pour le développement des systèmes cerealiers performants et viables en zone sub-humide du Sénégal (Sénégal Oriental/Haute Casamance) influence de différents types de fumier (de parcours ouverts, d'étable, 10 t/ha de fumier d'étable) sur les productions du maïs et du ml

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Fumier d'étable</i>	1	-	7	50

R05 Effets des techniques culturales sur la variabilité des rendements du sorgho pluvial et sur son effet allélopathique (Kaolack et Diourbel) étude des systèmes de culture bases sur le sorgho

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Date de semis</i>				
(ii) <i>Densité de semis</i>				
(iii) <i>Durée de la jachère</i>	-	-	30	-

Table 6 1 page 9

R06 Amélioration des pâturages naturels des zones d'élevage du Sénégal par utilisation de phosphates naturels (Kolda, Louga)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Phosphate naturel</i>	1	-	-	15

R07. Valorisation du potentiel des légumineuses fourragères en vue de l'amélioration des productions céréalières et animales en zone sub-humide (Kolda)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Association mais-mébé variété 58-74</i>	-	-	-	2

R08 Influence de quelques espèces ligneuses sur le redressement du statut organique et de la fertilité de vieux champs sur sol ferrallitique (rouge) en Casamance (Ziguinchor)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Culture en couloir</i>	2	-	6	42

R10 Effet d'une stabulation améliorée des bovins sur leur performances pondérales et sur la gestion de la fertilité des sols dans le centre du bassin arachidier (Fatick)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) <i>Embouche</i> (ii) <i>Paille améliorée</i> (iii) <i>Fumier amélioré</i>	-	1	5	-

Table 6 1 page 10

R14 Etude de l'influence de la matière organique sur la croissance des arbres et le rendement des cultures dans le centre du bassin arachidier (Bambey)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Modes d'apport de fumier	-	-	2	10

R18 Formation et assistance technique aux groupements de producteurs de semences des régions de Ziguinchor, centre nord bassin arachidier et Sénégal oriental/haute Casamance

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Riz amélioré	-	-	-	40
(ii) Production de semences	-	-	-	40

R19 Gestion et conservation des ressources phytogénétiques et de la biodiversité (SBA)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Inventaire du patrimoine floristique	-	-	-	7

R20 Etudes de techniques de récupération des sols salés (SBA)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Diguette anti-sel	-	4	-	160
(ii) Pépinière et plantation	-	4	-	160

R22 Amélioration du taurin Ndama par le schéma d'Amélioration Génétique à Noyau Ouvert (SAGNO)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
<i>(i) Mise en reproduction en station</i>				
<i>(ii) Suivi pondéral</i>				
<i>(iii) Insémination artificielle</i>				
	1	-	30	-

R24 Valorisation du potentiel pastoral pour le développement des systèmes céréaliers performants et viables en zone sub-humide du Sénégal (SOHC)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
<i>(i) Stabulation bovine</i>				
<i>(ii) Collecte et transformation laitière</i>				
<i>(iii) Fumier d'étable amélioré</i>				
	-	-	25	-

Table 6 1 page 12

II Formations sur les technologies développées et/ou validées dans le cadre du soutien pour le programme d'appui à la GRN (PAR)

Zone Basse et Moyenne Casamance (PAR1)

PAR1-8 Mise en place d'une collection d'ecotypes locaux de céréales et de variétés améliorées de riz Transfert en milieu paysan de matériel adapté

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Riz de mangrove amélioré				
(ii) Riz irrigué amélioré				
(iii) Homologation de variétés de riz				
	-	-	10	-

Centre Nord Bassin Arachidier (PAR2)

PAR2-5 Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives défensives (validation et transfert)

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Haies vives défensives				
	-	-	16	-

Sénégal Oriental / Haute Casamance (PAR4)

PAR4-10. Etude et amélioration des systèmes de production et de la gestion des ressources naturelles • suivi des élevages bovins villageois

Type de technologies développées et/ou validées	Type et nombre de formation aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Suivi zootechnique				
(ii) Suivi sanitaire				
	1	-	10	-

Table 6 1 page 13

PAR4-12 Test de techniques de lutte contre l'érosion hydrique par l'utilisation des haies vives

Type de technologies développées et/ou validées	Type et nombre de formation Aux technologies développées et/ou validées			
	Visites organisées	Formation individuelle par catégorie de personne		
		Techniciens	Paysans leaders	Producteurs
(i) Haies vives anti-érosives (ii) Barrières végétales (iii) Diguettes filtrantes	1	-	25	56

Conclusion

Au minimum, les formations individuelles formelles ont concernées 59 techniciens d'ONGs, 473 paysans leaders et 8813 producteurs. A cela viennent s'ajouter les 75 visites organisées. Les technologies dans le domaine de la gestion du sol ont fait l'objet du plus grand nombre de formations (2437 producteurs formés aux technologies de fertilisation organique soit 27,55% et 2692 producteurs formés aux technologies d'aménagement mécaniques soit 31,01%). Viennent ensuite les technologies agroforestières (haies vives défensives, anti-érosives et brise vent, culture en couloir, pépinières, plantation, diversification) pour lesquelles 2391 producteurs ont suivi des sessions de formation (26,97%). Dans le domaine de l'amélioration des cultures, les technologies liées aux variétés améliorées ont fait l'objet de formations pour 973 producteurs soit 10,77%. Enfin, dans le domaine des productions animales (intégration agriculture/élevage), 320 producteurs (3,7%) ont été formés.

Les chiffres avancés ont été obtenus à partir de missions sur le terrain et ne comptabilisent que les formations formelles comme dit plus haut. Il convient de souligner qu'un important volet de formations informelles (auto formation paysanne par exemple) a été constaté au cours de ces missions. Le nombre total des ruraux ayant eu accès aux technologies GRN est par conséquent probablement sous-estimé dans le présent inventaire.

Table 6.1 page 14

7 PROJECT RESOURCE COMPONENTS

In order to achieve the above objectives, the program consisted of seven major resource components, which can be briefly summarized as follows

I RESEARCH PROGRAM SUPPORT a grants program to support effective ISRA/partenaire collaboration, and interdisciplinary research and dissemination proposals from ISRA scientists, consisting of

Ia COLLABORATIVE RESEARCH GRANTS PROGRAM, which contractually links ISRA and its partenaires in research, dissemination and training activities through discrete projects, and

Ib GRANTS TO ISRA RESEARCHERS PROGRAM, which directly funds ISRA staff, often working with ISRA's partners There are three types of Ib grants

Ib 1 GRANTS FOR RESEARCH IN SENEGAL, which finance research, dissemination and training activities of ISRA staff through discrete projects,

Ib 2 SITE STUDIES, which fund the exposure of ISRA and partenaire staff to NRM technologies outside of Senegal, and

Ib 3 SABBATICALS, which fund ISRA research staff visits to other research institutions, in order to make most use of NRM research data generated at ISRA

II SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM a grants program to each of the four regional ISRA research units in the program zone, to support their core NRM programs

III LINKAGES TO REGIONAL AND INTERNATIONAL RESEARCH INSTITUTIONS a grants program to develop and strengthen ISRA's links with international research institutions

IV PERSONNEL

IVa LONG-TERM staff, as follows the RP1/NRBAR Program Director is the Director General of ISRA, Moussa Bakhayokho, with the NRBAR Deputy Director designated as the ISRA Scientific Director, Jean-Pierre Ndiaye Project personnel consisted of more than sixty ISRA staff, with the following main responsibilities Jean-Pierre Ndiaye for strengthening of institutional research capacity and RP1/NRBAR Grants Management, Mustapha Kebe for assessment of existing AG/NRM technology, the CM/GRN, Aminata Badiane for development of improved AG/NRM technology, and the CM/R-D, Abdou Fall, for validation of improved AG/NRM technology Additional personnel consisted of four long-term external Technical Assistants, a project administrator, a grants administrator, and other CID and USAID support staff, and numerous

IVb SHORT-TERM staff, consisting primarily of short-term consultants

V PARTICIPANT TRAINING a grants program to support all project objectives, consisting of

Va LONG-TERM TRAINING IN THE U S for ISRA researchers, for five Doctorate and ten Masters Degrees,

Vb SHORT-TERM TRAINING AND CONFERENCES OUTSIDE OF SENEGAL for ISRA staff,

Vc SHORT-TERM TRAINING IN SENEGAL for ISRA and partenaire staff, and

Vd LONG-TERM B S TRAINING FOR WOMEN IN SENEGAL, for 10 Senegalese women in AG/NRM subjects

VI ADDITIONAL DIRECT SUPPORT BY ISRA consisting of ISRA facilities and staff, provided outside of the USAID/CID contract

VII ADDITIONAL SUPPORT BY USAID AND CID consisting of complementary studies, personnel, and operating costs, provided outside of the USAID/CID contract

Activities implemented using each type of resource are summarized in this Chapter, with particular emphasis on the results obtained during the life of the project. Project-related documents produced for each area of activity are listed in the Bibliography.

I RESEARCH PROGRAM SUPPORT

In view of the priority need to carry out appropriate natural resource management research experiments as early as possible in the life of the program, given the normal 3 years time requirement for these activities, and the need to assist with disseminating the results upon their completion, initial emphasis was placed on developing the two Grant Programs "Collaborative Research Grants" and "Grants for Research in Senegal". Grants for "Site Studies" and "Sabbaticals" were therefore scheduled for implementation in later stages of the research cycle. In view of the delays in implementing the natural resources support program and the international linkages program, and to the shortage of available research personnel to undertake the necessary fieldwork under the NRBAR grants, there was sufficient time to implement only one site visit under this program. Numerous site visits did, however, occur, particularly with farmer involvement, through the short-term training in Senegal program. Although no sabbaticals were implemented as such, many of the short-term foreign training activities performed this function, and many of these have resulted in the publication of scientific Journal articles concerned with natural resource management technologies.

Policies, regulations and protocol agreements governing the administrative, financial and technical management of the research program support grants have been developed and implemented since 1993, with annual revision of protocols. The Grants Assistant Manager was recruited in 1994 in order to help sustain this process. The Management Committees of both Programs, consisting of ISRA, partenaire and CID personnel, met every year before the start of the Project Cycle to review the technical and financial aspects of Program implementation, in order to update the system of management and draw up an annual timetable of grant-related activities.

However, from 1996, a single ISRA grants management committee replaced all the individual management committees created for the different types of projects in ISRA. This new grants management committee is composed of two parts: (1) a group of seven permanent members (the DS as Chairman, Charge de Mission en Recherche-Developpement as Vice-Chairman, and the Units chiefs of the five URAs), and (2) a group of (a maximum of) five temporary members which may change depending on which donor's projects or which technical subject is being considered by the committee. The NRBAR temporary members continued to include partenaires, CID technical assistants and other ISRA staff Observers - with non-voting status - were also

permitted, and these have included USAID personnel and ISRA technical specialists for those meetings of the committee concerned with the NRBAR grants

Also in 1996, a significant and promising change in ISRA research management was made, the responsibility for management of all research projects was assigned to the ISRA regional research director (chef d'Unité URR) of the region where the research is primarily being undertaken. Although individual researchers in the units are still responsible for project implementation, the Unit head is responsible for monitoring progress and for ensuring the eventual success of the work.

Overall progress of the grants management process was strong, for example, more than 90% of the Quarterly technical reports of the grants were delivered, despite the considerable disruption to the implementation of the grants research programs as a result of the extensive reallocation of ISRA research staff, and organisational changes in ISRA and USAID. Annual and Final Reports have been somewhat behind schedule, but almost all were delivered prior to the end-of-contract date.

Ia COLLABORATIVE GRANTS PROGRAM

Ia (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR collaborative grants program, 24 activities implemented with the formal contractual participation of 14 partenaires, has achieved its objectives of developing a system of grants management which increased the number of on-farm trials, and particularly increased partenaire participation in the design, implementation and evaluation of ISRA's experiments. Implementation was according to the guidelines set out in the NRBAR Grant Agreements. In view of uncertainties regarding the continuation of the program during the reorganisation of both USAID and ISRA during 1995 and 1996, the level of effort expended is approximately 25% less than originally planned.

The central role and impact of this program on attainment of ISRA/NRBAR objectives are very evident. A collaborative grants management system was established, 23 formal contracts were signed between ISRA's multi-disciplinary research teams and 14 NGOs, farmer groups, and the University of Dakar for the joint implementation of on-farm experiments and studies, and 43 technologies were validated, with 18 developed. Extensive farmer and technician training, and evaluations of existing technologies, were important and integral parts of these activities.

Ia (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991 specified that the program should improve ISRA's orientation to farmers, should involve formal contracts with partenaires, and should be rigorously managed. The USAID/CID contract for assistance to ISRA in implementing NRBAR services was assigned the budget of \$1,620,000.

Ia (iii) ACTIVITIES

During 1993, protocols were developed, and the system was designed by ISRA and CID staff. At the same time, the requests for proposals were widely distributed to ISRA teams and to

partenaires Initially, partenaires having a proven track record with ISRA were particularly solicited, in order to initiate this program as productively as possible In 1993, ISRA awarded the first 3 collaborative research grants to teams of researchers from ISRA and Non-Governmental Organizations (NGOs) to conduct research, training and dissemination work, funds were disbursed in time to implement trials in the 1993/94 growing season In subsequent years, as the system became established, the number of grants was increased, by an additional 5 in 1994, and an additional 7 in 1995 However, in 1995, it was not possible to plan for further grant releases, as the project was in the process of being renegotiated by USAID and ISRA, throughout much of that and the following year, under their respective reorganisation schemes One new grant was awarded in 1996 Following the SOAG Agreement of September, 1996, it was again possible to implement new grants, so 8 new grants were awarded in 1997, covering the 1997/98 season

In addition to the annual reviews and monitoring visits for this program implemented by the DS and the DS committee members, a final comprehensive review of administrative and financial performance, and of the technical results, occurred at the final meeting of the DS's grants committee for NRBAR at Saly in June, 1998 (refer to the relevant short-term training event in Section Vc of this Chapter)

The 24 collaborative research activities are detailed in the report of the June meeting of the DS's committee, and are outlined below in Tables Ia 1 (a list of the grants) and Ia 2 (the technical results) As many of these research and dissemination activities are scheduled to continue under other funding following project close-out, further information will become available in the future

Ia (iv) SYNTHESIS OF THE COLLABORATIVE RESEARCH GRANTS PROGRAM

Of the 24 activities implemented, one (V23) did not have a formal contractual component between ISRA and a partenaire, because the partenaire was unable to manage its funds, however, ISRA ensured an informal arrangement with the GIE concerned, and the project was satisfactorily completed Of the 23 formal contracts, completed with a total of 14 partenaires, 7 were with the internationally-sponsored NGOs Winrock, Rodale and Africare, 8 were with national NGOs, 7 were with farmers' groups, and 1 was with the University of Dakar

Emphasis during 1997/98 was placed on writing-up of results, and communications with partenaires, however, much remains to be done in this regard There were numerous field training events involving partenaires and participating farmers Five large workshops were held, where ISRA staff, NGOs, farmers, and donors jointly evaluated results organic fertilisation of soils in the CNBA, at Bambey, Agroforestry and soils management in the SBA, at Kaolack, rice technologies in the Casamance at Tambacounda, livestock-related technologies in the Casamance at Kolda, and the closing NRBAR seminar in Dakar for research results in all areas Farmer exchange visits included those of the Kolda/Linguere areas on validation of the stabling and related technical packages, and Kolda/Kaolack on agroforestry for erosion control Four video films were completed on projects S/V01, S/V11, S/V12-R01

Activities concentrated in the areas of soil management, crop production, agroforestry and livestock Forty-three technologies were validated, with 18 developed Extensive farmer and

technician training, and evaluations of existing technologies, were important and integral parts of these activities. Technical implementation of these projects was satisfactory, with generally adequate reporting by research teams. However, much remains to be done, in order to effectively analyse and report on the work already completed, in order to ensure the necessary impact on the population.

TABLE Ia 1 LIST OF NRBAR COLLABORATIVE RESEARCH GRANTS, 1993-98

CODE	TITRE ET SITES DU PROJET	CHERCH & PARTEN
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1993/96

V01 S01	<i>Valonsation des Ressources Naturelles Thies - Diourbel - Fatick</i>	<i>M Diagne RODALE</i>
V02 S02	<i>Amélioration de la fertilité des sols Thies - Kaolack - Diourbel - Fatick - Tambacounda</i>	<i>A BADIANE WINROCK</i>
V03 S03	<i>Valonsation des Technologies Agroforestieres Mises au Point par la Recherche et Transfert en Milieu Reel Fatick</i>	<i>M DIATTA OSDIL</i>

1994/97

V04 S04	<i>Amélioration et diversification des productions agricoles en milieu reel par le biais de l'agroforesterie Kaolack</i>	<i>Mal DIATTA WINROCK</i>
V05 S05	<i>Amélioration de la productivite Cerealier par la protection des cultures dans les cuvettes du Lac de Guiers St Louis</i>	<i>A TAMBA SAHEL 3000</i>
V06 S06	<i>Etude de l'influence des brise-vent sur la productivité agricole céréalière dans la vallée du Fleuve Sénégal Podor</i>	<i>A TAMBA G P KIRAYE</i>
V07 S07	<i>Projet de Recherche Collaborative en Agroforesterie Kaolack</i>	<i>Mal DIATTA AFRICARE</i>
V08 S08	<i>Collaboration ISRA/ARAF Pour une meilleure Valonsation et Gestion des Ressources Naturelles Gossas</i>	<i>D Y SARR ARAF</i>

19 95/98

V09 S09	<i>Methode d'evaluation d'une strategie d'aménagement de terroir appliquée a deux villages du Sine Saloum Nioro - Kaffrine</i>	<i>M SENE CARITAS</i>
V10 S10	<i>Mise au point d'itineraires techniques pour l'intensification de la riziculture dans les vallées aménagées par le GADEC dans le SOHC</i>	<i>S THIAW GADEC</i>
V11 S11	<i>Gestion Intégrée de Ressources Naturelles par des groupements féminins dans le Département de Bambey Bambey</i>	<i>A BADIANE FJBS</i>
V12 S12	<i>Valonsation des résidus de transformation du poisson fumé pour la fertilisation des terres Thies - Fatick - Diourbel</i>	<i>M NDIAYE AHDIS</i>

CODE	TITRE ET SITES DU PROJET	CHERCH & PARTEN
V13 S13	Amélioration de la fertilité des sols de Ndog Fatick	M SENE RODALE
V14 S14	Amélioration de la fertilité des sols et gestion des adventices par la production de céréales de plateau (maïs et mil) Sédhiou	S DIALLO OCRV
V15 S15	Diversification des cultures Kaolack	Maniev SENE CARITAS
19 96/98		
V16 S16	Aménagement anti-érosif et redressement de la fertilité des sols du bassin Versant de Diamaguene en zone périurbain	M SENE CARITAS
19 97/98		
V17 S17 S25	Transfert de variétés de riz dans les vallées salées du Pakao et du Kassa -	A BEYE AJAEDO OCRV
S18	Restauration agronomique des sols - SBA-	M DIATTA AFRICARE
PAR3 S19	Consolidation des acquis dans le cadre du projet ISRA/ARAF S/V08 (1994/1997) Valorisation et GRN dans la région de Fatick -	D SARR ARAF
PAR2 S20	Collaboration entre AHDIS et CNBA dans le Programme GRN (PAR2-3, PAR2-4 et PAR2-5)	URR CNBA AHDIS
PAR2 S21	Collaboration entre RODALE et CNBA dans le Programme GRN (PAR2-3 à PAR2-7)	URR CNBA RODALE
PAR3 S22	Etude des possibilités de mise en valeur des bas-fonds du Sud Bassin Arachidier - Avec le Département Géographie de l'Université CAD	A NDIAYE UCAD-
V23	Introduction de la culture fourragère de légumineuses annuelles en milieu paysan en vue de l'amélioration des productions céréalières et animales en Haute Casamance au Sénégal	A DIATTA GIES
V24 S24	Effets des bois rameaux fragmentés et du compost de litier de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraîchères des Niayes	A TAMBA SAHEL 3000

TABLE Ia 2 SUBVENTIONS POUR LA RECHERCHE COLLABORATIVE / SV (page 1-18)

SV01 Valorisation des ressources naturelles (régions de Thies, Diourbel et Fatick) validation en milieu paysan de l'efficacité du fumier amélioré et du compost amélioré sur la production du mil, de l'arachide et du niébe

Cette activité de recherche collaborative a été menée conjointement par l'ISRA, Rodale International et des ONGs pour répondre au problème chronique de la baisse de la fertilité des sols et des faibles productions culturales. Pour répondre à ces contraintes, les paysans en collaboration avec les chercheurs et les vulgarisateurs ont identifié des technologies à faible coût qui peuvent être validées et appliquées dans leurs conditions.

Les technologies et les résultats sont les suivants

(i) Utilisation du fumier associé au phosphate naturel (fumier amélioré) Les résultats montrent que 2t/ha de fumier associé au phosphate naturel (équivalent à 30 kg de P₂O₅/ha) donne les meilleures productions moyennes en arachide 55-432, Fleur 11 et GC 8-35 (1073 kg/ha) et en mil IBV 8204 et Souna 3 (1033 kg/ha) contre 299 kg/ha et 243 kg/ha respectivement pour les parcelles témoins
TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(ii) Utilisation du compost associé au fumier à quantité égale (compost amélioré) Les résultats montrent que l'application tous les deux ans de 2 t/ha de compost amélioré ont donné une production de 794 kg/ha de grains d'arachide supérieure à la production du témoin (348 kg/ha). Les résultats sont les mêmes pour la production de mil (917 kg/ha pour le compost amélioré contre 305 kg/ha pour les parcelles témoins)
TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(iii) Système de culture. L'association mil/niébe a donné des productions inférieures aux cultures de mil et d'arachide en culture pure

(iv) Rations alimentaires du bétail. Les gains de poids constatés sur le bétail alimenté avec 500 g de mil, abreuve biquotidiennement (matin et soir) et ayant reçu un complément de résidus d'arachide et de niébe, sont meilleurs que sur les animaux qui ne reçoivent pas de complément alimentaire
TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

Table Ia 2 page 1

SV02 Amelioration de la fertilité des sols (régions de Thies, Kaolack, Diourbel, Fatick, Tambacounda) test en milieu paysan de variétés améliorées de mil et des technologies du compost

Cette activité de recherche collaborative a été menée conjointement par l'ISRA, Winrock et des ONGs pour répondre au problème chronique de la baisse de la fertilité des sols et des faibles productions culturales. Les essais ont été conduits dans plusieurs sites sur des sols à différents niveaux de fertilité. De plus, de nouvelles variétés de mil ont été introduites et évaluées pour leur production. L'intérêt de cette étude était d'utiliser une approche collaborative pour valider des technologies existantes (compost, variétés améliorées) que les paysans peuvent appliquer dans leurs conditions. Les technologies et les résultats sont les suivants :

(i) Comparaison de la pratique paysanne avec le compost enrichi avec la fumure minérale recommandée et le phosphate naturel. Les résultats montrent les productions les plus fortes (1204 kg/ha de mil Souna 3) ont été obtenues après épandage de 2 t/ha de compost et application de la fumure minérale recommandée (150 kg/ha de 10-21-21 NPK au semis + 100 kg/ha d'urée à la levée). Le bénéfice net est de 37 000 F CFA/ha pour ce traitement et pour le traitement 2 t/ha de compost + phosphate naturel (équivalent à 60 kg de P₂O₅/ha). Au total, 316 paysans ont été formés à cette technologie de compost enrichi mais 50% des paysans formés (158) l'appliquent.

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(ii) Test de variétés de mil chez 119 paysans. Les variétés améliorées IBV 8004, IBV 8001 et Souna 3 ont été testées avec ou sans apport de 2 t/ha de compost. Les variétés améliorées IBV ont donné de meilleurs rendements, de 27 à 56% supérieurs à ceux de la variété locale. L'application de compost augmente la production des variétés améliorées d'environ 40%. La production pour Souna 3 est de 40 à 64% supérieure à celle des variétés locales. L'application de compost entraîne une augmentation de 53 à 67% sur la variété Souna 3.

TECHNOLOGIE VALIDÉE TECHNIQUEMENT

(iii) Application de compost (2 t/ha). Cette étude compare l'application de 2 t/ha de compost avec la pratique paysanne sur la variété de mil Souna 3. L'application de compost à 2 t/ha augmente la production de mil à Ndiakane, 1305 kg/ha comparé à la pratique paysanne (981 kg/ha), à Diakael, 1875 kg/ha contre 1574 kg/ha pour la pratique paysanne.

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

Ces trois études confirment que les systèmes de cultures impliquant des variétés améliorées de mil (en particulier Souna 3) et l'application de compost sont appropriés et meilleures que la pratique paysanne.

Table Ia 2 page 2

SV03 Valorisation des technologies agroforestieres mises au point par la recherche et transfert en milieu reel (region de Fatick)

(i) **Technologie des haies vives pour proteger les cultures de la divagation du betail.** Les especes *Acacia mellifera*, *A. rufescens*, *A. tortilis*, *A. nilotica*, *Bauhinia rufescens* et *Zizyphus mauritiana* ont ete teste en haies vives avec des arbres espaces de 50 cm a l'interieur des rangs. Le taux de survie des especes a ete de 99% a Boyard Ndiodiome et de 64% a Ndoff. Le taux le plus faible a ete de 14% pour *Z. mauritiana* a Dack.
TECHNOLOGIE DEVELOPPE

(ii) **Technologie du brise vent.** *Anacardium occidentale* a ete teste comme brise vent pour proteger les cultures de mil et d'arachide a Boyar. Le taux de survie de cette espece a ete de plus de 90% (plants espaces de 5 m a l'interieur des rangs et 150 m de longueur).
TECHNOLOGIE DEVELOPPE

(iii) **Protection et amelioration des sols.** *Acacia albida*, *Balanites aegyptiaca* et *Acacia senegal* ont ete testes en ligne. Ces trois especes ont presente un taux de survie superieur a 95% (arbres espaces de 10 m).
TECHNOLOGIE DEVELOPPE

(iv) **Technologie de la culture en couloir.** *Leucaena leucocephala* a produit une moyenne de 4,6 t/ha/an de biomasse et 790 perches (arbustes etaient espaces de 4 m entre les rangs et de 1 m a l'interieur des rangs soit 2 500 plants/ha).
TECHNOLOGIE DEVELOPPE

(v) **Tolerance au sel d'especes ligneuses dans les systemes de production agro-sylvo-pastoraux.** Les especes *Acacia trachycarpa*, *A. tortilis*, *A. holosericea*, *A. nilotica* (var *adonsonii*), *A. senegal*, *A. laeta*, *Bauhinia rufescens*, *Prosopis juliflora*, *P. chilensis* et *Parkinsonia aculaeta* ont ete testees. Le taux de survie moyen apres 2 ans est de 0% pour *A. holosericea* et *A. trachycarpa* et de 100% pour *A. laeta*. Soixante pour cent (60%) des arbres presentent un taux de survie de 60%. La croissance en hauteur varie de 0 cm pour *A. holosericea* et *A. trachycarpa* a 170 cm pour *P. chilensis*. Les arbustes de *Prosopis* et *Parkinsonia* sont plantes de 5 m en 5 m.
TECHNOLOGIE DEVELOPPE

SV04 Amelioration et diversification des productions agricoles en milieu reel par le biais de l'agroforesterie (region de Kaolack)

(i) **Evaluation d'especes agroforestieres pour augmenter la matiere organique du sol afin d'augmenter les productions agricoles, contrôler l'erosion et produire du fourrage.** Suite a des sessions de formation sur les techniques de pepiniere, de plantation et de maraichage et a des sessions de sensibilisation au rôle de l'arbre en exploitation agricole, les especes agroforestieres choisies pour le transfert de la technologie des haies vives dans 18 champs paysans (Sinthiou Kohel en 1994, Kolomba et Sokoto en 1995) sont *Acacia mellifera*, *A. laeta*, *A. tortilis*, *A. nilotica*, *Zizyphus mauritiana*, *Bauhinia rufescens*. Un total de 5 400 plants a ete produits avec un taux de survie moyen de 91% apres une annee. La technologie a ete evaluee pour *Acacia mellifera*, *A. laeta*, *A. tortilis*, *A. nilotica*, *Zizyphus mauritiana*, et *Bauhinia rufescens* dans l'essai haies vives monospécifiques implante en 1994 dans 17 parcelles paysannes de Sinthiou kohel. Un an et demi apres plantation, le taux de survie est bon pour cet essai en milieu reel non protege. Avec un taux de survie de 80%, *Bauhinia rufescens* presente le plus faible taux de survie. En 1995, les essais implantes dans 9 parcelles paysannes a Sinthiou Kohel et dans 15 parcelles a Kolomba montrent quatre mois apres plantation des taux de survie superieurs a la moyenne (68%) a Sinthiou Kohel pour *Bauhinia rufescens* (92%), *Acacia nilotica* (82%) et *Acacia tortilis* (71%). A Kolomba, *Acacia laeta* (95%), *Acacia nilotica* (90%) et *Bauhinia*

Table Ia 2 page 3

rufescens (84%) sont les plus performants *Zizyphus mauritiana* est l'espèce la moins performante au niveau des deux villages A Sokoto, la priorité pour les paysans était la lutte contre l'érosion hydrique Dix espèces ont été plantées (au total 2427 plants) dans un dispositif anti-érosif (lignes isohypses suivant les courbes de niveau, perpendiculaires à la direction de l'écoulement) Le taux de survie moyen est de 80% quatre mois après plantation et la croissance en hauteur a varié de 24 à 61 cm suivant les espèces et les lignes

TECHNOLOGIE VALIDÉE TECHNIQUEMENT

SV05 Amélioration de la productivité céréalière par la protection des cultures dans les cuvettes du Lac de Guers (Saint-Louis)

(i) **Technologie du brise vent pour protéger les champs de riz et produire du bois à usage domestique.** Le brise vent est constitué de 2 lignes de *Eucalyptus camaldulensis* et d'une ligne de *Acacia holosericea* espaces de 2 m entre les lignes et de 1,5 m à l'intérieur des lignes et plantes autour d'une parcelle irriguée villageoise Les espèces testées ont montré un taux de survie de 100% après 2 mois et atteignent une hauteur de 210 cm pour *Eucalyptus* et 114,3 m pour *Acacia* après la même période

TECHNOLOGIE DÉVELOPPÉE

SV06 Étude de l'influence des brise vent sur la productivité céréalière dans la vallée du fleuve (Podor)

(i) **Technologie du brise vent pour protéger les champs de riz.** Le brise vent est recommandé pour réduire l'érosion éolienne et pluviale du sol et produire du bois aussi Il est constitué de 2 lignes de *Eucalyptus camaldulensis* et d'une ligne de *Acacia holosericea* espaces de 2 m entre les lignes et de 1,5 m à l'intérieur des lignes D'autres espèces avec le même potentiel de protection peuvent être utilisées *Prosopis juliflora*, *Parkinsonia aculeata*, *D. sisso* et *Leucaena leucocephala*

TECHNOLOGIE DÉVELOPPÉE

SV07 Projet de recherche collaborative en agroforesterie (Kaolack) réhabilitation des terres dégradées avec des espèces agroforestières

(i) **Évaluation des espèces ligneuses pour la restauration du parc agroforestier et l'amélioration des productions d'arachide, mil, sorgho et niébe.** L'objectif de cette étude était d'utiliser les technologies agroforestières comme les brise vent, les haies vives et la régénération naturelle d'espèces courantes pour restaurer la fertilité des sols et maintenir les productions agricoles Les espèces ligneuses évaluées sont les suivantes *Acacia mellifera*, *A. nilotica*, *Prosopis cineraria*, *A. laeta*, *Eucalyptus camaldulensis*, *A. tortilis*, *Zizyphus mauritiana*, *A. albida*, *Anacardium occidentale*, *Prosopis juliflora*, *Leucaena leucocephala*, *Parkinsonia aculeata*, *Acacia holosericea*, *Prosopis africana*, *M. indica*, *C. papaya*, *Bauhinia rufescens* et *Agrumes* En tout, environ 68 000 arbres ont été plantés dans les différents sites de la zone d'intervention du projet Les taux de survie des espèces en haies vives, 27 mois après plantation sont *Acacia mellifera* (81%), *A. nilotica* (95%), *A. laeta* (78%), *A. tortilis* (91%) et *Zizyphus mauritiana* (83%) Ces taux sont encourageants La croissance en hauteur pour les mêmes espèces après 27 mois sont *Acacia mellifera* (91 cm), *A. nilotica* (137 cm), *A. laeta* (163 cm), *A. tortilis* (121 cm) et *Zizyphus mauritiana* (104 cm) La hauteur de la première branche (ramification) pour les haies vives sont respectivement 8, 15, 17, 22 et 15 cm La largeur de la haie est de 104, 102, 152, 97 et 67 cm respectivement Les taux de survie des espèces utilisées comme brise vent 27 mois après plantation sont *Acacia mellifera* (19%), *A. nilotica* (28%), *A. laeta* (43%), *A. tortilis* (23%) et *Zizyphus mauritiana* (18%) Ces taux sont encourageants *Acacia mellifera*, *A. laeta* et *Zizyphus mauritiana* ont été retenus pour leur utilisation en haies vives aussi bien en plantation pure qu'en plantation mixte avec *A. nilotica* et *A. tortilis* (rangées de 300 m de long, 100 m entre les rangées et 10 m entre les arbres en ligne Aucun résultat agronomique a été rapporté

TECHNOLOGIE DÉVELOPPÉE

Table Ia 2 page 4

(ii) Etude du système agroforestier à *Acacia albida* pour le contrôle de l'érosion et la revegetalisation des parcs Les résultats ont montré que *Acacia albida* est recommandée pour la restauration des sols et l'amélioration du parc agroforestier

TECHNOLOGIE DÉVELOPPÉE

(iii) Validation des espèces agroforestières comme brise vent, haies vives et pour restaurer le parc agroforestier Les espèces à valider étaient les suivantes *Acacia mellifera*, *A. nilotica*, *A. laeta*, *A. tortilis raddiana*, *Zizyphus mauritiana*, *A. albida*, *Parkinsonia aculeata*, *Acacia holosericea*. Concernant la technologie des haies vives, excepté *Parkinsonia aculeata*, toutes les espèces montrent un taux de survie supérieur à 90% à Keur Layene Gueye et à 89% à Laghem. Concernant la régénération du parc, seulement *A. tortilis raddiana* montre un taux de survie de 70%. *Acacia holosericea* a un taux de survie de 80% en brise vent à Keur Layene Gueye et à Laghem 6 mois après plantation.

TECHNOLOGIE DÉVELOPPÉE

SV08 Collaboration ISRA/ARAF pour une meilleure valorisation et gestion des ressources naturelles à Gossas

(i) Validation en milieu paysan de l'application de compost dans les systèmes de culture traditionnelle. L'effet du compost sur la variété de mil Souna 3 a été validé en milieu paysan au cours de cette étude. Dix (10) paysans de 8 villages ont participé à l'expérimentation. La production de mil en parcelles compostées a été de 718 kg/ha et de 357 kg/ha sur celles sans compost (augmentation de 100%). Les résidus de mil sont de 4000 kg/ha (avec compost) et 2700 kg/ha (sans compost). Ceci représente une contribution significative à la matière organique du sol qui maintient les productions agricoles.

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ÉCONOMIQUEMENT

Table 1a page 5

SV09 Methode d'évaluation d'une strategie d'aménagement de terroir appliquée à deux villages du Sine Saloum (Nioro, Kaffrine)

Cette étude a développé une approche intégrée de lutte anti-érosive et de redressement de la fertilité des sols. Des producteurs ont été formés aux techniques de défense et de restauration des sols.

(i) Aménagement d'ouvrages mécaniques et biologiques Le schéma d'aménagement a été réalisé pour les bassins versants de Sonkorong et Ndiobene Taïba qui ont été caractérisés physiquement. Parmi les ouvrages mécaniques et biologiques, les radiers ont été réalisés à 100% à Sonkorong et à 95% à Ndiobene Taïba, les seuils à 10 et 20% respectivement, les cordons pierreux à 15 et 30% et les haies vives ont été réalisées à 70% dans les deux sites. Le radier à Sonkorong a fait l'objet d'un suivi de l'évolution de l'état de surface et du micro-modèle en amont de l'ouvrage. Un comblement/terrassement ou l'approfondissement de la ravine ont été observés et visualisés à 4 dates différentes sur des cartes grâce aux relevés effectués (évolution des courbes de niveau). En moyenne, l'épaisseur de l'atterrissement est de 50 cm en fin de saison des pluies et atteint 80 à 90 cm par endroit. Le comportement des haies vives (4 à Sonkorong et 8 à Ndiobene Taïba) a également été suivi. À Sonkorong, les haies constituées essentiellement de *Acacia adansoni*, *Bauhinia rufescens*, *Acacia laeta*, *Ptilostigma reticulata* et *Zizyphus mauritiana* ont montré des taux de survie moyens satisfaisants allant de 63 à 100% après deux années. À Ndiobene Taïba, les mêmes espèces auxquelles s'ajoutent *Hardwickia binnata*, *Gliricidia sepium* et *Leucanena leucocephala* présentent des taux de survie de 41 à 99% en moyenne avec les taux les plus faibles pour les trois espèces supplémentaires et les haies implantées en première année et non regarnies en deuxième année.

TECHNOLOGIES VALIDÉES TECHNIQUEMENT

(ii) Techniques culturelles anti-érosives Les opérations culturelles suivant les courbes de niveau ont été systématisées en deuxième année.

La mobilisation des communautés rurales autour des ouvrages mécaniques (collecte, transport et stockage des blocs de cuirasse et de laterite, tissage des gabions, terrassement et pose et remplissage des gabions) et biologiques (plantation des haies vives) a été grande. La responsabilisation des paysans a été réalisée par le biais de différents types de formation (sur place, à Kaolack et environs, au Mali) et d'animation.

TECHNOLOGIES VALIDÉES TECHNIQUEMENT

SV10 Mise au point d'itinéraires techniques pour l'intensification de la riziculture dans les vallées aménagées par le GADEC en zone Sénégal Oriental/Haute Casamance

(i) Évaluation de variétés améliorées de riz en milieu villageois doté d'un micro-barrage et effet d'un apport organique sur la production de riz. Des groupements féminins ont testé les variétés améliorées ROK 5 et DJ 684-D comparées à des variétés locales avec ou sans apport de fumier ou compost ou *Sesbania rostrata*. Excepté à Sare Malal, dans tous les sites où l'étude a pu être menée à terme (bonne condition de pluviométrie et semis précoce), les variétés locales ont été plus performantes. À Sare Malal, les productions de la variété ROCK 5 avec et sans *Sesbania* ont été de 3550 et 3000 kg/ha alors que celles de la variété locale dans les mêmes conditions étaient de 3250 et 3050 kg/ha. Pour la DJ 684-D, la production est passée de 2980 kg/ha avec *Sesbania* à 2750 kg/ha sans *Sesbania*. Les productions de la variété locale Samba Diadia ont été respectivement de 2850 et 2600 kg/ha. Les variétés améliorées testées avaient un cycle trop long par rapport aux locales et il a été recommandé l'utilisation de variétés à cycle plus court. Si cette condition est remplie, la technologie serait techniquement développée. De plus, l'apport de fumier ou de compost ou du *Sesbania* est une technologie qui est à encourager. À Mboulemou, la DJ 684-D a montré une production moyenne de 1454 kg/ha avec des différences significatives avec (1750 kg/ha) ou sans (1333 kg/ha) *Sesbania*. L'effet positif des différents types d'apport a été clairement montré sur les variétés locales à Sinthiourou (2500 et

Table Ia 2 page 6

2750 kg/ha sans et avec compost pour la variété samba diadia , 2650 et 2975 kg/ha pour la variété COPE respectivement , 2775 et 3000 kg/ha pour la variété Djoundiana), a Tabanding (2650 kg/ha pour la variété GOUDOMP) et a Fadya sur la variété améliorée DJ 684-D (1350 et 1500 kg/ha) et sur la variété locale (1880 et 2220 kg/ha sans ou avec *Sesbania*) Le comportement des variétés améliorées et les effets à long terme des apports organiques doivent faire l'objet d'étude complémentaire pour validation technologies
TESTS COMPLEMENTAIRES RECOMMANDEES

SV11 Gestion intégrée des ressources naturelles par des groupements féminins dans le département de Bambey

Des femmes ont été formées à la technique de compost amélioré (compost + 50 kg/ha d'urée), aux technologies agroforestières et au maraîchage

(i) *Technologie du compost amélioré.* Les productions de mil variété Souna 3 ont varié de 1,7 à 3,5 t/ha pour 5 groupements en 1994 En 1995, les groupements de Ndiayene ont produits 700 kg/ha de gousses d'arachide (variété 55-437) avec 2t/ha de compost amélioré A Sango, la matière sèche totale de mil était de 4000 kg/ha
TECHNOLOGIE VALIDÉE

(ii) *Technologie de la haie vive.* *Prosopis juliflora*, *Acacia nilotica* et *Acacia tortilis* ont enregistré des taux de survie supérieurs à 80% en rangées seules ou en association *P juliflora* a présenté le plus fort taux de croissance en plantation seule (80 cm) et en association (60 cm) que toutes les autres espèces en 1995-1996 et le plus grand diamètre (9 mm)
TECHNOLOGIE DÉVELOPPÉE

(iii) *Technologie de diversification des cultures* Les groupements ont été impliqués dans la production de produits maraîchers chou, salade, oignon, tomate Un bénéfice net de 101 658 à 9 607 F CFA par personne a été enregistré
TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(iv) *Supplémentation alimentaire.* Des animaux sélectionnés ont été nourris avec 2-3 kg/ha de résidu d'arachide, 250-500 g/animal/jour de son de mil et 250-500 g/animal/jour de tourteau d'arachide En plus, les animaux ont reçu un complément en vitamines sous forme de bloc sale Le gain moyen de poids par animal et par jour a été de 74 g/j avec un maximum de 160 g/j Le gain économique/perte (rentabilité) varie entre -6% et 45% Soixante sept pour cent (67%) des paysans ont eu un profit supérieur à 33% tandis que 33% ont eu un profit dépassant les 20%
TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT pour le test conduit pendant 51 jours

SV12 Valorisation des résidus de transformation du poisson fumé pour la fertilisation des terres Thies, Fatick et Diourbel

Des études au champ ont été menées pour connaître l'effet de l'utilisation de résidus de poisson fumé sur les productions de mil (variété Souna 3), de maïs (variété CP75) et d'arachide (variété 55-437) Les résidus sont riches en éléments nutritifs comme le montrent les résultats de l'analyse suivante pH=6,5 , carbone=27,4% , azote=6,1% , Phosphore=5,1% , Potassium=0,9% , Calcium=11,1% et Magnésium=6,4% Les études ont été conduites en champ paysan dans différents sites

(i) *Effet des résidus sur mil, sorgho et arachide.* Les meilleures productions ont été 2500 kg/ha pour le mil à 6 t/ha de résidus ce qui n'est pas différent significativement de 2400 kg/ha obtenus après application de 4 t/ha A 4 t/ha de résidus, la production de sorgho a été de 3174 kg/ha A 2 t/ha de résidus, elle a été de 930
Table Ia 2 page 7

kg/ha pour l'arachide ce qui n'est pas significativement différent de la production après application de 1,5 t/ha de résidus (930 kg/ha) Pour le niébe, la production a été de 950 kg/ha pour 2 t/ha de résidus L'application de 4 t/ha de résidus pour le mil et le sorgho, de 2 t/ha pour l'arachide et le niébe a été recommandée pour cette technologie

TECHNOLOGIES VALIDÉES TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(ii) Effet des modes d'application des résidus sur maïs et mil. Les productions de maïs (CP75) ont varié entre 2400 et 2600 kg/ha à la dose de 4 t/ha de résidus et ne sont pas statistiquement différentes en fonction du mode d'application (en surface, incorporé, en bande) Il en est de même pour le mil (entre 1640 et 1844 kg/ha à 4 t/ha de résidus) L'application en surface de 4 t/ha de résidus pour le mil et le maïs est le principal résultat

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(iii) Comparaison des résidus de poisson (4 t/ha) et fumure minérale recommandée (150 kg/ha de 8-18-27 NPK + 100 kg/ha d'urée) sur les productions de mil (Souma 3), arachide (55-437) et niébé (Mouride et Diongoma) Les 4 t/ha de résidus appliqués en surface ou incorporés donnent les meilleures productions de mil (1500 kg/ha) avec une augmentation de 85% par rapport à la fumure recommandée Pour les productions d'arachide (900 kg/ha), les résidus et la fumure minérale n'ont pas montré de différences significatives Pour le niébé, augmentations de rendements avec application de résidus sont de 34% pour la variété Mouride et de 140% pour la variété Diongoma par rapport à la fumure minérale

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(iv) Effet des modes d'application des résidus sur mil et maïs (autre étude) Les traitements sont 4 t/ha appliqués en surface, 4 t/ha incorporé, 4 t/ha en bandes dans la ligne de semis, fumure recommandée (150 kg/ha de 8-18-27 NPK + 100 kg/ha d'urée), 2 t/ha en bandes dans la ligne de semis, témoin sans fumure Les productions de mil (Souma 3) ne sont pas significativement différentes en fonction du mode d'application 1600 kg/ha pour l'application en surface, 1800 kg/ha en bandes, 1800 kg/ha incorporé Il en est de même pour le maïs (CP75) avec 2400 kg/ha (surface), 2500 kg/ha (bandes) et 2700 kg/ha (incorporé) Les doses de 4 t/ha de résidus (appliqués en surface ou incorporé) pour le mil et de 4 t/ha pour le maïs indépendamment du mode d'application sont les principaux résultats obtenus

TECHNOLOGIES VALIDÉES TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

Table Ia2 page 8

425

SV13 Amélioration de la fertilité des sols de Ndof (Fatick) tests de variétés améliorées avec des amendements organiques et phosphates en parcelles paysannes dans le terroir de Ndof

(i) Formation des paysans à la technique du compostage. Dix paysans de Ndof et des paysans des villages environnants ont été formés aux techniques de fabrication du compost. Un dispositif de 20 fosses compostières a été réalisé par les paysans de Ndof et Faoye

TECHNOLOGIE VALIDÉE TECHNIQUEMENT

(ii) Evaluation de l'effet du compost ou du fumier (2 t/ha) enrichi ou non en phosphate à 30 kg/ha P₂O₅ (amélioré) sur les productions céréalières (mil et sorgho) en milieu paysan. Le fumier simple n'a pas d'effets positifs immédiats sur le mil. Par contre, le fumier amélioré, le compost amélioré et le compost simple (à un degré moindre) entraînent un accroissement des rendements de mil (Souma 3 et variété locale) par rapport aux parcelles sans fumure (entre 40 et 50%). La variété améliorée a donné les meilleurs rendements. Concernant le sorgho (variété CE 145-66), les productions sont significativement meilleures (entre + 25,5 et 42,5%) pour les fumures améliorées comparées aux fumures simples, elles-mêmes comparées aux parcelles sans fumure. Le comportement de la variété améliorée par rapport à la variété paysanne est meilleur quel que soit le type de fumure. Dans les champs paysans du terroir de Ndof, l'influence du phosphore a été déterminante dans les effets immédiats des types de fumure. Cette étude a montré que l'apport de phosphate aux amendements organiques est nécessaire pour augmenter les productions de céréales améliorées.

TECHNOLOGIE S DÉVELOPPÉES

(iii) Evaluation d'un traitement phytosanitaire (au DECIS) sur les productions de niébé en milieu paysan. L'effet du traitement au DECIS est significatif sur les productions de niébé (variétés améliorées Melakh et Mouride et variété paysanne) par rapport aux parcelles non traitées. Toutefois, pour le même type de traitement la variété paysanne a montré une meilleure production que les variétés améliorées.

TECHNOLOGIE DÉVELOPPÉE

SV14 Amélioration de la fertilité des sols et gestion des adventices par la production de céréales de plateau (maïs et mil) à Sedhiou étude d'itinéraires techniques pour maintenir la production paysanne

Des études ont été menées pour déterminer les pratiques de gestion appropriées pour les cultures du maïs et du mil (fertilisation, choix des variétés et contrôle des adventices). Vingt (20) champs de paysans leaders ont servi de terrain d'expérimentation.

(i) Effet des doses de compost et de la fumure recommandée (NPK et/ou urée) sur le maïs (variété JDB) et le mil (variété Sagno). Les productions de maïs varient de 1,46 t/ha (témoin) à 3,36 t/ha (5 t/ha de compost + NPK + urée). Il n'y a pas de différences significatives entre l'utilisation de 3 t/ha de compost (2,1 t/ha) et 7 t/ha (2,3 t/ha). Il n'y a pas de différence significative non plus entre 5 t/ha de compost + 150 kg/ha NPK + 100 kg/ha d'urée (3,4 t/ha) et 5 t/ha de compost seulement (2,8 t/ha). Il s'est avéré inutile d'apporter de l'urée lorsque 5 t/ha de compost et plus sont apportées. De plus, la production après application de 150 kg/ha NPK + 100 kg/ha d'urée (2,6 t/ha) n'est pas différente après celle de 3 t/ha de compost seul (2,1 t/ha). Les résultats pour le mil montrent qu'il n'y a pas de différence statistique entre l'utilisation de 3 t/ha de compost (1,7 t/ha) et 7 t/ha (1,8 t/ha). L'apport supplémentaire d'azote n'augmente pas significativement la production de mil par rapport à l'application de 5 t/ha de compost. Les productions n'étaient pas différentes quand 3, 5 ou 7 t/ha de compost + 150 kg/ha de NPK + 100 kg/ha d'urée étaient appliqués. Cependant, les productions étaient différentes entre compost et compost + urée d'une part et compost + 150 kg/ha NPK + 100 kg/ha d'urée d'autre part. Il serait intéressant de comparer la production de mil après application de compost + 150 kg/ha de NPK sans urée avec celle après application de compost + 150 kg/ha de NPK + 100

Table Ia 2 page 9

kg/ha d'uree Il n'y a pas eu de differences significatives entre la formule recommandee (150 kg/ha de NPK + 100 kg/ha d'azote) et 3 t/ha de compost

Le resultat principal pour cette technologie est une application de 5 t/ha de compost + 150 kg/ha NPK + 100 kg/ha d'uree a la fois pour le maïs et le mil

TECHNOLOGIE VALIDEE TECHNIQUEMENT

(ii) Test en milieu paysan de la variété améliorée JDB de maïs avec des variétés locales Les productions ont été faibles et 50% des champs paysans ont produits moins de 0,5 t/ha a cause de la faible pluviometrie et de la pauvreté des sols Les productions de la variété JDB améliorée vont de 0,31 t/ha a 1,73 t/ha compare a celles des variétés locales allant de 0,14 a 1,5 t/ha) Les productions moyennes des variétés améliorées et locales sont 0,87 et 0,64 t/ha respectivement representant un gain de 35% pour la variété JDB

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

(iii) Contrôle du Striga dans les champs de mil L'effet d'un paquet technologique (pulverisation de 2,4-D, fertilisation de 100 kg/ha d'uree apres un second desherbage, desherbage manuel) sur le *Striga* (*Striga hermonthica*) dans 20 champs de mil a été compare a la pratique paysanne La densité de *Striga* avant le traitement était en moyenne de 39,7 plants/m² dans les parcelles a traiter et de 27,4 plants/m² dans les parcelles témoin Apres pulverisation a maturité du mil, la population de *Striga* avoisinait 6,5 plants/m² pour les champs traités et 58,8 plants/m² pour les champs non traités Soixante quinze pour cent (75%) des champs traités produisent plus que les champs non traités

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

SV15 Diversification des cultures (Kaolack) évaluation des cultures et des systemes de culture

Les cultures et les systemes de cultures étudiés ont été mil, mil/pasteque en association, riz, arachide et arbres

(i) Test et comparaison de variétés locale et améliorée de mil La variété améliorée (Souna 3) ont été comparées a une variété locale sous trois niveaux de fertilité (témoin sans fumure, 2 t/ha d'engrais et 2 t/ha d'engrais + 100 kg de phosphate naturel de Taïba) Les productions sont meilleures pour Souna 3 (884 kg/ha) compare a la locale (582 kg/ha) L'engrais + phosphate naturel et la pratique paysanne ont donné des productions de 1046 kg/ha et 467 kg/ha respectivement soit une augmentation de 124% La production avec 2 t/ha d'engrais seul est de 702 kg/ha et n'est pas significativement différente de celle avec engrais + phosphate La dose de 2 t/ha d'engrais avec 100 kg de phosphate naturel a été recommandée

TECHNOLOGIE VALIDEE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(ii) Etude de l'association mil/melon Le melon a été semé une semaine avant la récolte du mil a une distance de 1,8 m entre les rangées et 0,9 m dans les rangées Les résultats montrent que l'association a été avantageuse (LER=1,56) Les bénéfices nets pour le mil et la pasteque sont de 83500 et 89400 CFA par saison respectivement

TECHNOLOGIE DEVELOPPEE

(iii) Evaluation de variétés de riz en fonction de la toposequence Les résultats montrent que la variété Rock 5 cultivée dans les bas fonds donne les meilleures productions (4418 kg/ha) Les autres variétés (IRAT 10 ou 144 B-9 sur sol de plateau, DJ 12-519 en bordures de pente, I KONG PAO ou IPK en pente) ont produit moins de 2000 kg/ha dans les mêmes conditions de traitement (200 kg/ha de 8-18-27 et 50 kg/ha d'uree 15 et 30 jours apres germination Toutes les variétés devront être restées dans toutes les situations de toposequence pour une comparaison fine

TECHNOLOGIE VALIDEE TECHNIQUEMENT

Table la 2 page 10

(iv) **Evaluation de variétés de niébe.** Les variétés les plus précoces (Mouride, Bambey 21, Melakh, CB5, 58-57) sont les plus appréciées car elles requièrent moins de pulvérisation pour lutter contre les thrips et autres insectes nuisibles. Les variétés Mougne, Diongoma, Baye Ngagne, Ndiage Aw et Ndiambour sont moins précoces et moins intéressantes pour les paysans

TECHNOLOGIE DÉVELOPPÉE

(v) **Evaluation de trois espèces à utiliser dans les systèmes agroforestiers pour le bois de chauffe, les fruits, les haies vives et le bois de construction.** Les espèces les plus prometteuses sont *Acacia seyal*, *A. nilotica*, *M. inermis*, *P. reticulata* et *Eucalyptus*. Un mélange de trois espèces a aussi été sélectionné pour des plantations de bordures (*Acacia mellifera*, *Prosopis juliflora* et *P. cineraria*) ainsi qu'une espèce seule (*Acacia mellifera*). Les arbres ont été plantés

TECHNOLOGIE DÉVELOPPÉE

SV16 Aménagement anti-érosif et redressement de la fertilité des sols du bassin versant de Diamaguène en zone périurbaine

Cette étude a développé une approche intégrée de lutte anti-érosive et de redressement de la fertilité des sols. Des producteurs ont été formés aux techniques de défense et de restauration des sols.

(i) **Aménagement d'ouvrages mécaniques et biologiques.** Le schéma d'aménagement a été réalisé pour le bassin versant de Diamaguène (comprenant la station agronomique de Nioro) qui a été caractérisé physiquement. Parmi les ouvrages mécaniques et biologiques, le radier a été réalisé (37 gabions), les cordons pierreux à 14%, 28 fascines (82m), 38 seuils (117m) et 78% des haies vives ont été réalisés. Le comportement médiocre des haies vives constaté en première année (75% de mortalité) à l'intérieur de la station de Nioro a été renversé grâce à une nouvelle plantation après établissement du parcellaire. Un bon comportement à l'intérieur et à l'extérieur de la station des haies multi-spécifiques un an après plantation a été noté.

TECHNOLOGIE VALIDÉE TECHNIQUEMENT

(ii) **Techniques culturales anti-érosives.** Les opérations culturales suivant les courbes de niveau ont été systématisées en deuxième année.

La mobilisation des communautés rurales autour des ouvrages mécaniques (mise en place de cordons pierreux, de seuils, de fascines, établissement du parcellaire) et biologiques (plantation des haies vives) a été grande. Pour la seule confection du radier/seuil, 178 personnes y ont participé à Diamaguène. La responsabilisation des paysans a été réalisée par le biais de différents types de formation (sur place, à Kaolack et environs, au Mali) et d'animation. Elle a débouché sur une auto-formation paysanne.

TECHNOLOGIES VALIDÉES TECHNIQUEMENT

SV17/S25 Transfert de variétés de riz dans les vallées salées du Pakao et du Kassa

(i) **Evaluation de variétés de riz améliorées (DJ 8-341 et DJ 11-509) et d'une variété de référence 144B/9 sous différents niveaux d'azote.** Le classement des variétés pour le critère de production moyenne sur six années est le suivant : DJ 11-509 (2863 kg/ha) > DJ 8-341 (2306 kg/ha) > 144B/9 (2134 kg/ha). Ces résultats ne sont pas significativement différents. La production moyenne pour tous les taux d'azote appliqués (50, 100 et 150 kg/ha) est de 3820 kg/ha pour DJ 8-341 et 2714 kg/ha pour 144 B/9. Cette différence est significative et représente une augmentation de 17% par rapport à la variété de référence. L'application de 100 kg/ha d'azote sur DJ 8-341 entraîne une augmentation de 167% (de 1513 à 4041 kg/ha) par rapport à la référence.

Table Ia.2 page 11

Pour 144 B/9, cette augmentation est de 203% (de 1163 a 3534 kg/ha) Les productions en conditions hydromorphes sont constamment meilleures que dans les terres hautes L'application de 100 kg d'azote/ha sur les terres hautes a ete recommandee pour les varietes DJ 8-509 et DJ 8-341

TECHNOLOGIE TECHNIQUEMENT VALIDEE

(ii) Effet de la période de semis Des dates de semis ont ete comparees pour les varietes Tox 728-1, DJ 11-509 et DJ 12-519 La date du 7 juillet apparaît la meilleure pour le semis de Tox 728-1 et DJ 12-519 DJ 11-509 peut être plante a n'importe quand sauf en août

TECHNOLOGIE TECHNIQUEMENT VALIDEE

(iii) Evaluation variétale (WAR 1, WAR 77-3-2-2 et ROK 5) à différents niveaux d'engrais recommandé. Les productions ont ete plus eleves a Badiana que dans les autres sites (Oulampane, Mlomp) Apres application de 50 ou 100% de la fumure recommandee, les trois varietes ont donne des productions superieures a 4600 kg/ha Les varietes WAR 1 et WAR 77-3-2 sont les plus productives (> 5000 kg/ha)

TECHNOLOGIE TECHNIQUEMENT VALIDEE

(iv) Performances des variétés WAR 1, WAR 77-3-2, WAR 81-2-1-3 et ROK 5 avec ou sans engrais à différents niveaux de pH (1,38 à 7,77) Le pH du sol est de 1,38 ce qui est tres bas Toutes les varietes semblent prometteuses a Birkama (pH=3,7), a Badobar (pH=3,7) et a Ngumdir (pH=5) avec des niveaux de rendements qui dépassent generalement 4000 kg/ha sans engrais

TECHNOLOGIE TECHNIQUEMENT VALIDEE

Table Ia 2 page 12

(v) **Selection et amelioration varietale du riz de mangrove.** Sur 13 varietes testees pour leurs bonnes performances de productivite et de resistance au stress, 11 ont montre un comportement satisfaisant Sur le plan organoleptique, la variete WAR 91-2-1-2 est interessante et a ete experimente avec succes en milieu paysan dans les parcelles de demonstration ISRA/DERBAC ou la qualite de son grain a ete positivement appreciee par les producteurs ce qui a entraıne son homologation en męme temps que WAR 1 En deuxieme annee d'essai, les varietes BR 50-120-2, IR 21855, WAR 100, WAR 115-1-2-11-4, BR 51-282-8, WAR 115-11, IR 2856 et BW 267-3 sont tres productives et ont montre des facultes d'adaptation assez interessantes qui meriteraient d'ętre confirmees en essai multilocal paysan

TECHNOLOGIE TECHNIQUEMENT VALIDEE

(vi) **Valorisation.** Un manuel de formation sur les normes et les techniques de production de semences de riz (cas de la zone sud du Senegal) a ete realise et edite pour diffusion

(vii) **Gestion des foręts** Une etude exploratoire des ressources du terroir de la zone d'intervention du projet de transfert de varietes ameliorees de riz (terroirs de Sandiniery, Karantaba et Diareng organises en Organisation Communautaire des Regroupements Villageois ou ORCV) a ete realisee (MARF) Elle a permis d'examiner (1) les causes et les consequences de la degradation de la foręt en rapport avec les autres systemes de production, (2) les principales formes d'utilisation de la foręt classee et (3) les principales formes d'organisation pour la gestion actuelle et future de la foręt classee L'analyse de la situation relative a la gestion des ressources naturelles dans cette zone d'intervention de l'ORCV a permis d'identifier des contraintes majeurs comme la degradation continue de la foręt, la faible integration des systemes de production, la degradation du sol par un phenomene de salinisation notamment, la faiblesse du niveau de valorisation des produits agroforestiers (insuffisance de la transformation et de la commercialisation), le manque d'accęs au credit, le manque de formation des paysans et une incompetence des organisations de producteurs et des ONGs en matiere de gestion des ressources naturelles Pour lever ces contraintes, l'ORCV va s'inscrire dans une demarche novatrice consistant a privilegier une demarche communautaire participative dans un cadre de synergie globale et consensuelle (privilegier une dynamique consensuelle pour toute prise de decision, impliquer toutes les parties prenantes, valoriser les efforts fournis par les communautés de base et ameliorer la communication entre partenaires

S18/R20 Restauration agronomique des sols (sud bassin arachidier)

L'etude de techniques de recuperation des sols sales (physique et biologique) a ete menee en milieu villageois apres l'elaboration d'un plan de masse servant a determiner l'emplacement des ouvrages

(i) **Technique de la diguette anti-sel.** Une formation des populations a cette technique des diguettes anti-sel a ete realisee et a precede leur mise en place

TECHNOLOGIE TECHNIQUEMENT VALIDEE

(ii) **Production en pepiniere et plantation d'espęces herbacees et ligneuses** Le transport des plants, le piquetage, l'ouverture des potets et la mise en terre des plants ont fait l'objet d'une formation des paysans Apres production de plants en pepinieres a Ndiaffate, Ngane et Keur Omar, *Tamarix aphylla* var *erectus* et *Atriplex lentiformis* ont ete plantes dans des parcelles amenees au niveau des trois sites Apres 8 mois, la croissance en hauteur (17 a 39 cm) et le taux de survie moyen (90 a 100%) ont montre un bon comportement de *Tamarix aphylla* a Ndiaffate, une faible croissance en hauteur et un taux de survie compris entre 4 et 91% a Ngane, une faible croissance en hauteur et un faible taux de survie a Keur Omar (entre 31 et 36%) Concernant *Atriplex lentiformis*, le stress hydrique a entraıne un taux de survie de 31% et un gain de croissance de 39,16 cm a Ngane

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

Table Ia 2 page 13

(iii) Suivi du niveau de la nappe phréatique. Le suivi des indicateurs d'état de salinité, d'acidité et de la profondeur de la nappe a permis de recueillir des informations importantes pour la compréhension du phénomène de la remontée de sel

**S19/PAR3 Consolidation des acquis dans le cadre du projet ISRA/ARAF (SV08, 1994-1997)
Valorisation et GRN dans la région de Fatick**

Cette étude étend à d'autres villages les résultats obtenus sous la subvention SV08

(i) Fosses compostières Le nombre de fosses compostières a augmenté de 47 entre 1996 et 1997 et de 76 entre 1997 et 1998

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(ii) Reboisement. Au total 12588 plantules ont été mises en terre toutes espèces confondues dans les différents villages de la zone d'étude. Les taux de survie moyens ont été de 40% environ malgré la divagation du bétail et la présence de termite sur les sites de reboisement

(iii) Etables fumières Des séances d'animation ont permis de recommander la technologie des étables fumières qui est peu utilisée dans la zone (seulement 8 paysans ont recours à cette technologie) pour la fertilisation des sols

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

(iv) Fumier amélioré. Les paysans mettant en tas le fumier sont assez nombreux (135). Sur 86 groupements villageois, environ 60 pratiquent la fertilisation des sols par cette technologie. L'utilisation de la technologie du fumier amélioré est en progression constante depuis 1996 avec 31 cas d'utilisation en 1996, 46 en 1997 et 135 en 1998

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

S20/PAR2. Collaboration entre AHDIS et CNBA dans le programme GRN (PAR2-3, PAR2-4 et PAR2-5)

(i) Évaluation socio-économique des technologies sur la GRN (PAR2-3) Trois technologies introduites par ISRA/NRBAR sont bien connues par les producteurs des villages de la zone d'intervention d'ADHIS. Il s'agit des techniques du compost, d'épandage de résidus de poissons fumés et des haies vives

(ii) Diffusion de la technologie du compostage enrichi en phosphate naturel (PAR2-4) Deux fosses compostières ont été implantées au niveau de groupements féminins de 5 villages de la zone de Bambey et de la zone de Thies. Un cycle de compostage a été mené (suivi de température, suivi de l'humidité et analyse du produit fini). Les résultats d'analyse ne sont pas encore disponibles mais la qualité du produit obtenu et le suivi du cycle de compostage a montré que le compostage est techniquement adapté à la fertilisation. L'addition de phosphate naturel n'introduit aucune différence sur le cycle de compostage. Des essais agronomiques sont en place et les résultats sont attendus

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

(iii) Tests de confirmation et de diffusion de technologies en milieu paysan - cas des haies vives défensives (PAR2-5) Des espèces à croissance rapide et à élagage naturel (*Acacia laeta*, *Acacia tortilis* et *Bauhinia rufescens*) et des espèces à croissance lente et embranchement latéral (*Acacia mellifera* et *Zizyphus mauritiana*) ont été produites en pépinières villageoises notamment par le biais de formation et associées

Table Ia 2 page 14

pied a pied dans 6 villages Apres 5 mois de plantation, les taux de survie toutes especes confondues sont compris entre 69 et 91% (moyenne de 78%) Le taux de survie par espece tous sites confondus varie entre 80 et 96% (moyenne de 90%), *Z mauritiana* presentant le moins bon taux (sol sableux) Aucune difference de comportement concernant le taux de survie et aussi la croissance en hauteur d'une espece donnee dans les differentes associations a ete constatee

TECHNOLOGIE VALIDEE TECHNIQUEMENT

S21/PAR2 Collaboration entre RODALE et CNBA dans le programme GRN (PAR2-3 a PAR2-7)

(i) Evaluation socio-economique des technologies sur la GRN (PAR2-3) Trois technologies introduites par ISRA/NRBAR sont bien connues par les producteurs des villages de la zone d'intervention de RODALE Il s'agit des techniques du compost, d'epandage de residus de poissons fumes et des haies vives

(ii) Diffusion de la technologie du compostage enrichi en phosphate naturel (PRA2-4) Deux fosses compostieres ont ete implantees au niveau de groupements feminins de 5 villages de la zone de Bambey et de la zone de Thies Un cycle de compostage a ete menee (suivi de temperature, suivi de l'humidite et analyse du produit fini) Les resultats d'analyse ne sont pas encore disponibles mais la qualite du produit obtenu et le suivi du cycle de compostage a montre que le compostage est techniquement adapte a la fertilisation L'addition de phosphate naturel n'introduit aucune difference sur le cycle de compostage Des essais agronomiques sont en place et les resultats sont attendus

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

(iii) Tests de confirmation et de diffusion de technologies en milieu paysan cas des haies vives defensives (PAR2-5) Des especes a croissance rapide et a elagage naturel (*Acacia laeta*, *Acacia tortilis* et *Bauhinia rufescens*) et des especes a croissance lente et embranchement lateral (*Acacia mellifera* et *Zizyphus mauritiana*) ont ete produites en pepinieres villageoises notamment par le biais de formation et associees pied a pied dans 6 villages Apres 5 mois de plantation, les taux de survie toutes especes confondues sont compris entre 78 et 98% (moyenne de 91,6%) Le taux de survie par espece tous sites confondus varie entre 80 et 96% (moyenne de 90%), *Z mauritiana* presentant le moins bon taux (sol sableux) Aucune difference de comportement concernant le taux de survie et aussi la croissance en hauteur d'une espece donnee dans les differentes associations a ete constatee

TECHNOLOGIE VALIDEE TECHNIQUEMENT

(iv) Effets du melange de phosphates naturels et de phosphogypse sur les sols et les cultures (PAR2-6) Cette etude consistait a generer une nouvelle technologie Le melange de 25% de phosphate de Taiba et 75% de phosphogypse donne les meilleurs resultats sur la culture de mil (entre + 6 et 17%) Pour l'arachide ces taux sont de 50% et 50% respectivement pour les rendements en gousses bigraines (+ 37%) et en fanes

TECHNOLOGIE DEVELOPEE

(v) Développement de méthodes alternatives de protection des récoltes vivrières et des semences contre les insectes (générations, validation et transfert) (PAR2-7) L'impact d'extraits de *Boscia senegalensis* sur la protection de graines de niébe stockees (Bambey 21, Diongoma, Melakh et Ndiambour) a ete evalue La faculte germinative des graines de niébe a ete mesuree au 6^{eme} mois La faculte germinative des graines stockees six mois en fût metallique est nettement superieure a celle observee dans le cas d'un stockage en sac Le stockage en fût seul ou combine a un traitement donne de tres bons resultats, le traitement a la phosphine s'averant d'une plus grande efficacite que celui aux feuilles des *B senegalensis* Apres six mois de stockage, les taux d'infestation cachee et active de *Callosobruchus maculatus* ne sont pas statistiquement differents Ainsi, l'utilisation d'extraits de *B senegalensis* ne deprecie pas la qualite semenciere des graines de niébe

Table Ia 2 page 15

TECHNOLOGIE DEVELOPEE

L'évaluation de substances biocides de sept (7) espèces végétales (*Pachyrhizus erosus*, *Boscia senegalensis*, *Boscia angustifolia*, *Parmari macrophylla*, *Balanites aegyptiaca*, *Azadirachta indica* et *Arachis hypogea*) a été réalisée pour le contrôle des brûches du niébe et de l'arachide en vue d'identifier les plus prometteuses et de déterminer des doses d'utilisation en milieu rural. Les tests biologiques ont été réalisés sur des graines de niébe (Bambey 21) et d'arachide (55-437). Les produits et extraits végétaux testés ont été (1) des poudres de graines de quatre (4) variétés de *Pachyrhizus erosus*, (EC 219, EC 503, EC X et EC 041), (2) des huiles extraites d'amandes de *Parmari macrophylla*, *Balanites aegyptiaca*, *Azadirachta indica*, *Arachis hypogea*, des feuilles fraîches de *Boscia senegalensis* et *B. angustifolia*, (3) des feuilles de *Boscia senegalensis* et *B. angustifolia*.

TECHNOLOGIES VALIDEES TECHNIQUEMENT

Activité biologique des poudres En dehors du rôle important que *P. erosus* peut jouer dans les objectifs de diversification de la production alimentaire, cette plante présente des perspectives très intéressantes pour la protection des semences de niébe et d'arachide. Les tests de germination des graines traitées avec des poudres de *P. erosus* révèlent l'absence d'un effet négatif sur la capacité germinative des semences.

Toxicité de contact des huiles sur les adultes de C. maculatus L'huile de *Azadirachta indica* s'avère 1,9 fois plus active (100% dès le premier jour du traitement à la dose 2 ml/kg) que celle de *Balanites aegyptiaca*, 3,3 fois plus active que celle de *Arachis hypogea* et 7 fois plus que celle de *Parmari macrophylla*. Les autres huiles testées présentent une toxicité très hautement dépendante de la dose. L'huile de *B. aegyptiaca* provoque une mortalité de 96% après 72 h à la dose de 10 ml/kg, celle de *A. hypogea* induit 86,7% de mortalité à 10 ml/kg après 72 h alors que *P. macrophylla* ne tue que 54,7% de *C. maculatus*.

Table Ia 2 page 16

Effet des huiles sur la descendance de C maculatus La descendance F1 confirme la plus grande efficacité de l'huile de *A indica* qui entraîne une inhibition totale de l'émergence d'une nouvelle génération de *C maculatus*. Les huiles de *P macrophylla*, *B aegyptiaca* et *A hypogea* permettent une réduction moindre mais très significative des émergences de F1 par rapport au témoin. Ainsi, à la concentration de 10 ml/kg, le pourcentage de réduction des émergences par rapport au témoin non traité à la concentration de 10 ml/kg est de 99,8% pour *B aegyptiaca*, 99,6% pour *A hypogea* et 98,0% pour *P macrophylla*.

Toxicité de contact des huiles sur les adultes de C serratus Après 24 h d'exposition, l'effet des huiles est peu à faiblement significatif puisque l'huile de *A indica*, qui se révèle être la plus efficace, ne provoque que 36 % de mortalité à la concentration maximale de 10 ml/kg. Cette mortalité s'élève à 96 % après 72 h. L'analyse des données obtenues ne montre aucune différence significative entre les trois autres huiles 5 %.

Effet fumigant des feuilles de deux espèces de Boscia Le pourcentage de mortalité corrigée de *B senegalensis* sur *C maculatus* varie de 33,6% à la dose de 0,26 g/l et atteint le maximum de 100% à la dose de 0,67 g/l. Pour *C serratus*, l'activité biologique atteint 100% à partir de la dose de 1,33 g/l. Ces résultats montrent la plus grande toxicité de *B senegalensis* sur les adultes de *C maculatus*. *Boscia angustifolia* testée dans les mêmes conditions présente une très faible activité biologique sur les bruches qui pourrait s'expliquer soit par une moindre teneur en substance active par rapport à *B senegalensis*, soit au stade phénologique ou à la teneur en eau du matériel végétal.

S22/PAR3 Étude des possibilités de mise en valeur des bas-fonds du sud bassin arachidier Collaboration avec le département Géographie de l'UCAD

(i) Caractérisation socio-économique du bassin versant de Koutango L'examen des paramètres socio-économiques mais aussi culturels influençant l'utilisation des terres de bas-fonds par les paysans des villages environnants le bassin versant a été réalisé en impliquant les populations. Cette étude insiste particulièrement sur la caractérisation des unités de production des villages polarisés par le bas-fond de Koutango, sur leurs pratiques agricoles et pastorales. Elle contribue à une meilleure connaissance des systèmes de production, des contraintes et des potentialités du bas-fond. Elle participe à la définition d'éléments techniques utiles pour la conception et la réalisation d'aménagements pour une meilleure valorisation du bas-fond qui offre des possibilités d'intensification et de diversification des cultures génératrices de revenus. Enfin, cette étude offre des pistes à approfondir pour l'élaboration d'un schéma d'aménagement cohérent, respectueux des populations et reposant sur les opportunités du milieu.

(i) Caractérisations hydrologique et hydrogéologique du bassin versant de Koutango Les caractérisations physiques du bassin versant (relief, forme, réseau hydrographiques), hydro-climatiques (pluviométrie, morphométrie du bassin versant, estimation des paramètres de coulement), hydrogéologique (contexte géologique et hydrogéologique général) et la caractérisation de la nappe phréatique (caractéristiques hydrodynamiques, piézométrie et écoulement, bathymétrie et potentialités hydriques) ont été réalisées afin de maîtriser l'eau dans le bassin versant. Suite à ces caractérisations la stratégie d'aménagement de petites digues de retenue a été préconisée pour restaurer l'équilibre entre écoulements de surface et écoulements souterrains qui fait défaut dans le bassin versant de Koutango pendant la période de déficit pluviométrique. Les potentialités d'intensification et de diversification (riziculture, arboriculture, maraîchage et production fourragère) ont été mises en évidence au niveau du bassin versant.

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

Table Ia 2 page 17

V23 Introduction de la culture de légumineuses fourragères annuelles en milieu paysan en vue de l'amélioration des productions cerealieres et animales en Haute Casamance au Senegal

(i) Test de légumineuses annuelles en milieu paysan dans une rotation legumineuse/céreuse. Cette etude a ete executee en collaboration avec les villages de Sare Kanta, Thiaracounda et Salamata (Haute Casamance) Il s'agissait de confirmer ou d'infirmier en milieu paysan les bons rendements en fourrage obtenus en station avec la variete de niebe 58-74 et la dolique Des rendements moyens de niebe ont ete obtenus dans les sites Sare Kanta (10,760 t ms/ha) et Thiaracounda (10,004 t ms/ha) Ils sont superieurs a ceux obtenus en station avec 58-74 et 66-35 (respectivement 5,598 et 7,224 t ms/ha) Les problemes de levees de la dolique n'ont pas permis d'obtenir les productions de cette legumineuse fourragere annuelle Les resultats obtenus doivent être confirmer mais ils vont dans le sens souhaite mettre au point un systeme fourrager a base de legumineuse annuelle a proposer aux paysans pour l'amelioration de la fertilité des sols et la production de fourrage en quantite et qualite pour les animaux domestiques

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

SV24 Effet des bois raméaux fragmentés et du compost de litière de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraichères des Niayes

(i) Effet de la technique du compost de litiere et des fragments de bois raméaux de filaos Cette etude a ete menee en collaboration avec l'ONG Sahel 3000 et les producteurs du village de Keur Malal Deux villageois ont ete formes a la technique de compostage (litiere + 2% d'uree + phosphogypse) en tas qui ont eux-mêmes assures la formation de 26 producteurs du même village Les tests de maturite du compost ont ete realises et les essais concluants ont permis de realiser des essais sur la pomme de terre, la tomates et l'oignon Pour la pomme de terre, les meilleurs rendements ont ete obtenus apres application de 10 t/ha de compost de litiere (reduction du nombre de grenailles et augmentation des gros tubercules) Les essais sur la tomate et l'oignon ont ete perturbes par un deficit hydrique Les rendements obtenus ont doubles par rapport aux parcelles sans compost Les revenus monetaires engendres par cette technologie ont ete importants ce qui a suscite un grand interêt pour les producteurs qui souhaitent l'etendre a d'autres speculations maraicheres

TECHNOLOGIE VALIDEE TECHNIQUEMENT

Table Ia 2 page 18

Ib GRANTS TO ISRA RESEARCHERS

Ib (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR grants to ISRA researchers program, 27 activities implemented with the formal contractual participation of multidisciplinary research teams, and the informal participation of numerous partenaires, has achieved its objectives of assisting research teams to continue and complete priority research activities in the natural resources area. Implementation was according to the guidelines set out in the NRBAR Grant Agreements. In view of uncertainties regarding the continuation of the program during the reorganisation of both USAID and ISRA during 1995 and 1996, the level of effort expended is approximately 25% less than originally planned.

The impact of this program on attainment of ISRA/NRBAR objectives is substantial. 27 formal contracts were signed with ISRA's multi-disciplinary research teams for implementation of on-farm and on-station experiments and studies, and 8 technologies were validated, with 6 developed. Extensive farmer and technician training, and evaluations of existing technologies, were important integral parts of these activities.

Ib (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that the program maximise the impact of researchers' work in natural resources. The USAID/CID contract for assistance to ISRA in implementing NRBAR services was assigned a budget of \$471,000.

Ib (iii) ACTIVITIES

During 1993, protocols were developed, and the system was designed by ISRA and CID staff. At the same time, the requests for proposals were widely distributed to ISRA teams. In 1993, ISRA awarded the first 3 researcher grants to teams of researchers based at Bambey, Kaolack and Kolda, funds were disbursed in time to implement trials in the 1993/94 growing season. In subsequent years, as the system became established, the number of grants was increased, by an additional 2 in 1994, and an additional 9 in 1995. However, in 1995, it was not possible to plan for further grant releases, as the project was in the process of being renegotiated by USAID and ISRA, throughout much of that and the following year, under their respective reorganisation schemes. No new grants were therefore awarded in 1996. Following the SOAG Agreement of September, 1996, it was again possible to implement new grants, so 12 new grants were awarded in 1997, covering the 1997/98 season.

Also under this program, a site visit was made to Fouta Djallon in Guinee by a team of ISRA, CARITAS and CID staff, who studied technologies for watershed management which have potential application in the Southern Zone of Senegal. The results of this visit were used in the design and implementation of two NRBAR grants projects.

In addition to the annual reviews and monitoring visits for this program implemented by the DS and the DS committee members, a final comprehensive review of administrative and financial

performance, and of the technical results, occurred at the final meeting of the DS's grants committee for NRBAR at Saly in June, 1998 (refer to the relevant short-term training event in Section Vc of this Chapter)

The 27 research activities are detailed in the report of the June meeting of the DS's committee, and are outlined below in Tables Ib 1 (a list of the grants) and Ib 2 (the technical results) As many of these research and dissemination activities are scheduled to continue under other funding following project close-out, further information will become available in the future

Ib (iv) SYNTHESIS OF THE GRANTS TO ISRA RESEARCHERS PROGRAM

Of the 27 activities, 3 were based at Bambey, 8 at Kaolack, 5 at the SOHC unit (Tambacounda and Kolda), 6 at Ziguinchor, and 5 elsewhere These activities were complemented through numerous consultancies, long-term training activities in the U S , and short term training events in Senegal and elsewhere

Emphasis during 1997/98 was placed on writing-up of results and communications with partenaires, however, much remains to be done in this regard There were numerous field training events involving partenaires and participating farmers Five large workshops were held, where ISRA staff, NGOs, farmers, and donors jointly evaluated results organic fertilisation of soils in the CNBA, at Bambey, agroforestry and soils management in the SBA, at Kaolack, rice technologies in the Casamance at Tambacounda, livestock-related technologies in the Casamance at Kolda, and the closing NRBAR seminar in Dakar for results in all areas Farmer exchange visits included those of the Kolda/Linguere areas on validation of the stabling and related technical packages, and Kolda/Kaolack on agroforestry for erosion control A video film was completed on project R01

Activities concentrated in the areas of soil management, crop production, agroforestry and livestock Eight technologies were validated, with 6 developed, and a further 8 needing additional post-project testing Extensive farmer and technician training, and evaluations of existing technologies, were important integral parts of these activities Technical implementation of these projects has generally been satisfactory, with generally adequate reporting by research teams However, much remains to be done, in order to effectively analyse and report on the work already completed, in order to ensure the necessary impact on the population

TABLE Ib.1 LIST OF GRANTS TO ISRA RESEARCHERS, 1993-98

CODE	TITRE ET SITES DU PROJET
1993/96	
R01	<i>Etude sur l'utilisation agricole des ecailles de poisson fume comme amendement organique des sols du Senegal Mbour- Fatick 93/94 - CNBA-</i>
R02	<i>Etude de l'impact de la recherche le cas des Unites Experimentales de Thyse-Kaymor-Sonkorong et Koumbidia Kaolack 93/96 - SBA</i>
R03	<i>Influence des itineraires techniques sur la conservation de sols de plateau au milieu paysan (Basse Casamance) Ziguinchor 93/96 - BMC-</i>
R04	<i>Valonsation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal la Haute Casamance 93/96 SOHC</i>
1994/97	
R05	<i>Effets des techniques culturales sur la variabilite des rendements du sorgho pluvial et sur son effet allelopathique Kaolack - Diourbel 94/97 SBA</i>
R06	<i>Amelioration des pâturages naturels des zones d'elevage du Senegal par utilisation de phosphates naturels Kolda - Louga 94/97 - ZSP</i>
1995/98	
R07	<i>Valonsation du Potentiel des legumineuses fourrageres en vue de l'amelioration des productions cerealieres et animales en zone subhumide Kolda 95/98 SOHC</i>
R08	<i>Influence de quelques especes ligneuses sur le redressement du statut organique et de la fertilité de vieux champs sur sol ferrallitique (rouge) en Casamance Ziguinchor - Bignona 95/97</i>
R09	<i>Evaluation socio-economique des projets de recherches en GRN sous financement NRBAR 95/98 - URA/PASE</i>
R10	<i>Effet d'une stabulation ameloree des bovins sur leurs performances ponderales et sur la gestion de la fertilité des sols dans le centre du Bassin Arachidier Fatick 95/98 SBA</i>
R11	<i>Etude de l'efficacite du neem dans la protection et la conservation des sols contre l'infestation des nematodes phytoparasites, ravageurs des cultures maraicheres 95/97</i>
R12	<i>Inventaire des Technologies basees sur la Gestion des Ressources Naturelles et utilisees dans la production Agricole en Basse Casamance 95/96 BMC</i>
R13	<i>Identification de technologies de la culture de mil/niébe en zone humide Tamba - Kaolack 95/98 CNBA</i>
R14	<i>Etude de l'influence de la matiere organique sur la croissance des arbres et le rendement des cultures dans le centre du Bassin Arachidier (Bambey) Bambey 95/98 SBA</i>
R15	<i>Etude comparee de l'adoption des technologies de gestion des sols dans les nzieres de mangroves de Casamance et les penmetres irrigues de la Vallee de l'Anambe 95/98 BMC</i>

1997/98	
R16	<i>Inventaire des Technologies basees sur la gestion des ressources naturelles et utilisees en Moyenne Casamance 97/98 BMC</i>
R17	<i>Mise au point de techniques accelerees de compostage- 97/98 BMC</i>
R18	<i>Formation et Assistance Technique aux groupements de producteurs de semences des regions de Ziguinchor centre Nord Bassin Arachidier et SOHC 97/98 CNBA</i>
R19	<i>Gestion et conservation des ressources phylogenetiques et de la biodiversite - SBA - 97/98 SBA</i>
R20	<i>Etudes de techniques de recuperation des sols salés 97/98 SBA</i>
R21	<i>Influence des conditions hydriques et du travail du sol sur les effets ameliorateurs des amendements (organiques et inorganiques) - 97/98 SBA</i>
R22	<i>Amelioration du taun Ndama par le schéma genetique a Noyau Ouvert (SAGNO) 97/98 SOHC</i>
R23	<i>Détermination de la periode de semis et de la densité de peuplement des légumineuses fourrageres annuelles en association avec le maïs in "NRBAR R07" 97/98 - SOHC</i>
R24	<i>Valonsation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone subhumide du Senegal - 97/98 SOHC</i>
R25	<i>Etude de l'adaptabilite des varietes de maïs dans le Sud Bassin Arachidier - 97/98 SBA</i>
R26	<i>Contribution des micro-organismes (rhizobiums et champignons cellulolytiques) a l'amelioration de la fertilité des sols - 97/98 URA/PV</i>
R27	<i>Etudes des methodes d'exploitation des ligneux en zone perurbaine influence sur la qualite du fourrage et la survie des peuplements - 97/98 URA/PA</i>

TABLE Ib 2 SUBVENTIONS AUX CHERCHEURS DE L'ISRA / R (page 1-12)

R01 Etude sur l'utilisation agricole des residus de poisson fume comme amendement organique des sols du Sénégal (Mbour, Fatick, 93/94)

(i) Etude des taux et modes d'application des residus sur les production de mil. Les productions de mil (variété Souna 3) ne sont pas significativement différentes pour le mode d'application de 4 t/ha de résidus en surface (1600 kg/ha), en bandes (1800 kg/ha) ou incorpore (1800 kg/ha) Les mêmes tendances ont été constatées pour les productions de maïs (CP 75) en surface (2400 kg/ha), en bandes (2500 kg/ha) ou incorpore (2700 kg/ha)

TECHNOLOGIE VALIDEE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

R02 Etude de l'impact de la recherche le cas des Unites Experimentales de Thyse-Kaymor-Sonkorong et Koumbidia (Kaolack)

(i) Evaluation des technologies Les paysans connaissent l'existence de technologies existantes ou nouvelles dans la zone d'étude contrôle de l'érosion, cultures en pentes, cultures suivant les courbes de niveau, haies vives, reforestation l'objectif était de passer en revue les technologies les plus aptes à maintenir la fertilité du sol et le niveau de production des variétés locales et améliorées de mil, maïs, arachide, niébe et sorgho L'étude a montré des problèmes techniques et socio-économiques dans l'adoption des technologies (argent, travail, connaissance technique) Les plantations suivant les courbes de niveau et les haies vives sont les techniques les plus appréciées par les paysans

R03 Influence des itinéraires techniques sur la conservation de sols de plateau en milieu paysan (basse Casamance, Ziguinchor) développement de technologies à faible coût pour les productions agricoles

(i) Evaluation de méthodes de conservation de la fertilité des sols et augmentation des productions dans les systèmes paysans traditionnels Les différentes méthodes testées (préparation du sol par billon perpendiculaire ou parallèle à la pente, culture en couloir avec *Gliricidia sepium* et *Leucaena leucocephala*, culture suivant les courbes de niveau avec *Vertivera nigriflora*) n'ont pas d'influence sur la production de mil Cependant, *Leucaena* produit plus de biomasse que *Gliricidia*, les deux espèces étant espacées de 4 m entre les rangs et de 1 m dans les rangs Les productions en billon parallèle à la pente sont inférieures (1,66 t/ha) au labour perpendiculaire (2,33 t/ha) La préparation mécanique du sol avec ou sans enfouissement de *Gliricidia* donne des productions supérieures à 2 t/ha Pour l'association mil/maïs, il n'y a pas de différences significatives pour la production entre le billon parallèle (3,33 t/ha) et le billon perpendiculaire (3,33 t/ha) La préparation mécanique avec ou sans *Vertivera* donne des productions de 3,5 et 3,0 t/ha respectivement

TECHNOLOGIE DEVELOPPEE

Table Ib 2 page 1

R04 Valorisation du potentiel pastoral pour le développement des systèmes céréaliers performants et viables en zone sub-humide du Sénégal (Sénégal Oriental/Haute Casamance) influence de différents types de fumier (de parcours ouverts, d'étable, 10 t/ha de fumier d'étable) sur les productions du maïs et du mil

(i) Comparaison du fumier d'étable (pratique paysanne et 10 t/ha) et du fumier de plein champ sur les productions du mil et maïs local. Les productions de maïs et de mil avec la pratique paysanne sont comparables à celles après application de 10 t/ha de fumier d'étable. Pour le maïs, les productions sont de 1645 kg/ha pour le fumier de plein champ, de 1785 kg/ha pour le fumier d'étable (pratique paysanne) et 1680 kg/ha pour le fumier d'étable (10 t/ha) à Sare Samboundiang. À Ndangane, les productions sont plus importantes et sont respectivement de 2110, 2276 et 2253 kg/ha. Les productions de mil ne sont pas significativement différentes suivant les traitements.

TECHNOLOGIE DÉVELOPPÉE

R05 Effets des techniques culturales sur la variabilité des rendements du sorgho pluvial et sur son effet allélopathique (Kaolack et Diourbel) étude des systèmes de culture basés sur le sorgho

(i) Évaluation de la production du sorgho en fonction de la date de semis, de la densité de semis, de la durée de la jachère et des facteurs climatiques et pédologiques. La durée de la jachère est le facteur le plus important pour la production du sorgho. Une jachère de 4 à 5 ans augmente les productions avec 1200 à 2100 kg/ha contre 325 à 900 kg/ha après une jachère de 1 à 2 ans. L'importance et la régularité des pluies influencent positivement les productions tandis que la sécheresse et le faible niveau de fertilité des sols diminuent les productions. La date de semis avant la deuxième semaine de juillet et une densité faible à moyenne sont des facteurs avantageux.

TECHNOLOGIE DÉVELOPPÉE

R06 Amélioration des pâturages naturels des zones d'élevage du Sénégal par utilisation de phosphates naturels (Kolda, Louga)

(i) Restauration des champs par le phosphate naturel. La revegetalisation des champs a été étudiée après six niveaux d'application de phosphate naturel (0, 100, 200, 300, 400 et 500 kg/ha) de Taïba et Thies. La végétation dominante est *Z. glochidiata*, *S. gracilis*, et *A. mutabilis* à Doli. À Kolda, *P. walense*, *V. racemosus* et *A. pseudapricus* sont les espèces communes. Le phosphate n'augmente pas la biomasse des espèces dans les deux sites. Toutefois, le phosphate naturel à 400 kg/ha P_2O_5 augmente la teneur en P du fourrage.

TECHNOLOGIE DÉVELOPPÉE

R07 Valorisation du potentiel des légumineuses fourragères en vue de l'amélioration des productions céréalières et animales en zone sub-humide (Kolda)

(i) Amélioration des systèmes de production mixtes (maïs/légumineuses fourragères). Cette activité menée dans le village de Ndangane, visait à évaluer l'effet des associations maïs-légumineuses fourragères annuelles sur l'évolution de la fertilité des sols, les productions de grains de maïs et de fourrages de ces associations et à identifier la meilleure association. Les quatre (4) traitements étudiés sont le maïs variété Jaune de Bambey (JDB) en culture pure et les associations (en dérobée) JDB-nièbe variété 58-74, JDB-nièbe variété 59-12 et JDB-dolique. Concernant les paramètres utilisés pour le suivi de l'évolution de la fertilité du sol, on observe une tendance significative à la baisse des moyennes des paramètres de carbone total, d'azote total et de phosphore total et cela pour tous les traitements alors que le rapport C/N a montré une augmentation significative. Pour le phosphore assimilable aucune hausse ou baisse significative n'a été

Table Ib 2 page 2

observee pour l'ensemble des traitements Pour la production de grains de maïs, aucune augmentation ou chute des rendements moyens n'a été observée pour la culture en dérobée par rapport à la culture pure de maïs Pour la production de fourrage, les associations maïs/niebe 58-74 et 59-12 ont donné des rendements de 9,45 et 7,451 t ms/ha respectivement en 2^{ème} année supérieur à la culture pure et à l'association maïs/dolique Sur la base des résultats agronomiques actuellement disponibles, l'association maïs-niebe variété 58-74 est la mieux indiquée pour une production mixte de grains de maïs et de fourrage

TECHNOLOGIE VALIDÉE TECHNIQUEMENT

R08 Influence de quelques espèces ligneuses sur le redressement du statut organique et de la fertilité de vieux champs sur sol ferrallitique (rouge) en Casamance (Ziguinchor)

(i) Démonstration en milieu paysan de la technologie agroforestière de la culture en couloir Après une revue des données bibliographiques et cartographiques des sols de plateau, un diagnostic participatif pour mieux cerner les contraintes du milieu et une caractérisation pédologique et écologique des parcelles expérimentales, la technologie a été testée et suivie à Djimande 1, Djimande 2 et Soutou avec des espèces ligneuses (*Leucaena leucocephala*, *Gliricidia sepium*, *Acacia holosericea*, *Cassia siamea*) Les paramètres dendrométriques des arbres ont été mesurés ainsi que la biomasse produite Les rendements des cultures (mil ou arachide) ont été évalués de même que la compétition entre les lignes d'arbres et les lignes de cultures adjacentes Pour les arbres, seul *Cassia siamea* a montré une bonne croissance en hauteur (2,90 m en moyenne) et un taux de survie égal à 95% dans la parcelle de Djimande1 contre 90% à Soutou et 66% dans la parcelle de Djimande2 La production de biomasse est très élevée *Gliricidia sepium* a bien rejeté après coupe mais au moment des cultures, les arbres avaient perdu leurs feuilles et la compétition avec les cultures adjacentes était faible *Acacia holosericea* n'a pas bien répondu à la coupe Enfin, *Leucaena leucocephala* a produit très peu de biomasse en saison sèche à cause d'un broutage excessif Pour résoudre les problèmes liés à la divagation du bétail, des haies vives défensives de *Mesoneurum benthamianum* ont été installées Après 3 mois le taux de survie était de 94% L'effet des haies sur les lignes adjacentes d'arachide est différent d'une espèce ligneuse à l'autre et est hautement significatif au seuil de 5% L'effet de *Cassia siamea* sur la culture est remarquable alors que *Gliricidia* et *Leucaena* semblent améliorer les rendements des cultures adjacentes Après deux visites organisées, la formation de 6 paysans leaders et la participation de 50 personnes à la mise en place de la technologie, les paysans ont montré des réserves sur l'enfouissement des feuilles favorisant le développement des termites La coupe devrait être réalisée en mai pour permettre à la biomasse de sécher pendant un mois et d'éliminer les brindilles des feuilles

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

Table Ib 2 page 3

R09 Evaluation socio-économique des projets de recherches en GRN sous financement NRBAR (95/98)

(i) *Etudes d'impact.* Cinq (5) projets de recherche collaborative ISRA - NRBAR - ONG qui ont tenté de valoriser en milieu paysan des technologies mises au point par la recherche (semences améliorées, compost/fumier, associations culturales, haies vives défensives, embouche, parcs améliorés) ont été évalués socio-économiquement pour leurs impacts sur les ménages et groupements ruraux. Les projets collaboratifs ont eu pour la plupart des impacts considérables tant sur les bilans céréaliers que sur les revenus des ménages ruraux et leurs groupements. Cependant, les niveaux d'adoption sont souvent faibles du fait de plusieurs contraintes. La démarche démonstrative utilisée par les projets a permis de convaincre les ménages et groupements ruraux, utilisateurs ou non des technologies de l'intérêt de celles-ci. Pour consolider les impacts des projets et amener les ménages ruraux à valoriser davantage les technologies, il conviendrait donc de lever les contraintes identifiées. Pour ce faire, les futurs projets devront contribuer à une meilleure valorisation des technologies par les ménages ruraux et une meilleure organisation des projets de recherche/développement. En matière de perspectives de recherche/développement quatre axes ont pu être dégagés :

- Large diffusion des haies vives puisque cette technologie présente de bonnes perspectives en termes d'adoption et d'impacts,
 - Former les paysans sur les techniques de gestion du potentiel ligneux : intensité et fréquence des tailles,
 - Faire une recherche approfondie sur l'association arbres et cultures maraîchères pour élucider la question relative à l'effet fertilisant de certaines espèces en l'occurrence le *Leucaena leucocephala*, effet nié par certains paysans,
 - Recherche sur la lutte biologique contre les termites qui provoquent une grande mortalité des plants.
- Une large diffusion des documents produits serait de nature à permettre de mettre à la disposition des décideurs publics et privés une large gamme d'informations micro-économiques qui constituent une bonne source d'inspiration pour la conception de futurs projets et pour l'élaboration de politiques agricoles performantes.

R10 Effet d'une stabulation améliorée des bovins sur leur performances pondérales et sur la gestion de la fertilité des sols dans le centre du bassin arachidier (Fatick)

(i) *Intégration agriculture/élevage en milieu paysan.* Pour une durée d'embouche de 72 à 90 jours, une augmentation de poids de 49,8 kg à 74,7 kg a été notée. Cette variation tient compte de l'alimentation et de la catégorie des animaux. Les performances économiques ont été relevées avec un taux de rentabilité des opérations variant entre 7,65 et 47% selon les animaux. Des stratégies d'utilisation des ressources alimentaires du bétail au sein de l'exploitation ont été proposées. Des tests d'amélioration de la qualité nutritive des fourrages grossiers par apport d'urée (foin de brousse et pailles de céréales) ont été effectués (augmentation de 55,7% du niveau d'ingestion de paille, la consommation passant de 2,5 kg/j pour le foin non traité à 5,65 kg/j/UBT pour le foin traité). Chez les animaux qui ont bénéficié des recommandations alimentaires formulées (supplémentation au tourteau d'arachide), le gain moyen quotidien (GMQ) est passé de 387 g à 788 g soit une efficacité zootechnique de 51%. Le taux de rentabilité de l'embouche chez les animaux test a varié entre 9 et 55% et est plus élevé chez les animaux qui présentent un embonpoint au départ (faible chez les animaux dont la durée d'embouche est longue soit 120 j, et dont l'alimentation de base est le foin de brousse). Les mâles valorisent mieux les aliments avec des GMQ plus élevés de 920 g/j contre 596 g/j pour les femelles dans les lots test. Du point de vue des revenus, l'embouche a généré 558 F CFA/j de travail net en moyenne dans le lot test contre 282 F CFA pour le lot témoin. La rentabilité des opérations d'embouche dépend non seulement des aspects techniques (choix des animaux au départ, alimentation et durée d'embouche) mais aussi des aspects économiques liés en grande partie aux prix d'achat et de vente.

Table Ib 2 page 4

des animaux (structure des marches, periode de vente, acheteur) Concernant la production de matieres organiques dans les exploitations suivies, l'apport de litiere a ete effectue avec des quantites allant de 7 a 20 kg sous les animaux par etable chaque semaine en fonction des paysans et des disponibilites en pailles (tiges de paille de mil fragmentee) Les quantites de matieres organiques recueillies dans les fosses arrosees avec 1 a 2 bassines d'eau tous les 3 a 4 jours) ont fortement varie selon les exploitations Elles varient entre 3,7 et 11,35 kg de matieres brutes par jour et par UBT Pour ce qui est de la qualite du fumier produit, les teneurs en azote et en elements mineraux (potassium et calcium) sont plus elevees que ceux obtenus pour la poudrette traditionnelle

TECHNOLOGIE VALIDEE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

R11 Etude de l'efficacite du neem dans la protection et la conservation des sols contre l'infestation des nématodes phytoparasites, ravageurs des cultures maraicheres

(i) *Evaluation d'une technologie de lutte biologique contre les nématodes* L'efficacite du Neem dans la protection naturelle et la conservation des sols contre l'infestation des nematodes a ete etudiee en milieu paysan (zone de Ndoiyene a Mbour) L'objectif majeur etait de lutter biologiquement contre le *Meloidogyne*, nematode phytophage qui cause des pertes de recolte evaluees entre 25 et 65% A cet effet, l'action nematocide du Neem a ete teste (8 traitements) sur la culture de tomate (variete *Karakoli*) L'evaluation de la densite des populations de nematodes au niveau des racines de tomates montre que l'efficacite de la poudre de neem, même si elle reste inferieure a la protection obtenue avec le Cadusaphos (nematocide chimique couramment utilise), est bonne a partir de 200 g/m²

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

R12 Inventaire des technologies basées sur la gestion des ressources naturelles et utilisees dans la production agricole en basse Casamance

(i) *Etudes d'impact.* En basse Casamance (region de Ziguinchor), des enquetes ont ete realisees en milieu paysan dans des villages qui ont ete des sites de demonstration de technologies La plupart des technologies de gestion des ressources naturelles utilisees dans la production agricole, au nombre de 231, concerne la gestion des cultures Elles sont au nombre de cent dix huit (118) soit 51% du total, dont 44% sont constituees par le materiel vegetal Les varietes de riz sont au nombre de vingt huit (28) Elles representent le gros lot du materiel vegetal (54%) L'accent doit être mis sur le transfert des varietes deja existantes et tres peu diffusees, mais egalement sur la diversification par la selection et l'amelioration de nouvelles especes Les recherches sur les technologies de gestion des sols (27) doivent egalement se poursuivre pour consolider et ameliorer les acquis La fumure minerale est faiblement utilisee par les producteurs (doses en dessous des recommandations de la recherche) Des efforts doivent être faits pour relever les taux d'adoption des technologies de gestion des aménagements hydro-agricoles (22) et des ressources forestieres (22) qui sont, en general, faibles Seulement dix sept (17) technologies de gestion des ressources animales utilisees dans la production agricole ont ete recensees Des efforts doivent être faits pour accroître leur nombre et relever leur taux d'adoption tres faible Les technologies de gestion des ressources halieutiques (25) ont, en general, des taux moyens d'adoption Neanmoins, les acquis doivent être preserves et ameliores La majorite des technologies introduites dans la region proviennent des institutions de recherche ISRA, 56%) et des structures d'encadrement (projet de developpement, services techniques traditionnels, ONGs et OP pour 28%) Les technologies d'origine locale (10%) et celles introduites par les centres de formation (4%) et les pêcheurs migrants (2%) sont egalement presentes dans la zone Pour introduire les technologies en milieu reel, differents procedes ont ete utilises parmi lesquels les essais de demonstration (57%), les suivis de l'approche participative (12%) et du partenariat (9%) Le contact individuel est le moins utilise avec 3% de l'effectif

Table Ib 2 page 5

R13 Identification de technologies de la culture de mil/niébé en zone humide (Tambacounda, Kaolack) contrôle des insectes ravageurs du niébé

(i) *Evaluation variétale.* Dix variétés de niébé ont été testées avec 4 niveaux d'application d'insecticide et quatre dates de semis. La variété Baye Ngane avec 2 applications de DECIS (1,5 kg matière active/ha) par saison a été recommandée.

TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

R14 Etude de l'influence de la matière organique sur la croissance des arbres et le rendement des cultures dans le centre du bassin arachidier (Bambey)

(i) *Itinéraire technique.* L'influence de la matière organique sur la croissance de *Zizyphus mauritiana* et les rendements des cultures a été étudiée en station et en milieu paysan. Le suivi agronomique et sylvicole de l'expérimentation a permis d'obtenir quelques résultats préliminaires après cinq (5) mois. Sur les variables de croissance de l'arbre (hauteur, diamètre, taux de survie, nombre de brins latéraux), l'épandage superficiel de fumier sur la parcelle élémentaire (2 t/ha) semble être le meilleur traitement par rapport au témoin, à l'incorporation de fumier dans le trou de plantation et au traitement mixte (incorporation et épandage de fumier). Concernant la culture associée (mil IBV 8402), la production a été meilleure à Ndimb et à Bambey pour les parcelles élémentaires ayant été soumises au traitement mixte suivi de l'épandage superficiel de fumier et du traitement incorporation de fumier dans le trou recevant l'arbre.

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

R15 Etude comparée de l'adoption des technologies de gestion sols dans les rizières de mangroves de Casamance et les périmètres irrigués de la vallée de l'Anambé

(i) *Identification des déterminants de l'adoption des technologies de gestion de la fertilité dans les rizières.* Les enquêtes réalisées pour comparer des déterminants de l'adoption des technologies de gestion de la fertilité des rizières (variétés améliorées, fertilisation, techniques culturales, protection des cultures) en Basse Casamance et dans le bassin de l'Anambé ont montré qu'en fonction du type de technologies, les niveaux d'adoption sont très différents. Ces taux sont fonction de plusieurs facteurs liés à l'environnement socio-économique dans lequel évoluent les producteurs, mais également de la nature de l'environnement technique (caractéristiques de la technologie, l'état de la recherche, la qualité et l'efficacité du système de transfert technologique, ...). L'analyse descriptive n'a pas permis de cerner les corrélations fonctionnelles entre les facteurs déterminants, ni les décisions d'adopter ou de rejeter une technologie. Des analyses plus approfondies seront nécessaires et serviront à améliorer les efforts de recherche pour mieux cibler les utilisateurs des technologies, aussi, elles permettront de mieux cerner les déterminants de cette adoption de manière à dégager certaines recommandations susceptibles d'améliorer le processus de diffusion de ces technologies.

R16 Inventaire des technologies basées sur la gestion des ressources naturelles et utilisées en moyenne Casamance

(i) *Etudes d'impact.* En moyenne Casamance, des enquêtes ont été réalisées dans les structures de recherche et de développement. La plupart des technologies de gestion des ressources naturelles utilisées dans la production agricole, au nombre de 124, concerne la gestion des cultures. Elles sont au nombre de soixante-dix-huit (78) soit 63% du total. Le matériel végétal représente le plus grand nombre des technologies de gestion des cultures. Quinze (15) technologies de gestion des sols ont été répertoriées soit 12% du total. Pour le reste, neuf (9) technologies de gestion des aménagements hydro-agricoles soit 7%, 8 des ressources forestières (6%), 12 technologies de gestion des ressources animales (10%) et 2 de gestion des ressources

Table Ib 2 page 6

halieutiques (2%) ont été inventoriées. La majorité des technologies introduites dans la région proviennent des ONGs et des OP (45%), des projets de développement (33%), de la recherche (7%), des pratiques locales (7%), des centres de formation (3%), des services traditionnels (3%), des organismes privés (2%). Pour introduire les technologies en milieu réel, différents procédés ont été utilisés par les structures de développement parmi lesquels les réunions de sensibilisation (37%), les séances de formation (27%), les essais de démonstration (25%) et les séminaires (11%). Des enquêtes au niveau des producteurs sont nécessaires pour finaliser cette étude.

R17 Mise au point de techniques accélérées de compostage

(i) *Technologie du compostage accélérée par le champignon *Trichoderma harzianum** Il s'agissait d'accélérer la décomposition de la matière végétale et par conséquent le processus de maturation grâce à l'utilisation d'un champignon cellulolytique du genre *Trichoderma*. Un inoculum a été préparé par multiplication de la souche de champignon dans de la paille stérilisée. Ce substrat a été incorporé à la paille de riz hachée à composter dans des caissons (couche par couche). Le sommet du caisson est recouvert par une couche de fumier. Une réduction importante du volume (1/4) de la paille des caissons a été notée durant les 4 premières semaines. Au-delà de cette période, le champignon est resté inactif. Une seconde expérimentation a été effectuée en tas à même le sol avec la paille, une dose plus importante d'inoculum, un recouvrement plus hermétique et un arrosage plus fréquent. La décomposition a été meilleure et beaucoup plus rapide avec un produit final plus évolué et une teneur en eau jugée excessive.

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

Table Ib 2 page 7

R18. Formation et assistance technique aux groupements de producteurs de semences des régions de Ziguinchor, centre nord bassin arachidier et Senegal oriental/haute Casamance

(i) *Homologation de 10 variétés de riz.* Des essais de démonstrations et des fiches d'identité de 10 variétés améliorées de riz ont été réalisés afin de relancer le processus d'adoption à travers le circuit officiel (processus d'homologation) Ces variétés sont DJ 8-341 et DJ 11-509 en riziculture pluviale stricte, Tox 728-1 en riziculture pluviale de nappe, ITA 123, BG 90-2, BW 248-1 et BR 51-46-5 en riziculture irriguée et de bas-fond, WAR 1, WAR 77-3-2-2 et WAR 81-2-1-3-2 en riziculture de mangrove
TECHNOLOGIE VALIDÉE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

(ii) *Production de semences* Afin de mettre en place la filière et de maintenir l'identité variétale des nouvelles variétés en cours d'homologation, un atelier de formation sur la technologie de production semencière a été organisé à Velingara regroupant les principaux acteurs de la production des semences des régions de Kolda et de Ziguinchor Un manuel de formation sur les normes et les techniques de production de semences de riz (cas de la zone sud du Sénégal) a été réalisé et édité Il se décompose en 6 modules (1) Types de riziculture en Casamance et contraintes, (2) Morphologie et croissance du riz, (3) Sélection et amélioration variétale, (4) Programme semencier, (5) Production, (6) Réglementation et contrôle officiel Des annexes renfermant notamment les fiches d'identité des variétés validées viennent compléter le manuel

R19 Gestion et conservation des ressources phylogénétiques et de la biodiversité (SBA)

(i) *Inventaire du patrimoine floristique.* Il s'agissait d'asseoir les bases d'une gestion durable des ressources phylogénétiques s'appuyant sur une diversité végétale en vue de satisfaire les besoins des producteurs La strate herbacée a été inventoriée sur sept (7) sites avec un total de trente cinq (35) relevés Les résultats montrent la faiblesse de la diversité floristique Les espèces présentes ne dépassent pas la dizaine Les plus courantes sont *Hibiscus asper*, *Zornia glochidiata*, *Chenfeldia gracilis* et *Cassia tora* La diversité des ligneux est plus grande Plus d'une cinquantaine d'espèces locales ou exotiques a été inventoriée sur le terrain Il a été enregistré une très forte régénération naturelle chez *Melaleuca leucodendron*, *Eucalyptus camaldulensis*, *Ptilostigma reticulatum*, *Combretum glutinosum* Par contre, *Acacia trachycarpa* et *Prosopis juliflora* ont enregistré une mortalité importante Suite à cet inventaire, une orientation stratégique de sauvegarde du patrimoine naturel a été définie

R20 Etudes de techniques de récupération des sols salés (SBA)

L'étude de techniques de récupération des sols salés (physique et biologique) a été menée en milieu villageois après l'élaboration d'un plan de masse servant à déterminer l'emplacement des ouvrages

(i) *Technique de la diguette anti-sel.* Une formation des populations à cette technique des diguettes anti-sel a été réalisée et a précédé leur mise en place
TECHNOLOGIE TECHNIQUEMENT VALIDÉE

(ii) *Production en pépinière et plantation d'espèces herbacées et ligneuses* Le transport des plants, le piquetage, l'ouverture des potets et la mise en terre des plants ont fait l'objet d'une formation des paysans Après production de plants en pépinières à Ndiaffate, Ngane et Keur Omar, *Tamarix aphylla* var *erectus* et *Atriplex lentiformis* ont été plantés dans des parcelles aménagées au niveau des trois sites Après 8 mois, la croissance en hauteur (17 à 39 cm) et le taux de survie moyen (90 à 100%) ont montré un bon comportement de *Tamarix aphylla* à Ndiaffate, une faible croissance en hauteur et un taux de survie compris entre 4 et 91% à Ngane, une faible croissance en hauteur et un faible taux de survie à Keur Omar (entre 31 et 36%) Concernant *Atriplex lentiformis*, le stress hydrique a entraîné un taux de survie de 31% et un gain de

Table Ib 2 page 8

croissance de 39,16 cm a Ngane

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

(iii) Suivi du niveau de la nappe phréatique. Le suivi des indicateurs d'état de salinité, d'acidité et de la profondeur de la nappe a permis de recueillir des informations importants pour la compréhension du phénomène de la remontée de sel

R21 Influence des conditions hydriques et du travail du sol sur les effets améliorateurs des amendements (organiques et inorganiques) (SBA)

A travers l'utilisation des ressources naturelles disponibles dans le sud du bassin arachidier, l'objectif de cette étude était de corriger durablement les carences minérales des sols tout en augmentant l'efficacité d'utilisation de l'eau par les cultures

(i) Etude de l'interaction eau/fertilité dans le cadre d'un amendement organo-minéral à l'aide du travail du sol Cette étude a été réalisée dans la zone maïsicole (rotation mil/arachide) à Nioro. Les rendements sont faibles quel que soit le traitement et varient de 960 à 1 180 kg/ha pour les pailles et de 710 à 1 880 kg/ha pour les grains. Les rendements pour le traitement labour et apport d'engrais (LE) sont significativement inférieurs à ceux des trois (3) autres traitements qui ont des effets similaires (LE + apport de Phosphogypse/PG, LE + apport de fumier, LE + PG + fumier). Il apparaît que la fumure vulgarisée n'est pas suffisante pour obtenir de bons rendements. De plus, l'effet de l'apport complémentaire de PG est comparable à celui du fumier

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

R22 Amélioration du taurin Ndama par le schéma d'Amélioration Génétique à Noyau Ouvert (SAGNO)

L'amélioration de la production de lait, de viande et des performances de reproduction des troupeaux villageois par la diffusion du progrès génétique acquis en station a été recherchée (identification des meilleures vaches en milieu villageois avec 22 villages retenus et 44 éleveurs associés au programme, sélection, suivi sanitaire et mise en reproduction par insémination). Il s'agissait d'obtenir des taurillons issus des accouplements entre de bons géniteurs et les meilleures laitières, de tester les taurillons du point de vue andrologique avant leur mise en service et d'obtenir un grand nombre de femelles gravides après l'organisation de la reproduction. Les résultats ont porté sur la reproduction, l'évolution pondérale et l'étude endocrinologique

TECHNOLOGIE TECHNIQUEMENT VALIDEE

Table Ib 2 page 9

(i) **Mise en reproduction en station.** Sur les cinquante femelles selectionnees mises en reproduction, trente cinq ont mis bas (70%) reparties en 18 velles (51%) et 17 veaux (49 %) Le poids moyen a la naissance de l'ensemble des animaux est de 14,5 kg, avec respectivement 14,4 kg pour les velles et 14,6 kg pour les veaux Les mises bas sont reparties sur 11 mois de l'annee Il n'y a pas eu de naissance en fevrier Quatre vingt six pour cent (86%) des naissances en station ont eu lieu entre les mois d'avril et d'octobre Parmi les naissances, 7 morts ont ete enregistrees (20%), reparties en 3 mâles (43 %) et 4 femelles (57 %) Les reformes se sont elevees a 16 têtes sur 164 soit un taux de reformes de 10% reparties en 9 mâles (56% des reformes) et en 7 femelles (44%) Concernant l'etat physiologique et l'activite ovarienne, 78 femelles dont 22 genisses en âge de reproduction ont fait l'objet d'une etude Vingt neuf (29) femelles dont 10 genisses sont gravides soit un taux de conception de 37% Vingt neuf (29) femelles dont 5 genisses sont cyclees avec respectivement 22 cl (corps jaunes) et 4 F (follicules pour les multipares et 5 cl pour les genisses Vingt (20) femelles dont genisses ne presentaient aucune activite ovarienne (non cyclees) et 3 femelles etaient en periode *post partum*

(ii) **Evolution pondérale en fonction du sexe.** L'evolution ponderale de 130 têtes a ete suivie Le sexe et la periode ont des effets sur l'evolution ponderale des animaux En periode critique, entre fevrier et avril, caracterisee par la diminution, tant en quantite qu'en qualite, du disponible fourrager et l'elevation de la temperature, les animaux mâles realisent des gains de poids moyens superieurs aux femelles Pour le reste de l'annee, il n'y a pas de differences significatives entre les sexes et les classes d'âges

(iii) **Etude andrologique.** Trois (3) taurillons de SAGNO ont accepte le vagin artificiel et leur sperme a pu être recolte Le sperme du taureau adulte a egalement ete recolte Les principales caracteristiques des ejaculats sont superieurs chez le taureau Les volumes moyens produits par les taurillons au niveau sont analogues a ceux obtenus en Gambie et corroborent les normes fixees pour la race Ndama pour l'utilisation de l'insemination artificielle

R23 Détermination de la période de semis et de la densité de peuplement des légumineuses fourragères annuelles en associations avec le maïs in « NRBAR R07 » (SOHC)

Cette etude visait principalement a determiner a travers les rendements en grains de maïs et en fourrages la periode de semis et la densite de peuplement optimales des legumineuses fourrageres annuelles, le niebe variete 58-74 et la dolique en culture derobee avec le maïs variete JDB

(i) **Amélioration des systemes de production mixtes (maïs/légumineuses fourragères)** Les premiers resultats obtenus montrent que le semis du niebe variete 58-74 et de la dolique en culture derobee 15 jours apres celui du maïs conduit a des rendements moyens en grains de maïs satisfaisants (entre 1709 et 2676 kg/ha pour JDB/58-74 et entre 2542 et 3083 pour JDB/dolique) et a de bons rendements en fourrages (meilleur pour niebe 58-74 avec 9,72 t ms/ha que pour la dolique ou la periode de semis n'influence pas les rendements en fourrage compris entre 3,710 et 6,038 t ms/ha) dans les conditions de la zone (Senegal oriental) de l'etude Quant a la densite de peuplement, celle de 106 400 plants/ha de niebe variete 58-74 et de la dolique a raison de 2 plants par poquet a donne des rendements satisfaisants en grains de maïs et en fourrage mais aucune des densites testees ne peut être considerees comme meilleure et ce quelle que soit la legumineuse en derobee Pour resume, entre les 2 associations maïs-niebe 58-74 et maïs-dolique, c'est l'association maïs-niebe 58-74 qui a donne des rendements moyens globaux en grains de maïs et en fourrages les plus interessants en rapport avec les deux (2) traitements de 15 jours pour l'essai periode de semis et de 106 400 plants/ha pour l'essai densite de peuplement Ces resultats seront a confirmer par d'autres essais

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

Table Ib 2 page 10

R24 Valorisation du potentiel pastoral pour le développement des systèmes céréaliers performants et viables en zone sub-humide du Sénégal (SOHC)

(i) Stabulation bovine. Les impacts de la stabulation sur les performances biologiques des animaux, sur les rendements des cultures céréalières et sur l'amélioration des revenus paysans ont été étudiés. Il a été montré que les bovins en stabulation (en moyenne 110 jours) bénéficient de meilleures conditions de gestion que ceux conduits de manière extensive grâce à une amélioration de l'habitat, l'alimentation et la santé. Les pertes de poids généralement observées en saison sèche sont réduites. La production laitière est maintenue et améliorée permettant de fournir des protéines et générer des revenus additionnels pour les exploitations. La stabulation (412,6 litres par vache en 4 mois de stabulation). La mise en place d'un dispositif de collecte et de transformation du lait a permis de réaliser des analyses sur la qualité hygiénique et chimique du lait des animaux, sur sa commercialisation et sur les recettes qu'il génère (42,74 F CFA/litre de lait pasteurisé). Les unités de transformation du lait réalisent des bénéfices hors amortissement de l'ordre de 879 000 F CFA sur 10 mois avec un total de 20 582 litres de lait traités. Le bénéfice net tiré de la stabulation est 232 350 F CFA en moyenne (dépendant du nombre et de la catégorie des animaux) soit 33 193 F CFA en moyenne par animal. L'utilisation du fumier d'étable pour la fertilisation des cultures céréalières constitue une alternative à la fumure minérale et au fumier de parc souvent réduit à l'état de potasse. Le fumier d'étable permet d'améliorer la texture des sols et réduire les effets de l'érosion hydrique. Toutefois, au cours des années d'expérimentation, le parage s'est montré comme étant une bonne pratique de fertilisation des céréales (bons rendements en grains et en paille pour le maïs et le mil) dans un système continu de la même céréale sur la même parcelle. D'autres expérimentations sont nécessaires pour se prononcer clairement entre l'utilisation du parage ou de la technologie de la stabulation. Quoiqu'il en soit, il est apparu que la stabulation bovine en saison sèche constituait une technologie propice pour une gestion des ressources pédologiques, végétales et animales.

TECHNOLOGIE DEVELOPPEE

R25 Etude de l'adaptabilité des variétés de maïs dans le sud du bassin arachidier

(i) Evaluation variétale. Huit (8) variétés précoces à intermédiaires ont été testées dans douze (12) villages. Les rendements obtenus ont été faibles (de 1100 à plus de 5000 t/ha) et variables en fonction de la nature du sol. Les rendements moyens les plus élevés ont été obtenus à Daga Ndeup et à Keur Samba Gueye (1700 et 1600/ha). Les variétés les plus performantes sont SW1 C9 (2200 kg/ha) et Synthetic C (2100 kg/ha), Babungo (1) 8334 et Accross Pool 16DR (1700 kg/ha) et Safita 2 (1600 kg/ha). L'étude de la stabilité du rendement a révélé la stabilité et l'adaptation à des conditions défavorables de Synthetic C et Poza Rica 7931. Babungo (1) 8334 et SW1 C9 exigent des conditions favorables (intensification).

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

Table Ib 2 page 11

R26 Contribution des micro-organismes (rhizobiums et champignons cellulolytiques) à l'amélioration de la fertilité des sols

De la matière végétale provenant de deux (2) arbres fixateurs d'azote (*Gliricidia sepium* et *Leucaena leucocephala*) et de la paille ont été soumises à l'action du champignon cellulolytique, *Trichoderma harzianum*. Les teneurs en azote et en carbone ont été dosées à une fréquence hebdomadaire. Cinq (5) semaines après inoculation, une diminution très rapide de la teneur en carbone dans la matière végétale provenant de *G. sepium* (de 34 à 26%) a été constatée alors qu'elle est restée relativement constante pour *L. leucocephala* (37%) et la paille (37%). La teneur en azote est restée constante pour les trois (3) substrats (2,9, 1,5 et 0,9% respectivement). Le rapport C/N a été significativement supérieur pour la matière végétale provenant de la paille (25) comparativement à celui de la matière végétale provenant des arbres fixateurs d'azote (12 pour *G. sepium* et 10 pour *L. leucocephala*). Il y a eu un effet accélérateur de *T. harzianum* sur la décomposition de la matière végétale pour les arbres fixateurs d'azote.

TECHNOLOGIE DÉVELOPPÉE

R27 Étude des méthodes d'exploitation des ligneux en zone périurbaine influence sur la qualité du fourrage et la survie des peuplements

Dans le but d'exploiter les légumineuses arbustives au moment où leur concentration en nutriments digestibles est la plus élevée, différentes méthodes de conservation ont été testées dans la zone des Niayes et le nord du bassin arachidier (Bambey) sur les espèces suivantes *Leucaena leucocephala*, *Sesbania rostrata*, *Gliricidia sepium*, et *Adansonia digitata*. Les traitements appliqués sont le fourrage frais lyophilisé, le séchage au soleil et à l'ombre, le séchage à l'étuve à 40, 60 et 80°C puis l'ensilage. Les critères d'appréciation de l'effet des différents traitements sur la qualité du fourrage sont la composition chimique (matières azotées totales, composants pariétaux et en ce qui concerne l'ensilage, le pH et l'azote ammoniacal), et la digestibilité *in vitro* des fourrages traités en comparaison avec le fourrage frais lyophilisé.

(i) **Technologie des conservations du fourrage.** Les résultats obtenus sur *L. leucocephala* montrent que les matières azotées totales ne varient pas quelle que soit la méthode de conservation utilisée. En revanche, les composants pariétaux (fibres) sont augmentés et la digestibilité est baissée sous l'effet de la chaleur et de l'ensilage. Le fauchage du *Leucaena* au stade de floraison permet de tirer le meilleur profit du fourrage. Le séchage au soleil ou à l'ombre n'a pas une influence négative sur la qualité de *Leucaena leucocephala*. Toutefois, le séchage au soleil peut entraîner des pertes en feuilles considérables. Ces résultats permettent de recommander l'application du séchage à l'ombre ou en grange pour préserver la qualité des feuilles de *Leucaena leucocephala*. L'ensilage et le séchage à l'ombre ont été introduits en milieu réel et appliqués sur *L. leucocephala* (Sebikotane) et *A. digitata* (Bambey).

TECHNOLOGIE TECHNIQUEMENT VALIDÉE

Table Ib 2 page 12

II SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM

II (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of support for ISRA's natural resources program, 35 activities based at the 4 regional research centers of the project intervention zone, has achieved its objectives of directly contributing to the development and validation of technologies, and of strengthening ISRA's overall natural resources management research program. Implementation was according to the guidelines set out in the NRBAR Grant Agreements. Despite the fact that funds were not released for this program until late-1996, it was possible to effectively implement a level of effort close to that originally planned.

The impact of this program on attainment of ISRA/NRBAR objectives has been substantial, particularly when events are considered in relation to complementary activities such as the short-term consultants, the NRBAR collaborative grants projects, and short-term training programs. Areas where impact is most obvious are the core natural resources programs of the 4 regional research centers of the project zone were sustained, in the absence of other major funding sources, priority natural resources research activities were implemented, leading to effective technologies being developed, validated and evaluated, collaborative research linkages were strengthened through 11 collaborative studies with NGOs and the University of Dakar, and through 12 other studies directly with farmers, and extensive training of technicians and farmers in new technologies. A particularly successful activity was the certification of 10 new rice varieties for the Casamance, and associated extensive farmer training in seed production techniques.

II (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that the natural resources support program should be allocated on the basis of a review of ISRA's core funding, on the availability of other donor funds, on priorities established for natural resources-based research in ISRA's workplan, and on progress in improving ISRA's financial and administrative management. Once established, the program would be jointly reviewed by ISRA and outside experts, on an annual basis. Funds would be disbursed directly from USAID based on a pre-determined and Mission-approved indirect cost rate, and the availability of ISRA's certified costs statements. This program was not implemented during the life of the Grant Agreement, as ISRA was unable to fulfill the pre-conditionality of achieving financial certification. When Agreement 685-0285 was replaced by Agreement 685-SO2 on 27 September, 1996, the financial pre-conditionality was removed, and it was agreed that more effort should be placed on the objectives of the development and validation of technologies, and on farmer and partenaire training in new technologies, rather than on ISRA's institutional development. The USAID/CID contract for assistance to ISRA in implementing NRBAR services was assigned the budget of \$1,000,000. An indirect cost study was commissioned (refer the Hannibal Muhtar short-term consultancy reports in August/September, 1996, and in March/April, 1998), and the results, with the agreement of USAID, were used in drafting the program budgets.

In order to respond to the needs of the new Grant Agreement, to the reduction in the period of implementation by 60%, and to the strengthened regional focus of the research program, the program was designed to group activities at the 4 ISRA research centers within the project zone. The program began in January, 1997, and ended in July, 1998. A formal procedure for selection of activities to be funded was developed with a protocol, as part of the 1997 workplan, and included a review of ISRA's core funding, availability of funds from other donors, and ISRA's current research priorities as expressed in the draft strategic plan. In view of the urgency of establishing activities, the 4 ISRA units concerned were asked to submit a consolidated program of activities for approval to the DS committee. After extensive negotiations and technical review of the proposals involving the CID Chief-of-Party, 35 activities were accepted. The maximum funding for any one agreement was set at \$250,000, for a total of \$1,000,000.

II (iii) ACTIVITIES

Each regional center developed a detailed proposal as part of the ISRA and NRBAR 1997 workplans. A consultant assisted the DS's monitoring and evaluation unit with the development of logical frameworks for the four targeted units. During implementation, numerous monitoring visits were made to activity sites by ISRA, CID and USAID staff. During the life of the program, 35 events were implemented at a total cost of approximately \$1,000,000. Only one annual review was undertaken, as the program was in operation for only one season, this review was comprehensive, included external reviewers, and was implemented as the final meeting of the DS's grants committee for NRBAR at Saly in June, 1998 (refer to the relevant short-term training event in Section Vc of this Chapter).

The 35 activities are detailed in the report of the June meeting of the DS's committee, and are outlined below in Tables II 1 (a list of the grants) and II 2 (the technical results). As many of these research and dissemination activities are scheduled to continue under other funding following project close-out, further information will become available in the future.

II. (iv) SYNTHESIS OF THE GRANTS TO SUPPORT ISRA'S NRM PROGRAM

The 8 activities implemented in the Lower and Middle Casamance (PAR1) resulted in improvements in research program management, 11 technologies validated, 3 technologies developed, progress made towards the validation of 3 other technologies, improvements in the regional GIS operations, a collaborative researcher/farmer diagnostic study which is being used as a basis for defining future research priorities, and a study of insect pests of fruit trees at farm level which will help to more precisely tailor research to farmers' needs.

The 7 activities implemented in the Center and North Peanut Basin (PAR2) resulted in improvements in research program management, 3 technologies validated, 7 technologies developed, progress made towards the validation of 2 other technologies, a collaborative researcher/farmer diagnostic study, on-farm diagnostic studies of plant parasites and of the use of horses in the Peanut Basin, an economics study showing that the live fences, fish residue and compost technologies have been validated on farms in Kaolack, and laboratory studies of the efficiency of vegetable biocides to control pests of cowpeas and peanuts.

The 7 activities implemented in the the Southern Peanut Basin (PAR3) resulted in improvements in research program management, 1 technology validated, 1 technology developed, progress made towards the validation of 1 other technology, a village institutional development study preparative to defining rules for community participation in the management of natural resources, a collaborative researcher/farmer diagnostic study, a base-line survey of a typical watershed resource, and an on-farm animal traction diagnostic study

The 13 activities implemented in the Eastern Senegal/Upper Casamance zone (PAR4) resulted in improvements in research program management at Tambacounda and Kolda, 7 rapid rural appraisal studies in specific areas, a synthesis of research on insect pests which are important in the cotton/cereals systems of Eastern Senegal, an evaluation of animal health programs in village cattle, more than 200 cultivars/varieties of millet, sorghum, maize and fonio were collected from farmers fields, and evaluated on-station, 10 technologies developed, and progress made towards the validation of 4 other animal production technologies

Technical implementation of these activities has generally been satisfactory, with generally adequate reporting by research teams. However, much remains to be done, in order to effectively analyse and report on the work already completed, in order to ensure the necessary impact on the population. Also, a number of final technical reports of this program have not yet been received by the DS, and much of this research needs to be continued, in order to obtain effective results over a longer experimental period. Although further work is planned, sources of funding are not yet assured.

TABLE II 1 LIST OF NATURAL RESOURCES RESEARCH SUPPORT ACTIVITIES

CODE	TITRE DE L'ACTIVITE	CHERCH. & PARTEN.
URR Basse et Moyenne Casamance - MBC		
PAR1- 1	<i>Gestion du Programme</i>	M KHOUMA
PAR1- 2	<i>Etude et mise au point de techniques de lutte appropriées contre les attaques de poisson sur le riz au niveau des vallées aménagées</i>	V NDIAYE
PAR1- 3	<i>Installation de collections d'arbres fruitiers et tests de variétés d'agrumes, de manguiers et de bananiers en milieu paysan</i>	D SIDIBÉ
PAR1- 4	<i>Caractérisation de l'entomofaune parasite des manguiers et agrumes en Casamance</i>	S DJIBA
PAR1- 5	<i>Amélioration des itinéraires techniques de la patate douce</i>	Y NIANG
PAR1- 6	<i>Approfondissement du diagnostic partagé</i>	M KHOUMA
PAR1- 7	<i>Mise en place d'un système d'information géographique</i>	M KHOUMA
PAR1- 8	<i>Mise en place d'une collection d'écotypes locaux de céréales et de variétés améliorées de riz Transfert en milieu paysan de matériel adapté</i>	A BEYE
URR Centre Nord Bassin Arachidier - CNBA		
PAR2- 1	<i>Gestion du Programme</i>	D SECK
PAR2- 2	<i>Diagnostic Participatif</i>	D SECK
PAR2- 3	<i>Etude diagnostique sur les modes de transferts et évaluation socio-économique des technologies sur la GRN</i>	Mb FAYE AHDIS&RODALE
PAR2- 4	<i>Diffusion de technologies en milieu paysan le compostage enrichi</i>	A BADIANE AHDIS&RODALE
PAR2- 5	<i>Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives défensives (validation et transfert)</i>	B NDOUR AHDIS&RODALE
PAR2- 6	<i>Etude des effets de mélange de phosphates naturels et de phosphogypse sur les sols et cultures (génération de technologies)</i>	M FALL AHDIS&RODALE
PAR2- 7	<i>Développement de méthodes alternatives de protection des récoltes vivrières et des semences contre les insectes (génération, validation et transfert)</i>	D SECK AHDIS&RODALE

CODE	TITRE DE L'ACTIVITE	CHERCH. & PARTEN
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URR Sud Bassin Arachidier - SBA

PAR3- 1	<i>Gestion du Programme</i>	D Y SARR
PAR3- 2	<i>Etude des possibilités de mise en valeur des bas-fonds du Sud Bassin Arachidier</i>	A NDIAYE avec UCAD
PAR3- 3	<i>Analyse de l'impact socio-économique des principales technologies agricoles</i>	A SENE
PAR3- 4	<i>Analyse institutionnelle et recherche de stratégie de gestion communautaire des ressources naturelles</i>	D SARR
PAR3- 5	<i>Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovations performantes</i>	F DIA
PAR3- 6	<i>Diagnostic plundisciplinaire du secteur agricole</i>	Man SENE
PAR3- 7	<i>Mise en place d'une base de données régionale</i>	Mod SENE

URR Sénégal Oriental Haute Casamance - SOHC

PAR4- 1	<i>Gestion du Programme</i>	D F MBAYE
PAR4- 2	<i>Synthese des travaux sur les insectes ravageurs des cultures céréalières et de rente</i>	D BADIANE
PAR4- 3	<i>Synthese sur les recherches sylvicoles de la zone</i>	A BODIAN
PAR4- 4	<i>Synthese des recherches sur les cultures fourrageres au Sénégal Oriental et en Casamance</i>	A DIATTA
PAR4- 5	<i>Exploitation et valonsation des donnees du CRZ sur la reproduction du taurin Ndama</i>	M A BA
PAR4- 6	<i>Synthese des études sur la pathologie animale des ruminants de la zone</i>	M T SECK
PAR4- 7	<i>Synthese des recherches en amélioration variétale de céréales</i>	A FOFANA
PAR4- 8	<i>Diagnostic plundisciplinaire et participatif des systemes de production Mbaye</i>	D F MBAYE
PAR4- 9	<i>Prospection sur les insectes ravageurs des cultures céréalières et de rente</i>	D BADIANE
PAR4-10	<i>Etude et amélioration des systemes de production et de la gestion des ressources naturelles Suivi des élevages bovins villageois</i>	M BA
PAR4-11	<i>Prospection et evaluation de variétés locales de ceréales (mil/mais/sorgho/ fonio)</i>	A FOFANA
PAR4-12	<i>Test de techniques de lutte contre l'érosion hydrique par l'utilisation des haies vives</i>	A BODIAN
PAR4-13	<i>Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du Taurin Ndama utilisé en monoboef et en paire</i>	M SECK

TABLE II 2 PROGRAMME D'APPUI À LA GRN / PAR (page 1-17)

Zone Basse et Moyenne Casamance (PAR 1)

PAR1-1 Gestion du Programme

Il s'agissait pour le chef du Centre de Recherches Agricoles de Djibelor de superviser les activités sur les plans scientifiques, administratifs et financiers et sur le plan de l'acquisition des équipements en liaison avec les personnels impliqués. Cette subvention n'a pas fait l'objet d'activités de recherche. Elle permettait un suivi régulier des activités du programme grâce à la transmission des rapports techniques et financiers trimestriels.

PAR1-2 Etude et mise au point de technique de lutte appropriées contre les attaques de poisson sur le riz au niveau des vallées aménagées

La mise au point de techniques (grillages, palissades, endiguement) de lutte contre les poissons ravageurs du riz a été réalisée au niveau de vallées aménagées en Basse et Moyenne Casamance à Samine Escalé, N'Gundir et Tomataba. Le dispositif pour empêcher la remontée des geniteurs a été très efficace. Les rendements les plus importants ont été obtenus dans la parcelle endiguée et ceci semble être lié à l'effet positif des endiguements secondaires sur la rétention de l'eau et le lessivage des sols.

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

PAR1-3 Installation de collections d'arbres fruitiers et tests de variétés d'agrumes, de manguiers et de bananiers en milieu paysan

La première phase de cette activité a consisté en la multiplication en pépinière des plants devant servir à l'installation des collections. Les plants non disponibles seront fournis par le CDH et la station de Ndiol. Les sites d'implantation et les schémas de plantation des collections ont ensuite été réalisés. Cinq sur huit sites ont été identifiés dans les quatre départements de la zone (1 site à Bignona, 2 à Sedhiou, 1 à Oussouye et 1 à Ziguinchor). Des milliers de plants fruitiers toutes espèces confondues ont été produits en pépinière à la station de Djibelor. Les principales espèces sont les manguiers, les agrumes, les papayers, les corrossoliers et les sapotilliers. Les plantations sont à réaliser.

TECHNOLOGIE DÉVELOPPÉE

PAR1-4. Caractérisation de l'entomofaune parasite des manguiers et agrumes en Casamance

(1) La caractérisation de l'entomofaune parasite des manguiers et agrumes a été réalisée en Casamance au niveau de 10 vergers répartis dans les départements de Bignona, Oussouye, Sedhiou et Ziguinchor. En ce qui concerne les manguiers, des pourritures de diverses origines, notamment dues à la mouche des fruits, ont été observées sur les fruits dans toutes les zones visitées. D'autres signes d'affections cryptogamiques, bactériennes ou d'origine entomologique ont été également observés sur feuilles, rameaux et tronc. Ainsi, il est noté de sérieux problèmes d'infestation des manguiers par une cochenille (non encore déterminée), en particulier sur les variétés améliorées, dans le village de Dâka Bantang. Cette infestation conduit le plus souvent à la mort progressive de l'arbre atteint. À Hamdani et à Faoune ce sont les termites, entre autres, qui posent des problèmes à l'implantation effective de vergers. Concernant les agrumes, tous les insectes ravageurs précédemment inventoriés ont été capturés et mis en collection, notamment des cochenilles, une mineuse des feuilles et des défoliateurs (*Papilio demodocus*). Dans le cas particulier d'un verger (celui de H Manga), les insectes ravageurs qui ont causé le plus de dégâts sont les lépidoptères de la famille des *Tortricidae* (*Characoma ferruginca* Hamps), les diptères de la famille des *Tephritidae* (*Ceratitus capitata*

Table II 2 page 1

Wied) et les vertebres rongeurs

PAR1-5 Amelioration des itinéraires techniques de la patate douce

(i) Evaluation varietale. Vingt et une varietes (collection CDH) ont ete comparees a deux varietes locales de la Basse (Mandina) et de la Moyenne (Fatato Koyo) Casamance La comparaison des composantes du rendement a permis de mettre en evidence un lot de 8 varietes considerees comme etant les varietes elite de la zone de Djibelor (Fanaye, Clone 65, Ndargu, Kaparan 4, Clone 19, 6/62 TIB, Clone 2 et Fatato Koyo) A Sefa malgre des conditions difficiles (sol et eau a pH trop eleve), les meilleures varietes ont ete identifiees (Fanaye, Ndargu, Fatato koyo, Louga 5 et Clone 4) Il faut noter que la patate douce est bien adaptee aux conditions de la zone

TECHNOLOGIE DEVELOPPEE

PAR1-6 Approfondissement du diagnostic partage

Cette activite a ete consacree au diagnostic de la zone basse et moyenne Casamance en termes de contraintes, de potentialites, de dynamiques de developpement local et regional pour les caracteristiques physiques et agro-climatiques, demographiques, socio-economiques et la gestion des ressources naturelles et du terroir L'objectif de cette activite etait d'ameliorer la caracterisation du milieu, d'approfondir la connaissance des systemes de productions vegetales (riz, mil, sorgho, mais, arachide, cultures maraicheres et fruitieres), animales (bovins, ovins et caprins, volailles, porcins, lapins, apiculture) et halieutiques (pêche fluvio-marine, fluviale, estuarienne et maritime, pisciculture) et forestieres (produits forestiers ligneux et non ligneux) Un autre objectif etait d'identifier les strategies adoptees par les paysans A partir des contraintes de production identifiees, le diagnostic a permis de definir des priorites, des objectifs de recherche traduits en themes et activites dans le cadre de la planification strategique de l'Institut (1998-2003) pour une meilleure vulgarisation et formation De fait, elle a largement oriente le programme de recherche pour 1997 Ce diagnostic a ete realise avec les agriculteurs proprietaires de vergers et de plantations visites Il a permis d'avoir une bonne comprehension des systemes d'exploitation Le diagnostic a permis aussi de prodiguer sur place des conseils aux agriculteurs pour une tenue de leurs exploitations Enfin, il a permis de faire des propositions et des recommandations concernant la maîtrise de l'eau, les cultures, les sols, l'elevage, la pêche, les forêts et l'appui institutionnel

Table II 2 page 2

PAR1-7 Mise en place d'un systeme d'information geographique

Le recensement et le tri des donnees disponibles a Djibelor sur la Basse et Moyenne Casamance a ete realise Une carte de la zone agro-ecologique avec limites des departements a ete digitalisee Les informations disponibles sur une base departementale ont ete saisies dans une base de donnees et concernent la population par departement, le nombre d'habitants au km², le nombre de menages ruraux, le nombre de têtes de betail, le nombre de betail par menage, la ration alimentaire *per capita*, la variabilite de la production cerealiere, la repartition ethnique dans la zone, le zonage agricole et la carte des parcelles de la nouvelle station de Djibelor La formation technique de tout le personnel chercheur et d'appui est indispensable
TECHNOLOGIE DEVELOPPEE

PAR1-8 Mise en place d'une collection d'écotypes locaux de céréales et de variétés améliorées de riz Transfert en milieu paysan de materiel adapté

(i) *Sélection et amélioration variétale du riz de mangrove.* Sur 13 varietes testees pour leurs bonnes performances de productivite et de resistance au stress, 11 ont montre un comportement satisfaisant Sur le plan organoleptique, la variete WAR 91-2-1-2 est interessante et a ete experimente avec succes en milieu paysan dans les parcelles de demonstration ISRA/DERBAC ou la qualite de son grain a ete positivement appreciee par les producteurs ce qui a entraîne son homologation en même temps que WAR 1 En deuxieme annee d'essai, les varietes BR 50-120-2, IR 21855, WAR 100, WAR 115-1-2-11-4, BR 51-282-8, WAR 115-11, IR 2856 et BW 267-3 sont tres productives et ont montre des facultés d'adaptation assez interessantes qui meriteraient d'être confirmees en essai multilocal paysan
TECHNOLOGIE TECHNIQUEMENT VALIDEE

(ii) *Sélection et amélioration variétale du riz irrigué.* Des varietes ont ete testees en essai avance dans les conditions de la riziculture irriguee du bassin de l'Anambe (region de Kolda) L'ensemble des douze (12) varietes experimentees presentent des caracteristiques agronomiques souvent superieures au temoin IR 1529-680-3 Les varietes Sahel 201 et 202 ont ete meilleures en production a toutes les varietes experimentees Ces genotypes s'adaptent assez bien dans le bassin de l'Anambe Sahel 202 presente un bon tallage et un bon recouvrement du sol mais devra être suivi vis-a-vis de la pyriculariose et de l'helminthosporiose Sahel 108, en dépit de son niveau de rendement plus faible que celui du temoin, a un cycle tres court pouvant être un avantage pour la double culture Les varietes introduites semblent repondre assez bien aux conditions de riziculture du bassin de l'Anambe Elles allient un bon niveau de rendement avec d'autres caracteristiques agronomiques interessantes, notamment la precocite, la hauteur des plants, le nombre de panicules au m², une bonne tolerance aux attaques de piqueurs-suceurs et une bonne exertion paniculaire Par ailleurs il a ete tente d'identifier parmi les meilleurs genotypes de la region sahelienne, les varietes pouvant être utilisees dans des essais multilocaux Les resultats des essais menes en conditions pluviales avec irrigation complementaire (Anambe) et en submersion moyenne (Djibelor, region de Ziguinchor) font ressortir une certaine stabilite du classement des varietes IR 2042-178-1, Tox 3093-35-2-3-3-1, Wabir 12979 et Cica 8 par rapport aux temoins DJ 684 D (1996 a Djibelor), IR 1529-680-3 (1997 a Anambe) et ITA 123 (1997 a Djibelor) Ces varietes sont proposees pour la campagne prochaine en essais multilocaux Il convient aussi de signaler que la variete MRC 2663-2483 a presente un niveau de precocite particulierement important De fait, elle est exposee aux attaques d'oiseaux avec un impact negatif sur sa productivite Cependant, elle pourra s'averer interessante pour la double culture au niveau du bassin et sera aussi testee en riziculture de nappe Enfin, des demonstrations en milieu paysan ont ete realisees avec les varietes BG 90-2, BW 248-1 et ITA 123 dans le bassin de l'Anambe Les producteurs ont exprime leur satisfaction sur le comportement vegetatif (tallage, rusticite, taille des plants et precocite) des introductions par rapport au temoin Par ailleurs, les producteurs ont fait etat d'une bonne reponse des trois (3) varietes testees aux apports d'engrais Concernant la selection conservatrice et la production de semences, un manuel de formation sur les normes

Table II 2 page 3

et techniques de production des semences a ete realise suite a l'atelier de formation des formateur sur la technologie semenciere riz en Casamance Il constitue un outil destine aux agronomes et formateurs pour resorber le deficit actuel en semences certifiees

TECHNOLOGIE TECHNIQUEMENT VALIDEE

(iii) Homologation de 10 variétés de riz. Des essais de demonstrations et des fiches d'identite de 10 varietes ameliorees de riz ont ete realisees afin de relancer le processus d'adoption a travers le circuit officiel (processus d'homologation) Ces varietes sont DJ 8-341 et DJ 11-509 en riziculture pluviale stricte , Tox 728-1 en riziculture pluviale de nappe , ITA 123, BG 90-2, BW 248-1 et BR 51-46-5 en riziculture irriguee et de bas-fond , WAR 1, WAR 77-3-2-2 et WAR 81-2-1-3-2 en riziculture de mangrove

TECHNOLOGIE VALIDEE TECHNIQUEMENT ET SOCIO-ECONOMIQUEMENT

Centre Nord Bassin Arachidier (PAR2)

PAR2-1 Gestion du programme

Il s'agissait pour le chef du Centre National de la Recherche Agronomique de Bambey de superviser les activites sur les plans scientifiques, administratifs et financiers et sur le plan de l'acquisition des equipements en liaison avec les personnels impliquees Cette subvention n'a pas fait l'objet d'activites de recherche Elle permettait un suivi regulier des activites du programme grâce a la transmission des rapports techniques et financiers trimestriels

PAR2-2 Diagnostic participatif

Dans le cadre de ce programme, differentes etudes concernant la malherbologie, la zootechnie et l'alimentation animale ont ete realisees

(i) Enquêtes exploratoires en malherbologie. L'inventaire des plantes parasites et leurs hôtes (cultives et spontanées) et la caracterisation des groupements vegetaux auxquels appartiennent ces especes parasites, ont ete realisees De plus, des enquêtes exploratoires et rapprochees dans des terroirs villageois du bassin arachidier ont ete menees Il ressort des inventaires floristiques que les plantes parasites recensees lors des prospections dans le territoire national appartiennent a six (6) genres repartis dans trois (3) familles La famille des *Scrophulariacees* est la plus riche en genres (3) et en especes (8) suivies par celle des *Loranthacees* (2 genres et 3 especes) et celle des *Cuscutacees* Certaines especes sont largement distribuees au Senegal et occasionnent des degâts importants aux principales cultures vivrieres Parmi les plantes eprhises, *S hermonthica* est de loin l'espece la plus repandue dans les cultures et la plus nuisible *S gesnerioides* et *S aspera* trouvent aussi en milieu cultive des conditions favorables a leur developpement Les enquêtes ont montre que

- les paysans connaissent les plantes parasites mais ignorent souvent leur biologie et mode de reproduction ,
- 50% des champs sont parasites ,
- la predominance de la culture du mil, plus sensible au *Striga* que le sorgho, augmente les risques de proliferation du parasite ,
- rien n'est fait par les producteurs pour eviter une augmentation du stock de graines de *Striga* dans les sols Dans le domaine des techniques de lutte, il a ete mis en evidence
- l'impossibilite d'eradiquer rapidement *S hermonthica* et *S gesnerioides* (trois (3) annees n'ont pas suffi pour reduire la levee du parasite) ,
- le rôle de la pluviometrie qui module les performances de la culture et la nocivite du parasite ,
- la forte variation de la levee du *Striga* ,

Table II 2 page 4

- les periodes de grande nocivite du parasite Dans une parcelle fertile, le mil est essentiellement perturbe pendant la phase aerienne du parasite et si le sol est pauvre en elements nutritifs, le parasite est nuisible des sa phase souterraine ,
- le manque de resultats exploitables sur la selection de varietes resistantes surtout pour les ceréales ,
- les bons resultats des techniques de lutte curative (sarclages et herbicides)

(ii) Diagnostic des systèmes d'élevage du équidés La situation et les perspectives de la traction des equides dans une partie du bassin arachidier ont ete etudiees Les resultats de cette étude ont fait l'objet d'un memoire de titularisation d'un chercheur de l'ISRA Suite a cette etude, des investigations ont ete menees sur les differents systemes d'elevage du cheval au Senegal afin de preciser le rôle de cet animal dans la vie socio-economique et d'analyser les contraintes des modes d'exploitation en vigueur Ce diagnostic a permis de degager les tendances et perspectives par rapport aux modes de conduites actuels Toutes ces informations ont ete regroupees dans un document intitule L'elevage du cheval au Senegal

(iii) Valorisation des résidus de récolte de niébé dans l'alimentation des animaux. Des etudes ont ete menees sur la possibilite d'utiliser dans la ration alimentaire de la fane de niebe qui est un residu de recolte distribue en vert aux animaux Un prealable a cette pratique etait la determination de la valeur nutritive de ces residus de recolte Des echantillons de fanes de differentes varietes de niebe ont ete analyses Les premiers resultats ont montre une bonne valeur nutritive des fanes montrant une richesse en energie et en azote digestible variable suivant les varietes Les varietes Ndiambour, Baye Ngane et Bambey 21 presentent une qualite nutritionnelle superieure a la fane d'arachide L'usage double (alimentation humaine et animale) de certaines varietes de niebe est possible tel que Bambey 21 et Baye Ngagne D'autres analyses et des etudes complementaires devraient approfondir le diagnostic preliminaire realise sur l'utilisation des fanes de niebe dans l'alimentation animale

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

Table II 2 page 5

PAR2-3 Etude diagnostique sur les modes de transferts et evaluation socio-economique des technologies sur la GRN

(i) Evaluation socio-economique des technologies sur la GRN Au total 29 technologies ont ete inventoriees dont 19 presentent un taux moyens d'utilisation de 65% Trois technologies introduites par ISRA/NRBAR sont bien connues par les producteurs des villages de la zone d'intervention de RODALE et d'ADHIS Il s'agit des techniques du compost, d'epandage de residus de poissons fumes et des haies vives

PAR2-4 Diffusion de technologies en milieu paysan le compostage enrichi en phosphate naturel

Deux fosses compostieres ont ete implantees au niveau de groupements feminins de 5 villages de la zone de Bambey et de la zone de Thies Un cycle de compostage a ete menee (suivi de temperature, suivi de l'humidite et analyse du produit fini) Les resultats d'analyse ne sont pas encore disponibles mais la qualite du produit obtenu et le suivi du cycle de compostage a montre que le compostage est techniquement adapte a la fertilisation L'addition de phosphate naturel n'introduit aucune difference sur le cycle de compostage Des essais agronomiques sont en place et les resultats sont attendus

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

PAR2-5. Test de confirmation et diffusion de technologies en milieu paysan cas des haies vives defensives (validation et transfert)

(i) Tests de confirmation et de diffusion de technologies en milieu paysan cas des haies vives defensives Des especes a croissance rapide et a elagage naturel (*Acacia laeta*, *Acacia tortilis* et *Bauhinia rufescens*) et des especes a croissance lente et embranchement lateral (*Acacia mellifera* et *Zizyphus mauritiana*) ont ete produites en pepinieres villageoises notamment par le biais de formation et associees pied a pied dans 6 villages Apres 5 mois de plantation, les taux de survie toutes especes confondues sont compris entre 69 et 91% (moyenne de 78%) Le taux de survie par espece tous sites confondues varie entre 80 et 96% (moyenne de 90%), *Z mauritiana* presentant le moins bon taux (sol sableux) Aucune difference de comportement concernant le taux de survie et aussi la croissance en hauteur d'une espece donnee dans les differentes associations a ete constatee

TECHNOLOGIE VALIDEE TECHNIQUEMENT

PAR2-6 Etude des effets de melange de phosphates naturels et de phosphogypse sur les sols des cultures (generation de technologies)

(i) Effets du melange de phosphates naturels et de phosphogypse sur les sols et les cultures Cette etude consistait a generer une nouvelle technologie Le melange de 25% de phosphate de Taiba et 75% de phosphogypse donne les meilleurs resultats sur la culture de mil Pour l'arachide ces taux sont de 50% et 50% respectivement pour les rendements en gousses et en fanes

TECHNOLOGIE DEVELOPPEE

Table II 2 page 6

PAR2-7 Développement de méthodes alternatives de protection des récoltes vivrières et des semences contre les insectes (generation, validation et transfert)

(i) *Effet insecticide des feuilles de Boscia senegalensis* L'impact d'extraits de *B senegalensis* sur la protection de graines de niébe stockees (Bambey 21, Diongoma, Melakh et Ndiambour) a été évalué. La faculté germinative des graines de niébe a été mesurée au 6^{ème} mois. La faculté germinative des graines stockees six mois en fût métallique est nettement supérieure à celle observée dans le cas d'un stockage en sac. Le stockage en fût seul ou combiné à un traitement donne de très bons résultats, le traitement à la phosphine s'avérant d'une plus grande efficacité que celui aux feuilles des *B senegalensis*. Après six mois de stockage, les taux d'infestation cachée et active de *Callosobruchus maculatus* ne sont pas statistiquement différents. Ainsi, l'utilisation d'extraits de *B senegalensis* ne déprécie pas la qualité semencière des graines de niébe.

TECHNOLOGIE DEVELOPPEE

(ii) *Evaluation de substances biocides d'origine végétale pour le contrôle des brûches du niébé et de l'arachide.* Sept (7) espèces végétales (*Pachyrhizus erosus*, *Boscia senegalensis*, *Boscia angustifolia*, *Parmari macrophylla*, *Balanites aegyptiaca*, *Azadirachta indica* et *Arachis hypogea*) ont été évaluées en vue d'identifier les plus prometteuses et de déterminer des doses d'utilisation en milieu rural. Les tests biologiques ont été réalisés sur des graines de niébe (Bambey 21) et d'arachide (55-437). Les produits et extraits végétaux testés ont été

- des poudres de graines de quatre (4) variétés de *Pachyrhizus erosus*, (EC 219, EC 503, EC X et EC 041)
- des huiles extraites d'amandes de *Parmari macrophylla*, *Balanites aegyptiaca*, *Azadirachta indica*, *Arachis hypogea*, des feuilles fraîches de *Boscia senegalensis* et *B angustifolia*
- des feuilles de *Boscia senegalensis* et *B angustifolia*

TECHNOLOGIE VALIDEE TECHNIQUEMENT

Activité biologique des poudres En dehors du rôle important que *P erosus* peut jouer dans les objectifs de diversification de la production alimentaire, cette plante présente des perspectives très intéressantes pour la protection des semences de niébe et d'arachide. Les tests de germination des graines traitées avec des poudres de *P erosus* révèlent l'absence d'un effet négatif sur la capacité germinative des semences.

Toxicité de contact des huiles sur les adultes de C maculatus L'huile de *Azadirachta indica* s'avère 1,9 fois plus active (100% dès le premier jour du traitement à la dose 2 ml/kg) que celle de *Balanites aegyptiaca*, 3,3 fois plus active que celle de *Arachis hypogea* et 7 fois plus que celle de *Parmari macrophylla*. Les autres huiles testées présentent une toxicité très hautement dépendante de la dose. L'huile de *B aegyptiaca* provoque une mortalité de 96% après 72 h à la dose de 10 ml/kg, celle de *A hypogea* induit 86,7% de mortalité à 10 ml/kg après 72 h alors que *P macrophylla* ne tue que 54,7% de *C maculatus*.

Effet des huiles sur la descendance de C maculatus La descendance F1 confirme la plus grande efficacité de l'huile de *A indica* qui entraîne une inhibition totale de l'émergence d'une nouvelle génération de *C maculatus*. Les huiles de *P macrophylla*, *B aegyptiaca* et *A hypogea* permettent une réduction moindre mais très significative des émergences de F1 par rapport au témoin. Ainsi, à la concentration de 10 ml/kg, le pourcentage de réduction des émergences par rapport au témoin non traité à la concentration de 10 ml/kg est de 99,8% pour *B aegyptiaca*, 99,6% pour *A hypogea* et 98,0% pour *P macrophylla*.

Toxicité de contact des huiles sur les adultes de C serratus Après 24 h d'exposition, l'effet des huiles est peu à faiblement significatif puisque l'huile de *A indica*, qui se révèle être la plus efficace, ne provoque que 36 % de mortalité à la concentration maximale de 10 ml/kg. Cette mortalité s'élève à 96 % après 72 h. L'analyse des données obtenues ne montre aucune différence significative entre les trois autres huiles 5 %

Table II 2 page 7

Effet fumigant des feuilles de deux especes de Boscia Le pourcentage de mortalite corrigee de *B senegalensis* sur *C maculatus* varie de 33,6% a la dose de 0,26 g/l et atteint le maximum de 100% a la dose de 0,67 l/g Pour *C serratus*, l'activite biologique atteint 100% a partir de la dose de 1,33 g/l Ces resultats montrent la plus grande toxicite de *B senegalensis* sur les adultes de *C maculatus* *Boscia angustifolia* teste dans les mêmes conditions presente une tres faible activite biologique sur les bruches qui pourrait s'expliquer soit par une moindre teneur en substance active par rapport a *B senegalensis*, soit au stade phenologique ou a la teneur en eau du materiel vegetal

Sud Bassin Arachidier (PAR3)

PAR3-1 Gestion du programme

Il s'agissait pour le chef du Centre de Recherches Agricoles de Kaolack de superviser les activites sur les plans scientifiques, administratifs et financiers et sur le plan de l'acquisition des equipements en liaison avec les personnels impliquees Cette subvention n'a pas fait l'objet d'activites de recherche Elle permettait un suivi regulier des activites du programme grâce a la transmission des rapports techniques et financiers trimestriels

PAR3-2 Etude des possibilités de mise en valeur des bas-fonds du sud bassin arachidier

(i) Caractérisation socio-économique du bassin versant de Koutango L'examen des parametres socio-economiques mais aussi culturels influençant l'utilisation des terres de bas-fonds par les paysans des villages environnants le bassin versant a ete realise en impliquant les populations Cette etude insiste particulierement sur la caracterisation des unites de production des villages polarises par le bas-fond de Koutango, sur leurs pratiques agricoles et pastorales Elle contribue a une meilleure connaissance des systemes de production, des contraintes et des potentialites du bas-fond Elle participe a la definition d'elements techniques utiles pour la conception et la realisation d'aménagements pour une meilleure valorisation du bas-fond qui offre des possibilites d'intensification et de diversification des cultures generatrices de revenus Enfin, cette etude offre des pistes a approfondir pour l'elaboration d'un schema d'aménagement coherent, respectueux des populations et reposant sur les opportunités du milieu

(i) Caracterisations hydrologique et hydrogéologique du bassin versant de Koutango Les caracterisations physiques du bassin versant (relief, forme, reseau hydrographiques), hydro-climatiques (pluviometrie, morphometrie du bassin versant, estimation des parametres decoulement), hydrogeologique (contexte geologique et hydrogeologique general) et la caracterisation de la nappe phreatique (caracteristiques hydrodynamiques, piezometrie et ecoulement, bathymetrie et potentialites hydriques) ont ete realisees afin de maîtriser l'eau dans le bassin versant Suite a ces caracterisations la strategie d'aménagement de petites digues de retenue a ete preconisee pour restaurer l'equilibre entre ecoulements de surface et ecoulements souterrains qui fait defaut dans le bassin versant de Koutango pendant le la periode de deficit pluviometrique Les potentialites d'intensification et de diversification (riziculture, arboriculture, maraîchage et production fourragere) ont ete mises au niveau du bassin versant

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDEE

PAR3-3 Analyse de l'impact socio-economique des principales technologies agricoles

(i) Technologie des haies vives L'analyse socio-economique de la technologie des haies vives a combine l'evaluation paysanne par des enquêtes elargies (collecte de donnees qualitatives et quantitatives aupres de

Table II 2 page 8

150 producteurs au niveau de 22 exploitations agricoles de 32 villages repartis dans 20 communes rurales de la zone sud bassin arachidier) et le suivi de la technologie sur une échelle plus réduite (collecte d'informations quantitatives fines pour des analyses économiques de rentabilité) Les résultats montrent que l'installation d'une haie vive pour les paysans ne se justifie que si elle permet de lutter contre l'érosion éolienne en saison sèche, de protéger les champs de case des animaux divaguants et d'améliorer la fertilité de sols grâce au maintien de la litière et des engrais organiques épandus L'appropriation de cette technologie est souvent facilitée par la présence de l'encadrement (société de développement, ONG) et les possibilités de mise en valeur en saison morte (arboriculture fruitière et maraîchage) L'emplacement des parcelles, la zone géographique, l'âge et le type du sol sont aussi des facteurs déterminants de la probabilité d'adoption de la technologie des haies vives L'objectif vise des haies vives de protection des parcelles de culture n'est pas encore atteint dans la majorité des cas exceptés dans les champs de case clôturés par les haies traditionnelles d'euphorbes, d'*Acacia macrostachya*, de *Jatropha curcas*, de *Bauhinia rufescens* Les contraintes à l'appropriation des haies vives sont la pluviosité, les charges additionnelles de leur installation et entretien (exigence en main d'œuvre), l'inexistence auparavant d'une protection (mise en défens), le temps nécessaire à l'efficacité de la haie et l'insuffisance des plants Les espèces les plus choisies pour les haies vives sont celles qui ont une bonne défense naturelle (longues épines), résistent à la sécheresse et ont des propriétés fertilisantes L'association avec des espèces productives qui fournissent des services et contribuent à la production alimentaire et aux revenus familiaux seraient des atouts de plus À l'inverse, des espèces ne sont pas souhaitées dans les haies comme celles qui occupent beaucoup d'espace, celles à branchage bas et étalé, à racines traçante ou pouvant servir d'abris à des animaux nuisibles aux cultures ou qui sont appréciées par le bétail En cas de rejet de la technologie des haies vives, celui-ci est attribué au manque de terres, à la non perception de l'intérêt et au manque de connaissance L'abandon de la technologie peut être motivé par la divagation du bétail et les forts taux de mortalité Pres de 90% des producteurs ont accepté l'arrangement et la composition des haies proposées par la recherche Ils suggèrent toutefois des modifications introduction de nouvelles espèces, espacement, association, disposition des espèces et modalités de gestion (régime et périodicité des coupes)

Table II 2 page 9

PAR3-4 Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles

L'inventaire des organisations paysannes, des organisations non gouvernementales et des projets de developpement implantes dans la zone Sud Bassin Arachidier a ete realise Cet inventaire vise a fournir des elements utiles a leur caracterisation Les informations collectees doivent permettre l'identification de structures susceptibles d'être des partenaires dans la conduite d'activites de preservation et de restauration des sols (capacites techniques et organisationnelles) Un autre objectif vise a alimenter la base de donnees en cours d'elaboration par la cellule de concertation regroupant la recherche (ISRA), les producteurs (CNCR), les industriels (ITA) et les vulgarisateurs (ANCAR/PNVA) Des fiches d'inventaire ont ete prepares nature de l'organisation, localisation, domaines d'intervention, population cible, taille et date de creation Quarante quatre (44) structures ont ete inventoriees Les informations recueillies permettront de faire un choix de structures avec lesquelles il sera permis d'approfondir la reflexion devant conduire a la definition des regles de participation collective aux actions de GRN

PAR3-5 Etude des facteurs limitants de la traction animale dans la mise en œuvre des techniques de travail du sol et test d'innovations performants

(i) *Enquêtes sur la technologie de la traction animale.* Ce programme s'est limite au diagnostic de l'evolution des pratiques paysannes, les orientations nouvelles et les principales contraintes liees a l'utilisation de la traction animale (equins, bovins et asins) par des enquêtes au niveau de 1861 exploitations agricoles de 2 regions (Fatick et Kaolack) du sud bassin arachidier Ces enquêtes ont tenu compte des specificites agro-ecologiques et le niveau de l'exploitation (evolution des effectifs et des techniques culturelles, type d'attelage, gestion des animaux et realisation des activites culturelles) L'etude experimentale en station (Nioro) n'a pu être realise Les enquêtes ont montre que la traction animale apparaît comme une technologie bien implantee dans les exploitations du Sine Saloum (86,4% d'entre elles l'utilisent dont 26% avec des bovins soit 513 paires de bœufs) Toutefois, son developpement ne s'est pas accompagne d'un veritable essor dans le temps par rapport a l'acquisition des animaux par les paysans et a l'application de certains itineraires techniques L'accroissement des effectifs est tres variable a l'interieur des differentes zones cibles et des exploitations agricoles elles-mêmes L'analyse de l'appropriation des animaux a montre une stagnation des effectifs voire une regression malgre l'augmentation d'adeptes enregistree pour les equides (80,6% des exploitations possedent des equins) Il faut noter que l'accroissement de l'effectif des bovins n'est pas significatifs avec 9% pour les bœufs en considerant l'evolution demographique et la demande accrue de terres arables (46% des exploitations detiennent des bœufs de traits) La diversite du materiel animal au sein des exploitations agricoles explique les differentes strategies observees en matiere d'itineraires appliques et de gestion des animaux. L'utilisation des vaches de trait semble être une alternative face a la difficulte d'appropriation des mâles dont les effectifs s'accroissent difficilement et sont inegalement repartis dans les exploitations (47,2% ont plus de 2 paires de vaches de traits) Les recommandations de la recherche allant dans le sens du developpement des techniques de travail du sol doivent considerer et integrer ces differentes dynamiques entre les zones et a l'interieur des exploitation pour ameliorer l'applicabilite et la faisabilite des technologies Les principales contraintes de la traction animale sont surtout liees aux restrictions alimentaires auxquelles sont confrontes les animaux en fin de saison seche Cela ne favorisant pas par ailleurs un embonpoint des animaux compatible avec la force de travail requise pour les travaux cultureux L'application du travail du sol comme technique de lutte contre la degradation et la baisse de la fertillite est limitee par differents facteurs comme la reduction de l'effort de traction compte tenu des restrictions alimentaires, le retard et l'arrêt precoce des pluies, le manque de materiel ou d'animaux et les pratiques paysannes Cette etude montre que les techniques de travail du sol et les besoins d'energie de traction qui en decoulent ne sont pas realisables pour beaucoup d'exploitants Des recherches pour la mise au point et la validation de techniques pour l'acces a une force de traction appropriee Les tendances a

Table II 2 page 10

l'utilisation des vaches doivent être accompagnées par la recherche (capacités de travail, production laitière, reproduction)

PAR3-6 Diagnostic pluridisciplinaire du secteur agricole

(i) *Analyse du fonctionnement de quelques exploitations agricoles dans la région de Kaolack.* La détermination du fonctionnement des exploitations agricoles, l'élaboration d'une typologie et l'analyse du fonctionnement des exploitations agricoles par type et la définition d'orientations pour des actions de recherche ou de développement sont les objectifs visés par cette étude. Des enquêtes ont été réalisées dans des villages de sous zones agro-écologique du sud bassin arachidier (bassin arachidier ancien, zone agricole et pastorale et zone de polyculture). Toutes les exploitations agricoles des villages de Sagnaneme et Medina Kebe ont été étudiées soit 154 exploitation au total. De manière globale, au plan structurel, il a été noté que dans les 14 différents types de fonctionnement des exploitations qui ont été caractérisés, les équipements sont vieux et acquis depuis le programme agricole. Les agriculteurs rencontrent de grandes difficultés pour l'acquisition de nouveaux équipements. Ces difficultés sont dues au problème de crédit et à la faiblesse des capacités d'investissement des exploitations. Ces mêmes raisons limitent l'utilisation de semences certifiées de qualité et les engrais minéraux à l'exception des exploitations encadrées par CARITAS notamment et celles bénéficiant d'un contrat de production avec certaines sociétés agro-industrielles (NOVASEN, SONAGRAINE). La pratique consistant à faire des réserves personnelles de semences est très généralisée. Le cheptel de petits ruminants qui en principe est destiné à l'achat de semences ou d'engrais ou d'équipement est surtout utilisé pour combler le déficit vivrier ou d'autres besoins sociaux. La vente occasionnelle de bovins est une alternative au crédit d'investissements. Les doses d'engrais utilisées sont assez faibles (100 kg/ha) et atteignent rarement les 2/3 de la dose de fumure recommandée (150 kg/ha). Elles sont destinées de préférence aux céréales. Les exploitations bénéficiant d'un cheptel de trait et de production conséquent font recours à amendements organiques soutenus de leurs terres. Des recommandations ont été formulées et sont orientées vers des actions de développement pour le renouvellement et le renforcement des équipements, le développement de l'utilisation de semences certifiées de qualité, le développement d'un élevage mixte (bovins et petits ruminants), la mise en place d'un système de crédit adapté, la mise en place de systèmes de culture ou d'aménagement/occupation de l'espace permettant la pratique de la jachère, la définition d'itinéraires techniques maintenant ou améliorant la fertilité, l'association de la pastèque dans les systèmes de culture et enfin la définition de normes équilibrées pour l'intégration agriculture/élevage.

Table II 2 page 11

PAR3-7 Mise en place d'une base de données

(i) *Systeme d'Information Geographique (SIG)* Dans le cadre du renforcement du diagnostic partage necessaire a la definition des priorites de recherche, il a ete procede a la mise en place d'un SIG Celle-ci a concerne deux niveaux le bassin versant de Diamaguene et la zone relative au sud bassin arachidier Ce programme a ete realise en collaboration avec le Centre de Suivi Ecologique et l'Unite de Traitement des Images Satellitaires (ISRA) Les fonds de cartes ont ete elabores et les bases de donnees creees alimentees au fur et a mesure de l'acquisition des donnees provenant de chacun des deux niveaux (donnees demographiques, physiques, socio-economiques) Concernant le niveau du bassin versant de Diamaguene, les donnees utilisees ont ete celles obtenues dans le programme SV16 et concernent des elements cartographiques (limites et courbes de niveau, parcellaire, type de sols, infrastructure, hydromorphologie, vegetation, types d'aménagement) et la base de donnees Le SIG sera actualise en continu avec de nouvelles donnees collectees

TECHNOLOGIE DEVELOPPEE

Senegal Oriental / Haute Casamance (PAR4)

PAR4-1 Gestion du programme

Il s'agissait pour le chef du Centre de Recherches Agricoles de Tambacounda et du Centre de Recherches Zootechniques de Kolda de superviser les activites sur les plans scientifiques, administratifs et financiers et sur le plan de l'acquisition des equipements en liaison avec les personnels impliquees Cette subvention n'a pas fait l'objet d'activites de recherche Elle permettait un suivi regulier des activites du programme grâce a la transmission des rapports techniques et financiers trimestriels

PAR4-2 Synthese des travaux sur les insectes ravageurs des cultures cerealieres et de rente

La connaissance des acquis dans le domaine de la protection des cultures contre les principaux ravageurs et l'exploitation des informations disponibles sur la protection phytosanitaire dans la zone Senegal oriental/haute Casamance etaient les deux principaux objectifs de cette etude Pour le coton, les insectes carpophages sont les principaux ravageurs dans les differentes zones de production L'efficacite de la lutte chimique est aujourd'hui reelle Sur l'arachide, les termites et les iules sont les obstacles majeurs a la production De plus, le champignon *Aspergillus flavus* est responsable de la presence de l'aflatoxine dans les graines Pour le maïs, les foreurs de tiges sont les ravageurs les plus importants L'entomofaune du sorgho est dominee par *Contarinia sorghicola* connu sous le nom de Cecidomyie du sorgho et *Atherigona soccata* *Acigona ignefusolis* et *Sesamia celamistris* occasionnent les degats les plus importants sur le mil Enfin, pour le riz, *Chilo*, *Diopsis* et *Orseolis* sont les especes les plus nuisibles Cette synthese aura un impact dans la definition de nouvelles priorites de recherche et le transfert de techniques de lutte contre les ravageurs

Table II 2 page 12

PAR4-3 Synthèse sur les recherches sylvicoles de la zone

Des MARPs (Methode Acceleree de Recherche Participative) ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

PAR4-4 Synthèse des recherches sur les cultures fourrageres au Senegal Oriental et en Casamance

Des MARPs ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

PAR4-5 Exploitation et valorisation des données du CRZ de Kolda sur la reproduction du taurin Ndama

Des MARPs ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

PAR4-6 Synthèse des études sur la pathologie animale des ruminants de la zone

Des MARPs ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

PAR4-7 Synthèse des recherches en amélioration variétale de cereales

Des MARPs ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

PAR4-8 Diagnostic pluridisciplinaire et participatif des systèmes de production

Des MARPs ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

PAR4-9 Prospection sur les insectes ravageurs des cultures céréalières et de rente

Des MARPs ont ete effectues dans plusieurs villages de la Haute Casamance et dans quelques villages du Senegal Oriental Le rapport de synthese sur les resultats de ces MARPs n'est pas encore disponible

Table II 2 page 13

PAR4-10 Etude et amélioration des systèmes de production et de la gestion des ressources naturelles suivi des élevages bovins villageois

(i) Suivis zootechnique et sanitaire des élevages bovins villageois L'objectif de cette étude était d'assurer une couverture sanitaire du bétail par une identification et une maîtrise des principales pathologies dominantes. Le suivi zootechnique a été réalisé au niveau de 8 troupeaux appartenant à 7 villages et le suivi sanitaire au niveau de 8 troupeaux appartenant à 7 villages. Les résultats du suivi zootechnique ont montré que les 1100 têtes constituant les 8 troupeaux, 38% sont des vaches, 13% des taureaux, 15% des génisses, 13% des taurillons, 10% des velles et 11% des veaux. Le taux de mise-bas est de 25% (104 naissances). La période où les mises-bas sont les plus fréquentes est comprise entre les mois de juillet et décembre (72%) indiquant des saillies fécondantes entre les mois d'octobre et mars (disponible alimentaire encore abondant). Les mois de juillet et août présentent les taux de mises-bas les plus élevés (22 et 15% respectivement). Les taux de mises-bas les plus faibles sont enregistrés en mars et avril. Trente sept têtes dont 20 mâles et 17 femelles sont sortis des troupeaux. Les ventes représentent 84% des sorties et les mortalités 3%. Les autres sorties (13%) sont dues aux abattages, dons. Il ressort du suivi sanitaire que les carences alimentaires et les syndromes cutanés prédominent avec respectivement 37,2% et 25,5% des cas diagnostiqués, les syndromes uro-génitaux représentent 9,8%. L'ensemble des affections se sont déclarées au cours du suivi. Le suivi a permis de mettre en évidence l'immunité acquise par les animaux en ce qui concerne les maladies telluriques. Les différentes pathologies rencontrées sont essentiellement concentrées aux mois de juillet (23,5%), août (33,3%) et septembre (15,7%) c'est à dire pendant la saison des pluies. Les analyses sanguines ont montré un volume du culot de centrifugation moyen de l'ordre de 28,4%. Seulement 4,5% des animaux étaient infectés par les trypanosomes. De même, un faible taux d'infection à glossines, à strongyles, à strongyloïdes et à coccidies a été noté. Un breuvage traditionnel ayant des propriétés anti-parasitaires pourrait expliquer ces faibles taux d'infestation. Les perspectives de cette étude vont d'une part, dans le sens d'une bonne maîtrise de la conduite et gestion des troupeaux villageois, et, d'autre part, dans l'augmentation de l'échantillon d'étude et une réduction de la période de suivi (suivi rapproché) des troupeaux pour une identification plus large des pathologies et une couverture sanitaire meilleure en vue d'améliorer les performances des productions.

PAR4-11 Prospection et évaluation de variétés locales de céréales (mil/maïs/sorgho/fonio)

(i) Collecte de cultivars traditionnels Une collecte de mil, sorgho, maïs et fonio a été effectuée principalement en Haute Casamance (une partie du département de Sedhiou a été prospectée pour le mil et le sorgho). Soixante six (66) accessions de sorgho, 31 de souba, 22 de sanio, 104 de maïs et 26 de fonio ont été obtenues dans la région de Kolda. Cinquante cinq (55) accessions de sorgho, 18 de souba, 21 de sanio, 57 de maïs et 3 de fonio ont été obtenues dans la région de Tambacounda. Les enquêtes effectuées auprès des paysans durant la collecte montrent l'absence d'utilisation de variétés améliorées sorgho et de mil. Les raisons avancées sont en général la méconnaissance de ces variétés et la non disponibilité des semences. Les variétés améliorées de maïs sont généralement connues mais faiblement utilisées. Le fonio est cultivé de façon très rudimentaire. L'essentiel des cultures se pratique en culture pure. Les principales cultures associées rencontrées ont été sorgho/maïs et sanio/maïs. Le souba commence à gagner du terrain dans la zone à cause de la baisse constante de la pluviométrie qui fait que le sanio est de moins en moins adapté. L'équipement agricole est obsolète. La gamme de cycle est étendue au niveau de toutes les espèces. La fumure minérale est très peu utilisée. Les principaux parasites des céréales sont les cantharides et le striga. Les céréales sont à la base de l'alimentation des populations rurales.

(ii) Caractérisation et évaluation des cultivars Le sorgho et le mil ont été évalués et caractérisés en station pour certains de leurs caractères qualitatifs et quantitatifs. Les rendements du sorgho ont été dans l'ensemble médiocres, inférieurs au témoin de référence F2-20 (2018 kg/ha). Les écotypes suivants ont donné des

Table II 2 page 14

rendements acceptables dans les conditions de l'essai CSG3 (1976 kg/ha), CSG16 (1799 kg/ha), CSG2 (1757 kg/ha), CSG21 (1658 kg/ha), CSG44 (1522 kg/ha) et CSG46 (1504 kg/ha). Les caractères quantitatifs ont montré que les ecotypes sont significativement différents seulement pour la floraison (allant de 61 à 99 jours) et la verse. Le matériel local est presque entièrement anthocyane (95%). Seul CSG5 est entièrement tan alors que CSG32 et CSG36 présentent un mélange de plantes pigmentées et de plantes tan. Concernant le mil souna, les rendements obtenus ont été très faibles (entre 296 et 1201 kg/ha) dus à une forte pression parasitaire. La hauteur de la plante est la seule caractéristique quantitative où une différence significative entre les ecotypes a été notée. Les observations visuelles ont mis en évidence l'hétérogénéité interne des cultivars locaux de souna (nombre élevé de shibras résultant du croisement entre mil cultivé et mil sauvage et présentant une tige fine et de petits épis). Enfin, pour le mil sanio, les rendements obtenus sont meilleurs que le souna (pression parasitaire moins forte). Aucune différence significative pour le rendement en gramme a été notée entre les ecotypes. Les meilleurs sont CSO15 (1945 kg/ha), CSO16 (1883 kg/ha), CSO12 (1777 kg/ha) et CSO8 (1764 kg/ha). Aucune différence significative sur les caractères quantitatifs n'a été décelée. L'évaluation devra être approfondie et étendue sur tout le matériel collecté pour en approfondir les connaissances et faciliter son utilisation dans un programme de sélection.

TECHNOLOGIE DEVELOPPEE

Table II 2 page 15

PAR4-12 Test de techniques de lutte contre l'érosion hydrique par l'utilisation des haies vives

(i) *Technologies des haies vives anti-erosives* Les especes *Acacia mellifera*, *A. adansonu*, *Bauhinia rufescens* et *Zizyphus mauritiana* ont ete testees en haies vives monospecificques (3216 plants pour tout le dispositif constitue de ligne de 100 m de longueur et ecartee de 50 cm) sur des parcelles cerealieres et arachidieres en pente en milieu rural L'espece *Jatropha curcas* a ete utilisee pour les barrieres vegetales Sur les bordures des ravines, ce sont *Vetiveria nigriflora* et *Andropogon gayanus* qui ont ete testees Des diguettes filtrantes ont ete installees en aval des aménagements biologiques anti erosifs Les taux de survie des differentes especes utilisees varient entre 70 et 90% apres un an Les prelevements de sols realisees en amont et en aval du dispositif, avant et apres son installation, ont permis d'évaluer les pertes en sables, argile et limon Il est apparu que la diguette filtrante retient un volume de sable de l'ordre de 9,8 tonnes L'analyse granulometrique du sol a montre que le taux le plus eleve de terres augmente avec la profondeur Par contre le sable tres fin, grossier et le carbone sont plus importants en surface excepte sur les echantillons composites (deux echantillons de sols de deux bandes differentes melangees) Le volume de sable retenu par la diguette filtrante a tendance a favoriser le remblayage des ravines et diminue l'ensablement de la vallee alluviale

TECHNOLOGIE DEVELOPPEE

(ii) *Evaluation socio-economique des technologies des haies vives et des endiguements* Cette evaluation a ete realisee a Sare Pathe Kamako dans la region de Kolda Il est apparu que les populations villageoises ont l'intention de proteger et de maintenir les barrages et les haies vives Concernant les barrages, ceux-ci sont construits avec des materiaux disponibles limitant leur coût Cependant il n'est pas certain que les jeunes villageois consacreront du temps a l'entretien des barrages puisque les benefices sont plus visibles pour les femmes qui travaillent dans les champs de riz Les haies vives quant a elles sont benefiques a tout le monde (produits derives) dans le village et dans les concessions (augmentation des productions agricoles et amelioration des sols) Cependant des regles d'exploitation doivent être etablies et ce lorsque les arbres auront atteint une certaine maturite De plus, des formations aux chefs de concessions sont necessaires pour leur apprendre comment maintenir et preserver les haies vives

PAR4-13 Etude d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du taurin Ndama utilisé en monoboef et en paire

En vue d'améliorer les performances au travail des animaux de trait, et de mettre a la disposition des agropasteurs un outil de travail (monoboef), une etude a ete menee en milieu reel (9 exploitations reparties dans les villages de Bantancountou Maounde, Marakissa et Sare Hamidou) sur l'effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du taurin Ndama utilise en monoboef et en paire

(i) *Effet du traitement sur la vitesse, la variation ponderale, le VCC, et la duree hebdomadaire de travail* Le traitement a ete le suivant un mois avant le debut de l'hivernage, les animaux de trait sont blanchis a la trypanosomose Le Berenind permettant une protection de trois semaines environ peut être utilise a la dose de 7 mg/kg (solution aqueuse a 7 %) Pendant la periode hivernale, le Trypanidiumnd qui permet une protection en moyenne de quatre mois peut être utilise a la dose de 1 mg/kg de poids vif pour couvrir toute la periode de la campagne Les resultats obtenus de cette etude ont montre que le traitement n'a pas eu d'effet significatif sur la vitesse de travail, la variation ponderale, le volume du culot de centrifugation et la duree de travail pour les animaux soumis a la prophylaxie preventive contre la trypanosomose et les animaux non traites soumis aux memes conditions de travail Les animaux traites se sont deplaces avec une vitesse moyenne de $0,67 \pm 0,6$ m/s avec une variation de poids de $3,42 \pm 2,23$ kg, et les animaux non traites ont obtenu respectivement $0,65 \pm 0,12$ m/s et $6,11 \pm 2,40$ kg Ces derniers ont eu une duree hebdomadaire de travail de $8,0 \pm 0,9$ heures et un volume du culot de centrifugation de $31,8 \pm 4,4$ % Les animaux traites ont

Table II 2 page 16

respectivement $6,7 \pm 0,7$ heures et $32,5 \pm 3,6\%$ Il apparaît toutefois nécessaire de formuler des recommandations en matière de protection sanitaire contre l'infection trypanosomienne

(ii) *Effet du traitement et du type d'attelage sur la vitesse, la variation de poids, le VCC, et la durée hebdomadaire de travail* Quelque soit le traitement appliqué et le type d'attelage utilisé, il n'y a pas eu de différence significative entre les différents lots sur la vitesse de travail, la variation pondérale et le volume du culot de centrifugation. Cependant le type d'attelage a eu un effet significatif ($p < 0,01$) sur la durée hebdomadaire de travail des animaux de trait. Les attelages doubles (animaux traités $8,3 \pm 1,1$ heures et non traités $9,7 \pm 0,5$ heures) ont eu une durée de travail moyenne plus importante que les attelages simples (animaux traités $4,5 \pm 0,7$ heures et non traités $5,9 \pm 0,9$ heures). Il convient de noter que des études en station avaient montré que l'infection trypanosomienne avait eu un effet significatif ($p < 0,001$) sur les performances au travail du bétail Ndama.

Au terme de cette présente étude, avec les essais de vaccination contre la trypanosomose qui se sont révélés toujours inefficaces à cause de la variation antigénique, la prophylaxie contre cette infection est une priorité dans les zones à haut risque pour ne pas compromettre les performances au travail des animaux suite à une infection. Les perspectives vont dans le sens d'une vulgarisation à grande échelle de cet outil de travail qui est le monoboëuf, et de mettre à la disposition des agropasteurs un traitement des animaux contre cette infection et à moindre coût.

AUTRE TEST DE CETTE TECHNOLOGIE RECOMMANDÉE

Table II 2 page 17

III LINKAGES TO INTERNATIONAL RESEARCH INSTITUTIONS

III (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of international linkages, 3 activities linking ISRA research teams with two U S universities, has achieved its objectives of directly contributing to the development and validation of technologies, and of strengthening ISRA's international institutional cooperation Implementation was according to the guidelines set out in the NRBAR Grant Agreements Despite the fact that funds were not released for this program until late-1996, it was possible to effectively implement the level of effort originally planned for this component

The impact of this program on attainment of ISRA/NRBAR objectives has been substantial, particularly when events are considered in relation to complementary activities such as the short-term consultant and short-term training programs Areas where impact is most obvious are a study of the effects of farmer management of volunteer trees and shrubs in the traditional parkland system of the Peanut Basin shows that these technologies are much more valuable than previously thought, and post-project follow-up work is being negotiated with international donors, and the Kolda stabling technology was successfully transferred to 15 young and women farmers, including intensive on-site training

III (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that linkages to international research institutions should finance joint research, organise seminars, and personnel exchanges This program was not implemented during the life of the Grant Agreement, as ISRA was unable to fulfill the pre-conditionality of achieving financial certification When Agreement 685-0285 was replaced by Agreement 685-SO2 on 27 September, 1996, the pre-conditionality was removed, and it was agreed that more effort should be placed on the objectives of the development and validation of technologies, and on farmer and partenaire training in new technologies, rather than on ISRA's institutional development The USAID/CID contract for assistance to ISRA in implementing NRBAR services included a budget of \$500,000 for approximately 10 activities

To respond to the needs of the new Grant Agreement, and to the reduction in the period of implementation by 60%, the program was re-designed to include fewer activities, with more effort per activity The program began in January, 1997, and ended in July, 1998 A formal procedure for selection of activities to be funded was developed with a protocol, as part of the 1997 workplan, in view of the urgency of establishing activities, due to the much-reduced implementation period, proposals were particularly solicited from research teams which had already instituted productive existing relationships with international research institutions The maximum funding for any one linkage agreement was set at \$250,000

III (iii) ACTIVITIES

During the life of the program, 3 events were implemented at a total cost of approximately \$460,000 Significant cost sharing occurred with host institutions NRBAR also assisted with many other international linkages activities for ISRA staff, which were funded from non-

NRBAR sources, or from other NRBAR sources such as the foreign training programs The 3 international linkages activities are outlined in the following text

LIR-01

PROJECT TITLE - Improving diversified income for women and young farmers through development and transfer of manure stabling technology in the Casamance region of Senegal (Kolda)

GRANTEE. TU/ISRA (ISRA/LNERV and Tuskegee University)

PRINCIPAL INVESTIGATORS Dr Abdou Fall (ISRA/LNERV) & Jianbang Gan (TU)

PROJECT AMOUNT US\$ 155,901 or CFA 77,950,500

MAIN ACTIVITIES AND ACCOMPLISHMENTS

Completed socio-economic baseline survey targeted towards young and female farmers

Visits of Suchet Louis (TU International Programs Director), Ralph Noble (TU Animal Science Professor) and Jianbang Gan (TU Agricultural Economics Professor) to work with the ISRA research team in Senegal

Establishment of the technology in 5 villages, using 9 farmers and 21 cows

15 young farmers (one female) trained in use of the technology

Study of the reproductive status of the Ndama cows

Training visit to TU of 2 Kolda staff responsible for the stabling program (Papa N Dieye and Aladjı Diack)

A proposal for further joint work on this and related topics is being formulated by TU/ISRA staff

RESULTS

- Stabled cows had more than twice the pregnancy rate of traditionally-managed cows
- Stabled cows had a much longer lactation period than traditionally-managed cows
- New participant farmers were able effectively use the technology
- New participants from villages already practicing the technology benefited from assistance of those experienced in the technology
- Participants who showed more individual initiative were more likely to succeed with the technology
- Completion of a comprehensive village-level reproductive management strategy for stabled Ndama cattle

LIR-02

PROJECT TITLE - Strengthening Senegalese Research Capabilities Towards Restoration Of Degraded Soils (Kaolack)

GRANTEE. OSU/ISRA (ISRA/DS and Oregon State University)

PRINCIPAL INVESTIGATORS Dr Ammata Badiane (ISRA/DS) & Dr Richard Dick (OSU)

PROJECT AMOUNT. US\$ 249,556 or CFA 124,778,000

MAIN ACTIVITIES AND ACCOMPLISHMENTS:

Training at OSU for 2 ISRA technical staff, P Sarr and S Faye, in soils physics and soil biochemistry

Purchase and installation of soils lab Equipment at Bambey

3 visits of Dr Richard Dick to the project research sites

Field experiments in 6 peanut/millet fields in Kaolack, representing 3 soils types

Writing of a research proposal to continue the research

ISRA's recruitment of a senior soils scientist, Mateugue Diack

475

RESULTS

- results from one year of research on the role of trees and shrubs in the traditional parkland system of the peanut basin show that farmer management of volunteer shrubs and trees on arable land has been virtually ignored by agricultural scientists, even though the positive impact on soil improvement and on soil moisture already appears significant from the preliminary results. The central species studied were *Cordyla pinnata* and *Piliostigma reticulata*
- future prospects for this very promising avenue of research were presented, including the current negotiation between ISRA, OSU and NGOs on continuing the research, using mainly IDRC funds, the completion of three Journal articles from the results to date, and a discussion of unanswered questions in this area
- the purchase and installation of soils analyses equipment at Bambey has resulted in the soils lab being fully functional
- Trainee Pape Sarr of Kaolack co-authored a technical article, as a result of his training at OSU

LIR-03

PROJECT TITLE - Evaluation of Selected Under-Utilized African Vegetable Crops by Farmers (For Value-added Purposes) in the Kaolack and Tambacounda Regions of Senegal
GRANTEE TU/ISRA (ISRA/CDH and Tuskegee University)

PRINCIPAL INVESTIGATORS Dr Alassane Fall (ISRA/CDH) & Dr Conrad Bonso (TU)

PROJECT AMOUNT US\$ 87,403 63 or CFA 43,701 815

MAIN ACTIVITIES AND ACHIEVEMENTS

Visits of Suchet Louis (TU International Programs), Errol Rhoden (TU) and C K Bonso (TU)

Evaluation of improved varieties of jaxatu, bissap and okra at CDH

Socio-economic survey of farmers' using traditional vegetables improved and unimproved varieties in Tambacounda, Velingara and Kaolack

RESULTS

- Koor and Vimto varieties of Bissap have significantly out-performed others, and are presently being tested on farms
- Photoperiodic response results identified optimum times of planting for improved bissap varieties

III (iv) SYNTHESIS OF THE INTERNATIONAL LINKAGES PROGRAM

Following the approval by USAID of the 1997 Workplan in January, invitations to ISRA staff for submission of proposals were made, resulting in three proposals being funded by May – two proposals with Tuskegee University and one with Oregon State University. Together, these proposals account for \$492,861 (247m CFA) out of a total program amount of US\$500,000, which was released by USAID in late-1996. By December, 1997, all three activities had already undertaken substantial fieldwork, which continued into 1998. Program activities have been implemented as projected in the 1997 and 1998 Workplans. Three areas of technology development were assisted by these activities: testing on station and on farmers' fields of improved varieties of traditional vegetables, further extending of the Kolda stabling technology to non-traditional users, and the evaluation of agroforestry parkland management on farmers' fields in the Peanut Basin. The numerous exchanges of staff between the contracting institutions were most productive, as they were targeted to specific ISRA needs. Results of these activities are still being analysed at ISRA, but have already made significant contributions to assisting farmers in applying new technologies.

IV PERSONNEL

The NRBAR Project Director is the ISRA Director General, and the ISRA Scientific Director holds the posts of both the Deputy NRBAR Project Director and the ISRA NRBAR Grants Manager. The CID Chief-of-Party has worked with these Directors, and with other ISRA and USAID staff, in order to facilitate NRBAR personnel management, including the technical assistance provided under NRBAR.

Technical assistance was designed to help ISRA design and carry out a natural resources based agricultural research program, and to strengthen ISRA's capacity to plan, manage and carry out research programs. This has been successfully accomplished through an extensive program of both long-term and short-term consultants.

IVa LONG-TERM PERSONNEL

IVa (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of long-term technical assistance program achieved its objectives of providing crucial help to ISRA in designing and carrying out a natural resources based agricultural research program, and in strengthening ISRA's capacity to plan, manage and carry out research programs. Implementation appears to have been consistent with the guidelines set out in the NRBAR and SO2 Grant Agreements, and total estimated expenditures are expected to be approximately equal to the budget of \$3.1m.

The impact of this program has been comprehensive and pervasive, long-term personnel have provided crucial leadership and technical expertise in the attainment of all project objectives. Particular areas of impact for long-term personnel were providing the necessary leadership and support to ISRA in designing and implementing all project activities, establishing the three NRBAR grants research programs, establishing the outreach and natural resources units within the Direction Scientifique, upgrading financial management, and in completing the ISRA Strategic Plan and Mission Statement.

IVa (ii) CONTEXT

In addition to local staff, the Grant Agreement called for the initial assistance of 4 long-term advisors: a research manager, a natural resources planner, an outreach advisor and a financial advisor. Three advisors were installed as planned. However, in view of the fact that the planned installation of an improved financial system at ISRA had not been accomplished by another contractor prior to the anticipated arrival of the financial advisor, it was agreed that the NRBAR Financial Advisor would be delayed to give more time for the contractor to complete this work with ISRA. After further delays in preparatory work were incurred, it was agreed that the financial advisor would in any case arrive, in mid-1993, to assist with this process. The Financial Advisor departed, in mid-1996, at the end of his planned 3-year contract, and in response to the new SO2 Grant Agreement, which emphasised research results rather than institutional support. The Natural Resources Planner and the Outreach Advisor completed their tours, in 1996, after 4 years, this was at least one year less than anticipated, following ISRA and

USAID agreement that the objectives of their assistance had already been achieved, and in response to the new SO2 Grant Agreement, which emphasised research results rather than institutional support. The Research Manager, who was also chief-of-party, remained until the end of the USAID/CID contract in 1998.

IVa (iii) ACTIVITIES

All long-term ISRA and CID personnel were recruited and assigned, as planned. ISRA nominated counterparts for the CID personnel in December, 1993. CID and ISRA personnel quickly established rapport and have formed productive collaborative teams in order to implement project activities. Communications and rapport between the CID/ISRA team and USAID were also well established within the first months of the project.

Summary information for each long-term external personnel is provided below. Detailed reports are exhibited in Annex IVa.

Name and Period of CID Personnel Thomas Cusack (Chief-of-Party and Research Manager),
SEP92 – SEP98

ISRA Unit responsible DG and DS

Area of Work project management, research management

Accomplishments provided leadership, technical input, and direction for major activities leading to the attainment of all project objectives, assisted ISRA in designing an annual program/budget planning system appropriate for ISRA's circumstances, training and implementation of strategic planning and research planning activities

Name and Period of CID Personnel Paul Anamosa (Natural Resources Planner), SEP92-SEP96

ISRA Unit responsible DS

Area of Work natural resources research

Accomplishments assisted ISRA in installing a natural resources unit, in completing a natural resources strategic plan, and in designing a grants management system

Name and Period of CID Personnel Wendy Wilson (Outreach Advisor), SEP92-SEP96

ISRA Unit responsible DS

Area of Work outreach

Accomplishments assisted ISRA in installing an outreach unit, in completing a communications plan, and in designing a grants management system

Name and Period of CID Personnel David Holmes (Financial Advisor), JUN93-JUN96

ISRA Unit responsible ACP

Area of Work financial management

Accomplishments assisted ISRA in developing a strategic plan for installing an effective financial management system, including fund accounting, and assisted the Grant Billing Unit in managing and financial closure of the World Bank PRAII project

Locally employed CID staff consisted of an administrator (Anne Williams, followed by T J Quan and then Didi Leguede), an assistant administrator (Faty Ba Mbengue), an assistant grants

administrator (Massamba Dieng), office assistant (Marie Diouf), two office drivers (Babacar Ciss and Daouda Nging), three drivers (Malang Diaw, Cherif Dabo and Moussa Gadiaga), and a part-time accounts clerk (Maka Lo)

IVa (iv) SYNTHESIS OF THE LONG-TERM PERSONNEL PROGRAM

The installation of technical assistance was implemented as planned, with some adjustments, detailed by the annual workplans, to ensure an efficient use of funds towards project objectives. During the final months of the project, a constraint arose with the early departure of the administrator and the assistant grants manager, due to pre-existing commitments prior to the granting of the project extension for the period 16jul-30sep98. The on-campus administrator for the project, Rochelle Rainey, undertook a short-term visit to Senegal during the closing period, in order to address this constraint.

IVb. SHORT-TERM PERSONNEL

IVb (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of short-term personnel, 121 consultancy visits involving 64 consultants, achieved its objectives of providing crucial help to ISRA in designing and carrying out a natural resources based agricultural research program, and in strengthening ISRA's capacity to plan, manage and carry out research programs. Implementation was consistent with the guidelines set out in the NRBAR and SO2 Grant Agreements, and total estimated expenditures, at approximately \$1.3m, are expected to be approximately 30% less than originally budgeted, despite the fact that 22% more visits were implemented than originally planned. This has been possible due to extensive use of repeat consultants (approximately 50% of visits were implemented by consultants who had already served as NRBAR consultants), use of the NRBAR Chambre de Passage, and significant cost sharing with other programs and institutions (with 40 visits, approximately 34% of the total).

The impact of this program has been comprehensive and pervasive, particularly when visits are considered in relation to complementary activities such as the short-term foreign training and short-term training in Senegal programs. Short-term personnel, under the direction of appropriate ISRA and CID long-term personnel, have provided crucial leadership and technical expertise in the attainment of all project objectives. Particular areas of impact for short-term personnel included research impact studies, monitoring and evaluation systems, communication of research results, strategic planning, socio-economic evaluation of technologies, training in specific technical areas, development of international linkages for specific technology development, syntheses of research results between trials, and project administration.

IVb (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that the ISRA/NRBAR program of short-term technical assistance should help ISRA in designing and carrying out a natural resources based agricultural research program, and in strengthening ISRA's capacity to plan, manage and carry out research programs. The Grant Agreement called for technical

assistance in areas such as agronomy, soils, economics, biometrics, research methods, research management, and human resources. In addition, short-term consultants should participate in ISRA's research program reviews. Although Agreement 685-0285 was replaced by Agreement 685-SO2 on 27 September, 1996, the short-term consultants program did not change, except that it was agreed that more effort should be placed on the objectives of the development and validation of technologies, and on farmer and partenaire training in new technologies, rather than on ISRA's institutional development.

USAID/CID contract assistance to ISRA in implementing NRBAR services included a budget of \$1.8m for approximately 99 consultancy events. The program began in January, 1993, and ended in September, 1998. The procedure for selection of consultants, although conforming to USAID regulations, was essentially undertaken through the normal channels of ISRA, or through normal CID Institution channels, in the case of an international search. The official approval of the NRBAR Director or Deputy Director was always obtained prior to implementation. Proposals were approved, with the assistance of the CID/NRBAR COP, on the basis of their relevance to project objectives, their likelihood of success related to previous assignments, and the specific number and types of events targeted in each of the Annual Workplans.

IVb. (iii) ACTIVITIES

During the life of the program, 121 visits were implemented at a total cost of approximately \$1.3m, and involving 64 consultants, with 57 events being repeat visits. For 40 events, significant cost sharing occurred with other programs or institutions. NRBAR also assisted with many other foreign consultant activities for ISRA program directly related to NRBAR objectives, which were funded from non-NRBAR sources. The text which follows outlines the activities of each of the 121 visits, by year of implementation.

1992-93

Five short-term consultancies (TDYs) were completed in 1992-93. These played crucial roles in establishing the ISRA research impact study program, in establishing a system for Grants management, in developing the NRBAR procedures manual, in the NRBAR long-term training program, and the NRBAR monitoring and evaluation plan.

Name and Dates of Consultant: Jean Kearns, 19JAN93 - 4FEB93

ISRA Unit responsible: SG

Area of Work: Procedures Manual, NRBAR start-up administration

Accomplishments: produced a first draft NRBAR Procedures Manual, participated in the *seminaire de demarrage* and in initial administrative activities of project.

Name and Dates of Consultant: David Acker, 16MAY93 - 25MAY93

ISRA Unit responsible: DS

Area of Work: NRBAR Training Plan for Long-Term Trainees, project administration

Accomplishments: interviewed and prepared training dossiers for 17 candidates, revised NRBAR Long-Term Training Plan, assisted with project administration.

Name and Dates of Consultant Bill Roberts, 27MAY93 - 22JUN93

ISRA Unit responsible CG

Area of Work Monitoring and Evaluation, Impact

Accomplishments drafted M/E plan for NRBAR, assisted with ISRA M/E planning at CG, assisted with planning of ISRA historical impact study, and related work

Name and Dates of Consultant John Sanders, 10OCT93 - 23OCT93

ISRA Unit responsible DS/BAME

Area of Work Evaluation of ISRA's research impact

Accomplishments developed economics methodology for the measurement of impact, trained four ISRA researchers in utilization of the technique, completed a workplan with ISRA for a series of five commodity impact studies, assisted ISRA with producing a preliminary report on the impact of cotton research, identified data requirements for impact studies for four cereals

Name and Dates of Consultant Rochelle Rainey, 21NOV93 - 16DEC93

ISRA Unit responsible Pape Sall, ISRA Grants Manager

Area of Work Computer Systems and Grants Management

Accomplishments recommended changes to, and developed a critical time path for, administration of the Grants and Subcontracts Programs, created and organised administrative documentation and procedures, and performed computer installation, repair and training tasks

1994

Twenty-two short-term consultancies (TDYs) were completed during 1994 and these played crucial roles in establishing a plan for a GIS system, in the external evaluation of five of ISRA's research programs, in NRBAR project evaluation and management, in the determination of research impact, in improving ISRA's ability to communicate with partenaires, in research station management, in development of the INFORM data system, and in establishing ISRA's monitoring and evaluation capacity. The 1994 TDY program has been implemented almost exactly as anticipated in the 1994 Workplan, although 22, rather than 30, TDYs were employed, additional TDYs which were programmed under NRBAR funding were funded by ISRA through other sources. The average costs of employing TDYs have been much lower than anticipated as a result of cost sharing by other donors and by CID, and the almost continuous use of the Chambre de Passage. The activities of the 1994 TDYs can be summarised as follows

Name and Period of Consultancy Richard Caldwell, 07MAR94 - 11MAR94

ISRA Unit responsible DS

Area of Work Evaluation of the NRBAR Project

Accomplishments prepared for, and participated in the NRBAR Annual Joint Review, conducted a systematic analysis of NRBAR Project operations to date, and made recommendations for improvements

Name and Period of Consultancy David Acker, 07MAR94 - 11MAR94

ISRA Unit responsible DS

Area of Work Evaluation of the NRBAR Project

Accomplishments prepared for, and participated in the NRBAR Annual Joint Review, conducted a systematic analysis of NRBAR Project operations to date, and made recommendations for improvements

Name and Period of Consultancy David Wilcock, 07MAR94 - 11MAR94

ISRA Unit responsible DS

Area of Work Evaluation of the NRBAR Project

Accomplishments prepared for, and participated in the NRBAR Annual Joint Review, conducted a systematic analysis of NRBAR Project operations to date, and made recommendations for improvements

Name and Period of Consultancy Narendra Rustagi, 07MAR94 - 11MAR94

ISRA Unit responsible DS

Area of Work Evaluation of the NRBAR Project

Accomplishments prepared for, and participated in the NRBAR Annual Joint Review, conducted a systematic analysis of NRBAR Project operations to date, and made recommendations for improvements

Name and Period of Consultancy Suchet Louis 01APR-16APR94, 23APR-06MAY94

ISRA Unit responsible DS

Area of Work External evaluation of ISRA's research programs

Accomplishments participated in the evaluation and wrote an evaluation report of the Programme Ressources Alimentaires et Nutrition, of the DRSPA, discussed methods of implementing the recommendations made by the evaluation team, and wrote an implementation plan "Propositions pour une recherche pluridisciplinaire et un transfert efficace de technologies"

Name and Period of Consultancy Kader Diallo 01APR-16APR94, 23APR-06MAY94

ISRA Unit responsible DS

Area of Work External evaluation of ISRA's research programs

Accomplishments participated in the evaluation and wrote an evaluation report of the Programme Ressources Alimentaires et Nutrition, of the DRSPA, discussed methods of implementing the recommendations made by the evaluation team, and wrote an implementation plan "Propositions pour une recherche pluridisciplinaire et un transfert efficace de technologies"

Name and Period of Consultancy Maimouna Dicko 01APR94 - 21APR94

ISRA Unit responsible DS

Area of Work External evaluation of ISRA's research programs

Accomplishments participated in the evaluation and wrote an evaluation report of the Programme Ressources Alimentaires et Nutrition, of the DRSPA

Name and Period of Consultancy Papa Ibrahima Thiongane 02APR94 - 21APR94

ISRA Unit responsible DS

Area of Work External evaluation of ISRA's research programs

Accomplishments participated in the evaluation and wrote an evaluation report of the Programme de Recherche sur la Gestion des Ressources Naturelles et les Systemes de Production en Zone Pluviale Seche (P R GRN SP ZS)

Name and Period of Consultancy James Verdin, 19APR94 - 11MAY94

ISRA Unit responsible Papa Abdou Diallo

Area of Work Geographical Information Systems

Accomplishments performed a GIS needs assessment, drafted an implementation plan

Name and Period of Consultancy James Rowland, 19APR94 - 11MAY94

ISRA Unit responsible Papa Abdou Diallo

Area of Work Geographical Information Systems

Accomplishments performed a GIS needs assessment, drafted an implementation plan

Name and Period of Consultancy Rochelle Ramey, 15MAY94 - 02JUN94

ISRA Unit responsible Pape Sall, ISRA Grants Manager

Area of Work Administration, Computer Systems and Grants Management

Accomplishments finalised the job description for the new grants assistant administrator, wrote amendments to subcontracts S01, S02 and S03, computer training and needs assessment, developed project spreadsheets, and clarified short-term training logistics

Name and Period of Consultancy Bill Roberts, 25MAY94 - 18JUN94, JUL94

ISRA Unit responsible CG

Area of Work Monitoring and Evaluation, Impact

Accomplishments completed final draft of M/E plan for NRBAR, assisted with finalising the Banjul workshop report to ISRA, including an outline strategy for M/E at ISRA, drafted the World Bank and OSDIL projects logframes

Name and Period of Consultancy Louis Ndong, 10 AUG - 24 SEP , 12 - 16 DEC

ISRA Unit responsible UNIVAL

Area of Work Communications

Accomplishments Assisted in finalizing proposed strategies for rural extension & comprehension

Name and Period of Consultancy Samba Diao Thiam, 10 AUG - 24 SEPT , 20 - 21 DEC

ISRA Unit responsible UNIVAL

Area of Work Communications

Accomplishments Assisted in finalizing proposed strategies for rural extension & comprehension

Name and Period of Consultancy Bashir Diop, 10 AUG - 24 SEPT
ISRA Unit responsible UNIVAL
Area of Work Rural development extension
Accomplishments Prepared NGO/PVO inventory

Name and Period of Consultancy David Andrews 30 SEPT - 15 OCT ,
ISRA Unit responsible DRCSP
Area of Work Cereals Program
Accomplishments Reviewed pearl millet and sorghum breeding programs, reviewed emergency technologies for possible future NRBAR/ISRA use

Name and Period of Consultancy Jamil Simon, 20 - 24 OCT , 12 - 23 DEC
ISRA Unit responsible UNIVAL
Area of Work Social Marketing Analysis/Public Relations
Accomplishments (OCT) Initial meetings, review of UNIVAL activities, Identification and evaluation of production resources for photo-booklet/audio cassette Met with ISRA's programming executives Prepared dummy layout of booklet and planned activities for follow-up missions

Name and Period of Consultancy John Sanders, 23 OCT - 14 NOV
ISRA Unit responsible BAME
Area of Work Economic Impact of ISRA's research Projects
Accomplishments Prepared report on planning and management systems, incorporating previously prepared data on rice impact by Abdoulaye Fall (ISRA, DRSCI) and Monica Fisher (student researcher) during their research in July/August Participated in CST

Name and Period of Consultancy Mamadou Sidibe, 23 OCT - 4 NOV
ISRA Unit responsible BAME
Area of Work Economic Impact of ISRA's research Projects
Accomplishments Prepared report on planning and management systems, incorporating previously prepared data on rice impact by Abdoulaye Fall (ISRA, DRSCI) and Monica Fisher (student researcher) during their research in July/August

Name and Period of Consultancy Hannibal Muhtar, 7 - 25 NOV,
ISRA Unit responsible SG
Area of Work Research Stations Management
Accomplishments Collected needed elements to develop equipment profiles for stations Prepared a comprehensive plan of action for station needs for 1995

Name and Period of Consultancy Edwin Brush, 20-25 NOV,
ISRA Unit responsible SG/SARH
Area of Work INFORM
Accomplishments Evaluated the 1994 INFORM data collection activity

Name and Period of Consultancy Rochelle Rainey, 28 NOV - 12 DEC

ISRA Unit responsible DS

Area of Work Administration, Computer Systems, Grants Management

Accomplishments Reviewed OSU procedures requiring clarification & explained grants & subcontracts accounting processes Designed more efficient process to track contractually required documents, resolved some outstanding computer issues, made field visits to grants and subcontract sites

1995

Twenty-four short-term consultancies (TDYs) were completed during 1995 These played crucial roles in the design of agroforestry trials, in the external evaluation of ISRA's management and research programs, in NRBAR project evaluation and management, in improving ISRA's ability to communicate with partenaires on new technologies, in research station management, in training of researchers in adaptive research methods, in gender analysis of research projects, in strategic planning, in developing cereals technologies, in establishing ISRA's monitoring and evaluation capacity, in establishing regional research priorities, in the establishment of a national agricultural research system (SNRA), in inventory management, in a synthesis of organic matter research in Senegal, in developing a collaborative research project on water management technologies in the Nioro Watershed, and in human resources planning This TDY program was implemented as anticipated in the 1995 Workplan

Name and Period of Consultancy Monica Fisher, 02JAN95 - 15MAR95

ISRA Unit responsible BAME and DRSPA/Kolda

Area of Work validation of stabling technology in Upper Casamance

Accomplishments completed a survey of users of the technology, analysed the data and wrote a socio-economic validation report for project R04

Name and Period of Consultancy Hannibal Muhtar, 04-20JAN95 and 19-22MAR95

ISRA Unit responsible SG

Area of Work research station management

Accomplishments finalised 1995 operations and budgets for stations, including the associated administrative procedures, made recommendations on reorganisation of research stations, assisted with implementation of station rehabilitation, drafted responsibilities and qualifications for station technicians and coordinator, participated in the station financial management workshop, and in the preparations for and implementation of the mid-term review

Name and Period of Consultancy Suchet Louis, 14JAN95 - 05FEB95

ISRA Unit responsible DS

Area of Work external management and technical evaluation of research

Accomplishments evaluated management of ISRA research programs, evaluated technical content of the animal and health programs, and contributed to the draft strategic plan/mid-term review

Name and Period of Consultancy Richard Caldwell, 28JAN95 - 04FEB95
ISRA Unit responsible DG/DS
Area of Work project management
Accomplishments assisted with the NRBAR mid-term evaluation

Name and Period of Consultancy Assane Goudiaby, Amadou Oumar Ouane, Henri Mathieu Lo, 31JAN95 - 31MAR95
ISRA Unit responsible DRCSP
Area of Work on-farm technology development
Accomplishments completed training of ISRA researchers in on-farm research methods

Name and Period of Consultancy Dave Hibbs, 27FEB95 - 03MAR95
ISRA Unit responsible DRPF
Area of Work agroforestry technologies
Accomplishments made recommendations for improved agroforestry research

Name and Period of Consultancy Cathy Knott, 29MAR95 - 15APR95
ISRA Unit responsible outreach
Area of Work gender analysis
Accomplishments developed a methodology for gender analysis of research projects, including instruments

Name and Period of Consultancy Ramata Molo Aw, 31MAR95 - 15APR95
ISRA Unit responsible outreach
Area of Work gender analysis
Accomplishments developed a methodology for gender analysis of research projects, including instruments

Name and Period of Consultancy Papa Ibrahima Thiongane, 15APR95 - 15MAY95
ISRA Unit responsible DS
Area of Work strategic planning
Accomplishments completed a (SWOT) analysis of ISRA's strengths, weaknesses, opportunities and threats

Name and Period of Consultancy Bill Roberts, 24MAY95 - 20JUN95
ISRA Unit responsible DS/CG
Area of Work monitoring and evaluation
Accomplishments 8 researchers trained, ISRA monitoring and evaluation strategy developed, including reporting formats, procedures and log-frames, evaluation of the NRBAR monitoring and evaluation system

Name and Period of Consultancy David Andrews, 10-24JUN95
ISRA Unit responsible DRCSP
Area of Work cereals technologies
Accomplishments provided technical support to evaluating cereals technology

Name and Period of Consultancy Jamil Simon, 04-27JUN95
ISRA Unit responsible UNIVAL
Area of Work communications
Accomplishments implementation of 7 activities of the communications strategy, including the field-testing of the final draft of the compostage booklet

Name and Period of Consultancy Louis Ndong, 17JUN95 - 07JUL95
ISRA Unit responsible UNIVAL
Area of Work communications
Accomplishments development of the compostage booklet and tape

Name and Period of Consultancy Ali Kissi, 21-31JUL95
ISRA Unit responsible DS
Area of Work research planning
Accomplishments trained and assisted the regional research committees in establishing agricultural research priorities at regional level

Name and Period of Consultancy John Russell, 07-29AUG95
ISRA Unit responsible DS
Area of Work on-farm research
Accomplishments developed, prepared materials for, and presented to 19 ISRA researchers, a short course on the design, implementation and analysis of on-farm trials

Name and Period of Consultancy Maty Ndiaye Sy, 28AUG95 - 24OCT95
ISRA Unit responsible DG
Area of Work research and personnel management
Accomplishments trained two ISRA facilitators in team-building techniques, while jointly facilitating 8 ISRA workshops, and trained 23 senior ISRA staff in personal and time management techniques

Name and Period of Consultancy Hannibal Muhtar, 03-15OCT95
ISRA Unit responsible SG
Area of Work research station management
Accomplishments strategic planning for infrastructure, finalised a proposal to rehabilitate Bambey research station, evaluated ISRA maintenance facilities in the Dakar area

Name and Period of Consultancy Papa Ibrahima Thiongane, 10OCT95 - 10NOV95
ISRA Unit responsible CS
Area of Work strategic planning
Accomplishments described the principal elements of the Senegalese national research system, their comparative advantages, and proposed a system organisation

Name and Period of Consultancy Antonin Diouf, 28-31OCT95
ISRA Unit responsible DS
Area of Work preparation of a collaborative research project
Accomplishments completed a physical characterisation of the Nioro Watershed to provide the basic data needed to design a soil and water management (collaborative research grant) proposal

Name and Period of Consultancy Rochelle Rainey, 12NOV95 - 08DEC95
ISRA Unit responsible DG/DS
Area of Work project management
Accomplishments designed the December NRBAR workshop in Tucson for NRBAR students, budgeting for the 1996-98 period, training of the new NRBAR administrator, and completed an initial pre-audit assessment

Name and Period of Consultancy John Ashburner, 12NOV95 - 19DEC95
ISRA Unit responsible SG
Area of Work infrastructure management
Accomplishments the existing ISRA inventory transferred from the AS400 to micro computers, allowing its use as a management tool by station managers, inventory files reclassified into useable formats, and inventory lists updated according to three classification lists

Name and Period of Consultancy Hannibal Muhtar, 27NOV95 - 02DEC95
ISRA Unit responsible SG
Area of Work research station management
Accomplishments developed terms of reference for station managers, developed a draft workplan and budget for 1996 under NRBAR funds, wrote a technical paper on the feasibility of consolidating ISRA sites in the Dakar area

Name and Period of Consultancy Nicholas Dupuy, 13DEC95 - APR96
ISRA Unit responsible DS
Area of Work thematic synthesis of research results
Accomplishments initiated a review of organic matter research in Senegal, to function as a reliable basis for designing and prioritising future research in this area

Name and Period of Consultancy Amadou Gueye, 13DEC95 - APR96
ISRA Unit responsible DG
Area of Work human resources management
Accomplishments initiated a human resources audit of ISRA by a diagnostic study of human resources management, and making recommendations for changes

1996

Twenty-four short-term consultancies (TDYs) were completed during 1996. These played important roles in the synthesis of organic matter research results in Senegal, in human resources management, in inventory management, in research station management, in improving researchers' biometric skills, in topographic surveys of the Nioro watershed in support of grant S/V16, in improving researchers' on-farm research skills, in the assessment of research impact, in

strategic planning, in supporting ISRA's LTPT research projects, in socio-economic validation of technologies, in monitoring and evaluation of research undertaken at Unit level, in the determination of the ISRA indirect costs rate, in the evaluation of ISRA's physical plant, and in the development of international research linkages This TDY program was implemented as anticipated in the 1995/96 Workplan

Name and Period of Consultancy Nicholas Dupuy, 13DEC95 - 19APR96 (included in 1995 list)
ISRA Unit responsible DS

Area of Work thematic synthesis of research results

Accomplishments completed a review of organic matter research in Senegal, to function as a reliable basis for designing and prioritizing future research in this area

Name and Period of Consultancy Amadou Gueye, 13DEC95 - 18APR96 (included in 1995 list)
ISRA Unit responsible DG

Area of Work human resources management

Accomplishments conducted a human resources audit of ISRA, reorganised and updated ISRA personnel files, developed personnel procedures, undertook a diagnostic study of human resources management, and made recommendations for future changes

Name and Period of Consultancy John Ashburner, 9JAN96 - 7FEB96
ISRA Unit responsible SG

Area of Work inventory for station management

Accomplishments finalised the existing ISRA equipment and vehicle inventory according to management unit, and trained 13 inventory accountants and 8 station managers in inventory procedures

Name and Period of Consultancy Hannibal Muhtar, 20JAN96 - 07FEB96
ISRA Unit responsible SG/Aminata Badiane

Area of Work research station management

Accomplishments developed a revised station management program for 1996, evaluated the areas to be used for intensive research at Sangalkam, and outlined the various soil testing strategies with Dr Aminata Badiane

Name and Period of Consultancy Louis Ndong, 23-24JAN96
ISRA Unit responsible CM/R-D

Area of Work communication of research results to partenaires

Accomplishments completed an outreach video of the fish scales technology (NRBAR grant for research in Senegal R01)

Name and Period of Consultancy Letourmy and Goze, 01MAY96 - 12MAY96
ISRA Unit responsible DS

Area of Work Technical support in Biometry

Accomplishments trained 35 researchers in statistical analyses of experiments and surveys

Name and Period of Consultancy Antonin Diouf, 02MAY - 19AUGUST96

ISRA Unit responsible ISRA Kaolack/Modou Sene

Area of Work Topography

Accomplishments completed topographical survey work in the Nioro watershed, necessary in order to implement NRBAR collaborative research grant S/V16

Name and Period of Consultancy John Russell, 05MAY96 - 21JUNE96

ISRA Unit responsible DS, Adama Faye

Area of Work on-farm trials

Accomplishments implemented a 2 week training course for 19 researchers in the conception and analysis of on-farm trials, produced reference materials for self-tuition by researchers in this area, and implemented individual consultations with 41 researchers at 8 ISRA research sites

Name and Period of Consultancy Mamadou Sidibe, 09MAY96 - 05JUNE96

ISRA Unit responsible URA/PASE

Area of Work research impact assessment

Accomplishments the URA/PASE impact methodology, cotton, and rice reports were completed and sent for external review/publication, the initial draft of the millet report was reviewed and the study redesigned - particularly, with a new spreadsheet format, a survey questionnaire was designed and pre-tested for the diffusion study of millet, maize and sorghum technologies , and assisted the Chief URA/PASE to complete the first draft strategic plan for the Unit

Name and Period of Consultancy Nicolas Dupuy, 20MAY - 25SEPT96

ISRA Unit responsible DG

Area of Work ISRA Projet d'Entreprise and strategic planning

Accomplishments synthesised the available Strategic Planning documentation, completed a planning document for the Senegalese national agricultural research system to the year 2015, and participated in improving the strategic planning efforts of Isra's units through the GPS

Name and Period of Consultancy Vincent Bralts, 18JUN96 - 28JUN96

ISRA Unit responsible URR-BMC/Boubacar Barry

Area of Work GIS and thesis research project of the NRBAR LTPT, Boubacar Barry

Accomplishments reviewed available GIS and non-GIS data on Casamance watersheds, including topography, soil types, rainfall and cropping patterns

Name and Period of Consultancy Hannibal Muhtar, 27JUN96 - 16JUL96

ISRA Unit responsible Hyacinthe Mbengue

Area of Work station management

Accomplishments supervision of AGETIP rehabilitation work on stations, delivered to ISRA and AGETIP the completed site rehabilitation plans for Bambey and Nioro stations and evaluated the areas to be used for intensive research at Sangalkam, assisted ISRA with planning of the on-station component of the PSAOP project, and worked with station managers on improving their programs

Name and Period of Consultancy Monica Fisher, 10JUN96 - 08AUG96

ISRA Unit responsible URR-HCSO and URA-PASE NRBAR research grants R04/R09 Area of Work socio-economic analysis

Accomplishments co-authored 3 technical reports on stabling technology, collected and analysed data for these studies, and assisted ISRA staff in writing fiches techniques based on the results

Name and Period of Consultancy Bill Roberts, 01AUG96 - 17AUG96

ISRA Unit responsible DS/Mme Fatou Ba

Area of Work monitoring and evaluation

Accomplishments assisted ISRA with reviewing monitoring and evaluation documents produced to date, and adapted the tools and processes for individual research projects financed by NRBAR, particularly for the 4 URRs in the Project Zone Proposed a general outline and procedures for monitoring and evaluation at the Unit level Worked with 35 researchers to develop draft M/E plans for the 4 URRs

Name and Period of Consultancy Hannibal Muhtar, 09AUG96 - 20SEPT96

ISRA Unit responsible Hyacinthe Mbengue

Area of Work evaluation of indirect costs

Accomplishments determined the percentage rate of indirect cost of the ISRA operations and prepared a preliminary report that details the methodology, calculations and tables

Name and Period of Consultancy Antonin Diouf, 02SEPT-18OCT96

ISRA Unit responsible DG

Area of Work inventory and specification of physical plant

Accomplishments assisted ISRA consultants in completing the ISRA inventory and evaluation of physical plant in the Dakar, Ziguinchor, Kolda and Tamba areas

Name and Period of Consultancy Suchet Louis, 10-18SEPT96

ISRA Unit responsible DS/CS

Area of Work international linkages

Accomplishments drafted a memorandum of understanding and developed two pre-proposals in collaboration with researchers from ISRA URA/productions animales et URR/Niayes

Name and Period of Consultancy Richard Dick, 23-27SEPT96

ISRA Unit responsible DS/Aminata Badiane

Area of Work international linkages

Accomplishments developed preliminary proposal for joint ISRA/OSU research and development program on restoration of degraded soils in Senegal, and discussed the content of the thesis of the NRBAR LTPT Evelyne Ndiaye, including post-thesis applications in Senegal

Name and Period of Consultancy Rochelle Ramey, 01-17OCT96

ISRA Unit responsible DG

Area of Work program support

Accomplishments assisted NRBAR team to prepare protocols and budgets for additional funds, and documentation for anticipated USAID/Senegal Audit

Name and Period of Consultancy Robert Wilkerson 01-16NOV96

ISRA Unit responsible DS

Area of Work participant training/monitoring of participant research work

Accomplishments monitor progress that LT/PT Alioune Fall has made in his field research study and become aware of local conditions that may have important impact on the work

Name and Period of Consultancy John Russell, 15-24NOV96

ISRA Unit responsible DS

Area of Work CST/On-farm trial

Accomplishments participated in the CST meetings and work with NRBAR team to plan for participant mid-winter seminar to be held in Honolulu, Hawaii)

Name and Period of Consultancy John Sanders 22-06DEC96

ISRA Unit responsible ISRA/PASE

Area of Work research planning

Accomplishments completed the data collection, analysis and first draft reports of the miller, sorghum and maize impact studies and developed a short-term training for M Kebe at Purdue JAN-MAR97, and developed other research planning tasks as requested by the DG

Name and Period of Consultancy Hannibal Muhtar 05-15DEC96

ISRA Unit responsible DS/Hyacinthe Mbengue

Area of Work research and infrastructure management

Accomplishments visited the stations of Sangalkam, Bambey, LNERV and ISRA maintenance facilities

1997

Twenty-one short-term consultancies (TDYs) were completed during 1997. These played important roles in video production for the S/V08 and S/V12-R01 collaborative research projects, writing of a manual for farmers and NGOs on rice seed production, proposals for creating a research fund to ensure ISRA's sustainable funding, planning for nursery establishment and a national seminar in halophyte/salinated soils research and development, inventory management, research station management, improving researchers' on-farm research skills in strategic planning and research reporting, the implementation of underutilized vegetables research through international linkages, socio-economic validation of agroforestry technologies, development of the outreach function in ISRA through regional R/D committees, seminars and data collection, monitoring and evaluation of research undertaken at Unit and other levels, the management of international research linkages, the implementation of soils research through international linkages, evaluating ISRA/partner contracts, and the implementation of agriculture/livestock research through international linkages. This TDY program was implemented as anticipated in the 1997 Workplan.

Name and Period of Consultancy John Ashburner, 10JAN97 - 02FEB97

ISRA Unit responsible SG

Area of Work Inventory for Station Management

Accomplishments developed a strategy planning with senior ISRA management staff and organized a group mission to Kolda Research station to complete a physical inventory of station and identify problems and group proposals for their solution

Name and Period of Consultancy Hannibal Muhtar, 13JAN97 - 14FEB97

ISRA Unit responsible DG,SG

Area of Work Research Station Management

Accomplishments worked with ISRA managers and support service staff in a three day on-the-job training workshop on management issues and developed budgets for ISRA stations, developed a tentative ISRA investment and financial plan for the PSAOP, prepared a report on issues relating to financial management of ISRA and highlighted areas of concern

Name and Period of Consultancy Richard Dick, 20-27MAR97

ISRA Unit responsible DS, Aminata Badiane

Area of Work LIR Program

Accomplishments developed a mechanism for implementing the proposed joint ISRA/OSU research and exchanging project, visited possible research sites in Kaolack Reviewed the Bambey soils research lab and identified equipment requirements/repairs and general status of the operation of the lab

Name and Period of Consultancy Suchet Louis, 26MAR97 - 31APR97

ISRA Unit responsible DS/Adama Faye

Area of Work LIR Program

Accomplishments met and discussed with ISRA researchers of URA/Animal productions for planning the implementation of the joint TU/ISAR project Also finalized and submitted another research proposal on local vegetables

Name and Period of Consultancy Jean Pichot, 04-09MAY97

ISRA Unit responsible DG/DS

Area of Work Analysis of NRBAR research Grants and ISRA partnership

Accomplishments met with various partners and organized a restitution meeting to communicate the evaluation findings and suggestions for a better and more fruitful partnership

Name and Period of Consultancy Jianbang Gan & Ralph Noble, 05-23MAY97

ISRA Unit responsible DS/Adama Faye

Area of Work LIR Program

Accomplishments developed a detailed implementation workplan for the proposed ISRA/TU project, collected data on milk production, processing and prices and discussed future cooperation plan with partners

Name and Period of Consultancy Gretchen Le Van, 15MAY-15AUG97

ISRA Unit responsible NRBAR

Area of Work Project Administration

Accomplishments assisted the NRBAR Project Administrator in evaluating the actual status of project files, compiled the necessary documents needed for the files and completed a study on the Senegalese Family Law

Name and Period of Consultancy Michael Satin, 16MAY-10AUG97

ISRA Unit responsible BAME

Area of Work socio-economic survey

Accomplishments completed a survey in 12 villages and submitted a preliminary draft report

Name and Period of Consultancy Lamine Bocoum, 01JUN97-31MAY98

ISRA Unit responsible DS/RD

Area of Work assistance to CM/RD

Accomplishments developed a monitoring fiche for follow up action on ISRA research work

Name and Period of Consultancy Hannibal Muhtar, 18JUN97-14JUL97

ISRA Unit responsible SG/CS

Area of Work research station management

Accomplishments finalized the ISRA budget and Investment plan for the strategic plan, prepared a proposal for a consolidated management of ISRA URRs and stations, prepared a report related to ISRA needs for a procedures manual for management and station operations, organized a four days on-the job training for ISRA managers

Name and Period of Consultancy Bill Roberts, 27JUN - 15JUL97

ISRA Unit responsible DG/DS

Area of Work ISRA monitoring and evaluation planning

Accomplishments reviewed ISRA strategic plan and annexes and assisted in preparation of a logical framework and monitoring and evaluation plan for the project, developed draft for monitoring and evaluation section of scientific procedures manual for DS with fiches de survi
Attended research station managers' workshop in Bambey

Name and Period of Consultancy Nicolas Dupuy, 01JUL - 31DEC97

ISRA Unit responsible DG/DS

Area of Work ISRA Projet d'Entreprise and strategic planning, summary reporting of research

Accomplishments synthesized the available Strategic Planning documentation, the yearly report of all ISRA units and is now consolidating research results to be presented to ISRA clients and partners

Name and Period of Consultancy Conrad Bonsi, 07-21JUL97

ISRA Unit responsible CDH/Alassane Fall

Area of Work LIR03/indigenous vegetables

Accomplishments assisted ISRA in selecting priority indigenous vegetables species for applied research in Tambacounda and Kaolack, and in selecting the most appropriate research sites

Name and Period of Consultancy Richard Dick, 11-27SEPT97
ISRA Unit responsible DS/Aminata Badiane
Area of Work LIR02 project and NRBAR research grants review
Accomplishments worked with Aminata Badiane CM/GRN and the Kaolack team and met with various ISRA principal investigators of NRBAR grants

Name and Period of Consultancy Antonin Diouf, OCT-DEC97
ISRA Unit responsible SG/Ndiaga Dieng
Area of Work Evaluation of research facilities in the project zone
Accomplishments worked with ISRA consultant to inventory and evaluate all ISRA's physical facilities

Name and Period of Consultancy Louis Ndong, 10-29NOV97
ISRA Unit responsible ISRA/Kaolack S/V08
Area of Work Validation and Communication of research results generated through NRBAR activities
Accomplishments Video-filmed S/V08 result works and edited the results of professional standard

Name and Period of Consultancy Cheikh Tidiane Sarr, 05DEC97-30JAN98
ISRA Unit responsible ISRA/DG
Area of Work Sustainable funding Initiative
Accomplishments analysis of NRBAR grants management system and presentation of an adequate mechanism for funding of future agricultural research activities

Name and Period of Consultancy Dov Pasternak, 13-19DEC97
ISRA Unit responsible ISRA/Kaolack
Area of Work S/V18 and R20
Accomplishments assisted ISRA to evaluate the establishment of the ISRA halophyte diguette trials including feedback from farmers and projected impact potential Outlined a plan for a workshop to be held at the beginning of May 1998 on potential solutions for the acid-saline soils of Senegal

Name and Period of Consultancy Errol Rhoden, 14-22DEC97
ISRA Unit responsible ISRA/CDH
Area of Work NRBAR-LIR-03
Accomplishments collected local cultivars of bissap, okra and jaxatu , evaluated performance of bissap production and discussed future experiments on agronomic aspects of vegetable production

Name and Period of Consultancy Ba Aminata Mbaye, 15DEC97-30MAR98
ISRA Unit responsible ISRA/Ziguinchor
Area of Work Dissemination and valorization of technologies developed under NRBAR-V17
Accomplishments elaborated a draft practical guide on the production of rice crop in the Casamance region The guide will be used by farmers and will provide counseling and guidance in rice production

495

The following seven TDYs also assisted with program activities, but their travel and salary costs were funded from non-NRBAR sources

Glenn Good/NRBAR administrative review

Nick Hobgood and Steve Mason/fisheries resources management data

Candace Buzzard/project development

Cire Sall/biometrics

Paul Perrault/research management

1998

Twenty-five short-term consultancies (TDYs) were completed during 1998. These played important roles in the synthesis of NRBAR research results in Senegal, in research station management, in the assessment of research impact, in strategic planning and research reporting, in socio-economic validation of agroforestry and stabling technologies, in monitoring and evaluation of research activities, in the determination of the ISRA indirect costs rate, in the development of international research linkages, in planning for ISRA's sustainable funding, in supporting the new halophyte technologies, and in project close-out activities. This TDY program was implemented as anticipated in the 1998 Workplan.

Name and Period of Consultancy Lamine Bocoum (01JUN97-15AUG98) (also listed in 1997)

ISRA/Unit Responsible ISRA/DS

Area of Work outreach

Accomplishments detailed and recorded training outcomes of NRBAR grants research projects, assisted ISRA with developing the grants data-bank, and reviewed ISRA's overall achievement of NRBAR objectives

Name and Period of Consultancy Cheikh Sarr (05DEC97-30JAN98) (also listed in 1997)

ISRA/Unit Responsible ISRA/DG

Area of Work Sustainable research funding

Accomplishments completed a feasibility study for a national agricultural research fund

Name and Period of Consultancy Madame Ba (15DEC97-30MAR98) (also listed in 1997)

ISRA/Unit Responsible ISRA/DS

Area of Work outreach

Accomplishments assisted ISRA in completing a rice technology dissemination booklet for extension agents

Name and Period of Consultancy Nicolas Dupuy, 01JAN98-25SEP98

ISRA Unit Responsible ISRA/DG/DS

Area of Work summary reporting of research activities and support to ISRA in the preparation of scientific reports

Accomplishments worked with the DS, DG and various researchers in consolidating scientific documents as the 1995, 1996 and 1997 Annual Reports of ISRA, the ISRA Mission Statement, and the report of the Final NRBAR Workshop

Name and Period of Consultancy Richard Dick, 04-23JAN98

ISRA Unit Responsible ISRA/DS

Area of Work NRBAR/LIR-02 and NRBAR grants program

Accomplishments worked with 3 ISRA scientists on specific manuscripts to be submitted to scientific refereed journals, visited research sites and reviewed equipment and lab supply shipment for the Bambey Soils Research Lab

Name and Period of Consultancy Suchet Louis, 15-22JAN98

ISRA Unit Responsible ISRA/CDH

Area of Work NRBAR/LIR-03 and LIR-01 projects – traditional vegetable crops in Senegal and manure stabling technology in Casamance

Accomplishments met with the principal investigator and visited the project sites to complete the 1998 workplan

Name and Period of Consultancy Monica Fisher, 15JAN98-18FEB98

ISRA Unit Responsible ISRA/Kolda

Area of Work NRBAR Grant R04 and PAR 4-12 – socio-economic analysis

Accomplishments conducted a socio-economic analysis of stabling technologies (R04), a gender analysis of the impact of stabling on the socio-economic status of women in the Kolda region and a market study on the pasteurization of milk in Kolda

Name and Period of Consultancy Edwin Brush, 02-13FEB98

ISRA Unit Responsible ISRA/DS

Area of Work ISRA research personnel evaluations

Accomplishments assisted ISRA in/developed a research personnel evaluation strategy through a critical review of ISRA's and other national agricultural research institution's experience

Name and Period of Consultancy Marie Kane Seck, 02FEB98-10MAR98

ISRA Unit Responsible ISRA/DS

Area of Work research impact on women farmers – gender issue

Accomplishments carried a study on the effects of NRM technologies on the socio-economic status of women in the Kaolack "Bassin arachidier" region

Name and Period of Consultancy Charles Yamoah, 04FEB98-23JUL98

ISRA Unit Responsible ISRA/DS

Area of Work reporting on NRBAR funded research projects results

Accomplishments completed the review and summary of research technical reports and presented the information in a summary table showing the technologies that are developed and already validated and those that are being tested for validation

Name and Period of Consultancy Rochelle Rainey, 22FEB98-14MAR98

ISRA Unit Responsible ISRA/DG

Area of Work Project Administration

Accomplishments updated NRBAR bibliography from draft version, finalize inventory list with NRBAR Admin-Assistant and Grants Management Assistant to reconcile grants expenses against CID records

Name and Period of Consultancy Yosı Ben-Dov, 26FEB98-09MAR98

ISRA/Unit Responsible ISRA/Kaolack

Area of Work NRBAR R27 project

Accomplishments trained ISRA and Africare nursery staff in halophyte management, supervised the importation and establishment of Israeli seedlings at project sites

Name and Period of Consultancy Hannibal Muhtar, 03MAR98-01APR98

ISRA Unit Responsible ISRA/SG

Area of Work Station management

Accomplishments conducted an updated indirect costs study, completed a review of station development 1992-98, trained station managers

Name and Period of Consultancy Gilles Archambault, 17-20MAR98

ISRA/Unit Responsible ISRA/CNBA, Bambey

Area of Work Laboratory Equipment under NRBAR/LIR-02 (funded under LIR02)

Accomplishments Installed the AA100 purchased under LIR-02 project in the Soil Laboratory, connected a printer to the system and drafted guidelines for utilization of the AA100

Name and Period of Consultancy Rochelle Rainey, 05APR-01MAY98

ISRA/Unit Responsible ISRA/DG

Area of Work Project Administration

Accomplishments completed inventory of documents in file and copies relevant documents for final report and assisted with close-out severance package for local staff and discussed issue of outstanding balances on student accounts with Chief of Party and the DS

Name and Period of Consultancy Mamadou Sidibe, (20APR-16MAY, JUL98)

ISRA/Unit Responsible ISRA/BAME

Area of Work Economic impact Evaluation

Accomplishments completed 5 research impact studies

Name and Period of Consultancy John Sanders, 22APR-01MAY98

ISRA/Unit Responsible ISRA/BAME

Area of Work Economic impact Evaluation

Accomplishments provided key technical input to final drafts of the research impact studies

Name and Period of Consultancy Cheikh Sarr (27APR-15MAY98)

ISRA/Unit Responsible ISRA/DG

Area of Work Sustainable research funding

Accomplishments assisted ISRA in planning, implementing and reporting on a national research funds workshop

Name and Period of Consultancy Suchet Louis (02MAY-05JUN98)

ISRA/Unit Responsible ISRA/DS

Area of Work livestock technologies and outreach

Accomplishments a synthesis of livestock technologies developed or validated through NRBAR

Name and Period of Consultancy Louie Tripp (05-18MAY98)
ISRA/Unit Responsible ISRA/NRBAR
Area of Work Financial Management
Accomplishments reviewed NRBAR and CID financial transactions

Name and Period of Consultancy Ralph Noble (11MAY-14JUN98)
ISRA/Unit Responsible ISRA/DS
Area of Work LIR01
Accomplishments assisted with the drafting of a final report for the TU/ISRA international linkage project for stabling in Kolda

Name and Period of Consultancy Rochelle Rainey (18MAY-30SEP98)
ISRA/Unit Responsible ISRA/DG
Area of Work Project administration
Accomplishments completed the end-of-project administrative and financial tasks

Name and Period of Consultancy Dov Pasternak (06-09JUN98)
ISRA/Unit Responsible ISRA/DG
Area of Work halophytes
Accomplishments technically reviewed the S18/R20 halophyte results, and made recommendations

Name and Period of Consultancy Michael Satin (10JUN-10JUL98)
ISRA/Unit Responsible ISRA/DS
Area of Work economic analysis
Accomplishments completed the economic analyses of live fences and windbreaks in Kaolack, and assisted with presentation materials for extension purposes

Name and Period of Consultancy Bill Roberts (30JUN-15JUL98)
ISRA/Unit Responsible ISRA/DS
Area of Work Monitoring and evaluation
Accomplishments completed a review of research planning and management, and monitoring and evaluation, improvements at ISRA during the period 1992-98

Name and Period of Consultancy Richard Dick (30JUN-10JUL98)
ISRA/Unit Responsible ISRA/NRBAR
Area of Work LIR02 and final technical reporting
Accomplishments assisted ISRA and Charles Yamoah in a synthesis of NRBAR-generated and validated technologies, completed a final report for the OSU/ISRA international soils project

IVb (iv) SYNTHESIS OF THE SHORT-TERM PERSONNEL PROGRAM

Once the technical program was established in late 1993, the volume of effort remained remarkably constant through to the end of the project, at a rate of approximately 23 TDY events per year. The emphasis of the short-term technical assistance program evolved from an initial concentration on institutional strengthening in management areas, to institutional strengthening in technical areas, and finally to events for analyses of data and results, or other complements to NRBAR grants activities, this change corresponded both to the needs of the NRBAR Grants project cycle, and to the additional emphasis placed on technical results by ISRA and USAID since 1996.

Individual consultants' level of effort can be divided between the primary areas of work, as follows: 8 events in the areas of strategic planning, research priorities and sustainable funding, 6 in monitoring and evaluation, 3 in human resources development, 2 in natural resource program planning, 13 in outreach, including communications and women's roles, 6 in technical evaluations of Departmental research programs, 4 in on-farm research methodology, 3 specifically in biometrics, 8 in the Purdue-based research impact studies, 7 for the development of specific technologies (particularly agroforestry, cereals and halophytes), 8 for the validation of specific technologies (mainly for socio-economic analyses), 6 for the technical syntheses of research results across trials, 13 for the development of international linkages (particularly for specific technology development in stabling, vegetables and soil management as part of funded linkages with Tuskegee University and Oregon State University), and 17 for project administration and management.

All ISRA/NRBAR programs appear to have benefited from the consultancy program, both in the short-term through specific results, but also in the long-term through consultants' training activities which pervaded the whole program, however, areas which particularly benefited from this NRBAR resource as a principal source of support were: research impact studies, monitoring and evaluation systems, communication of research results, strategic planning, socio-economic evaluation of technologies, training in specific technical areas (such as halophytes, on-farm research methodology, and agroforestry), development of international linkages for specific technology development, syntheses of research results between trials, and project administration.

V TRAINING

The NRBAR training program has supported ISRA's training needs in the areas of long-term training at the Masters and Ph D levels in the U S , short-term training outside of Senegal, short-term training in Senegal, and long-term B S training for women in Senegal. These programs have been implemented according to the guidelines of the SO2 and NRBAR Grant agreements, and are complementary with the informal training activities undertaken through the project's technical assistance.

Va. LONG-TERM HIGHER DEGREE TRAINING

Va (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of long-term Higher Degree training appears to have achieved its objectives of providing relevant and rigorous technical training in natural resources subjects, for 5 students at Ph D level and 10 at M S level. Implementation appears to have been consistent with the guidelines set out in the NRBAR and SO2 Grant Agreements, and total estimated expenditures are expected to be approximately equal to the budget of \$1.75m. Four Ph D and five M S students had completed their programs, and returned to ISRA, prior to the project end-date. One M S student was unable to achieve the necessary grades, so returned without to ISRA without a Degree. The remaining four M S students completed their programs shortly after the project end-date, and returned to ISRA. The remaining Ph D student was still completing his thesis in Senegal at project end-date, and is expected to complete the program in the U S in 1999.

The impact of this program on attainment of ISRA/NRBAR objectives has already been significant. Direct contributions to ISRA/NRBAR objectives include 5 in-depth evaluations of existing technologies or policies, 3 technology development studies, and 2 scientific research studies. A further five studies are expected to give similar, useful, results upon completion. Their international training and experience has allowed key ISRA researchers to improve performance in priority areas of natural resources research. All the successful students have completed Journal articles and/or extension papers based on their research, which in most cases was implemented in Senegal. An area of most obvious impact was in the quality of these researchers' participation in the final technical review meeting of the NRBAR grants in June, 1998, and at the final NRBAR seminar in August, 1998 (refer Section Vc Short-term Training in Senegal). One of the students was appointed to the senior research and supervisory post of Director of the ISRA Research Center at Djibbelor. ISRA has also benefited from the recruitment of three additional women scientists, who signed long-term employment contracts with the Institute prior to departing for the U S , and have now returned to work at ISRA having successfully completed their M S programs.

Va (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that up to 5 Ph D Degrees and 10 Masters Degrees would be justified during the life of the project, given ISRA's staffing levels. Areas of study should be natural resources concerns, and efforts should be made to train approximately two women Ph Ds and three M S. The program began in early- 1993, with

the development of a long-term training plan, and ended in December, 1998. The procedure for selection of candidates was via an ISRA selection committee, consisting of a sub-committee of the ISRA Management Committee. The scholarship announcement was circulated to all ISRA researchers, and selection was objectively based on the selection criteria of the long-term training plan. Students' departures for the U S to begin training were staggered, in order to reduce the negative effect on on-going research programs at ISRA.

Four of the selected candidates dropped out for personal reasons prior to leaving for the U S, and were replaced by ISRA through their existing training program procedures. One male replacement was found within ISRA, but the remaining 3 positions - reserved for women candidates - could not be filled at ISRA, as none of the potential candidates were available. In 1995, in order to fill one of these remaining vacant positions from outside ISRA at short notice, ISRA requested the Directors of the two NRBAR-participatory agricultural research institutes, ENSA and IST, to propose a short-list, the (female) candidate was selected from the short-list, based on the criteria specified in the training program procedures. The remaining 2 vacancies for women were filled through a national search. The three women candidates, who had been selected from outside of ISRA, signed employment contracts with ISRA, to ensure their return to ISRA following completion of training.

Va (iii) ACTIVITIES

A long-term training plan was developed by ISRA and CID, and approved by USAID, in May, 1993, including the dossiers of the selected five Ph D and ten Masters candidates. English language training and orientation was provided to participants, either in-country and/or in the U S, as necessary. The 15 Degree training activities were implemented at a total cost of approximately \$1.6m. In order to better prepare students for more applied tasks upon their return to ISRA, three NRBAR Mid-Winter workshops were held for participants in the U S, in 1994, 1995 and 1996, this was in addition to the students' requirements to obtain their degrees.

Fifteen students pursued their studies in the U S during the period. Four Ph D students and five Masters students have returned to Senegal at the successful completion of their studies. In addition, one Masters candidate returned to Senegal having failed his Degree. The five remaining students appear to be on track for completing their degrees by December, 1998. Summary information for each of the fifteen participants is presented in the attached list, and the technical reports are referenced in the Bibliography.

DOCTORAL DEGREE PARTICIPANTS

Four Ph D students, Samba Sall, Mamadou Diop, Boubacar Barry and Alioune Fall, have completed their degrees and returned to ISRA. Ibrahima Thomas returned to Senegal at the end of his PIO/P period, without completing his degree. Part of the delay stems from the fact that some required courses are offered only every other year, so he had at least one course to take after his PIO/P ended. He returned to Senegal as originally scheduled. Thomas returned to the U S for a 6 months period in 1997 to complete two courses and his preliminary examinations, and is expected to return once more to the U S in 1999, financed through other funding sources, to defend his thesis.

Name of Long-term Participant Doctoral Trainee **Samba SALL**
FIELD OF STUDY Agricultural Economics
UNIVERSITY Kansas State University
PIO/P # 685-0285-1-10079
DATE OF DEPARTURE August, 1993
DATE OF RETURN TO SENEGAL Returned in June 1997, Posted to ISRA/Djibelor
EXTENSION OF STAY Requested and approved from July to December 1997
ACADEMIC PROGRESS TO DATE PHD Degree obtained
THESIS TOPIC *A Technology-Characteristics Approach to Adoption The Case of Improved Rice Varieties in Southern Senegal*
Field Research completed in Senegal June-Sept96

Samba Sall returned to ISRA after successfully completing his Ph D in the U S Samba Sall's research consists of the evaluation of the performance of the improved rice varieties DJ684D, DJ12519, IRAT144, IRAT133, IRAT10, IR112, 144B9, AMANO, IKP, ROCK5, and TOX-728 The analyses included a study of the reasons for adoption/non-adoption in the various on-farm environments in the Casamance Region The study also included the evaluation of many local rice varieties such as Ablaye Mano and Barafita. The results have important implications for farmers, extensionists, researchers and policy-makers, and these are very well presented in the final two Chapters It is also planned that Samba will use the results and methodology in a socio-economic evaluation of the PROGES investments in the rice valleys of the Casamance, and in further studies of the adaptation and diffusion of other technologies at farm level

Name of Long-term Participant Doctoral Trainee **Mamadou DIOP**
FIELD OF STUDY Animal Science
UNIVERSITY University of Nebraska
PIO/P # 685-0285-1-10081
DATE OF DEPARTURE September 1993
DATE OF RETURN TO SENEGAL Returned to Senegal in June 1997, posted to LNERV
EXTENSION OF STAY none requested
ACADEMIC PROGRESS TO DATE Excellence performance - 3.70 GPA – PHD degree obtained
THESIS TOPIC *Design and Analysis of Open Nucleus Breeding Plants for Cattle in Senegal*

Mamadou Diop returned to ISRA after successfully completing his Ph D in the U S His study demonstrates the effectiveness of two specific specifications of the open-nucleus breeding system for Ndama cattle (Model 1 and Model 3), over traditional closed systems

Name of Long-term Participant Doctoral Trainee **Boubacar BARRY**
FIELD OF STUDY Agricultural Engineering (Soil/Water)
UNIVERSITY Purdue University
PIO/P # 685-0285-1-10091
DATE OF DEPARTURE August 1994

DATE OF RETURN TO SENEGAL returned to Senegal in November 1997, posted to ISRA/Djibelor

EXTENSION OF STAY Approved for November 1997

ACADEMIC PROGRESS TO DATE Good performance - 3.50 GPA – PHD Degree Obtained

THESIS TOPIC Impacts of Watershed Management Practices on Anti-Salt Dam Design and Operation Using GIS in Casamance (Senegal)

Field Research completed in Senegal June-October 1996

Boubacar Barry returned to ISRA after successfully completing his Ph D in the U S on the analyses of the relationship between recent hydrology and watershed management, and land use, in the Casamance. The results are useful for making extension recommendations for crop scheduling, and for new varieties of rice and other crops which are needed to better utilise the drier growing conditions. The results demonstrate the effects of anti-salt dikes, and can be used in the more effective planning of new dikes as well as in the more productive use of existing dikes. The results can also help regional decision-makers in establishing natural resources policies and guidelines.

Name of Long-term Participant Doctoral Trainee **Alioune FALL**

FIELD OF STUDY Agricultural Engineering

UNIVERSITY Michigan State University

PIO/P # 685-0285-1-10082

DATE OF DEPARTURE August, 1993

DATE OF RETURN TO SENEGAL November 1997, posted to ISRA/Djibelor

EXTENSION OF STAY Approved from July to November 1997

ACADEMIC PROGRESS TO DATE Excellent performance - 3.9 GPA – PHD Degree Obtained

THESIS TOPIC Methodology for Evaluating the Impact of Animal Traction at the Farm Level in a Small Scale Multi-cropping System (Basse Casamance Region)

Field Research completed in Senegal May-November 1996

Alioune Fall returned to ISRA after successfully completing his Ph D in the U S. He evaluated existing animal traction technology using the Ndama cattle breed, in the Casamance Region. The results show that

- (a) the range of implements available for use with animal traction is small,
- (b) mainly due to the low quality of materials used in the working components and to the harsh field conditions, implements experienced frequent breakdowns, which local blacksmiths were often unable to repair due to unavailability of tools and of inadequate raw materials,
- (c) 70% of farmer users rely on only one pair of oxen, which makes this technology somewhat unreliable, given the frequency of animal problems and of materials limitations, leading to these farmers frequently having to resort to hand-tools for short or long periods of time,
- (d) level of utilisation is low as almost all effort is concentrated on land preparation, rather than including at least the main weeding operations, due to lack of suitable equipment,
- (e) more research is needed on the problem of solving the constraint of lack of feed for draft animals during the peak land preparation season, on testing an improved yoking system, and on improved design of implements, and

- (f) farmers need more technical assistance, particularly for improving the low level of skills in their use of this technology, through increased and improved training operations

Name of Long-term Participant Doctoral Trainee **Ibrahima THOMAS**

FIELD OF STUDY Forest Biometrics

UNIVERSITY Oregon State University

PIO/P # 685-0285-1-10080

DATE OF DEPARTURE September, 1993

DATE OF RETURN TO SENEGAL July, 1998

EXTENSION OF STAY obtained through July, 1998

ACADEMIC PROGRESS TO DATE Good performance - 3.15 GPA Thesis not yet completed

THESIS TOPIC Comparison of Statistical Distributions for Fitting Diameter Data from Forest Stands in Senegal

Field Research completed in Senegal July-September 1995 and July-December 1997

MASTERS DEGREE PARTICIPANTS

Mour Gueye, Mouhamadou Sissokho, Bassirou Diaw, Mamadou Lo and Alioune Dieng returned to Senegal after successfully completing their Degrees prior to project end-date. Tanou Ba returned without completing his Degree, however, his thesis data was considered valuable, and he has completed a research paper. The remaining four Masters students, Fana Sylla, Evelyne Ndiaye, Massamba Thiam, and Aissatou Ndiaye, having begun their academic programs only in September 1996 following English training, completed their programs shortly after the project end-date.

Name of Long-term Participant Masters Trainee **Mour Gueye, CRA/Tamba**

FIELD OF STUDY Agronomy/Cropping Systems

UNIVERSITY Tuskegee University

PIO/P # 685-0285-1-10095

DATE OF DEPARTURE January, 1996

DATE OF RETURN TO SENEGAL July - 1998

EXTENSION OF STAY None

ACADEMIC PROGRESS TO DATE Excellent - 4.0 GPA

THESIS TOPIC Agronomic effects of organic residues management on soil potassium availability and cotton yield improvement in Senegal

Mour Gueye returned to ISRA after successfully completing his MS in the US. Mour's research was successfully completed on the agronomic effects of organic residues as fertilizer on cotton/cereals systems in Kolda/Tambacounda. The results show that, when plowed in, cotton residues and stable manure result in significant increases in the level and quality of cotton production, compared to using no-potassium fertilizer or muriate of potash. A further validation study is needed to determine the on-farm potential of using cotton residues as organic amendments to the soil.

5/85

Name of Long-term Participant Masters Trainee **Mohamadou M SISSOKHO**

FIELD OF STUDY Animal Science

UNIVERSITY Oregon State University

PIO/P # 685-0285-1-10093

DATE OF DEPARTURE August 1994

DATE OF RETURN TO SENEGAL March 1998

EXTENSION OF STAY approved for March 1998

ACADEMIC PROGRESS TO DATE Excellent performance - 3,80 GPA

THESIS TOPIC *Factors Limiting Cattle Performances Under Village Management Systems and Test of Potential Techniques of Forage Conservation Designed to be Applicable by Farmers*

Field Research completed in Senegal 5/96 – 9/96

Mohamadou Sissokho returned to ISRA after successfully completing his M S in the U S on the analyses of the performance of village cattle herds under the agro-pastoral production system of Kolda This detailed analyses of cattle herd dynamics and performance under village husbandry conditions in the Kolda Region will be very useful in making appropriate extension recommendations, and for introducing at village level the improved agriculture/livestock technologies presently being developed and validated in the Region The results can also help regional decision-makers in establishing natural resources policies and guidelines

Name of Long-term Participant Masters Trainee **Bassirou DIAW**

FIELD OF STUDY Physical Oceanography

UNIVERSITY Oregon State University

PIO/P # 685-0285-1-10090

DATE OF DEPARTURE August 1994

DATE OF RETURN TO SENEGAL returned to Senegal in December 1997

EXTENSION OF STAY approved for December 1997

ACADEMIC PROGRESS TO DATE marginal performance - 2,60 GPA – Masters Degree Obtained

THESIS TOPIC *Research Proposal for Masters Degree Thesis in Physical Oceanography*

Bassirou Diaw returned to ISRA after successfully completing his M S in the U S His research showed the importance of upwelling phenomena in marine fisheries management in Senegal

Name of Long-term Participant Masters Trainee **Mamadou LO**

FIELD OF STUDY Agronomy/Farming Systems

UNIVERSITY University of Florida

PIO/P # 685-0285-1-10089

DATE OF DEPARTURE August 1994

DATE OF RETURN TO SENEGAL returned in May 1997, posted to ISRA/Djibelor

EXTENSION OF STAY approved for May 1997

ACADEMIC PROGRESS TO DATE Very Good - 3 66 GPA – Masters Degree obtained

THESIS TOPIC *Comparison of Different Methods of Analysis of On-Farm Research and Extension in Small Scale Farm Systems in Lower Casamance (Senegal)*

Field Research completed in Senegal 5/96 – 9/96

Mamadou Lo returned to ISRA after successfully completing his M S in the U S Lo's research shows that the Adaptability Analysis and Linear Programming approaches, which are currently being promoted at ISRA, are superior to previous methods for improving the adoption rate of improved technologies through (a) predicting farmer responses to improved technologies, and (b) designing better extension messages This study has significantly added to our knowledge and understanding of farm households in the Lower Casamance The study evaluates the success of the improved nappe varieties DJ12519, IRAT112, IRAT133, and IKP, compared with local varieties The results demonstrate the necessity for researchers to take into account farmers' evaluation criteria in the development and validation of improved technologies

Name of Long-term Participant Masters Trainee **Tanou BA Galle**
FIELD OF STUDY Soil and Water Management/Bioresources Engineering
UNIVERSITY University of Arizona
PIO/P # 685-0285-1-10092
DATE OF DEPARTURE September 1993
DATE OF RETURN TO SENEGAL Returned in June 1997
EXTENSION OF STAY none
ACADEMIC PROGRESS TO DATE Poor Performance, unable to obtain Degree
THESIS TOPIC Water Use of a Drought-resistant Grain Sorghum Cultivar under Furrow Irrigation

This study investigated the extent of nitrate pollution of groundwater under different sorghum irrigation conditions

Name of Long-term Participant Masters Trainee **Alioune Badara DIENG**
FIELD OF STUDY Agricultural Economics and Biometry
UNIVERSITY Tuskegee University
PIO/P # 685-0285-1-10094
DATE OF DEPARTURE January, 1996
DATE OF RETURN TO SENEGAL June 1998
EXTENSION OF STAY None
ACADEMIC PROGRESS TO DATE Excellent - 4.0 GPA
THESIS TOPIC Cereal Supply and Demand in Senegal, 1960-1995 Implications for Food Self-Sufficiency
Field study completed in Senegal 12/96 – 5/97

Alioune Dieng returned to ISRA after successfully completing his M S in the U S on the analyses of the relationship between food self-sufficiency and supply/demand for domestic cereals Important results included evidence that self-sufficiency increases in Senegal with increasing incomes, cereal production does not necessarily increase with increased producer prices, due to other factors, including availability of suitable land in the case of rice, and rice was found to be a substitute for maize, but complementary to millet/sorghum The results will be useful in making appropriate agricultural policy recommendations for production, prices, trade, processing and markets for millet, sorghum, maize and rice

The remaining 4 candidates completed their Degrees after the project end-date

Name of Long-term Participant Masters Trainee **Massamba Thiam, CRA/Djibelor**
FIELD OF STUDY Wood Technology
UNIVERSITY Oregon State University
PIO/P # 685-0285-1-10096
DATE OF DEPARTURE January, 1996
DATE OF RETURN TO SENEGAL December 1998
EXTENSION OF STAY until December 1998
ACADEMIC PROGRESS TO DATE Excellent performance
THESIS TOPIC Effect of High Temperature Drying on bending strength and shear strength of Western Hemlock

Name of Long-term Participant Masters Trainee **Evelyne Lydie Ndiaye**
FIELD OF STUDY Soil Science
UNIVERSITY Oregon State University
PIO/P # 685-0285-1-10097
DATE OF DEPARTURE January 1996
DATE OF RETURN TO SENEGAL December 1998
EXTENSION OF STAY until December 1998
ACADEMIC PROGRESS TO DATE Excellent performance
THESIS TOPIC Influence of Alternative Low Input Cropping Systems on Soil Quality Trajectory

Name of Long-term Participant Masters Trainee **Fana Sylla Ba**
FIELD OF STUDY Agronomy/Crop Breeding
UNIVERSITY University of California Davis
PIO/P # 685-0285-1-10107
DATE OF DEPARTURE March, 1996
DATE OF RETURN TO SENEGAL December 1998
EXTENSION OF STAY until December 1998
ACADEMIC PROGRESS TO DATE Good performance in course-work
THESIS TOPIC Inheritance of the reproductive system in cowpea (*Vigna unguiculata* (L) Walp.)

Name of Long-term Participant Masters Trainee **Aissatou Ndiaye**
FIELD OF STUDY Crop and Soil Science
UNIVERSITY Oregon State University
PIO/P # 685-0285-1-10108
DATE OF DEPARTURE March, 1996
DATE OF RETURN TO SENEGAL December 1998
EXTENSION OF STAY until December 1998
ACADEMIC PROGRESS TO DATE Excellent performance
THESIS TOPIC Influence of soil aggregation on the rates of carbon and nitrogen mineralization in fallowed and cover cropped soil

Va (iv) SYNTHESIS OF THE LONG-TERM HIGHER DEGREE PROGRAM

These research reports have provided valuable information related to specific technologies encountered in Senegal, including

- The evaluation of 4 improved nappe varieties of rice in the Lower Casamance (Mamadou Lo)
- The evaluation of the anti-salt dyke technology in the Casamance (Boubacar Barry)
- The evaluation of animal traction technologies using Ndama cattle (Alhouné Fall)
- Technology development study for improved agriculture/livestock technologies in villages in the Kolda Region (M Sissokho)
- Technology development study for the improvement of Ndama cattle through open nucleus techniques (M Diop)
- Technology development study for use of cotton residues and stable manure in cotton production (M Gueye)
- The evaluation of the performance of the improved rice varieties DJ684D, DJ12519, IRAT144, IRAT133, IRAT10, IR112, 144B9, AMANO, IKP, ROCK5, and TOX-728 including an adoption study (Samba Sall)
- Scientific studies of up-welling benefits (B Diaw) and nitrate pollution in sorghum fields (Tanou Ba)
- The evaluation of food security policies for cereals (A Dieng)

The volume of effort increased over the period 1993-96, and reduced somewhat during 1997-98, as the participants began returning to Senegal. Four Ph D students departed for the U S in mid-1993, 4 M S students and 1 Ph D student in mid-1994, and the remaining 6 M S students departed in early-1996. The subjects of these studies were, at Ph D level 1 economics, 1 soils, 1 engineering, 1 animal science, and 1 forestry, and at M S level 3 soils, 3 agronomy, 1 forage agronomy, 1 economics, and 2 oceanography. Students were distributed over 9 universities throughout the U S, these sites were chosen by ISRA, the students, and the training coordinator, according to students' specific personal circumstances and needs, according to academic discipline, and to their English language proficiency at the time of application.

Vb. SHORT-TERM TRAINING AND CONFERENCES OUTSIDE OF SENEGAL

Vb (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of short-term training and conferences outside of Senegal, 50 events involving 68 ISRA staff, has achieved its objectives of providing useful international training and experience for ISRA staff, allowing them to improve performance in priority areas. Implementation was according to the guidelines set out in the NRBAR Grant Agreement. It was possible to implement 40% more events than originally planned, with total estimated expenditures being 20% less than the indicative budget. This mainly reflects the fact that researchers were generally available for only short periods of time, due to the need to maintain key researchers on priority research programs.

The impact of this program on attainment of ISRA/NRBAR objectives has been substantial, particularly when events are considered in relation to complementary activities such as the short-term consultant and short-term training in Senegal programs. Areas where impact is most obvious are the greatly-increased use of logframe analyses in research planning (Mme Ba et al, Gambia, 1994), the successful conception and production of the strategic plan (Papa Seck, Mamadou Sidibe and Moustapha Kebe, ISNAR, 1993-95), the production of 5 research articles on range management (Safietou Fall, U S , 1996), analyses and interpretation of stabling technology data (Dieye, 1996, Diallo, Diatta, Toure, and M A Ba, 1998), and the successful introduction of halophyte technology (Malamy Diatta, 1994, 1996 and 1998, Abdou Mbye, 1998).

Vb (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that foreign short-term training programs should (a) promote collaboration with other researchers, and partenaires, and (b) provide skills relevant to specific problem areas, critical to attainment of project objectives. The Agreement called for a special effort to fund female technicians, researchers and managers, the inclusion of research planning and management, and financial management, and the exclusion of biotechnology and tissue culture programs. Although Agreement 685-0285 was replaced by Agreement 685-SO2 on 27 September, 1996, the short-term foreign training program did not change, except that it was agreed that more effort should be placed on the objectives of the development and validation of technologies, and on farmer and partenaire training in new technologies, rather than on ISRA's institutional development. The USAID/CID contract for assistance to ISRA in implementing NRBAR services included a budget of \$700,000 for approximately 35 short-term foreign training programs (refer page 5 of the 1993 NRBAR Workplan). The program began in October, 1993, and ended in June, 1998. The procedure for selection of events to be funded was relatively informal, proposals from ISRA staff were sent for approval through the normal channels to the DS (the NRBAR Deputy Director), or, in cases of proposals from senior staff, to the DG (the NRBAR Director). Proposals were approved, with the assistance of the CID/NRBAR COP, on the basis of their relevance to project objectives, the level of participation of candidates in NRBAR research activities, and the specific number and types of events targeted in each of the Annual Workplans.

Vb (iii) ACTIVITIES

During the life of the program, 50 events were implemented at a total cost of approximately \$555,000 (refer Table 9 1 of the NRBAR Plan de Travail, 1997), and involving 68 ISRA staff. For many events, significant cost sharing occurred with host institutions. NRBAR also assisted with many other foreign training activities for ISRA staff, which were funded from non-NRBAR sources, or from other NRBAR sources such as the international linkages program. More than 100 other activities were proposed and discussed, but were not implemented – mainly for reasons of lack of availability of staff or lack of relevance of the training to NRBAR objectives.

The following text outlines each of the 50 events, by year of implementation, while the attached table (Table Vb) outlines the activities of each of the 68 participants, in French.

1993

In 1993, there was a single event in which two ISRA personnel participated. This event gave two senior ISRA administrators the opportunity to explore the international National Agricultural Research System (NARS) experience with strategic planning and research priority-setting, in order to effectively plan for these tasks to be implemented in the immediate future at ISRA.

NAME OF PARTICIPANT(S)	Papa A. Seck (DS) and Mamadou Sidibe (Chef-BAME)
DATES & LOCATION(S) OF TRAINING	October 1993, ISNAR, The Hague
ISRA/NRBAR PROGRAM	Research management
DESCRIPTION OF TRAINING	Strategic planning and research priority setting

1994

In 1994, there were 10 foreign short-term training events in which 21 ISRA staff participated. Emphasis was placed on participation in international training courses for researchers in specific priority fields (7 events), and for administrators (3 events). International networking and the presentation of research results from Senegal were important components for 6 of these training events. All activities served to some extent to strengthen ISRA's international research linkages.

NAME OF PARTICIPANT(S)	Fatou BA, Alassane NDIAYE, Babacar NGOM
DATES & LOCATION(S) OF TRAINING	May 9-28, 1994, The Gambia
ISRA/NRBAR PROGRAM	Technical training of researchers
DESCRIPTION OF TRAINING	M & E of Agricultural Projects

NAME OF PARTICIPANT(S) Dr Papa A SECK
 DATES & LOCATION(S) OF TRAINING 21may-10jul94, Pittsburgh, World Bank, VPI & OSU
 ISRA/NRBAR PROGRAM Technical training of researchers, Technical training of administrators
 DESCRIPTION OF TRAINING Francophone seminar on Development Management, USAID/World Bank Coordination Meeting, NRBAR Management Meeting, research priority-setting

NAME OF PARTICIPANT(S) Manievel SENE
 DATES & LOCATION(S) OF TRAINING July 1994, Paris, France
 ISRA/NRBAR PROGRAM Technical training of researchers
 DESCRIPTION OF TRAINING Discreet Data Analysis Seminar

NAME OF PARTICIPANT(S) Ndiaga DIENG, Mustapha DIOP
 DATES & LOCATION(S) OF TRAINING 08jul-06aug94, Fayetteville, U of Arkansas
 ISRA/NRBAR PROGRAM Technical training of administrators and technicians
 DESCRIPTION OF TRAINING Experiment Station Operations & Management Workshop

NAME OF PARTICIPANT(S) Ndiaga DIENG
 DATES & LOCATION(S) OF TRAINING August 7 - 15, 1994, ISNAR, The Hague
 ISRA/NRBAR PROGRAM Technical training of administrators
 DESCRIPTION OF TRAINING INFORM/Finances, Human Resource Management

NAME OF PARTICIPANT(S) Aminata BADIANE
 DATES & LOCATION(S) OF TRAINING July 1994, Acapulco, Mexico
 ISRA/NRBAR PROGRAM Technical training of researchers
 DESCRIPTION OF TRAINING 15th International Congress of Soil Science

NAME OF PARTICIPANT(S) Malamy DIATTA
 DATES & LOCATION(S) OF TRAINING July - November 1994, Strasbourg, France
 ISRA/NRBAR PROGRAM Technical training of researchers
 DESCRIPTION OF TRAINING Agroforestry Data Analysis Techniques

NAME OF PARTICIPANT(S) Ndiaga DIENG
 DATES & LOCATION(S) OF TRAINING Oct 94, ISNAR, The Hague
 ISRA/NRBAR PROGRAM Technical training of administrators
 DESCRIPTION OF TRAINING Finance Officer's Meeting International training course

NAME OF PARTICIPANT(S)	Adama FAYE, Desire SARR, Babou NDOUR, Ibrahima DIA, M M Kebe, Demba F MBAYE, Taib DIOUF, Lamine SONKO
DATES & LOCATION(S) OF TRAINING	Nov 18-30, Montpellier, France
ISRA/NRBAR PROGRAM	Technical training of researchers
DESCRIPTION OF TRAINING	International Symposium on Systems Research

NAME OF PARTICIPANT(S)	Abdourahamane TAMBA, Babou NDOUR
DATES & LOCATION(S) OF TRAINING	Dec 5 - 10, Stuttgart, Germany
ISRA/NRBAR PROGRAM	Technical training of researchers
DESCRIPTION OF TRAINING	International Symposium on Wind Erosion in West Africa

1995

In 1995, there were 14 foreign short-term training events in which 15 ISRA staff participated. Emphasis for 10 events was placed on participation in international training courses for researchers in specific priority fields (9 events), and for administrators (1 event). International networking and the presentation of research results from Senegal were important components for 6 of these 10 training events. The remaining 4 events concentrated on obtaining scientific advice from experts in the relevant fields, and on management of NRBAR activities. All activities served to strengthen ISRA's international research linkages.

NAME OF PARTICIPANT(S)	Pierre DIENE
DATES/LOCATION(S) OF TRAINING	Feb 15 - 28, 1995 - Casablanca
ISRA/NRBAR PROGRAM	Technical training for administrators
DESCRIPTION OF TRAINING	International seminar Financial Management

NAME OF PARTICIPANT(S)	Fatou GUEYE
DATES/LOCATION(S) OF TRAINING	March 6 - April 15, 1995 - Montpellier
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	International course Statistics and Computer Training

NAME OF PARTICIPANT(S)	Aly NDIAYE
DATES/LOCATION(S) OF TRAINING	April 4 - 13, 1995, Orleans, France
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	International Seminar on Roots and Roots systems

NAME OF PARTICIPANT(S)	Abdoulaye FALL
DATES/LOCATION(S) OF TRAINING	April 04 - July 31, 1995 OSU, Purdue, IFPRI
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	Economics of Rural Development, research impact

NAME OF PARTICIPANT(S)	Mouhamadou Habib LY
DATES/LOCATION(S) OF TRAINING	April 09-16, 1995 OSU
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	Management of the NRBAR project, outreach
NAME OF PARTICIPANT(S)	Pape SALL
DATES/LOCATION(S) OF TRAINING	April 09-27, 1995 OSU
ISRA/NRBAR PROGRAM	Technical training for researchers agroforestry
DESCRIPTION OF TRAINING	Agroforestry technologies, outreach methods
NAME OF PARTICIPANT(S)	Moustapha KEBE
DATES/LOCATION(S) OF TRAINING	April 29 - May 9, 1995, ISNAR, The Hague
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	Strategic planning and methods of setting research priorities, by ISNAR staff
NAME OF PARTICIPANT(S)	Madiagne Diagne
DATES/LOCATION(S) OF TRAINING	08-19may95, IFDC/Alabama
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	International workshop on methods of crop growth simulation
NAME OF PARTICIPANT(S)	Moussa BAKAYOKHO
DATES/LOCATION(S) OF TRAINING	June 10 - July 4, 1995, Illinois, USA
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	International Symposium on Improvement of Communication between Organizations
NAME OF PARTICIPANT(S)	Mouhamadou Ly, Adama FAYE
DATES/LOCATION(S) OF TRAINING	June 24 - July 9, 1995, OSU & Tuskegee Institute, USA
ISRA/NRBAR PROGRAM	Technical training for researchers, research management
DESCRIPTION OF TRAINING	International outreach workshop, meetings with NRBAR project staff
NAME OF PARTICIPANT(S)	Yaya Thiongane
DATES/LOCATION(S) OF TRAINING	July 08-18, 1995, South Africa
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	International workshop, paper presentation
NAME OF PARTICIPANT(S)	Safietou FALL
DATES/LOCATION(S) OF TRAINING	July 23 - Aug 7, 1995, Salt Lake City, OSU
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	International Congress on Rangelands & scientific visit to Oregon State University

NAME OF PARTICIPANT(S)	Pape SALL
DATES/LOCATION(S) OF TRAINING	August 6 - 12, 1995, Finland
ISRA/NRBAR PROGRAM	Technical training for researchers, research administration
DESCRIPTION OF TRAINING	World Congress of International Union of Forestry Research Organizations

NAME OF PARTICIPANT(S)	Jacques FAYE
DATES/LOCATION(S) OF TRAINING	Dec 15 - 22, 1995, Tucson, OSU, World Bank, USAID
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	Management Meetings for NRBAR and other projects

1996

In 1996, there were 9 foreign short-term training events in which 14 ISRA staff participated. Emphasis was placed on participation in international training courses for researchers in specific priority fields (5 events), for administrators (1 event) and for technicians (1 event). International networking was an important component of the activity for 3 of these training events. In addition, 1 event enabled a senior researcher to draft or complete 5 scientific Journal articles (subsequently submitted and accepted) based on her ISRA research, and 1 event facilitated the Scientific Director's management of NRBAR activities and to strengthen ISRA international research linkages.

NAME OF PARTICIPANT(S)	Papa Nouhine Dieye
DATES/LOCATION(S) OF TRAINING	31jan-29feb96, Montpellier, France
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	Data Collection & Statistical Analysis/Module I

NAME OF PARTICIPANT(S)	Astou Sene & Itaf Deme Gningue
DATES/LOCATION(S) OF TRAINING	31jan-29mar96 - Montpellier, France
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	Data Collection & Statistical Analysis/Modules I and II

NAME OF PARTICIPANT(S)	Mamadou Sarr and Saliou Niang
DATES/LOCATION(S) OF TRAINING	August 09-September 09, 1996, Canada
ISRA/NRBAR PROGRAM	Technical training for technicians/administrators
DESCRIPTION OF TRAINING	Agricultural Research Station Management

NAME OF PARTICIPANT(S)	Safietou Fall
DATES/LOCATION(S) OF TRAINING	Sept 23-Dec 15, 1996, OSU, Wisconsin, Tuskegee
ISRA/NRBAR PROGRAM	Technical training for researchers
DESCRIPTION OF TRAINING	Sabbatical/Data collection/writing of 5 articles on Animal Production research results

515

NAME OF PARTICIPANT(S)	Aminata Badiane and Modou Sene
DATES/LOCATION(S) OF TRAINING	18Oct-16Nov 1996 - Cambridge, Canada
ISRA/NRBAR PROGRAM	technical training for researchers
DESCRIPTION OF TRAINING	ACCESS and Geographic Information Systems (GIS) related to Agricultural Research Station Management

NAME OF PARTICIPANT(S)	Aminata Badiane
DATES/LOCATION(S) OF TRAINING	Nov 18 - 20, 1996, Reims, France
ISRA/NRBAR PROGRAM	technical training for researchers, international linkages
DESCRIPTION OF TRAINING	International workshop Nitrogen management in soils

NAME OF PARTICIPANT(S)	Malaini Diatta
DATES/LOCATION(S) OF TRAINING	Nov 23 - Dec 24, U Ben-Gurion, Beer Sheva, Israel
ISRA/NRBAR PROGRAM	technical training for researchers, international linkages
DESCRIPTION OF TRAINING	International IPALAC course on Diguette amelioration un systeme agroforestier integre Presentation of application of this technology for the rehabilitation of 250,000ha of salinate/acidified soils in Sine-Saloum

NAME OF PARTICIPANT(S)	Jean Pierre Ndiaye (01-07dec), Fatou Ba and Louis Sene
DATES/LOCATION(S) OF TRAINING	Dec 01-15, 1996, ISNAR, The Hague
ISRA/NRBAR PROGRAM	Research and administrative Management, international linkages
DESCRIPTION OF TRAINING	Information systems as tools for natural resources management, research planning, monitoring and evaluation, INFORM

NAME OF PARTICIPANT(S)	Jean Pierre Ndiaye
DATES/LOCATION(S) OF TRAINING	Dec 08-22, 1996 - OSU & Honolulu
ISRA/NRBAR PROGRAM	Research and administrative Management, International Linkages/Participant training
DESCRIPTION OF TRAINING	Development of a Memorandum of Agreement with OSU and U of Hawaii, and participation in the annual LT/PT seminar, CRSP development

1997

In 1997, there were 7 foreign short-term training events in which 7 ISRA staff participated. Emphasis was placed on participation in international peer group training events which would enhance networking in specific areas as well as assist in achieving specific SO2 objectives (3 technical events and 3 administrative training events of this nature were implemented). The seventh activity consisted of international meetings by the DG, to assist in managing USAID, World Bank and ISNAR programs at ISRA.

NAME OF PARTICIPANT(S)	Mamadou Nguer, ISRA/Management Controller
DATES/LOCATION(S) OF TRAINING	Jun 02-09, 1997 - Casablanca, Morocco
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Colloquium on trends in financial management for internal auditors

NAME OF PARTICIPANT(S)	Babou Ndour, ISRA/CNBA
DATES/LOCATION(S) OF TRAINING	June 23-July 18, 1997 - London, England
ISRA/NRBAR PROGRAM	technical training for researchers
DESCRIPTION OF TRAINING	Agroforestry & Sustainable Soil Management

NAME OF PARTICIPANT(S)	Moussa Bakhayokho, ISRA/DG
DATES/LOCATION(S) OF TRAINING	June 28-July 06, 1997- OSU & ISNAR (Holland)
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	NRBAR Management Meeting/LTPTs and outreach at OSU, World Bank meeting in Washington, and discussions on four ISNAR/ISRA programs at ISNAR

NAME OF PARTICIPANT(S)	Jean Pierre Ndiaye, ISRA/DS
DATES/LOCATION(S) OF TRAINING	July 13-26, 1997- ISNAR, Holland
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	Workshop on Personnel Performance Assessment

NAME OF PARTICIPANT(S)	Abibou Niang, ISRA/Ziguinchor
DATES/LOCATION(S) OF TRAINING	Sept 29 - Dec06, 1997 - Wageningen, (Netherlands)
ISRA/NRBAR PROGRAM	Personnel Capacity Building/Lab Technician
DESCRIPTION OF TRAINING	8 th International Postgraduate Course on Soil and Plant Analysis and Data Handling

NAME OF PARTICIPANT(S)	Ndiaga Dieng, ISRA/SG
DATES/LOCATION(S) OF TRAINING	Oct 04 - Nov 01, 1997 - Cambridge, Canada
ISRA/NRBAR PROGRAM	Research Station Management
DESCRIPTION OF TRAINING	Station Management/ISRA's procedures management

NAME OF PARTICIPANT(S)	Pape Sall/ISRA/DRPF
DATES/LOCATION(S) OF TRAINING	Oct 13-22, 1997 – Antalya, Turkey
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	XI World Forestry Congress

1998

In 1998, there were 9 foreign short-term training events in which 9 ISRA staff participated. Emphasis was placed on training and collaborative assistance for the analyses of the results of the NRBAR grants (the main objective of 3 events), and ensuring continuity of development/validation of specific NRBAR grant technologies in future years (the main objective of 5 events). In addition, a single, more general, technical training event, at an IFDC course in Togo, was implemented before the March 31, 1998, the deadline for institutional strengthening investments.

NAME OF PARTICIPANT(S)	Abdourhamane Tamba
DATES/LOCATION(S) OF TRAINING	07-16feb98, IFDC/Togo
ISRA/NRBAR PROGRAM	technical training (S/V05, S/V06, S/V24)
DESCRIPTION OF TRAINING	Simulation of plant growth responses for cereals

NAME OF PARTICIPANT(S)	Astou Sene
DATES/LOCATION(S) OF TRAINING	25may-05jun98, ICRAF/SALWA, Mali
ISRA/NRBAR PROGRAM	PAR3-3
DESCRIPTION OF TRAINING	Data analysis of live hedge technologies

NAME OF PARTICIPANT(S)	Abdou Mbeye
DATES/LOCATION(S) OF TRAINING	25may-15jun98, Beer Sheva, Israel
ISRA/NRBAR PROGRAM	Subventions R20 and S18
DESCRIPTION OF TRAINING	Management of, and multiplication techniques for, the three targeted hydrophyte species

NAME OF PARTICIPANT(S)	Fatimata Dia Toure
DATES/LOCATION(S) OF TRAINING	4-24jun98, Tuskegee University
ISRA/NRBAR PROGRAM	R10
DESCRIPTION OF TRAINING	Analyses and interpretation of livestock data

NAME OF PARTICIPANT(S)	Mamadou Gueye
DATES/LOCATION(S) OF TRAINING	08-19jun98, Universite C-B Lyon 1, France
ISRA/NRBAR PROGRAM	R26
DESCRIPTION OF TRAINING	Soil microbiology nitrogen fixing by 3 common Senegalese species

NAME OF PARTICIPANT(S)	Ambroise Diatta
DATES/LOCATION(S) OF TRAINING	09-23jun98, Universite de Gembloux, Belgium
ISRA/NRBAR PROGRAM	R07, R23
DESCRIPTION OF TRAINING	Analysis of forage data

NAME OF PARTICIPANT(S)	Mamadou A Ba
DATES/LOCATION(S) OF TRAINING	11-24jun98, Tuskegee University
ISRA/NRBAR PROGRAM	R22, PAR4-10
DESCRIPTION OF TRAINING	Open Nucleus breeding techniques at village level

NAME OF PARTICIPANT(S)	A Aziz Diallo (and Aladjı Diack on LIR01 funds)
DATES/LOCATION(S) OF TRAINING	11-24jun98, Tuskegee University
ISRA/NRBAR PROGRAM	LIR01, PAR4-10, R4, R24
DESCRIPTION OF TRAINING	Outreach for stabling technologies

NAME OF PARTICIPANT(S)	Malamy Diatta
DATES/LOCATION(S) OF TRAINING	16-30jun98, University of California
ISRA/NRBAR PROGRAM	Subventions R20 and S18
DESCRIPTION OF TRAINING	Technology development in areas of agroforestry for rehabilitating salinated soils, techniques for rehabilitating salinated soils

Vb (iv) SYNTHESIS OF THE SHORT-TERM FOREIGN TRAINING PROGRAM

The volume of effort remained constant throughout the 1993-98 implementation period, at an average of 10 events/14 participants per year. The emphasis of the training program evolved from an initial concentration on research planning and methodology, to events for analyses of data, or other complements to NRBAR grants activities, this change corresponded both to the needs of the NRBAR Grants project cycle, and to the additional emphasis placed on technical results by ISRA and USAID since 1996. Participants consisted of 12 women (18% of the total), compared to the proportion of women senior staff at ISRA of approximately 6%. Forty-three (63%) of the participants participated in international training courses for researchers in specific priority fields: 6 in statistics, 5 in economics, 7 in agroforestry/forestry, 4 in soils, 9 in systems/outreach, 5 in agronomy, 3 in animal production, and 4 in rangeland management. Twenty-four (35%) of the participants participated in international training courses or visits for administrators: 6 for NRBAR and other project management activities, 5 for human resources management, 5 for research station management, 4 for research planning, 3 for financial management and 1 for communications. In addition, 2 technicians participated in international training courses for nursery management of halophytes, and for soils/plant laboratory analyses techniques.

Destinations of participants were diverse: 23 to Europe (excluding ISNAR), 19 to the U.S., 9 to ISNAR in Holland, 8 to other African countries, and a further 9 to Canada, Israel, Mexico or Turkey. Twenty-three participants visited international research institutes, 18 visited U.S. universities, 14 visited universities or national research institutions outside of the U.S., and 5 visits were made to NRBAR or World Bank project management sites in the U.S.

All ISRA/NRBAR programs have benefited from foreign training, however, particularly strongly represented are those stabling technology and halophyte/agroforestry teams involved in implementing NRBAR grants projects.

TABLE Vb FORMATION A COURT TERME A L'ETRANGER				1009
PARTICIPANT (POSITION)	ECHANANCE	ENDROIT	PROGRAMME NRBAR	SUJET DE FORMATION
Papa Seck	octobre 93	ISNAR	L'amélioration des connaissances techniques des chercheurs	Planification de la recherche, etudes d'impact, plan stratégique
Mamadou Sidibe	octobre 93	ISNAR	L'amélioration des connaissances techniques des chercheurs	Planification de la recherche, etudes d'impact, plan stratégique
Fatou Ba	09-28 mai 94	Gambie	L'amélioration des connaissances techniques des chercheurs	Cours international suivi-évaluation
Alassane Ndiaye	09-28 mai 94	Gambie	L'amélioration des connaissances techniques des chercheurs	Cours international suivi-évaluation
Babacar Ngom	09-28 mai 94	Gambie	L'amélioration des connaissances techniques des chercheurs	Cours international suivi-évaluation
Papa Seck	21 mai-10 juillet 94	Pittsburg, OSU, Banque Mondiale, VPI	L'amélioration des connaissances techniques des chercheurs, Gestion scientifique	Gestion du développement, convention NRBAR, Programme Banque Mondiale plan stratégique et priorités de la recherche
Manevel Sene	juillet 94	France	L'amélioration des connaissances techniques des chercheurs	Analyses statistiques
Ndiaga Dieng	08 juillet-06 août 94	Université d'Arkansas	L'amélioration des connaissances techniques des administratifs	Gestion des stations
Mustapha Diop	08 juillet-06 août 94	Université d'Arkansas	L'amélioration des connaissances techniques des administratifs et techniciens	Gestion des stations
Ndiaga Dieng	07-15 août 94	ISNAR	L'amélioration des connaissances techniques des administratifs	Ressources humaines , INFORM

Aminata Badiane	Jul94	Mexico	L'amélioration des connaissances techniques des chercheurs	Congres International des sols, présentation des résultats de l'ISRA en GRN/sols
Malainy Diatta	Jul-nov94	Strasbourg	L'amélioration des connaissances techniques des chercheurs	Agroforesterie/statistique analyses des données
Ndiaga Dieng,	12-20nov94	ISNAR	L'amélioration des connaissances techniques des administratifs	Cours International de Formation le fonctionnement des services financiers dans les institutions de recherche agricole
Adama Faye,	18-30nov94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Systeme en agriculture/GRN, séminaire OSU/ISRA
Désiré Sarr	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Système en agriculture/GRN, séminaire OSU/ISRA
Babou Ndour	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Système en agriculture/GRN, séminaire OSU/ISRA
Ibrahima Dia	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Système en agriculture/GRN, séminaire OSU/ISRA
Mousapha Kébé	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Systeme en agriculture/GRN, séminaire OSU/ISRA
Demba Mbaye	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Systeme en agriculture/GRN, séminaire OSU/ISRA
Taib Diouf	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Systeme en agriculture/GRN, séminaire OSU/ISRA
Lamine Sonko	18-30 novembre 94	Montpellier	L'amélioration des connaissances techniques des chercheurs	Symposium International sur les Recherches Systeme en agriculture/GRN, séminaire OSU/ISRA

Babou Ndour	05-10 décembre 94	Allemagne	L'amélioration des connaissances techniques des chercheurs	Symposium International l'érosion eolienne
Abdourahamane Tamba	05-10 décembre 94	Allemagne	L'amélioration des connaissances techniques des chercheurs	Symposium International l'érosion eolienne
Pierre Diene	15-28 février 95	Maroc	L'amélioration des connaissances techniques des administratifs	Séminaire international Gestion financière
Fatou Gueye	06 mars-15 avril 95	Montpellier	L'amélioration des connaissances techniques des chercheurs	Cours international Méthodologie de la recherche statistiques et informatique
Aly Ndiaye	04-13 avril 95	INRA Orléans/France	L'amélioration des connaissances techniques des chercheurs	Séminaire international Technologies racines/tubercules, présentation d'un papier
Abdoulaye Fall	04 avril-31 juillet 95	OSU, Purdue, IFPRI	L'amélioration des connaissances techniques des chercheurs	Cours sur les analyses socio économie, élaboration du rapport sur l'impact de la recherche (riz)
Mouhamadou Ly	09-16 avril 95	OSU	Gestion scientifique et administrative	Gestion du projet NRBAR , recherche/développement
Pape Sall	09-27 avril 95	OSU	Gestion scientifique et administrative, L'amélioration des connaissances techniques des chercheurs	Technologies agroforestière, recherche/développement
Moustapha Kebé	29 avril-09 mai 95	ISNAR	L'amélioration des connaissances techniques des chercheurs	Planification de la recherche, plan stratégique, priorités de la recherche
Madiagne Diagne	08-19 mai 95	IFDC, Alabama	L'amélioration des connaissances techniques des chercheurs	Simulation des cultures
Moussa Bakayokho	10 juin-04 juillet 95	Université de l'Illinois	L'amélioration des connaissances techniques des chercheurs	Cours international amélioration de communications des organisations et présentation des papiers sur l'ISRA

Adama Faye	24 juin-09 juillet 95	Tuskegee/OSU	Gestion scientifique et administrative	Atelier international recherche/développement et présentation d'un papier sur l'approche participative, liaisons internationales
Mouhamadou Ly	24 juin-09 juillet 95	Tuskegee/OSU	Gestion scientifique et administrative	Atelier international recherche/développement et présentation d'un papier sur l'approche participative, liaisons internationales, gestion du projet NRBAR
Yaya Thiongane	08-18 juillet 95	Afrique du Sud	L'amélioration des connaissances techniques des chercheurs	Congrès International de virologie, présentation d'un article scientifique
Safietou Fall	23 juillet-07 août 95	Utah et OSU	L'amélioration des connaissances techniques des chercheurs	Congrès International des Terres et Parcours, et visite scientifique à l'OSU
Pape Sall	06-12 août 95	Finlande	Gestion scientifique et administrative	Congrès international GRN/foresterie
Jacques Faye	15-23 décembre 95	CID/Université d'Arizona	Gestion administrative	Gestion des personnel, liaisons internationales, gestion du projet NRBAR, planification de la recherche
Papa Nuhine Dièye	31 janvier-29 février 96	Montpellier	L'amélioration des connaissances techniques des chercheurs	Atelier de formation statistiques et informatique, 1 module
Astou Sene	31 janvier- 31 mars 96	Montpellier	L'amélioration des connaissances techniques des chercheurs	Atelier de formation statistiques et informatique, 2 modules
Itaf Deme Gningue	31 janvier- 31 mars 96	Montpellier	L'amélioration des connaissances techniques des chercheurs	Atelier de formation statistiques et informatique, 2 modules
Mamadou Sarr,	09 août-09 septembre 96	Canada	L'amélioration des connaissances techniques des techniciens	Gestion des stations
Saliou Niang	09 août-09 septembre 96	Canada	L'amélioration des connaissances techniques des techniciens	Gestion des stations

Safiétou Fall	23 septembre-15 décembre 96	OSU Université du Wisconsin, Université de Tuskegee	L'amélioration des connaissances techniques des chercheurs	Analyse des données, rédaction des 5 articles en GRN/alimentation du bétail
Aminata Badiane	21 octobre-15 novembre 96	Canada	L'amélioration des connaissances techniques des chercheurs	Atelier ACCESS et SIG pour la gestion des stations
Modou Sène	21 octobre-15 novembre 96	Canada	L'amélioration des connaissances techniques des chercheurs	Atelier ACCESS et SIG pour la gestion des stations
Aminata Badiane	18-20 novembre 96	Reims/France	L'amélioration des connaissances techniques, networking/reunion internationale des chercheurs	Atelier international de formation La maîtrise de l'azote
Malain Diatta	23 novembre-24 décembre 96	Israel	L'amélioration des connaissances techniques, networking/réunion internationale des chercheurs	Atelier international de formation diguettes améliorées un système agroforestier, liaisons internationales
Jean-Pierre Ndiaye	01-07 décembre 96	ISNAR	L'amélioration des connaissances techniques des administratifs/networking	Gestion du personnel, INFORM, planification de recherche, liaisons internationales
Madame Ba	01-15 décembre 96	ISNAR	L'amélioration des connaissances techniques des administratifs/	Gestion du personnel, INFORM
Louis Sène	01-15 décembre 96	ISNAR	L'amélioration des connaissances techniques des administratifs/	Gestion du personnel, INFORM, liaisons internationales
Jean-Pierre Ndiaye	08-22 décembre 96	OSU, Hawaii	Gestion administrative, networking/CRSP	Planification de recherche, gestion NRBAR, liaisons internationales de la recherche

Mamadou Nguer	02-09 juin 97	Maroc	L'amélioration des connaissances techniques des administratifs/ networking/colloque international	Gestion financière L'audit interne
Babou Ndour	23 juin-18 juillet 97	Angleterre	L'amélioration des connaissances techniques, networking/atelier internationale des chercheurs	Analyses agroforestières, liées avec la gestion durable des terres
Moussa Bakhayokho	28 juin-06 juillet 97	Banque Mondiale, OSU, et ISNAR	Gestion administrative	Gestion des subventions USAID et Banque Mondiale, INFORM, évaluation des performances des chercheurs, mise en place d'une fondation, et le politique de partenariat
Jean-Pierre Ndiaye	13-26 juillet 97	ISNAR	Gestion scientifique	Evaluation des performances des chercheurs
Abibou Niang	29 septembre-06 décembre 97	Pays-Bas/ Université de Wageningen	L'amélioration des connaissances techniques des techniciens	Analyses des plantes et des sols, la manipulation des données, et la gestion des laboratoires
Ndiaga Dieng	04 octobre-01 novembre 97	Canada	L'amélioration des connaissances techniques des administratifs	Gestion de stations, élaboration du manuel de procédures de la gestion des stations
Pape Sall	13-22 octobre 97	Turquie	L'amélioration des connaissances techniques, networking/réunion internationale des chercheurs	Forum international sur le Rôle de la Foresterie dans la lutte contre la désertification, Congrès Forestier Mondial
Abdourhamane Tamba	07-16 février 98	Togo/IFDC	L'amélioration des connaissances techniques, networking/réunion régionale des chercheurs	Simulation de la croissance des plantes et la gestion de leurs réponses
Astou Sène	25 mai-05 juin 98	Mali, ICRAF/SALWA	PAR3 3	Economie/agroforesterie/haies vives analyses des données, rédaction d'une article scientifique
Abdou Mbèye	25 mai-15 juin 98	Israël/Université de Beer Sheva	R20/SV18	Halophytes techniques de multiplication des espèces ciblées

Fat Dia Toure	04-24 juin 98	Université de Tuskegee	R10	Stabulation bovine analyses des donnees
M Gueye	08-19 juin 98	France/Université Claude Bernard de Lyon 1	R26	Ecologie microbienne la fixation biologique de l'azote par trois plantes senégalaises <i>Vigna subteranea</i> , <i>Phaseolus vulgaris</i> et <i>Faidherbia (Acacia) albida</i>
Ambrose Diatta	09-23 juin 98	Belgique/ Université de Gembloux	R07/R23	Associations maïs/legumineuses fourragères
M A Ba	11-24 juin 98	Université de Tuskegee	LIR01/Par4-5, 4-10	Technique de la reproduction animale (SAGNO)
Aziz Diallo	11-24 juin 98	Université de Tuskegee	R04/24, LIR01	Stabulation/ subventions Agriculture/élevage R/D
Malamy Diatta	16-30 juin 98	Université de Californie	R20/SV18	Halophytes gestion des sols salés

Vc SHORT TERM TRAINING IN SENEGAL

Vc (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of short-term training in Senegal, 182 events involving approximately 1400 ISRA staff and approximately the same number of partenaire staff, has effectively supported all NRBAR activities. The program has achieved its objectives of providing useful training and experience for ISRA staff, allowing them to improve performance in priority areas, particularly in partnership with clients and other partenaires. A particular emphasis was placed on incorporating ISRA's partners, conjointly, into the training program, more than 50% of the major events were specifically oriented towards partenaires. Implementation was according to the guidelines set out in the NRBAR Grant Agreement. The overall level of effort was approximately 80% higher than originally budgeted, with total estimated expenditures being approximately 50% higher, this mainly reflects the lack of complementary funding after the World Bank PRAII project ended, and the increased emphasis on large seminars for presentation of results during the last 2 years of the project.

The impact of this program on attainment of ISRA/NRBAR objectives has been substantial, particularly when events are considered in relation to complementary activities such as the short-term consultant and short-term foreign training programs. Areas where impact is most obvious are the support given to the development, implementation and review of the NRBAR grants program, the successful participation of partenaires in the development of the ISRA strategic plan, on-site training in statistics and on-farm research methodology, farmer exchange visits on priority technologies, and the series of large NRBAR workshops held in each regional center during 1997-98, for the presentation and evaluation of research results.

Vc (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, specified that short-term training programs should (a) promote collaboration with other researchers, and partenaires, and (b) provide skills relevant to specific problem areas, critical to attainment of project objectives. The Agreement called for a special effort to fund female technicians, researchers and managers, the inclusion of research planning and management, and financial management, and the exclusion of biotechnology and tissue culture programs. Although Agreement 685-0285 was replaced by Agreement 685-SO2 on 27 September, 1996, the short-term training program did not change, except that it was agreed that more effort should be placed on the objectives of the development and validation of technologies, and on farmer and partenaire training in new technologies, rather than on ISRA's institutional development. The USAID/CID contract for assistance to ISRA in implementing NRBAR services included a budget of \$400,000 for approximately 100 short-term training programs. The program began with the implementation of the NRBAR Launching workshop in January, 1993, and ended with the final national-level presentation of NRBAR results at the Closing Seminar of August, 1998. The procedure for selection of events to be funded was relatively informal, proposals from ISRA staff were sent for approval through the normal channels to the DS (the NRBAR Deputy Director), or, in cases of proposals from senior

staff, to the DG (the NRBAR Director) Proposals were approved, with the assistance of the CID/NRBAR COP, on the basis of their relevance to project objectives, the level of participation of candidates in NRBAR research activities, and the specific number and types of events targeted in each of the Annual Workplans

Vc (iii) ACTIVITIES

During the life of the program, 182 events were implemented at a total cost of approximately \$560,000 (refer Table 9 1 of the NRBAR Plan de Travail, 1997), and involving approximately 1400 ISRA and 1400 partenaire staff For many events, significant cost sharing occurred with host institutions Participating non-ISRA personnel were funded for their participation in most of these events NRBAR also assisted with many other short-term training activities for ISRA and partenaire staff, which were funded from non-NRBAR sources, or from other NRBAR sources such as the international linkages program, or, especially in the case of farmers and NGO staff, from the NRBAR grants programs The text which follows outlines each of the 182 events, concentrating on the 44 major events, by year of implementation

1993

There were seven short-term training events in Senegal in 1993, in which more than 200 ISRA staff, and more than 200 partenaire staff participated Of the 5 major events, 4 included substantial partenaire participation The major events were the NRBAR launching workshop which successfully brought together all potential collaborators to discuss the first annual workplan, to inform potential ISRA and non-ISRA collaborators of project opportunities and procedures, and to exchange views on validating research results, the first meeting of the DS NRBAR Grants committee which finalized the NRBAR grants protocols and selected grantees for 1993/1994, a contribution to a public exposition, for the national journee scientifique, of ISRA research results, including a display of ISRA's work on natural resources technologies, the September national research coordinating meetings which provided the basis for the 1994 ISRA research plan , and the November financial workshop, which achieved a consensus on ISRA's financial management plan

1993 – MAJOR EVENTS

NAME OF PARTICIPANT	73 ISRA staff, senior Ministry officials, USAID Mission Director, other donors and partenaires
DATES/LOCATION (S) OF TRAINING	21-23 January, 1993 Saly
ISRA/NRBAR PROGRAM	Project management
DESCRIPTION OF TRAINING	The NRBAR launching workshop
NAME OF PARTICIPANT	15 members of the DS NRBAR Grants Committee
DATES/LOCATION (S) OF TRAINING	June, 1993 Saly
ISRA/NRBAR PROGRAM	DS Research management, NRBAR Grants management
DESCRIPTION OF TRAINING	first meeting of the DS NRBAR Grants committee

NAME OF PARTICIPANT	More than 50 ISRA staff, and thousands of visitors
DATES/LOCATION (S) OF TRAINING	30 June, 1993 Main Square, Dakar
ISRA/NRBAR PROGRAM	Outreach
DESCRIPTION OF TRAINING	Public exposition for the national journee scientifique

NAME OF PARTICIPANT	DS and more than 50 ISRA researchers
DATES/LOCATION (S) OF TRAINING	ISRA Centers September, 1993
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	the September national research coordinating meetings

NAME OF PARTICIPANT	Senior ISRA Financial and Administrative staff, with Ernst & Young personnel
DATES/LOCATION (S) OF TRAINING	November, Mbour
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	financial workshop

1993 – MINOR EVENTS

NAME OF PARTICIPANT	16 candidates for long-term training and NRBAR staff
DATES/LOCATION(S) OF TRAINING	May, 1993 at ISRA/LNERV
ISRA/NRBAR PROGRAM	LTPT
DESCRIPTION OF TRAINING	training meeting between candidates for long-term Training and NRBAR personnel for implementation of the training plan

NAME OF PARTICIPANT	12 members of the ISRA Council of Administrators
DATES/LOCATION(S) OF TRAINING	December, 1993 Dakar
ISRA/NRBAR PROGRAM	Administrative management
DESCRIPTION OF TRAINING	the December meeting of the ISRA Council of Administrators, which provided the basis for the 1994 administrative plan

1994

There were 17 short-term training events in Senegal, in which more than 125 ISRA personnel and approximately 60 partenaires participated. Co-financing with other funding sources was undertaken for many activities, notably with the World Bank for the Thionagne/Diallo strategic planning exercise in September and the Mbaye/Brush/Sene INFORM work in November, and with the centrally-funded USAID Regional Impact Project for the October/November impact work. Of the 6 major events, 3 included substantial partenaire participation. The major events consisted of 3 training/meetings related to socio-economics for BAME staff and their collaborators, on research impact, the CFA devaluation, and institutional development, an internal seminar on UNIVAL institutional development to improve outreach communications,

and 2 workshops with ISRA's natural resources partenaires to promote the collaborative research grants program

1994 MAJOR EVENTS

NAME OF PARTICIPANT(S)	20 ISRA Researchers
DATES/LOCATION(S) OF TRAINING	May 23-27, 1994, Bambey
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	BAME Program Committee Meeting to assess Research Development Activities
NAME OF PARTICIPANT(S)	Moussa BAKHAYOKO & 25 Key ISRA Staff
DATES/LOCATION(S) OF TRAINING	Oct 18, 1994, Dakar
ISRA/NRBAR PROGRAM	Outreach
DESCRIPTION OF TRAINING	UNIVAL Planning Seminar to plan new directions for UNIVAL
NAME OF PARTICIPANT(S)	John SANDERS, Mamadou SIDIBE, Mustapha KEBE & 12 other ISRA/BAME personnel
DATES/LOCATION(S) OF TRAINING	Nov 3 -11, 1994, NRBAR, Dakar
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	Methods of Evaluating the Impact of Agricultural Research
NAME OF PARTICIPANT(S)	Mme Fatou N BA, Wendy WILSON, Paul ANAMOSA, Reps from collaborating NGOs
DATES/LOCATION(S) OF TRAINING	Dec 5, 1994, NRBAR, Dakar
ISRA/NRBAR PROGRAM	Outreach
DESCRIPTION OF TRAINING	Collaborative research Program & description of ISRA's Research Activities with NGOs
NAME OF PARTICIPANT(S)	FONGS & CONGAD, ISRA personnel
DATES/LOCATION(S) OF TRAINING	Dec 7 & 8, 1994, Thies & Dakar
ISRA/NRBAR PROGRAM	Outreach
DESCRIPTION OF TRAINING	Informational Meetings to promote Grants Programs, improve quality of Research Proposals
NAME OF PARTICIPANT(S)	Mustapha KEBE, Bocar DIAGANA & 12 ISRA/BAME Researchers
DATES/LOCATION(S) OF TRAINING	Dec 14-16, 1994, St Louis
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	Impact of CFA Devaluation on Research Activities

1994 MINOR ACTIVITIES

NAME OF PARTICIPANT(S)	Ndiaga DIENG
DATES/LOCATION(S) OF TRAINING	April 1994, ISADE, Dakar
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Improving Consultancy Management Skills
NAME OF PARTICIPANT(S)	Papa SECK, Mamadou MBAYE, Ndiaga DIENG, & 7 ISRA Key personnel
DATES/LOCATION(S) OF TRAINING	Sept 4-17, 1994, at ISRA research centers
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	ISRA Strategic Planning for 1995
NAME OF PARTICIPANT(S)	Papa THIONGANE & Kader DIALLO
DATES/LOCATION(S) OF TRAINING	Aug 31 - Sept 28, 1994, in all regions
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	ISRA Strategic Planning for 1995
NAME OF PARTICIPANT(S)	Alassane NDIAYE & 7 key ISRA personnel
DATES/LOCATION(S) OF TRAINING	Sept 1994, Dahra & Kolda
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	ISRA Strategic Planning for 1995
NAME OF PARTICIPANT(S)	Moussa BAKHAYOKO
DATES/LOCATION(S) OF TRAINING	October 3-8, 1994, CNCR, Thies
ISRA/NRBAR PROGRAM	Outreach
DESCRIPTION OF TRAINING	Rural communications conference
NAME OF PARTICIPANT(S)	Adama FAYE, Mustapha KEBE, Ibrahima DIA, Demba F MBAYE, Taib DIOUF, Desire SARR, Babou NDOUR, Paul ANAMOSA
DATES/LOCATION(S) OF TRAINING	October 6-7 1994, Kaolack
ISRA/NRBAR PROGRAM	Natural Resources Management and Outreach
DESCRIPTION OF TRAINING	Cellule de Reflection
NAME OF PARTICIPANT(S)	Ndiaga DIENG & 4 ISRA Personnel
DATES/LOCATION(S) OF TRAINING	Oct 30 - Nov 8, 1994 St Louis, Bambey, Kaolack & Tambacounda
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Review visit of ISRA Financial Management Team

NAME OF PARTICIPANT(S)	Adama FAYE, Mustapha KEBE, Ibrahima DIA, Demba F MBAYE, Taib DIOUF, Desire SARR, Babou NDOUR
DATES/LOCATION(S) OF TRAINING	Nov 17, 1994, NRBAR, Dakar
ISRA/NRBAR PROGRAM	Natural Resources Management and Outreach
DESCRIPTION OF TRAINING	Farming Systems meeting prior to Montpellier
NAME OF PARTICIPANT(S)	Mamadou MBAYE, Ted BRUSH (ISNAR), Louis SENE
DATES/LOCATION(S) OF TRAINING	Nov 22-23, 1994, St Louis & Bambey
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	INFORM
NAME OF PARTICIPANT(S)	Souleymane GUEYE, Moussa NDOYE
DATES/LOCATION(S) OF TRAINING	Dec 15-16, 94, Dakar
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Professional Conference on Internal Audit

1995

There were 14 short-term training events in Senegal, in which more than 200 ISRA personnel and numerous partenaires participated. Co-financing with other funding sources was undertaken for many activities. Of the 5 major events, 2 included substantial partenaire participation. The 5 major events consisted of 3 large workshops on the ISRA Mission Statement and Strategic Plan, participation in a plant diversification seminar, and a training workshop on on-farm research methods.

1995 MAJOR EVENTS

NAME OF PARTICIPANT(S)	25 ISRA Researchers & other Organizations
DATES/LOCATION(S) OF TRAINING	12 -13 January 1995, LNERV, Dakar
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	Seminar on Phylogenetic Resources
NAME OF PARTICIPANT(S)	Pape Seck, Mamadou Mbaye & 26 ISRA Researchers
DATES/LOCATION(S) OF TRAINING	April 17 - 20, 1995, St Louis
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	ISRA Strategic Planning for 1995
NAME OF PARTICIPANT(S)	Comite de Pilotage (20 ISRA Researchers)
DATES/LOCATION(S) OF TRAINING	August 12 - 26, 1995, Goree
ISRA/NRBAR PROGRAM	Natural Resources Planning
DESCRIPTION OF TRAINING	ISRA Strategic Planning Meeting

534

NAME OF PARTICIPANT(S) Jacques FAYE, Tom Cusack, David Holmes & 62
 ISRA Researchers and partenaires
 DATES/LOCATION(S) OF TRAINING Sept 8 - 17, 1995, Saly Portudal
 ISRA/NRBAR PROGRAM Natural Resources Management
 DESCRIPTION OF TRAINING ISRA Strategic Planning

NAME OF PARTICIPANT(S) 25 ISRA Researchers & John T Russell
 DATES/LOCATION(S) OF TRAINING Aug 16 - 25, 1995, Mbour
 ISRA/NRBAR PROGRAM Natural Resources Management
 DESCRIPTION OF TRAINING Design & Analysis of Multilocational on Farm
 Trials training

1995 MINOR EVENTS

NAME OF PARTICIPANT(S) Awa Diagne, Abdoul Aziz Ba, S Mbengue
 DATES/LOCATION(S) OF TRAINING Octb 25 - 30, 1995, Cambere, Bambey, Dakar
 ISRA/NRBAR PROGRAM Financial Management
 DESCRIPTION OF TRAINING ISRA Coomputer needs

NAME OF PARTICIPANT(S) Ndiaga DIENG & 6 ISRA Researchers
 DATES/LOCATION(S) OF TRAINING 13 -14 Janvier 1995, Dakar
 ISRA/NRBAR PROGRAM Financial Management
 DESCRIPTION OF TRAINING Improving Fianacial Management Skills

NAME OF PARTICIPANT(S) 8 ISRA Key personnel, Ndiaga DIENG,
 DATES/LOCATION(S) OF TRAINING March 6 - 17, 1995, Kaolack
 ISRA/NRBAR PROGRAM Research Planning and Management
 DESCRIPTION OF TRAINING Workshop on methods of Participatory Research,
 Welor Serere

NAME OF PARTICIPANT(S) Aly NDIAYE
 DATES/LOCATION(S) OF TRAINING March 23 - 27, 1995, Kaolack
 ISRA/NRBAR PROGRAM Natural Resources Planning
 DESCRIPTION OF TRAINING Seminar on methods for participatory research

NAME OF PARTICIPANT(S) Papa THIONGANE
 DATES/LOCATION(S) OF TRAINING May 1995, Dakar
 ISRA/NRBAR PROGRAM Research Planning and Management
 DESCRIPTION OF TRAINING ISRA Strategic Planning for 1995

NAME OF PARTICIPANT(S) Wendy Wilson & M Dieng
 DATES/LOCATION(S) OF TRAINING May 22, 1995, Thies
 ISRA/NRBAR PROGRAM Outreach & Financial Management
 DESCRIPTION OF TRAINING Workshop on collaborative Research Projects

NAME OF PARTICIPANT(S)	Ndiaga Dieng, Pierre Diene, Boury Diallo, Boubacar Ngom
DATES/LOCATION(S) OF TRAINING	Sept 17 - 30, 1995, ISRA Centers
ISRA/NRBAR PROGRAM	Financial & Administrative management
DESCRIPTION OF TRAINING	Installation of ISRA accountants and administrative staff
NAME OF PARTICIPANT(S)	Boury Diallo & 4 ISRA Researchers
DATES/LOCATION(S) OF TRAINING	Nov 12-28, 1995, ISRA Stations
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Audit of Human Resources Management systems
NAME OF PARTICIPANT(S)	Aminata Badiane & 2 ISRA Researchers
DATES/LOCATION(S) OF TRAINING	Nov 14-18, 1995, Djibelor
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Visit of ISRA Stations

1996

There were 45 short-term training events in Senegal, in which 215 ISRA personnel and approximately 14 partenaires participated. Of the 5 major events, 1 included substantial partenaire participation. The 5 major events consisted of 3 major strategic planning meetings (one primarily oriented towards partenaires), 1 training event for biometrics, and 1 training event for on-farm research methods.

1996 MAJOR EVENTS

NAME OF PARTICIPANT(S)	44 ISRA researchers
DATES/LOCATION(S) OF TRAINING	Feb 13, 1996, Dakar
ISRA/NRBAR PROGRAM	Research Planning & Management
DESCRIPTION OF TRAINING	Committee of Prospective and Strategic Planning
NAME OF PARTICIPANT(S)	ISRA Researchers, partenaires
DATES/LOCATION(S) OF TRAINING	13-14 March, 1996, Dakar
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Agricultural Forum
NAME OF PARTICIPANT(S)	41 ISRA Researchers
DATES/LOCATION(S) OF TRAINING	02 - 05 May 1996, Dakar
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Training in Biometrics
NAME OF PARTICIPANT(S)	13 ISRA Researchers
DATES/LOCATION(S) OF TRAINING	12 - 24 May 1996, Mbour
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	On-Farm Research Training

NAME OF PARTICIPANT(S)	DS and 15 ISRA personnel
DATES/LOCATION(S) OF TRAINING	12 - 27 October 1996, 5 ISRA Units
ISRA/NRBAR PROGRAM	Strategic Planning
DESCRIPTION OF TRAINING	Planning and Budgeting for year 1997 and completion of ISRA Strategic Plan

1996 MINOR EVENTS

NAME OF PARTICIPANT(S)	4 ISRA personnel/Accounting office
DATES/LOCATION(S) OF TRAINING	15 -30 January 1996
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Control of financial units

NAME OF PARTICIPANT(S)	Fatou Ba, Ramatoulaye Toure, Saïbane Cissoko
DATES/LOCATION(S) OF TRAINING	04 Feb - 08 March 1996
ISRA/NRBAR PROGRAM	Grants Management
DESCRIPTION OF TRAINING	Improving Grants Management Skills

NAME OF PARTICIPANT(S)	Boury Diallo, Mamadou Nguer
DATES/LOCATION(S) OF TRAINING	05 Feb - 15 April 1996, Bambey
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Setting up ISRA Management Information System

NAME OF PARTICIPANT(S)	8 ISRA researchers
DATES/LOCATION(S) OF TRAINING	07 - 08 February, 1996, Dakar
ISRA/NRBAR PROGRAM	Natural Resources Planning
DESCRIPTION OF TRAINING	Meeting of GPS Committee managers

NAME OF PARTICIPANT(S)	Mame Gningue
DATES/LOCATION(S) OF TRAINING	24 Feb - 11 March, 1996
ISRA/NRBAR PROGRAM	Inventory Management
DESCRIPTION OF TRAINING	Supervision of ISRA inventory management

NAME OF PARTICIPANT(S)	DG, DS, SG and ACP
DATES/LOCATION(S) OF TRAINING	15 -19 Feb 1996, All ISRA centers
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	To manage the handover of tasks from one employee to the new

NAME OF PARTICIPANT(S)	3 ISRA Accounting personnel
DATES/LOCATION(S) OF TRAINING	14 Feb - 20 march 1996
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Accounting supervision mission

NAME OF PARTICIPANT(S)	Wendy Wilson, Adama Faye, Abdou Fall, Cheick Mbake
DATES/LOCATION(S) OF TRAINING	05 -09 Mar 1996, St Louis, Podor & Darha
ISRA/NRBAR PROGRAM	Outreach/Research & Developpement
DESCRIPTION OF TRAINING	Support to R7D activities and assessment of conditions at CRZ Darha
NAME OF PARTICIPANT(S)	Boury Diallo and Mamadou Nguer
DATES/LOCATION(S) OF TRAINING	06 march - 14 April 1996, Bambey
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Continuation of the ISRA Managment Information system/Computer needs
NAME OF PARTICIPANT(S)	Jean Pierre Ndiaye
DATES/LOCATION(S) OF TRAINING	18 - 26 March 1996, ISRA Units
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Installation of ISRA research units
NAME OF PARTICIPANT(S)	Baye Waly and 3 ISRA accounting personnel
DATES/LOCATION(S) OF TRAINING	25 - 31 March 1996, ISRA Centers
ISRA/NRBAR PROGRAM	Financial management
DESCRIPTION OF TRAINING	Accounting supervision mission
NAME OF PARTICIPANT(S)	Pape Seck, Mamadou Mbaye & Bara Diop
DATES/LOCATION(S) OF TRAINING	09 - 16 April 1996
ISRA/NRBAR PROGRAM	GPS
DESCRIPTION OF TRAINING	Follow up on Strategic planning activities
NAME OF PARTICIPANT(S)	Aminata Mbow
DATES/LOCATION(S) OF TRAINING	12 April - 03 May, 1996
ISRA/NRBAR PROGRAM	Grants Management
DESCRIPTION OF TRAINING	Computerization of grants
NAME OF PARTICIPANT(S)	Amadou Tamsir Diop & 14 ISRA resarchers
DATES/LOCATION(S) OF TRAINING	15 - 25 April 1996
ISRA/NRBAR PROGRAM	MARP/Diagnosis
DESCRIPTION OF TRAINING	Preliminary data collection on the rehabilitation program planned for the Ferlo Valley
NAME OF PARTICIPANT(S)	Wendy Wilson, Adama Faye, Massamba Dieng
DATES/LOCATION(S) OF TRAINING	16 - 26 April 1996
ISRA/NRBAR PROGRAM	Outreach/Research/Developement
DESCRIPTION OF TRAINING	Monitoring the collaborative grants

NAME OF PARTICIPANT(S)	Aminata Badiane
DATES/LOCATION(S) OF TRAINING	22 - 26 April 1996, Ziguinchor, Kolda, Tamba
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Evaluation of collaborative research projects and NRBAR grants
NAME OF PARTICIPANT(S)	Faty Mbengue and Rokaya Bodian
DATES/LOCATION(S) OF TRAINING	22 - 27 April 1996, Cesag, Dakar
ISRA/NRBAR PROGRAM	Program support
DESCRIPTION OF TRAINING	Training for Administrative assistants and Management Secretaries
NAME OF PARTICIPANT(S)	Mame Mor Gningue
DATES/LOCATION(S) OF TRAINING	Cesag/Dakar
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Training provided to the inventory accountant by CESAG institution
NAME OF PARTICIPANT(S)	Wendy Wilson
DATES/LOCATION(S) OF TRAINING	30 May - 05 June 1996, Kolda
ISRA/NRBAR PROGRAM	Research and Development
DESCRIPTION OF TRAINING	Outreach support to Winrock
NAME OF PARTICIPANT(S)	Aminata Badiane, Adama Faye, Modou Sene, Nicolas Dupuy
DATES/LOCATION(S) OF TRAINING	31 May 1996, Dakar
ISRA/NRBAR PROGRAM	Natural Resources Planning
DESCRIPTION OF TRAINING	Working group to submit a summary of the research work on management of organic materials
NAME OF PARTICIPANT(S)	Hyacinthe Mbengue
DATES/LOCATION(S) OF TRAINING	04 - 12 June 1996, ISRA stations and research units
ISRA/NRBAR PROGRAM	Station Management
DESCRIPTION OF TRAINING	Agricultural equipment needs assessment for ISRA stations
NAME OF PARTICIPANT(S)	Allassane Ba, Cheik Lo, Itaf Gningue
DATES/LOCATION(S) OF TRAINING	09 - 20 June 1996
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Visit by the temporary comitee of researchers
NAME OF PARTICIPANT(S)	Demba Farba Mbaye and 13 researchers
DATES/LOCATION(S) OF TRAINING	16 - 23 June 1996
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Shared Diagnosis

NAME OF PARTICIPANT(S)	Mamadou Gueye
DATES/LOCATION(S) OF TRAINING	16 - 20 June 1996
ISRA/NRBAR PROGRAM	Crop Production
DESCRIPTION OF TRAINING	Strategic Plan development
NAME OF PARTICIPANT(S)	Aminata Badiane and 6 ISRA researchers
DATES/LOCATION(S) OF TRAINING	24 - 27 June 1996, Mbour
ISRA/NRBAR PROGRAM	Natural Resources Planning
DESCRIPTION OF TRAINING	To conduct a syntheses of Organic literature
NAME OF PARTICIPANT(S)	Baye Waly Diagne and El Hadj Niane
DATES/LOCATION(S) OF TRAINING	01 - 06 July 1996, St Louis
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Working to close the Donor accounts
NAME OF PARTICIPANT(S)	Pape Seck
DATES/LOCATION(S) OF TRAINING	01 - 18 July 1996
ISRA/NRBAR PROGRAM	GPS
DESCRIPTION OF TRAINING	PSAOP Pre-evaluation meeting
NAME OF PARTICIPANT(S)	Jean Pierre Ndiaye
DATES/LOCATION(S) OF TRAINING	18 - 29 July 1996, Kolda, Tamba & Kaolack
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Supervisory visit
NAME OF PARTICIPANT(S)	Mame Mor Gningue
DATES/LOCATION(S) OF TRAINING	23 July - 11 August 1996
ISRA/NRBAR PROGRAM	Management of ISRA Inventory
DESCRIPTION OF TRAINING	Control and management of ISRA equipments
NAME OF PARTICIPANT(S)	Boury Diallo and Ramatoulaye Toure
DATES/LOCATION(S) OF TRAINING	26 - 27 July 1996, ISACI, Dakar
ISRA/NRBAR PROGRAM	Human Resources management
DESCRIPTION OF TRAINING	Training on Audit of Human Resources
NAME OF PARTICIPANT(S)	Fatou Ba
DATES/LOCATION(S) OF TRAINING	04 - 11 August 1996
ISRA/NRBAR PROGRAM	Grants Management
DESCRIPTION OF TRAINING	Monitoring and Evaluation of ISRA grants
NAME OF PARTICIPANT(S)	Moustapha Kebe
DATES/LOCATION(S) OF TRAINING	09 Sept - 10 October 1996
ISRA/NRBAR PROGRAM	BAME
DESCRIPTION OF TRAINING	Survey of the impact of the millet and maze and supervisory visit to the surveyors

NAME OF PARTICIPANT(S)	Hyacinthe Mbengue, Mamadou Coulibaly
DATES/LOCATION(S) OF TRAINING	30 Sept - 09 October 1996
ISRA/NRBAR PROGRAM	Research station management
DESCRIPTION OF TRAINING	Audit of rehabilitation work in ISRA resarch Units and stations

NAME OF PARTICIPANT(S)	Fatou Ba, Massamba Dieng
DATES/LOCATION(S) OF TRAINING	15 - 24 October 1996
ISRA/NRBAR PROGRAM	Grants Management
DESCRIPTION OF TRAINING	Presentation of the new protocoles for NRBAR grants program management

NAME OF PARTICIPANT(S)	Boury Diallo, Ramatoulaye Toure
DATES/LOCATION(S) OF TRAINING	28 November - 13 December 1996
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Control and financial assistance to ISRA Units

NAME OF PARTICIPANT(S)	DG, Boury Diallo, Ramatoulaye Toure
DATES/LOCATION(S) OF TRAINING	06 December 1996
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	First National day of Internal Control

1997

There were 78 short-term training events in Senegal, in which more than 400 ISRA personnel and approximately 53 partners participated. Financing was provided through NRBAR for these activities. In addition, NRBAR assisted with the implementation of many other short-term training activities which were funded from other sources. For example, the ISRA/ISNAR Regional Workshop in September on lessons learned from research/extension linkages, and the "Atelier de Restitution l'impact de l'evaluation du FCFA sur les revenus et la securite alimentaire au Senegal" in February. Of the 12 major events, 8 included substantial partenaire participation. The major events included 2 large workshops for the ISRA/partenaire presentation and discussion of NRBAR research results, on fertilisers at Bambey, and on sois/agroforestry in Kaolack, the NRBAR Annual Joint Review, which included site visits and farmer evaluations of technologies, a ISRA/partenaire strategic planning meeting for validation of the draft plan at regional level, 2 farmer exchange visits for the Kolda stabling technology, 2 station management workshops, 3 workshops on administrative and financial procedures, and a workshop to train partenaires in rice technologies for the Casamance.

1997 MAJOR EVENTS

NAME OF PARTICIPANT (S)	2 ISRA/DG personnel & 107 researchers & partners
DATES/LOCATION (S) OF TRAINING	02 - 22 March 1997, ISRA Centers
ISRA/NRBAR PROGRAM	Strategic Planning & Management
DESCRIPTION OF TRAINING	Finalization and Restitution of ISRA strategic Plan

NAME OF PARTICIPANT (S)	50 ISRA researchers & partenaires
DATES/LOCATION (S) OF TRAINING	20 - 21 May 1997, Bambey
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Workshop on organic fertilization of soils
NAME OF PARTICIPANT (S)	Tom Cusack, NRBAR/COP & 20 farmers
DATES/LOCATION (S) OF TRAINING	25 – 29 May 1997, Kolda
ISRA/NRBAR PROGRAM	Stabling Research Program
DESCRIPTION OF TRAINING	Exchange visit by Peul Herdders from the Linguere Area to Peul agropastoralists participating in the stabling research program
NAME OF PARTICIPANT (S)	Ndiaga Dieng & 12 Station Managers (13)
DATES/LOCATION (S) OF TRAINING	07 – 10 July 1997, Bambey
ISRA/NRBAR PROGRAM	Station Management
DESCRIPTION OF TRAINING	Workshop on Station management techniques facilitated by Dr Hannibal Muhtar
NAME OF PARTICIPANT (S)	Amadou Beye & 43 participants
DATES/LOCATION OF TRAINING	23 - 27 September 1997, Velingara
ISRA/NRBAR PROGRAM	Grants Management
DESCRIPTION OF TRAINING	Training Workshop on Rice crop technology in the Casamance region
NAME OF PARTICIPANT (S)	DG, Tom Cusack, Massamba Dieng & 34 ISRA personnel
DATES/LOCATION OF TRAINING	Nov 03-05, 1997 – Bambey
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	NRBAR/RP1 Annual Joint Review
NAME OF PARTICIPANT (S)	Pape Dieye & 3 ISRA personnel + 23 farmers
DATES/LOCATION OF TRAINING	Nov 18-22, 1997 – Linguere
ISRA/NRBAR PROGRAM	Research Grant Program
DESCRIPTION OF TRAINING	Field exchange visit of Kolda herders to the Liguere farmers
NAME OF PARTICIPANT (S)	Moussa Ndoye, Mamadou Nguer & 33 ISRA staff
DATES/LOCATION OF TRAINING	26 Nov 1997 – Bambey
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Meeting on ISRA administrative and financial procedures
NAME OF PARTICIPANT (S)	34 ISRA personnel
DATES/LOCATION OF TRAINING	28 Nov 1997 – Dakar
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Meeting on ISRA Management Information System

NAME OF PARTICIPANT (S) 45 ISRA personnel
 DATES/LOCATION OF TRAINING Dec 01-05, 1997 – Bambey
 ISRA/NRBAR PROGRAM Program Management
 DESCRIPTION OF TRAINING Workshop on new SYSCOA Management system

NAME OF PARTICIPANT (S) 16 ISRA station managers and administrative personnel
 DATES/LOCATION OF TRAINING 11 Dec 1997 – Dakar
 ISRA/NRBAR PROGRAM Station Management
 DESCRIPTION OF TRAINING Discussed the draft manual of station management procedures

NAME OF PARTICIPANT (S) 22 ISRA staff and 14 partenaire staff
 DATES/LOCATION OF TRAINING 10-11 Dec 1997, Kaolack
 ISRA/NRBAR PROGRAM Outreach
 DESCRIPTION OF TRAINING Presentation of NRBAR results on agroforestry/soil fertility

1997 MINOR EVENTS

NAME OF PARTICIPANT (S) Babacar Faye/BAME Research Assistant (1)
 DATES/LOCATION (S) OF TRAINING 06 -10 January 1997, Thies, Senegal
 ISRA/NRBAR PROGRAM Natural Resources Management
 DESCRIPTION OF TRAINING USAID Workshop on Environmental Impact Evaluation

DATES/LOCATION (S) OF TRAINING 20-25 January 1997, Kolda
 ISRA/NRBAR PROGRAM Inventory Management
 DESCRIPTION OF TRAINING Improving ISRA Management and inventory control system/Test of Physical Inventory

NAME OF PARTICIPANT (S) Aminata Badiane & Adama Faye (2)
 NAME OF PARTICIPANT (S) 6 ISRA personnel
 DATES/LOCATION (S) OF TRAINING 28 -31 January 1997, Kaolack
 ISRA/NRBAR PROGRAM Grants Management
 DESCRIPTION OF TRAINING Support Visit to Research Grant #R10 and data analysis

NAME OF PARTICIPANT (S) Tom Cusack & Adama Faye (2)
 DATES/LOCATION (S) OF TRAINING 21 - 28 February 1997, ISRA/SOHC
 ISRA/NRBAR PROGRAM Natural Resources Planning
 DESCRIPTION OF TRAINING Monitoring visit and review of NRBAR existing and newly terminated grants

NAME OF PARTICIPANT (S)	Aminata Badiane, Adama Faye, Mamadou Khouma & Modou Sene/ NRM Working Group (4)
DATES/LOCATION (S) OF TRAINING	03 – 07 March 1997
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Synthesis of the research work on management and transformation of organic residues
NAME OF PARTICIPANT (S)	Jean Pierre Ndiaye, Adama Faye, Aminata Badiane, Fatou Ba, Mamadou Gueye & Massamba Dieng (5 ISRA personnel & 1 NRBAR)
DATES/LOCATION (S) OF TRAINING	10 -21 March 1997- Bambey, Kaolack, Tamba, Kolda & Ziguinchor
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	Supervisory visit to ISRA research centers
NAME OF PARTICIPANT (S)	Aminata Badiane & Didi Leguede (2)
DATES/LOCATION (S) OF TRAINING	25 march 1997- Bambey
ISRA/NRBAR PROGRAM	Collaborative Research Management
DESCRIPTION OF TRAINING	Site visit to ISRA Collaborative Research Grant S/V11
NAME OF PARTICIPANT (S)	Ndiaga Dieng, Mamadou Nguer, Baye Wally
DATES/LOCATION (S) OF TRAINING	27 -28 March 1997, CNBA/Bambey
ISRA/NRBAR PROGRAM	Administrative Management
DESCRIPTION OF TRAINING	Installation of new administrative staff
NAME OF PARTICIPANT (S)	Jean Pierre Ndiaye, ISRA/DS
DATES/LOCATION (S) OF TRAINING	08 – 13 March 1997- Darha & St Louis
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Program Monitoring visit
NAME OF PARTICIPANT (S)	Maimouna Diop & Moktar Johnson (2)
DATES/LOCATION (S) OF TRAINING	10 - 11 April 1997, Bambey
ISRA/NRBAR PROGRAM	Management Information System
DESCRIPTION OF TRAINING	To get acquainted with CERAAS management software and install Novell 3 12 management system on CNBA server
NAME OF PARTICIPANT (S)	Mateugue Diack
DATES/LOCATION (S) OF TRAINING	15 - 16 April 1997- Kaolack
ISRA/NRBAR PROGRAM	International Liaison Program
DESCRIPTION OF TRAINING	Meeting with Kaolack researchers and LIR-02 project site visit

NAME OF PARTICIPANT (S)	Baye Waly and Samba Teuw (2)
DATES/LOCATION (S) OF TRAINING	21 – 26 April 1997 - Bambey
ISRA/NRBAR PROGRAM	Inventory and Financial management
DESCRIPTION OF TRAINING	Inventory assessment and Accounting supervision mission
NAME OF PARTICIPANT (S)	Ibra Mbow
DATES/LOCATION (S) OF TRAINING	21 - 27 April 1997 - Bambey
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	1996 Financial close-out report
NAME OF PARTICIPANT (S)	Mamour Kandji & Dame Sy
DATES/LOCATION (S) OF TRAINING	27 April - 10 May, 1997 - Dakar
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Tambacounda 1996 Financial closeout report
NAME OF PARTICIPANT (S)	Dia Cheick Awa Balla
DATES/LOCATION (S) OF TRAINING	29 April – 12 June 1997
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Elaboration of 1997 Financial statement for Darha
NAME OF PARTICIPANT (S)	Baye Wally & Samba Diene TEW (2)
DATES/LOCATION (S) OF TRAINING	05 – 13 May 1997
ISRA/NRBAR PROGRAM	Financial and Inventory Management
DESCRIPTION OF TRAINING	1996 Financial close-out, Inventory assessment and Accounting supervision mission
NAME OF PARTICIPANT (S)	Abdou Fall, Pape Dieye (2)
DATES/LOCATION (S) OF TRAINING	05 - 10 May 1997 – Kolda, Tamba, Sedhiou
ISRA/NRBAR PROGRAM	International Liaison Program
DESCRIPTION OF TRAINING	LIR-01 project site visit by ISRA and Tuskegee researchers
NAME OF PARTICIPANT (S)	Aminate Badiane & Adama Faye (2)
DATES/LOCATION (S) OF TRAINING	07 May 1997 - Bambey
ISRA/NRBAR PROGRAM	NRBAR collaborative research management
DESCRIPTION OF TRAINING	Accompany TDY Jean Pichot to meet with ISRA partners Rodale (Thies) and ISRA CNBA/Bambey researchers
NAME OF PARTICIPANT (S)	Aminata Badiane
DATES/LOCATION (S) OF TRAINING	12 - 14 May 1997, Nioro, Bambey, Kaolack
ISRA/NRBAR PROGRAM	Research Planning and Management
DESCRIPTION OF TRAINING	Monitoring of NRM activities and preparation of the NRM workshop to be held in Bambey

NAME OF PARTICIPANT (S)	Mamour Kandji/Accountant
DATES/LOCATION (S) OF TRAINING	18 - 24 May 1997, Kolda, Tamba, Dakar
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Finalization of 1996 accounts
NAME OF PARTICIPANT (S)	Alioune Badara Dieng
DATES/LOCATION (S) OF TRAINING	18 – 21 May 1997, Kolda
ISRA/NRBAR PROGRAM	International Liaison Program
DESCRIPTION OF TRAINING	Accompany Tuskegee University researchers on LIR-01 project site
NAME OF PARTICIPANT (S)	Jean Pierre Ndiaye
DATES/LOCATION (S) OF TRAINING	20 - 23 May 1997, Bambey, St Louis
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Participated in the Bambey workshop and visited ISRA/St Louis
NAME OF PARTICIPANT (S)	Mame Mor Gningue
DATES/LOCATION (S) OF TRAINING	20 - 25 May 1997, St Louis, Bambey, Kaolack
ISRA/NRBAR PROGRAM	Inventory Management
DESCRIPTION OF TRAINING	Update the Inventory lists
NAME OF PARTICIPANT (S)	Ndiaga Dieng, ISRA/SG
DATES/LOCATION (S) OF TRAINING	20 – 23 May 1997, St Louis
ISRA/NRBAR PROGRAM	Station Management
DESCRIPTION OF TRAINING	Preparatory visit of Consultant Hannibal Muhtar TDY
NAME OF PARTICIPANT (S)	Abdoulaye Barry/Accountant
DATES/LOCATION (S) OF TRAINING	22 May – 03 June 1997, Ziguinchor, Bambey, Dakar
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Elaboration of a balance sheet
NAME OF PARTICIPANT (S)	Moussa Bakhoyokho - ISRA/DG & Secretary
DATES/LOCATION (S) OF TRAINING	02 - 04 June 1997, Kaolack
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Management visit to ISRA center
NAME OF PARTICIPANT (S)	Moussa Bakhayokho - ISRA/DG & Secretary
DATES/LOCATION (S) OF TRAINING	08 - 12 June 1997, Bambey & neighboring centers
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Management visit to various centers

NAME OF PARTICIPANT (S) Adama Faye & Abdou Fall
 DATES/LOCATION (S) OF TRAINING 09 -21 June 1997, Kolda
 ISRA/NRBAR PROGRAM International Liaison Program
 DESCRIPTION OF TRAINING Start the survey activity under LIR-01 and elaborate a plan for the manual on stabling

NAME OF PARTICIPANT (S) Baye Waly & Pape Malick Fall/Accountants
 DATES/LOCATION (S) OF TRAINING 13 – 15 June 1997, St Louis
 ISRA/NRBAR PROGRAM Financial Management
 DESCRIPTION OF TRAINING Monitoring of St Louis Inventory files

NAME OF PARTICIPANT (S) Massamba Dieng/NRBAR
 DATES/LOCATION (S) OF TRAINING 12 – 17 June 1997, Sally
 ISRA/NRBAR PROGRAM Grants Management
 DESCRIPTION OF TRAINING Participated in the workshop on monitoring and evaluation of agricultural and natural resources management activities

NAME OF PARTICIPANT (S) Lamine Bocoum/Research Assistant
 DATES/LOCATION (S) OF TRAINING 13 - 22 June 1997, Tamba, Kolda & Ziguinchor
 ISRA/NRBAR PROGRAM Research & Development
 DESCRIPTION OF TRAINING Installation of regional R/D concertation comitees

NAME OF PARTICIPANT (S) Allassane Ndiaye
 DATES/LOCATION (S) OF TRAINING 17 - 26 June 1997, Dakar
 ISRA/NRBAR PROGRAM Financial Management
 DESCRIPTION OF TRAINING Meeting with the Consulting firm for the installation of a new management information system

NAME OF PARTICIPANT (S) Abdoulaye Barry/Accountant
 DATES/LOCATION (S) OF TRAINING 17 – 24 June 1997, Djibelor, Bambey, Kaolack, Dakar
 ISRA/NRBAR PROGRAM Financial Management
 DESCRIPTION OF TRAINING Meet with Bambey accountants andd prepare a balance sheet for the liaison accounts

NAME OF PARTICIPANT (S) Allassane Ndiaye & Moussa Ndoye
 DATES/LOCATION (S) OF TRAINING 17 – 30 June 1997, Dakar
 ISRA/NRBAR PROGRAM Financial management
 DESCRIPTION OF TRAINING Needs evaluation for the elaboration of terms of reference for the new managment information system

NAME OF PARTICIPANT (S)	Jean Pierre Ndiaye/DS
DATES/LOCATION (S) OF TRAINING	26 June 1997, Louga
ISRA/NRBAR PROGRAM	Research Management
DESCRIPTION OF TRAINING	Monitoring visit
NAME OF PARTICIPANT (S)	Moussa Bakhayokho/DG & Secretary
DATES/LOCATION (S) OF TRAINING	23 – 26 June 1997, St Louis
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Working visit to 3 stations near St Louis
NAME OF PARTICIPANT (S)	Lucien Dacruz
DATES/LOCATION (S) OF TRAINING	23 - 28 June 1997, Djibelor
ISRA/NRBAR PROGRAM	Personnel Management
DESCRIPTION OF TRAINING	Control and Update of Personnel files and status control of payment of social security fees
NAME OF PARTICIPANT (S)	Aminata Badiane
DATES/LOCATION (S) OF TRAINING	30June – 04July 1997, Bambey, Kaolack
ISRA/NRBAR PROGRAM	International Liaison Program
DESCRIPTION OF TRAINING	Monitoring and support visit to Bambey laboratory and LIR-02 project sites
NAME OF PARTICIPANT (S)	Baye Wally & Papa Fall (2)
DATES/LOCATION (S) OF TRAINING	08 – 15 July 1997, Bambey, St Louis
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Control and Update of Accounting files and record of 1996 debt liquidation
NAME OF PARTICIPANT (S)	Ndiaga Dieng, Pierre Diene, Mamadou Nguer (3)
DATES/LOCATION (S) OF TRAINING	13 – 17 July 1997, Djibelor, Tambacounda
ISRA/NRBAR PROGRAM	Administrative Management
DESCRIPTION OF TRAINING	Installation of newly nominated administrative personnel
NAME OF PARTICIPANT (S)	Allassane Fall, Conrad Bonsi & Mour Gueye
DATES/LOCATION (S) OF TRAINING	15 – 19 July 1997, Kaolack, Tambacounda
ISRA/NRBAR PROGRAM	International Liaison Program LIR-03
DESCRIPTION OF TRAINING	Project start visit with Tuskegee University partners – visit to the project agroecologic sites – meeting with project collaborators and ISRA personnel
NAME OF PARTICIPANT (S)	Aminata Badiane, & 5 ISRA researchers (6)
DATES/LOCATION (S) OF TRAINING	28 – 11 August, 1997, Foudioun
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Working group to elaborate a summary of research findings on organic material

NAME OF PARTICIPANT (S)	Moussa Bakhayokho/DG & Secretary (2)
DATES/LOCATION (S) OF TRAINING	01 – 02 August 1997, Louga & Darha
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Working visit to ISRA centers
NAME OF PARTICIPANT (S)	4 ISRA Researchers
DATES/LOCATION (S) OF TRAINING	03 – 08 August 1997, ISRA URRS
ISRA/NRBAR PROGRAM	Administrative Management
DESCRIPTION OF TRAINING	Meet with ISRA personnel in order to elaborate governing rules for the institution
NAME OF PARTICIPANT (S)	Moussa Bakhayokho/DG & Secretary
DATE/LOCATION (S) OF TRAINING	04 – 08 August 1997, ISRA Centers
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Working visit to ISRA centers
NAME OF PARTICIPANT (S)	Lamine Bocoum
DATES/LOCATION (S) OF TRAINING	05 – 08 August 1997, Rodale Thies
ISRA/NRBAR PROGRAM	Research and Development
DESCRIPTION OF TRAINING	Test of database questionnaire on R&D Partnership
NAME OF PARTICIPANT (S)	Moctar Johnson
DATES/LOCATION (S) OF TRAINING	13 – 20 August 1997, 5 ISRA Centers
ISRA/NRBAR PROGRAM	Inventory Management
DESCRIPTION OF TRAINING	Preparation for a physical inventory of ISRA assets in the various centers
NAME OF PARTICIPANT (S)	Aminata Badiane
DATES/LOCATION (S) OF TRAINING	26 – 29 August 1997, Kaolack
ISRA/NRBAR PROGRAM	International Liaison Program
DESCRIPTION OF TRAINING	Meet with LIR-02 project team, visit Bambey central laboratory in order to identify equipment needs of the project
NAME OF PARTICIPANT (S)	Ousmane Mbodj & Mahamat Sow
DATES/LOCATION (S) OF TRAINING	01 – 03 September 1997, St Louis
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Finalization of ISRA revised budget
NAME OF PARTICIPANT (S)	Lamine Bocoum
DATES/LOCATION (S) OF TRAINING	04 06 September 1997, Thies
ISRA/NRBAR PROGRAM	Research/Development
DESCRIPTION OF TRAINING	Test of database questionnaire

NAME OF PARTICIPANT (S)	Aminata Badiane & 3 researchers (4)
DATES/LOCATION (S) OF TRAINING	08 -17 September 1997, Foudioun
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Working group/ Summary of research findings on organic matter
NAME OF PARTICIPANT (S)	Tom Cusack & Massamba Dieng
DATES/LOCATION (S) OF TRAINING	15 – 19 September 1997, ISRA/SOHC
ISRA/NRBAR PROGRAM	Grants Management
DESCRIPTION OF TRAINING	Monitoring visit to SOHC
NAME OF PARTICIPANT (S)	CG, AI & Chef SARH (3)
DATES/LOCATION OF TRAINING	18 – 21 September 1997, Bambey
ISRA/NRBAR PROGRAM	Administrative Management
DESCRIPTION OF TRAINING	Finalization of procedures
NAME OF PARTICIPANT (S)	Mame Gningue, Lamine Ndiaye, Cire Kane
DATES/LOCATION OF TRAINING	24 Sept – 02 October 1997, 7 ISRA Centers
ISRA/NRBAR PROGRAM	Inventory Management
DESCRIPTION OF TRAINING	Report on status of physical inventory of assets and accounting work in fiscal year 1997
NAME OF PARTICIPANT (S)	Jean Pierre Ndiaye
DATES/LOCATION OF TRAINING	24 Sept – 07 October 1997, 6 ISRA Centers
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Supervision visit of scientific research activities
NAME OF PARTICIPANT (S)	Mahamat Sow & Ousmane Mboj
DATES/LOCATION OF TRAINING	07-11Oct, 1997 – Darha
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Finalization of ISRA Budget
NAME OF PARTICIPANT (S)	Jean Pierre Ndiaye, ISRA/DS, Terence Senghor
DATES/LOCATION OF TRAINING	Oct 28 – Nov 01, 1997 – ISRA/Djibelor
ISRA/NRBAR PROGRAM	Grants program Management
DESCRIPTION OF TRAINING	Monitoring visit to Djibelor Agricultural Reserach Center and planning for 1998 research activity program
NAME OF PARTICIPANT (S)	Moussa Ndoye, ISRA/AI
DATES/LOCATION OF TRAINING	Oct 23 – Nov 02, 1997 – Ziguinchor
ISRA/NRBAR PROGRAM	Inventory Management
DESCRIPTION OF TRAINING	Support visit to Ziguinchor center for inventory of assets

SFP

NAME OF PARTICIPANT (S)	50 ISRA researchcers
NAME OF PARTICIPANT (S)	Mouhamadou Bocoum
DATES/LOCATION OF TRAINING	Nov 09-15, 1997 - Kolda, Tamba & Kaolack
ISRA/NRBAR PROGRAM	Research/Development Program
DESCRIPTION OF TRAINING	Study/Grant/Partner
NAME OF PARTICIPANT (S)	Aminata Badiane/ISRA/CM/GRN
DATES/LOCATION OF TRAINING	Nov 12-14, 1997 – Kaolack & Bambey
ISRA/NRBAR PROGRAM	International Linkages Program
DESCRIPTION OF TRAINING	Monitoring visit to project LIR-02 sites
NAME OF PARTICIPANT (S)	Aminata Casset/ISRA/UIG
DATES/LOCATION OF TRAINING	Nov 17-22, 1997 – various ISRA centers
ISRA/NRBAR PROGRAM	Institutional Capacity Building
DESCRIPTION OF TRAINING	Computer system installation
NAME OF PARTICIPANT (S)	Moctar Johnson
DATES/LOCATION OF TRAINING	03-07 Dec 1997 – St Louis, Tamba & Bambey
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Financial monitoring visit
NAME OF PARTICIPANT (S)	Moctar Johnson
DATES/LOCATION OF TRAINING	13-14 Dec 1997 – Djibelor
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Follow-up on financial reports of 1996 and 1997
NAME OF PARTICIPANT (S)	Baye Waly & Mame More Gning
DATES/LOCATION OF TRAINING	12-17 Dec 1997 – various centers
ISRA/NRBAR PROGRAM	Financial Management
DESCRIPTION OF TRAINING	Monitoring visit and control of ISRA physical inventory of assets
NAME OF PARTICIPANT (S)	Aminata Badiane & 5 ISRA researchers
DATES/LOCATION OF TRAINING	15-17 Dec 1997 – Dakar
ISRA/NRBAR PROGRAM	Natural Resources Management Program
DESCRIPTION OF TRAINING	Synthesis of the organic matter research results
NAME OF PARTICIPANT (S)	Pape Seck
DATES/LOCATION OF TRAINING	15-17 Dec 1997 - St Louis, Thies, Bambey, et Kaolack
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Study mission with Consultant Cheikh SARR for the set-up of a research Fund

NAME OF PARTICIPANT (S)	Pape Assane Camara
DATES/LOCATION OF TRAINING	17-18 Dec 1997 – St Louis
ISRA/NRBAR PROGRAM	Station Management
DESCRIPTION OF TRAINING	Worked with the station manager on a crop multiplication Program

1998

There were 21 short-term training events in Senegal, in which more than 300 ISRA personnel and 300 partners participated. Financing was provided through NRBAR for these activities. In addition, NRBAR assisted with the implementation of many other short-term training activities which were funded from other sources. Of the 11 major events, 8 included substantial partenaire participation. The major events included 3 large workshops for presentation of research results, in agriculture/livestock, in Rice, and for all NRBAR results, a rice seed production outreach seminar, a station management evaluation, a farmers' site visit for anti-erosion agroforestry technologies, a research performance evaluation workshop, a national sustainable funding seminar, the final meeting of the DS Conventions committee for NRBAR, the national forum on seed production and supply at Bambey, and a passation de service at Kolda.

1998 MAJOR EVENTS

NAME OF PARTICIPANT (S)	Amadou Beye and validation committee
DATES/LOCATION OF TRAINING	12-17 FEB 1998 – Tamba
ISRA/NRBAR PROGRAM	Natural Resources Management
DESCRIPTION OF TRAINING	Workshop for the validation of "The practical guide of rice production in Casamance"

NAME OF PARTICIPANTS	60 ISRA researchers and partners
DATES/LOCATION OF TRAINING	17-20 FEB 1998 – Kolda
ISRA/NRBAR PROGRAM	Grants program management
DESCRIPTION OF TRAINING	Results Presentation Workshop – Animal Husbandry

NAME OF PARTICIPANT (S)	60 ISRA researchers and partners
DATES/LOCATION OF TRAINING	10-13 MARCH 1998 – Tambacounda
ISRA/NRBAR PROGRAM	Grants Program Management
DESCRIPTION OF TRAINING	Results Presentation Workshop on Rice productivity

NAME OF PARTICIPANT (S)	11 ISRA personnel
DATES/LOCATION OF TRAINING	16-19 March, 1998 – Dakar
ISRA/NRBAR PROGRAM	Station Management
DESCRIPTION OF TRAINING	Evaluation meeting of station managers to discuss the strategies and measures set up by ISRA in the field of station management

NAME OF PARTICIPANT (S)	13 farmers and 4 research/support staff from Kolda
DATES/LOCATION OF TRAINING	20-24 April, 1998 Kaolack and Gambia
ISRA/NRBAR PROGRAM	PAR4-12
DESCRIPTION OF TRAINING	site visit
NAME OF PARTICIPANT (S)	15 senior ISRA staff and more than 70 partenaires
DATES/LOCATION OF TRAINING	13-14 May, 1998 Ngor
ISRA/NRBAR PROGRAM	Sustainable funding
DESCRIPTION OF TRAINING	national workshop which brought together, senior GOS officials, senior ISRA managers and all major partenaires, to agree on a common approach to a national agricultural research fund, using a NRBAR consultant and his feasibility report as basis
NAME OF PARTICIPANT (S)	35 senior ISRA researchers and administrative staff
DATES/LOCATION OF TRAINING	Mbour, 19-20 May, 1998
ISRA/NRBAR PROGRAM	personnel evaluation
DESCRIPTION OF TRAINING	draft procedures and criteria were presented, revised, validated, and finalised by senior staff This consensus will allow the DS to begin testing at 3 ISRA sites during 1998
NAME OF PARTICIPANT (S)	20 senior ISRA researchers and managers, 8 partenaire representatives, USAID and NRBAR staff
DATES/LOCATION OF TRAINING	22-27 June, 1998 Saly
ISRA/NRBAR PROGRAM	Final meeting of the NRBAR component of the DS comite des conventions
DESCRIPTION OF TRAINING	final technical, financial and administrative review of the NRBAR grants projects
NAME OF PARTICIPANT (S)	29 ISRA staff and partenaires in the seeds sector
DATES/LOCATION OF TRAINING	29-30 June, 1998 Bambey
ISRA/NRBAR PROGRAM	national forum on seed production and supply
DESCRIPTION OF TRAINING	presentations of ISRA seeds research results and their implications for future seed production and distribution
NAME OF PARTICIPANT (S)	12 committee (passation de service) members, and 20 personnel of the Kolda research station
DATES/LOCATION OF TRAINING	02-03 July, 1998 Kolda
ISRA/NRBAR PROGRAM	research management
DESCRIPTION OF TRAINING	passation de service between A Diatta and Demba F Mbaye

<p>NAME OF PARTICIPANT (S)</p> <p>DATES/LOCATION OF TRAINING</p> <p>ISRA/NRBAR PROGRAM</p> <p>DESCRIPTION OF TRAINING</p>	<p>More than 70 ISRA research and administrative staff, more than 80 partenaires, 3 GOS Ministers, the USAID Mission Director and Deputy Director, other senior officials and media representatives</p> <p>10-12 August, 1998 Ngor</p> <p>NRBAR management</p> <p>national seminar to present and discuss NRBAR results, particularly the more than 232 research reports produced to date, review of exhibition of these publications</p>
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1998 MINOR EVENTS

<p>NAME OF PARTICIPANT (S)</p> <p>DATES/LOCATION OF TRAINING</p> <p>ISRA/NRBAR PROGRAM</p> <p>DESCRIPTION OF TRAINING</p>	<p>Aminata Badiane</p> <p>13JAN 1998 – Bambey</p> <p>International Linkages program</p> <p>Visited the Bambey laboratory in order to verify the new equipment purchased under LIR-02 program and discussed with the Station Manager</p>
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<p>NAME OF PARTICIPANTS (S)</p> <p>DATES/LOCATION OF TRAINING</p> <p>ISRA/NRBAR PROGRAM</p> <p>DESCRIPTION OF TRAINING</p>	<p>Moussa Ndoye & 5 ISRA personnel</p> <p>17-19 JAN 1998 – Bambey</p> <p>Financial Management</p> <p>Elaboration of ISRA commercial management procedures</p>
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<p>NAME OF PARTICIPANT (S)</p> <p>DATES/LOCATION OF TRAINING</p> <p>ISRA/NRBAR PROGRAM</p> <p>DESCRIPTION OF TRAINING</p>	<p>Lamine Bocoum</p> <p>19-23 JAN 1998 – Bambey, Gossas & Kaolack</p> <p>Research Development program</p> <p>Follow-up mission on use of agroforestry by the female population and the impact of anti-erosion technique</p>
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<p>NAME OF PARTICIPANT (S)</p> <p>DATES/LOCATION OF TRAINING</p> <p>ISRA/NRBAR PROGRAM</p> <p>DESCRIPTION OF TRAINING</p>	<p>Aminata Badiane & 5 ISRA researchers</p> <p>21-28 FEB 1998 – Kolda</p> <p>Natural resources Management</p> <p>Finalization of synthesis work on Organic matter</p> <p>Document writing</p>
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<p>NAME OF PARTICIPANT (S)</p> <p>DATES/LOCATION OF TRAINING</p> <p>ISRA/NRBAR PROGRAM</p> <p>DESCRIPTION OF TRAINING</p>	<p>Cire E SALL</p> <p>24-27 FEB 1998 – Bambey</p> <p>Program Management</p> <p>Follow-up visit of the experimentation sites at Bambey and technical assistance to researchers</p>
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NAME OF PARTICIPANT (S)	Lamine Bocoum
DATES/LOCATION OF TRAINING	26-27 FEB 1998 – Kaolack
ISRA/NRBAR PROGRAM	Research Development Program
DESCRIPTION OF TRAINING	Field visit to evaluate impact of agroforestry use by female population
NAME OF PARTICIPANT (S)	Nicolas Dupuy
DATES/LOCATION OF TRAINING	9-13 MARCH 1998 - Bambey
ISRA/NRBAR PROGRAM	TDY/Research results reporting
DESCRIPTION OF TRAINING	Finalization of the report of CNRA 1996-1997 Campaign
NAME OF PARTICIPANT (S)	Aminata Badiane
DATES/LOCATION OF TRAINING	17-19 MARCH 1998 – Bambey & Kaolack
ISRA/NRBAR PROGRAM	International linkage program – LIR-02
DESCRIPTION OF TRAINING	Field visit to project sites
NAME OF PARTICIPANT (S)	Moussa Bakayokho & 3 ISRA Personnel
DATES/LOCATION OF TRAINING	16 APRIL 1998 – Kaolack
ISRA/NRBAR PROGRAM	Program Management
DESCRIPTION OF TRAINING	Working visit with the Station manager and researchers
NAME OF PARTICIPANT (S)	Aminata Badiane
DATES/LOCATION OF TRAINING	14-15 July, 1998 Bambey
ISRA/NRBAR PROGRAM	LIR02
DESCRIPTION OF TRAINING	field evaluation of project

Vc (iv) SYNTHESIS OF THE SHORT TERM TRAINING IN SENEGAL PROGRAM

The level of effort was substantially higher in 1996-98, compared with 1993-95, due to the lack of complementary funding for such activities once the World Bank PRAII project ceased funding in 1995. The emphasis of the training program evolved from an initial concentration on research planning and methodology, to events for analyses of data, and presentations and evaluations of results of NRBAR grants activities, this change corresponded both to the needs of the NRBAR Grants project cycle, and to the additional emphasis placed on technical results by ISRA and USAID since 1996.

All ISRA/NRBAR programs have benefited from short-term training, however, particularly strongly represented are research planning and management (30% of major activities), mainly to support the participative strategic planning process, technical training related to collaborative research, and meetings for presentation, communication and evaluation of research results.

Vd LONG TERM BS TRAINING FOR WOMEN IN SENEGAL

Vd (i) SUMMARY AND CONCLUSIONS

The ISRA/NRBAR program of long-term training for women in Senegal, consisting of support for 7 students at the Ecole Nationale Supérieure d'Agriculture (ENSA) and 3 students at the Institut des Sciences de la Terre (IST) at the University of Dakar, has achieved its objectives of training 10 women to B S level. The final diploma will be the *Ingénieur Agronome* at ENSA and the *Ingénieur Géologique* at IST, and is expected to be conferred on the candidates when they complete their studies in November, 1998. Implementation was according to the guidelines set out in the NRBAR Grant Agreement. To date, all the students have performed satisfactorily, and show great promise for the future. It was possible to implement the maximum number of events called for in the Grant Agreement, with total estimated expenditures being 25% less than the indicative budget. This mainly reflects the fact that the costs of general institutional support at ENSA and IST were lower than anticipated.

The future impact of this program on attainment of ISRA/NRBAR objectives is expected to be substantial, as all of the students were able to work as interns at ISRA, in order to complete the practical study elements of their diplomas. The links already established between student and ISRA/partenaire researchers, through these activities, were substantial, and will likely eventually result in employment of many of the diplomates in ISRA or related institutions. The students are also currently well-placed, and are searching for, funding for graduate study abroad.

Vd (ii) CONTEXT

The NRBAR Grant Agreement 685-0285 dated 31 July, 1991, provided for the B S level training of up to 10 Senegalese women. The USAID/CID contract for assistance to ISRA in implementing NRBAR services included a budget of \$400,000 to fund up to 10 women. The program began in 1993, and will end in November/December, 1998. The two participating institutions were chosen on the basis of their excellence in providing the necessary B S level qualifications in the agriculture/natural resources field. The procedure for selection of students was through the regular recruitment processes at the two selected institutions. National advertisements were posted in the relevant newspapers, and posted at relevant locations at the University of Dakar, and elsewhere in Senegal.

Vd (iii) ACTIVITIES

ISRA/CID negotiated with the two Senegalese educational institutions (Ecole Nationale Supérieure d'Agriculture (ENSA) and the Institut des Sciences de la Terre (IST) for the implementation of 10 women's B S programs. This component was designed to increase the number of women working in the agricultural field in Senegal, and to ensure that there are qualified women available for future graduate training opportunities, and for appointment to research posts in the national agricultural research system. As a result of the national competition, ten candidates were selected by these institutions and received funding for tuition as well as for other training/research activities, leading to the B S level diploma. All students have successfully completed their fourth academic year, and are presently completing their fifth

academic year During the life of the program, the 10 students have been trained at a total cost of approximately \$300,000 (refer Table 9 1 of the NRBAR Plan de Travail, 1997)

Summary information for each of the participants is presented in the attached list

ENSA

Major Field of study Agriculture

Starting Date January 1994, Estimated Date of completion of Degree November 1998

Number of students 07

The 7 students have successfully completed their principal internship in various ISRA centers from July to August 1997 The objectives of this work study were threefold

- 1 to enable the students to increase their knowledge within a professional setting and participate actively in a functioning experimental agriculture center,
- 2 to analyse the context or environment within which the research institution operates, and
- 3 to examine the structures, terms of reference, research programs, the constraints of research centers, and their linkages with other structures or development projects

The internships generally took the form of studying the functioning of on-farm production systems This on-the-job training will contribute toward preparing the students for a better understanding of local populations with whom they will work

In 1998, the final internship is being implemented by the students in ISRA research centers for a period of six months and they are currently preparing their theses on a subject pre-determined with the head of department and the chief of the ISRA research center

NAME OF PARTICIPANT	Seynabou TOURE
INSTITUTION	ENSA, Thies
FIELD OF STUDY	Agriculture
DATE OF COMMENCEMENT OF STUDY	Jan 1994
ESTIMATED DATE OF COMPLETION	Dec 1998

NAME OF PARTICIPANT	Yaye NGOUYE
INSTITUTION	ENSA, Thies
FIELD OF STUDY	Agriculture
DATE OF COMMENCEMENT OF STUDY	Jan 1994
ESTIMATED DATE OF COMPLETION	Dec 1998

NAME OF PARTICIPANT	Fatimata DOUCOURE
INSTITUTION	ENSA, Thies
FIELD OF STUDY	Agriculture
DATE OF COMMENCEMENT OF STUDY	Jan 1994
ESTIMATED DATE OF COMPLETION	Dec 1998

SSS

NAME OF PARTICIPANT
INSTITUTION
FIELD OF STUDY
DATE OF COMMENCEMENT OF STUDY
ESTIMATED DATE OF COMPLETION

Oumy THIAM
ENSA, Thies
Agriculture
Jan 1994
Dec 1998

NAME OF PARTICIPANT
INSTITUTION
FIELD OF STUDY
DATE OF COMMENCEMENT OF STUDY
ESTIMATED DATE OF COMPLETION

Ndeye Maty BOCOUM
ENSA, Thies
Agriculture
Jan 1994
Dec 1998

NAME OF PARTICIPANT
INSTITUTION
FIELD OF STUDY
DATE OF COMMENCEMENT OF STUDY
ESTIMATED DATE OF COMPLETION

Soukeyna Awa DIAW
ENSA, Thies
Agriculture
Jan 1994
Dec 1998

NAME OF PARTICIPANT
INSTITUTION
FIELD OF STUDY
DATE OF COMMENCEMENT OF STUDY
ESTIMATED DATE OF COMPLETION

Diop FALL
ENSA, Thies
Agriculture
Sept 1993
Dec 1998

IST

Major Field of study Soil Sciences
Starting Date October 1993
Number of participants 03
Estimated completion date of degree November 1998

The 3 students at IST have satisfactorily completed their fourth academic year, including an internship with ISRA researchers, and are currently completing their memoire de fin d'etude in soils

NAME OF PARTICIPANT
INSTITUTION
FIELD OF STUDY
DATE OF COMMENCEMENT OF STUDY
ESTIMATED DATE OF COMPLETION

Aminata NDOYE
Institute of Soil Sciences (IST)
Soil Sciences
October 1993
November 1998

NAME OF PARTICIPANT
INSTITUTION
FIELD OF STUDY
DATE OF COMMENCEMENT OF STUDY
ESTIMATED DATE OF COMPLETION

Fatma SECK
Institute of Soil Sciences (IST)
Soil Sciences
October 1993
November 1998

NAME OF PARTICIPANT	Khady SOW
INSTITUTION	Institute of Soil Sciences (IST)
FIELD OF STUDY	Soil Sciences
DATE OF COMMENCEMENT OF STUDY	October 1993
ESTIMATED DATE OF COMPLETION	November 1998

VI and VII ADDITIONAL DIRECT SUPPORT BY ISRA, USAID, AND CID

ISRA provided the salaries of collaborating ISRA staff, most infrastructure costs, office space, and access to appropriate ISRA facilities and equipment. It is estimated that the value of these contributions exceeded the annual targeted level of \$500,000.

USAID assigned in-house personnel to assist with project implementation, funded both a technology inventory study and a financial management consultancy contract, provided office furniture and equipment, household furniture and major appliances, project vehicles, and other logistic support when necessary.

CID provided under its contract with USAID other logistic support, office equipment, computers, additional vehicles, and support for offices in the U S and in Senegal. Outside of the USAID/CID contract, OSU provided other support such as training in office finance and administration, and language training, for NRBAR in-country staff.

8 PROGRAM SUPPORT ACTIVITIES

All facets of the project support program were successfully implemented, including meetings and reporting exercises, with highest priority being placed on those activities which directly complemented the achievement of NRBAR objectives. Of particular importance was the close collaboration of ISRA, CID and USAID staff in producing the annual workplans and progress reports, implementing the joint annual reviews, redesigning the NRBAR program in 1995-96 according to the restructured programs at both ISRA and USAID, and implementing the 4 large regional validation seminars and the national closing seminar. Specific project support activities are outlined in Table 8.1, and the list of equipment purchased under the project is presented in Annex 1.

The impact of this program has been pervasive, and ensured that the project's resource components continued to focus on project objectives. Two examples of significant events are presented in the following paragraphs.

The final NRBAR Annual Joint Review in November, 1997, with the participation of senior ISRA and USAID staff, researchers, partner institutions, and farmers, succeeded in implementing a joint field evaluation of activities. The review included two consultant presentations, four site visits and a formal meeting at Bambey. The conclusion was that NRBAR was producing more than the required level of results and impact on the population, mainly because the collaborative process had been more productive than anticipated.

The final closing seminar report of NRBAR showed that the project had been a successful and substantial investment by both ISRA and USAID in a more sustainable future for rural development in Senegal. Quoting from the summary report of the seminar:

"This closing seminar of the Natural Resources-Based Agricultural Research Project was implemented during the period of 10-12 August, 1998, according to the principles utilised throughout the six years of the project's work: participation, collaboration, and the exchange of information and ideas. More than 150 participants, including more than 70 ISRA staff and more than 80 partenaires, collaborated effectively during each of the 3 days of the seminar. Three Ministers, the USAID Mission Director, the Chairman of the Agricultural Committee of the National Assembly, and many senior technical officials, were present, along with representatives of the main Aid Agencies, NGOs, farmers organisations, related institutions, and numerous journalists. Two hundred and thirty-two of the more than one thousand documents produced with project assistance were displayed, and were made available for review during the seminar. Participants made good use of the display and numerous demands for copies of documents were received by ISRA. Presentations and discussions of NRBAR-supported research results showed that all project objectives had been surpassed. Presentations and discussions of improvements in ISRA's institutional capacity also showed that project objectives had been attained. The conclusions and recommendations emphasised the need to diffuse the large numbers of results documented during the final years of the project, as the value of research results depends on the extent to which they are transmitted and interpreted to possible users."

The NRBAR Project Director, assisted by the Project Deputy Director and the CID COP, in cooperation with other ISRA/NRBAR team members, has supported the implementation of all project programs by management, administration, and monitoring and evaluation activities, as well as by the provision of financial services. Leadership and overall program support was provided by the Program Director, and the Program Deputy Director/Grants Administrator, as part of their ISRA duties, and by the CID COP as part of his duties of assisting the Program Directors. CID NRBAR staff participated in program support activities, with effort being concentrated at the Chief-of-Party level for overall leadership, and at the Program Administrator level for day-to-day implementation. Support efforts outside of Senegal are concentrated at Oregon State University under the CID NRBAR Coordinator, and at the Consortium for International Development Head Office under the CID Executive Director.

The final financial status of the project will be assessed after the completion of all financial transactions, later in 1999. However, it is expected that final NRBAR expenditures will total approximately \$15,100,000 which compares to a budgeted amount of \$15,573,000 for the 1992-98 period.

TABLE 8 1 PROGRAM SUPPORT ACTIVITIES

The RP1/NRBAR Program Director, assisted by the Program Deputy Director, and the CID COP and the Program Administrator in cooperation with other ISRA/NRBAR team members, has

- (a) planned and participated in regular meetings with program collaborators (including the weekly, monthly and Quarterly meetings with USAID staff, program reviews, and the U S side management meetings), and compiled program reports (including monthly, Quarterly and other progress reports, workplans, and trip reports),
- (b) participated in Quarterly ISRA/USAID inspection visits to program sites,
- (c) administered offices and facilities, and supervised and recruited technical assistance and local staff, including the management (drafting SOW, logistics, recruitment, reporting, etc) of 121 TDYs,
- (d) managed program close-out procedures including close-out plans, implementation of the closing workshop, and final reporting,
- (e) participated in the ISRA/USAID Annual Joint Reviews,
- (f) participated (planning, implementation, review) in program audits and evaluations, as required,
- (g) established, managed, effected payments on, and controled, RP1/NRBAR local currency accounts,

(h) assessed progress against program performance indicators identified in the RP1/NRBAR monitoring and evaluation plan, and attached these to the Quarterly Reports,

(i) continued to collect and analyse baseline data relevant to project objectives,

(j) coordinated changes in the CID contract to account for the new focus of USAID on the Results Packages,

(k) scheduled and managed (develop revised training plans, identify/place trainees and monitor progress) all in-country aspects of RP1/NRBAR training, and collaborate with the CID NRBAR Coordinator for all foreign training matters,

(l) assisted the ISRA Grants Manager and CM/Recherche-Developpement in developing a system for, help manage, and implement the collaborative research grants program,

(m) maintain the RP1/NRBAR inventory system, and

(n) maintain development activities such as housing and office improvements, and familiarisation with ISRA and USAID procedures

The activities of the Program Administrator focussed on logistical and administrative support, with a minor element of technical support, as follows

(o) administer the housing and local facility needs of the program,

(p) undertake procurement and management of local program materials, including administration of vehicles,

(q) provide personnel services for CID NRBAR staff, and office staff supervision,

(r) provide translation services,

(s) provide all necessary clerical and secretarial services,

(t) provide accounting and financial management services for local currency transactions,

(u) assist NRBAR staff in undertaking administrative exercises related to their technical tasks,

(v) provide day-to-day management of the short and long-term training programs, and the TDY program, and

(w) implement program close-out procedures

The activities of the CID NRBAR Coordinator, the CID Deputy Director responsible for NRBAR, and other U S based program support staff focussed on management, administrative and logistical support, mostly undertaken in the U S as a result of requests from the field, as follows

(x) recruitment preliminary searches for, and formal recruitment of, international TDYs

(y) logistics (1) purchase and shipping of program commodities, (2) international travel arrangements, and (3) preparation of visas and medical clearances, as necessary,

(z) technical backstopping (1) technical information requested by ISRA/NRBAR will be obtained and sent to Senegal,

(aa) regular visits to Senegal by the CID NRBAR On-Campus Coordinator (or alternate member of the CID management staff) were made to Senegal as required for specific administrative tasks,

(ab) contracting (1) managed subcontracts with Howard University, Tennessee State University and Oregon State University, (2) processed subcontracts developed under the Collaborative Research Grants, and (3) directly communicated with the USAID Contracting Officer as necessary on contractual matters,

(ac) participant training placement and administration of long-term and short-term trainees outside of Senegal, and

(ad) communication constant communication was maintained with the ISRA/NRBAR office, in order to expedite the above tasks

BIBLIOGRAPHY

TABLE OF CONTENTS OF THE BIBLIOGRAPHY

- 1 Introduction**
- 2 Strengthening of institutional research capacity**
- 3 Assessment of existing AG/NRM technology**
- 4 Development of improved AG/NRM technology**
- 5 Validation of improved AG/NRM technology**
- 6 Increased exposure to improved AG/NRM technology**
- 7 Project Resource Components**
 - I Ia Collaborative Grants Program**
Ib Grants to ISRA Researchers
 - II Support for ISRA's Natural Resources Program**
 - III Linkages to International Research Institutions**
 - IV Personnel**
 - IVa Long-term personnel**
 - IVb Short-term personnel**
 - V Training**
 - Va Long-term Higher Degree training outside Senegal**
 - Vb Short-term training and conferences outside Senegal**
 - Vc Short-term training in Senegal**
 - Vd Long-term B S training for women in Senegal**
- 8 Program Support Activities**

1 INTRODUCTION

This bibliography lists many of the more than 500 principal documents produced and distributed with the direct assistance of the project. Other related documents, ranging from Scientific Journal articles to extension materials, which are currently in preparation, will be produced by the relevant agencies after the project completion date. To ensure efficient cross-referencing, documents are listed within each section of the Bibliography according to the sequence of topics presented in each of the Chapters of this report.

2 STRENGTHENING OF INSTITUTIONAL RESEARCH CAPACITY

The sequence of presentation of documents follows that of the text of Chapter 2

RESEARCH PLANNING AND MANAGEMENT

Strategic Planning

1994 Diallo, A , Thiongane, P Rapport de mission Demarrage des travaux d'elaboration du plan strategique de l'Institut Senegalais de Recherches Agricoles (ISRA) ISRA, October, 1994

1994 BAME Strategies a court et moyen terme du BAME ISRA, 1994

1994 John Sanders and Mamadou Sidibe (Octobre/Novembre 1994) Appui au programme du ISRA/Bame ISRA, 1994

1995 Direction Generale Plan d'Urgence Octobre-December 1995 ISRA, 1995

1995 Ali Kissi Rapport de mission Appui aux comites regionaux pour l'etablissement des priorites de recherches au Niveau regional ISRA, Juillet 1995, 7p

1995 Maty Ndiaye Sy Rapport de mission de Maty SY Mission de facilitation a l'ISRA ISRA, August-October, 1995

1995 P I Thiongane Rapport de mission L'ISRA et son environnement Forces, Faiblesses, Opportunités, Menaces ISRA, Mai 1995, 59p

1996 Louis Suchet Rapport de mission Appui au programme des liaisons avec les institutions internationales de recherche ISRA, Septembre 1996, 26p

1996 Nicolas Dupuy Rapport de mission Appui a la synthese du plan strategique de l'ISRA, Rapport d'etape sur la synthese du projet d'entreprise ISRA, Juin 1996, 97p

1996 Nicolas Dupuy Rapport de mission Appui a la synthese du projet d'entreprise de l'ISRA Document de reference ISRA, Mai/Septembre 1996, 170p

1996 P I Thiongane Rapport de mission Des modalites de creation d'un systeme national de recherches agricoles et agro-alimentaires ISRA, November 1995, 88p

1997 Jean Pascal Pichot Rapport de mission Appui au programme de conventions ISRA, Mai 1997, 33p

1997 Nicolas Dupuy Appui a la Direction Generale de l'ISRA dans l'elaboration et/ou la consolidation du Rapport Annuel 1996, du plan strategique et du projet d'entreprise Rapport d'etape ISRA, Septembre 1997, 93p

1998 Nicolas Dupuy Appui a l'ISRA dans l'elaboration de documents scientifiques et aux activites de cloture du projet NRBAR Rapport de mission de Nicolas Dupuy ISRA, Sept 1998

1998 Direction Generale Projet d'Entreprise de l'ISRA ou la recherche agricole senegalaise a l'horizon 2015 ISRA, 1998

1998 Direction Scientifique Plan Strategique de l'ISRA (1998-2003) Synthese des activites scientifiques et chiffrage ISRA, 1998

Annual Programming and Budgeting

1996 Direction Scientifique "Programme D'Activites, 1996 " ISRA, 1996

1996 John Russell Rapport de mission Appui au programme de gestion de la recherche ISRA, Novembre 1996, 31p

Research Reporting

1997 Nicolas Dupuy Appui a la direction Generale de l'ISRA dans l'elaboration et/ou la consolidation des rapports annuels 1996 et 1995, du Bilan du plan quinquennal de l'ISRA (1990/94) du plan strategique et du projet d'entreprise, Rapport d'etape, 113p

1997 Charles Yamoah Appui a la revue technique des resultats de recherche sols/plantes, et a l'elaboration des articles scientifiques Rapport de mission de Charles Yamoah July 1998

1998 Direction Scientifique Bilan du Plan Quinquennal de l'ISRA 1990-1995 ISRA, 1998

1998 Direction Scientifique Rapport Annuel 1997 ISRA, 1998

1998 Direction Scientifique Rapport Annuel 1996 ISRA, 1998

1998 Direction Scientifique Rapport Annuel 1995 ISRA, 1998

1998 Suchet Louis Synthese des resultats de la recherche sur les productions animales Rapport de mission de Suchet Louis ISRA, June 1998

1998 Michael Satin Synthese des resultats de la recherche sur l'agroforesterie Rapport de mission de Michael Satin ISRA, June 1998

1998 Michael Satin Synthese des resultats de la recherche sur l'agroforesterie Rapport de mission de Michael Satin ISRA, May-August 1997 April 1998

1998 Monica Fisher Analyses socio-economiques des resultats de la recherche sur les etables fumieres, et les techniques de lutte contre l'erosion hydrique par l'utilisation des haies vivres (region de Kolda) - subventions NRBAR R04 et PAR4-12 Rapport de mission de Monica Fisher ISRA, February, 1998

Research Management

1993 ISRA/NRBAR Rapport du Seminaire de Demarrage du Projet, 21-23 janvier 1993 a Saly-Portudal ISRA, fevrier, 1993

1993 ISRA/NRBAR Sommaire du Projet ISRA, fevrier 1993

1993 ISRA/NRBAR Procedures manual first edition ISRA, April 1993, 212p

1993 ISRA/NRBAR Manuel de Procedures, Premiere Edition ISRA, avril 1993, 227p

1993 DRCSP Proces-verbal de la reunion du comite de programme de la DRCSP, 3-4 juin 1993, Bambey ISRA, 1993, 45 pages

1993 Direction Scientifique Invitation a la soumission de propositions de recherche, Programme de subventions aux chercheurs de l'ISRA ISRA, 28 avril 1993, 4 pages plus annexes

1994 Direction Scientifique Invitation a la soumission de propositions de recherche, Programme de subventions aux chercheurs de l'ISRA ISRA, 24 January, 94, 4 pages plus annexes

1994 Direction Scientifique Invitation a la Soumission de Propositions de Recherche, Programme ISRA/NRBAR, Subventions pour la Recherche Collaborative, Sur les Technologies Basee sur la Gestion des Ressources Naturelles ISRA, Le 24 Jan 1994, 5 pages plus 2 annexes

1994 Comite des Bailleurs de Fonds de l'ISRA Compte Rendu de la Reunion du Comite des Bailleurs de Fonds de l'ISRA ISRA, Novembre, 1994

1994 Massamba Dieng Visite de suivi par l'ISRA, l'USAID, CID et partenaires de l'ISRA ISRA, 17 September 1994, 4 pages

1995 Ndiaye, A , Diouf, T , Samba, A , Thiam, M , Cisse, M , Beye, G 1995 Revue a Mi-Parcours Rapport de la Commission Structure Organisationelle ISRA, January-February 1995

1995 Direction Scientifique Invitation a la Soumission de Propositions de Recherche, 1995, Programme de subventions aux chercheurs de l'ISRA ISRA, 5 pages plus annexes a,b,c

1995 Direction Scientifique Invitation a la soumission de propositions de recherche, Programme de subventions aux chercheurs de l'ISRA ISRA, 1995, 4 pages plus annexes

1995 Direction Scientifique Invitation a la Soumission de Propositions de Recherche, 1995, Programme de subventions a la recherche collaborative ISRA, 6 pages plus annexes A-F, deadline 24 February, 1995

1995 Direction Scientifique Deuxieme Invitation a la Soumission de Propositions de Recherche, 1995, Programme de subventions a la recherche collaborative ISRA, 6 pages plus annexes A-F, deadline 5 May 95

1995 Wendy Wilson Compte Rendu de la Reunion des partenaires du programme de recherche collaborative NRBAR 5/12/94 ISRA, January 1995, 5 pages

1997 ISRA/NRBAR Revue annuelle conjointe USAID/ISRA 1997, 3-5 Novembre 1997 ISRA, 1997, 218p

1998 Direction Scientifique Compte Rendu de la reunion du comite des conventions ISRA pour la revue finale du programme des subventions NRBAR, Saly – Portudal 22-27 juin 1998 STTS

1998 Direction Generale Compte Rendu de seminare de cloture du Projet de Recherche Basee sur la Gestion des Ressources Naturelles (ISRSA/NRBAR), Ngor Diarama, Senegal, 10-12 août 1998 STTS

1999 Tom Cusack Final Report of Thomas J Cusack, Chief-of-Party/Research Manager, Senegal Natural Resources-Based Agricultural Research Project 1992-1998 ISRA, 1998

Monitoring and Evaluation

1993 William Roberts Rapport de Mission Monitoring and Evaluation ISRA, 1993

1993 ISRA/NRBAR Plan de Suivi et d'Evaluation pour le projet NRBAR, Monitoring and Evaluation plan for NRBAR, French version of 21 June 1993 English version, For external review, CID/USAID/ISRA, 1993, 54 pages

1994 Diop, E , Quensiere, J , Leung-Tack, D Evaluation du Programme de Recherche Peche Continentale et Aquaculture (PCA) ISRA, 16-31 mai, 1994

1994 Ba, A , Hamel, O , Gueye, S Evaluation du Programme de Recherche Sylviculture et Amengement des Formations Naturelles (SAFNA) ISRA, 3-17 mai, 1994

1994 Fall, M , Samb, I , LeBlanc, J Rapport de la Mission d'Evaluation Programme sur les Cultures Irriguees ISRA, April 1994

1994 William Roberts Monitoring and evaluation plan for the NRBAR project ISRA, June, 1994, 70p

1994 Direction Scientifique Plan de suivi et d'evaluation pour le projet NRBAR ISRA, Juin 1994, 48p

1995 Madame Ba, Massamba Dieng, William Roberts L'elaboration du plan de suivi/evaluation de l'ISRA utilisation du cadre logique dans le processus ISRA, 10 January 1995, 14 pages + annexes

- 1995 William Roberts Rapport de mission monitoring and evaluation ISRA, Juin 1995, 150p
- 1995 Suchet Louis Rapport de Mission Evaluation of Livestock Research Program ISRA, 1995
- 1995 Monica Fisher Final report Research impact Stabling in the Kolda region ISRA, January-March 1995, 253p
- 1996 John Sanders Rapport de mission Appui au programme ura-socio-economie/politique agricole Les etudes d'impact et le plan strategique ISRA, Novembre/Decembre 1996, 22p
- 1996 Mamadou Sidibe Rapport de mission Appui au programme URA-socio-economie/politique agricole les etudes d'impact et le plan strategique ISRA, Mai/Juin 1996, 128p
- 1996 Monica Fisher Rapport de mission The socio-economic impact of stabling technology in the Kolda region ISRA, Juin/Août 1996, 114p
- 1996 William Roberts Rapport de mission Appui a l'elaboration du plan de suivi/evaluation en GRN dans les unités de la recherche regionale ISRA, Août 1996, 72p
- 1997 Cusack, T J "Summary Evaluation of the Agricultural Research Project II " Appendix C of the Implementation Completion Report of the Senegal Second Agricultural Research Project, World Bank Report Number 16610 World Bank, Washington DC , May 27, 1997
- 1998 William Roberts Appui a l'evaluation de progres institutionel en suivi/evaluation au Direction Scientifique a l'ISRA Rapport de mission de Bill Roberts ISRA, July 1998
- 1998 Mamadou Sidibe Appui a l'evaluation de l'impact de la recherche agricole et de la vulgarisation Rapport de mission de Mamadou Sidibe ISRA, April-June 1998
- 1998 John Sanders Appui a l'evaluation de l'impact de la recherche agricole et de la vulgarisation Rapport de mission de John Sanders ISRA, April 1998
- 1998 Mamadou Sidibe Appui a l'evaluation de l'impact de la recherche agricole et de la vulgarisation Rapport de mission de Mamadou Sidibe ISRA, July 1998
- 1998 Fatou Ndao Ba "Mise en Place d'un Systeme d'Information pour le Survi-Evaluation de la Recherche a l'ISRA " Report of the NRBAR closing seminar ISRA, August, 1998

Sustainable Funding

- 1997 Cheikh T Sarr Modalites de Financement a Long Terme de la Recherche Agricole et Agro-Alimentaire UN/FAO SDRR, February, 1997

1997 Pichot, Jean-Pascal Rapport de Mission Appui au Programme de Conventions ISRA, May, 1997

1998 Sarr Cheikh T Rapport de Mission Feasibility Study for a Research Fund ISRA, January, 1998

1998 Sarr Cheikh T, 1998 Rapport de Mission Results of the National Workshop on a Research Fund ISRA, May, 1998

Human Resources

1994 M Edwin Brush Rapport de Mission Human Resources Management ISRA, 1994

1996 Amadou Gueye Rapport de mission Audit de la gestion des ressources humaines Rapport d'étape sur les propositions de procédures administratives de gestion du personnel ISRA, Decembre 1995/Janvier 1996, 53p

1996 Amadou Gueye Rapport de mission Audit de la gestion des ressources humaines Rapport d'étape sur les propositions de procédures administratives de gestion du personnel ISRA, Janvier/Fevrier 1996, 32p

1996 Gueye, Amadou Rapport de mission Audit de la gestion des ressources humaines Rapport d'étape sur la mise a jour et la regularisation de dossiers des agents ISRA, Janvier/Fevrier 1996, 30p

1998 M Edwin Brush Appui a l'évaluation de personnel Rapport de mission de l'ISNAR ISRA, February, 1998

1998 Direction Scientifique Compte Rendu Atelier sur "Les Criteres d'Evaluation Annuelle des Performances des Chercheurs" Mbour 19-20 mai, 1998 ISRA, 1998

RESEARCH STATION MANAGEMENT AND ADMINISTRATION

1995 ISRA/NRBAR Avant projet sommaire Plan d'aménagement ISRA Station de Bambe, 27p

1995 Hannibal Muthar Rapport de mission appui au programme de la gestion de stations de recherche ISRA, Octobre/Novembre, 1995, 133p

1995 John Ashburner Rapport de mission Evaluation du systeme de contrôle des immobilisations de l'ISRA et proposition d'un systeme permettant une gestion ameliorée des unites de recherche ISRA, Decembre 1995, 50p

1996 Hannibal Muhtar Rapport de mission Appui au programme de la gestion de stations de recherche ISRA, Janvier/Fevrier 1996, 83p

1996 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche ISRA, Decembre 1996, 66p

1996 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche ISRA, Juillet 1996, 86p

1996 Antonin Diouf Rapport de mission Appui a l'evaluation du patrimoine bâti et foncier de l'ISRA dans les regions de Dakar, Ziguinchor, Kolda, et Tambacounda ISRA, Septembre/Octobre 1996, 6p

1996 Antonin Diouf Rapport de mission Appui au programme de subventions a la recherche collaborative Projet S/V16 ISRA, Mai/Août 1996, 15p

1996 John Ashburner Rapport de mission Contrôle et gestion des immobilisations de l'ISRA (Deuxieme mission) ISRA, Fevrier 1996, 103p

1997 John Ashburner Rapport de mission Aide memoire de la comptabilite matieres, procédure d'inventaire physique - contrôle et gestion des immobilisations de l'ISRA ISRA, Janvier 1997, 71p

1997 Antonin Diouf Rapport de Mission Evaluation of research facilities ISRA, 1997

1997 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche ISRA, Fevrier 1997, 108p

1998 Hannibal Muhtar Appui a la gestion des stations Rapport de mission de Hannibal Muhtar ISRA, April 1998

1998 Hannibal Muhtar Impact of NRBAR Project on ISRA Station Management and Technical Support Services Annex of "Appui a la gestion des stations Rapport de mission de Hannibal Muhtar" ISRA, April 1998

FINANCIAL MANAGEMENT

1996 Direction Generale Aide memoire pour la comptabilite matieres systeme imobys-pour les enregistrements de l'annee 1995 ISRA, Fevrier 1996, 82p

1996 David W Holmes Final report NRBAR Financial Advisor ISRA, 1996, 114p

1996 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche he determination of ISRA's indirect cost rate ISRA, Août/Novembre 1996, 37p

1998 Hannibal Muhtar Indirect Costs Annex of "Appui a la gestion des stations Rapport de mission de Hannibal Muhtar" ISRA, April 1998

OUTREACH

1994 Gaye, M , Sarr, D , Diouf, C , Diouf, O , Ndiaye, A , Seck, S Technologies de Gestion des Ressources Naturelles et Niveaux d'Adoption dans les Villages des Unites Experimentales de Koumbidia et Thyse Kaymor-Sonkorong ISRA/Kaolack, November 1994

1995 Catherine H Knott and Ramata Molo Aw, Rapport de mission Gender analysis Research design, methodology and planning ISRA, Avril 1995, 52p

1995 Goudiaby, A , Ouane, A , and Henri Lo Rapport de Mission on-farm technology development ISRA, 1995

1996 Wendy Wilson End of Tour Report, Outreach Advisor ISRA, August 1996

1997 Louis Ndong Rapport de Mission Validation and communication of research results ISRA, 1997

1997 Direction Scientifique Compe Rendu de l'Atelier de Validation du Manuel Intitule "Guide Pratique de Formation sur les Technologies de Production Semenciere Riz en Casamance" ISRA, 1997

1997 ISRA/Bambey RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Fertilisation organique des sols dans le CNBA", Bambey 20 et 21 ISRA, Mai 1997

1997 ISRA/Kaolack RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Agroforestrie et Fertilisation des sols dans le Sud Bassin Arachidier", Kaolack, le 10 et 11 decembre, 1997 ISRA

1998 ISRA/Tambacounda Rapport de Synthese RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Riziculture Dans Les Regions de Basse et Moyen Casamance, du Senegal Oriental et de Haute Casamance", Tambacounda, 10-13 mars 1998 ISRA

1998 ISRA/Kolda Rapport de Synthese RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Agriculture/GRN-Elevage dans les regions de Basse et Moyen Casamance, du Senegal Oriental et de Haute Casamance", Kolda, 17-20 fevrier 1998 Volume I Resume, Annexe 1, Annexe 2 Volume II Annexe 3 ISRA

1998 Marie Kane Seck Effets des technologies introduites par le projet NRBAR sur la situation des femmes du Bassin Arachidier Rapport de mission de Marie Kane Seck ISRA, April 1998

1998 Lamine Bocoum Rapport de Mission Research Support June 1997 to May 1998 ISRA, June, 1998

1998 Mouhamadou Lamine Bocoum Appui a la cellule recherche development de la Direction Scientife de l'ISRA Rapport de la deuxieme mission de Mouhamadou Lamine Bocoum ISRA, August 1998

NATURAL RESOURCES MANAGEMENT

1994 Hyacinthe Mbengue, Madiagne Diagne, Modou Sene, Mamadou Ndiaye, Paul Anamosa, Natural resources management research strategy, A Pilot Strategy with the Programme for Research on Natural Resource Management, and Production Systems in the Dry Zone , 6 april, 1994, Bambey ISRA, 20p

1995 Antonin Diouf Rapport de Mission Watershed Mapping ISRA, 1995

1996 Nicolas Dupuy Rapport de mission Gestion et transformations de la matiere organique au Senegal Referentiel bibliographique des travaux de recherche et de developpement agricole de 1948 a nos jours, Decembre 1995/Avril 1996 ISRA, Dakar, 232p

1996 Paul Anamosa End of Tour Report, Natural Resource Planner ISRA, 1996

1996 Richard Dick Rapport de mission Appui a la valorisation des technologies du sol, Septembre 1996 ISRA, 17p

1998 PAR 3 7 Modou Sene Mise en place d'un SIG dans le Sud Bassin Arachidier Final report ISRA/Kaolack, July 1998

1998 PAR 1 7 Mamadou Khouma Mise en place d'un systeme d'information geographique, Basse et Moyen Casamance (SIG) Final report ISRA/Ziguinchor, 1998

TRAINING

(Please see the list of training reports presented in section V of this bibliography)

3 ASSESSMENT OF EXISTING AG/NRM TECHNOLOGY

(The sequence of presentation of documents follows that of Table 3 1 of Chapter 3)

R02 M Gaye et D Sarr, R02, Attitude des paysans des unites experimentales face a l'introduction de technologies et pratiques culturelles, Kaolack, Octobre 1994, 10p

R02 M Gaye et D Sarr, R02, Processus de diffusion des technologies par effet tache d'huile le cas des villages environnants des unites experimentales de Koumbidia et Thyse-Kaymor-Sonkorong, 23p

R02 Matar Gaye, Desire Sarr, Cheikh Diouf, Ousseynou Diouf, Amadou Ndiaye, Siaka Seck Technologies de gestion des ressources naturelles et niveaux d'adoption dans les villages des unites experimentales de Koumbidia et Thyse Kaymor-Sonkorong Final report, Nov 1994

- R12 O Diop et N Toure, Rapport annuel, Novembre 1996, 34p
- R12 O Diop et N Toure-Mane, R12, Inventaire des technologies basees sur la gestion des ressources naturelles et utilisees dans la production agricole en basse Casamance, Rapport finale, Septembre 1997, 61p
- R12 Oumar Diop, N'Deye Toure Mane Inventaire des Technologies Basees sur la Gestion des Ressources Naturelles et Utilisees dans la Production Agricole en Basse Casamance Annual report, Nov 1996
- R15 Cheikh Ba, Lucien Ndecky Etude comparee des determinants de l'adoption des technologies de gestion de la fertilite des rizieres en Basse Casamance et dans les perimetres irrigues du Bassin de l'Anambe Final report, March 1998
- R15 Lucien Ndecky, R15, Rapport technique Annuel 1995 Mai 1996, 23p
- R15 Lucien Ndecky, Rapport technique trimestriel, Fevrier 1996, 9p
- R16 O Diop et N Toure, Inventaire des technologies basees sur la gestion des ressources naturelles et utilisees dans la production agricole en basse Casamance, Rapport technique d'avancement, Mars 1996, 29p
- R16 Oumar Diop, N'deye Mane Inventaire des Technologies Basees sur la Gestion des Ressources Naturelles et Utilisees dans la Production Agricole en Moyen Casamance Final report, May 1998
- PAR 1 6 Demba Sidibe Diagnostic participatif Zone de Basse et Moyenne Casamance Final report, 1998
- PAR 2 2 Mame Diouf L'elevage du cheval au Senegal Aug 1998
- PAR 2 2 Mame Diouf Valorisation des residus de recolte de miebe dans l'alimentation des animaux etude preliminaire Final report, Aug 1998
- PAR 2 3/S12/S20 Alioune Diouf, Ibrahima Gano, Serigne Dieng Rapport de synthese des resultats des sous-projets Final report, Aug 1998
- PAR 3 3 Astou Sene Analyse Socio-Economique de la technologie des haies vives dans le Sud Bassin Arachidier Final report, 1998
- PAR 3 4 Desire Sarr, Francois Dioh Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles Rapport Annuel/Final Report, Avril 1998

PAR 3 6 M SENE, Analyse du fonctionnement des exploitation agricoles dans la region de Kaolack, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 3 6 Manievel Sene, Ousseynou Diouf, Djiby Diouf, Francois Diouh, Birane Ndiaye Analyse du fonctionnement de quelques exploitations agricoles dans la region de Kaolack Annual report/Final report Feb 1998

Boubacar Barry, PHD Thesis Impacts of Watershed management practices on water resources and anti-salt dam design in Casamance (Senegal), 10-7-97, 179p

Alioune Dieng MS Thesis- L'offre et la demande cerealieres au Senegal, 1960-1995 Implications pour l'Autosuffisance Alimentaire 1998 Dieng – Cereal Supply and Demand in Senegal 1960-1995 Implications for Food Self-Sufficiency, 1998

B Diaw MS Thesis Note de synthese de projet "Quelques caracteristiques de l'upwelling senegalais et recherches sur les ondes piegees" 1998 Some upwelling characteristics and search for coastal trapped waves off Senegal, 1998

Alioune Fall, Ph D Thesis, Nov 1997, Outil d'aide à la decision pour l'evaluation de la traction animale en milieu paysan en Basse Casamance

Alioune Fall, PHD Thesis Methodology for Evaluating the Impact of Animal Traction at the farm level in a small Scale Multi-cropping System (Basse Casamance Region) November 1997

S Sall, D Norman, A Featherstone 1997 Adaptability of Improved Rice Varieties in Senegal

S Sall, D Norman, A Featherstone 1997 Quantitative Assessment and the Adoption of Improved Rice Varieties in Casamance Senegal The farmer's perspective

Samba Sall, PHD Thesis A dissertation submitted in partial fulfillment of the requirements for the degree Doctor of Philosophy Department of Agricultural economics, college of agriculture, Kansas State University 1997, 202p

Beye, A , Mbaye, A 1998 Manuel de Formation sur les Normes et les Techniques de Production de Semences de Riz (Cas de la zone sud du Senegal)

4 DEVELOPMENT OF IMPROVED AG/NRM TECHNOLOGY

(The sequence of presentation of documents follows that of Table 4 1 of Chapter 4)

S22 and R25 Abdou Ndiaye, Rapport d'activites trimestriel, 1 Octobre 1997, 6p

S22 K Sow Rapport de stage Valorisation du Bas-bonds de Koutango dans le Sud Bassin Arachidier, Contribution a sa caracterisation physique 1997

S22 R Malou, H Dacosta, L Akpo, F Diome, S Sambou Caracterisations Hydrologique et Hydrogeologique du bassin versant de Koutango Final report, May 1998

R01 M Ndiaye et D Sarr, R01, Utilisation des residus de transformation du poisson fume pour la fertilisation des terres effet du mode d'application sur la productivite des cultures, Janvier 1996, 9p

R01 M Ndiaye et D Sarr, Rapport technique, Juillet 1995 a Septembre 1995, 3p

R01 M Ndiaye, M Sidibe et D Sarr, R01, Rapport trimestriel, Janvier a Mars 1994, 3p

R01 Mamadou Ndiaye et Desire Y Sarr, Rapport technique, Juillet 1995 a Septembre 1995, 3p

R01 Mamadou Ndiaye et Desire Y Sarr, Utilisation des residus de transformation du poisson fume pour la fertilisation des terres Effet du mode d'application sur la productivite des cultures - Janvier 1996, 11p

R01 Mamadou Ndiaye et Desire Y Sarr, Utilisation des residus de transformation du poisson pour la fertilisation des sols resultats des enquêtes et composition chimique des sous produits, 34p

R01 Mamadou Ndiaye, Valorisation agricole des residus de transformation du poisson fume Synthesis, des travaux realises dans le cadre de la subvention de recherche R01 du projet NRBAR, Janvier 1996, 22p

R01 Mamadou Ndiaye Valorisation agricole des residus de transformation du poisson fume synthese des travaux realises dans le cadre de la subvention de recherche Final report, Jan 1996

R01 Utilisation des residus de transformation du poisson fume pour la fertilisation des terres effet sur la productivite des cultures, R01, Mamadou Ndiaye, Desire Sarr, Djibril Diouf, April 1995, 19 pages

R01 Utilisation des residus de transformation du poisson fume pour la fertilisation des terres Effet sur la productivite des cultures, Avril 1995, 17p

R01 Mamadou Ndiaye, Desire Sarr et Mamadou Sidibe, Projet de recherche Etude sur l'utilisation agricole des ecailles de poissons fumes comme amendement organique des sols du Senegal, Mai 1993, 66p

R02 M Gaye et D Sarr, R02, Attitude des paysans des unites experimentales face a l'introduction de technologies et pratiques culturelles, Kaolack, Octobre 1994, 10p

R02 M Gaye et D Sarr, R02, Processus de diffusion des technologies par effet tache d'huile le cas des villages environnants des unites experimentales de Koumbidia et Thyse-Kaymor-Sonkorong, 23p

R02 Matar Gaye, Desire Sarr, Cheikh Diouf, Ousseynou Diouf, Amadou Ndiaye, Siaka Seck
Technologies de gestion des ressources naturelles et niveaux d'adoption dans les villages des
unites experimentales de Koumbidia et Thyse Kaymor-Sonkorong Final report, Nov 1994

R03 Mankeur Fall Influence des itineraires techniques sur la conservation des sols de plateau
en milieu paysan en Basse Casamance Final report, 1994

R03 S Badiane, R03, Utilisation des especes legumineuses pour redresser le statut organique et
de fertilite des sols en BMC, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE",
17-20 February, 1998, Kolda

R03 S Badiane, Rapport technique NRBAR, 1994, 6p

R04, NRBAR, Memorandum sur la visite des pasteurs de la zone de linguere au CRZ de Kolda
et, de sa zone d'intervention, Mai 1997, 5p

R04 A Faye, P Dieye et A Diallo, R04, Valorisation du potentiel pastoral pour le
developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La
haute Casamance, Rapport annuel, Mars 1994, 16p

R04 Monica Fisher and Papa Dieye Socio-Economic Evaluation of NRBAR R04 March
1998

R04 P Dieye, A Diatta, A Faye, A Diallo et D Babene, Valorisation du potentiel pastoral
pour le developpement de systemes cerealiers performants et viables en zone sub-humide du
Senegal La haute Casamance, Rapport de deuxieme annee, Mars 1996, 21p

R04 P Dieye Etude et amelioration de l'elevage et de la gestion des ressources naturelles en
zone sub humide du Senegal, 17/1/95, 6p

R04 Utilisation des sous-produits de transformation du poisson pour la transformation des
champs de culture, Status report, Nov 1993, 8 pages, Desire Sarr, Mamadou Ndiaye

R04/R09 Monica Fisher, Papa Dieye, Adama Faye The Socio-Economic Impact of Stabling in
the Region of Kolda August 1996

Document 1 An Analysis of the profitability of stabling in the Region of Kolda, 1994

Document 2 An Analysis of the profitability of stabling in the region of Kolda, 1996

Document 3 The Adoption and Adaptation of Stabling by Farmers in the Region of Kolda,
1994/1996

R04/R24 Pape Dieye, Ambrose Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene
Valorisation du potential pastoral pour le developpement de systemes cerealiers performants et
viables en zone sub-humide du Senegal La Haute Casamance Final report, 1997

R04/R24 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene
Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal Feb 1998

R05, Manievel Sene, Pape Mandoumbe Gueye, Birane Toure Ndiaye, Aida Gueye, Analyse de l'influences des systemes de culture su la variabilite des rendements de sorgho et sur son effet allelopathique en parcelles paysannes, Juillet 1997, 32p

R05 Effets des techniques culturales sur la variabilite des rendements du sorgho pluvial et sur son effet allelopathique, Premiers resultats du Project R5/NRBAR, Rapport technique Annuel, Campagne 1994, Manievel Sene, Ndiouga Samb, Birane Ndiaye, March 1995, ISRA/Bambey, 32 pages

R05 Manievel Sene, Ndiouga Samb et Birane T Ndiaye, R05, Rapport technique annuel campagne 1994, Effets des techniques culturales sur la variabilite des rendements du Sorgho, pluvial et sur son effet allelopathique, Mars 1995, 31p

R05 Manievel Sene Etude du fonctionnement du Sorgho Variete CE 145-66 Analyse de la variabilite des rendements et de son effet allelopathique en parcelles paysannes Final report, Jan 1998

R05 Manievel Sene, R05, Rapport technique trimestriel (Juillet-Octobre), Novembre 1994, 9p

R06 A T DIOP, R06, Amelioration des parcours des zones d'elevages du Senegal par utilisation de phosphates naturels, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R06 A T Diop, A Badiane, D Friot, A Faye et S Fall, Amelioration des parcours des zones d'elevage du Senegal par utilisation des phosphates naturelles, Rapport d'etape de l'annee 1, Avril 1995, 6p

R06 A T Diop, A Badiane, D Friot, A Faye et S Fall, R06, Amelioration des parcours des zones d'elevage du Senegal par utilisation des phosphates naturelles, Rapport final de l'annee 1, Decembre 1995, 7p

R06 Amadou Tamsir Diop, Adminata Badiane, Safietou Fall, Adama Faye Amelioration des parcours des zone d'elevage du Senegal par utilisatio de phosphates naturels Final report, Aug 1998

R07 A DIATTA, P N DIEYE, M SAVANE, D BABENE, P ANOMOSA, R07, Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration des productions cerealieres et animales en zone sub-humide du Senegal La haute Casamance, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R07 A Diatta, A Faye, P Anamosa, O Diop, A Diallo et D Babene, Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration, des productions cerealieres et animales en zone sub-humide du Senegal La haute Casamance, Rapport de premier annee, R07, Mars 1996, 21p

R07 A Diatta, A Faye, P Dieye, P Anamosa, O Diop, A Diallo et D Babene, Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration, des productions cerealieres et animales en zone sub-humide du Senegal La haute Casamance, Rapport de deuxieme annee, Avril 1997, 33p

R07 Ambroise Diatta, Pape Dieye, Adama Faye, Paul Anamosa, Adboul Aziz Diallo, and Daniel Babene Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration des productions cerealieres et animales en zone subhumide du Senegal La Haute Casamance Final report, June 1998

R08 S Badiane, Influence de quelques especes ligneuses sur le redressement du statut organique, et de la fertilite des vieux champs sur sol ferrallitique en Casamance, Rapport technique annuel 1995, 23p

R08 S Badiane et B Dieng, R08, Influence de quelques especes ligneuses sur le redressement du statut organique, et de la fertilite des vieux champs sur sol ferrallitique en Casamance, Premier rapport trimestriel d'activites, Juin-Septembre 1995, 22p

R08 Souleye Badiane Amelioration de la fertilite et su statut organique des sols de plateau par des especes ligneuses Final report, 1998

R09 A Fall, Rapport de recherche Evaluation socio economique des etables fumieres dans la region de Kolda Approche methodologique, Août 1996, 22p

R09 Aïfa Ndoye Evaluation des impacts socio-economiques du projet collaboratif ISRA-NRBAR-RODALE International sur les menages ruraux Sept 1997

R09 Aïfa Ndoye Evaluatio ndes impacts socio-economiques du projet collaboratif ISRA-NRBAR-ARAF sur les menages ruraux et leurs groupements Sept 1997

R09 Aïfa Ndoye Synthese des travaux d'evaluation des impacts socio-economiques des projet collaboratifs ISRA-NRBAR-ONG-OP sur les menages ruraux et leur groupements Final report, Aug 1998

R09 Amadou Abdoulaye Fall Evaluation socioeconomique des etables fumieres dans la region de Kolda Approach methodologique Aug 1996

R09 Amadou Abdoulaye Fall, Mamadou Sidibe, Monica Fisher L'impact social de la recherche sur le riz dans la Valee du Fleuve Senegal June 1996

R10 F Dia, Rapport trimestriel, Effet de la stabulation sur les performances techniques et économiques de l'embouche bovine et sur la gestion de la fertilité dans les systèmes de culture, Decembre 1996, 5p

R10 Fatimata Dia, Aminata Badiane Etude des performances techniques et économiques de l'embouche bovine et de l'effet de la stabulation sur la gestion de la fertilité des sols Final report, July 1998

R10 F Dia, R10, Rapport semestriel, Effet de la stabulation sur les performances techniques et économiques de l'embouche bovine et sur la gestion de la fertilité dans les systèmes de culture, Août 1996, 6p

R10 F Dia-Toure, Rapport trimestriel Etat d'avancement des activités NRBAR R10, Juillet-Septembre 1997, 2p,

R11 Emile Coly Rapport technique L'étude de l'efficacité du neem dans la protection naturelle et la conservation des sols contre l'infestation des nematodes phytoparasites ravageurs des cultures maraichères Final report, April 1998

R11 E Coly, Rapport technique Annuel, Mars 1997, 6p

R13 M Balde, M Ndiaye et M Faye, Projet NRBAR R13, Identification de technologies de la culture du mil/niebe en zone humide, Mars 1996, 27p

R13 M Balde, Rapport d'étape du projet NRBAR 13, Identification de technologies de la culture du Niebe en zone humide, 26/01/1996, 7p

R13 Mamadou Balde, Mbaye Ndiaye, Mbene Faye Identification de technologies de la culture du mil/niebe en zone humide Final report, Mar 1996

R13 Fofana, A Fiches des Principales Variétés de Mil Juin 1997

R14 Ibrahima Diatta Influence de la matière organique sur la croissance du zizyphus mauritiana et le rendement des cultures dans le centre du bassin arachidier (Bambey) Final report, Jan 1996

R17 Mamadou Khouma Adaptation de techniques accélérées de compostage Final report, Nov 1997

R17 NRBAR, Compte rendu de l'atelier de formation des formateurs sur la technologie semencière riz en Casamance, Velingara, 23-27 Septembre 1997, 75p

R19 Ibrahima Diatte Gestion et conservation des ressources phylogénétiques et de la biodiversité Final report, July 1998

R20 M Diatta, M Sene, M Diack, A Thiam et A Mbaye, Rapport d'activite, Juillet a Octobre 1997, 7p

R20 Malamy Diatta, Modou Sene, Mateugue Diack, Amsastou Thiam, Abdou Mbaye Programme de Restauration Agronomique des Sols Sales, Region de Sine Saloum Final report, Aug 1998

R21 M Sene, Influence des conditions hydriques et du travail du sol sur les effets, ameliorants des amendements organiques et/ou minerales, Rapport d'activite trimestriel 1er trimestre, Juillet-Aout-Septembre 1997, 2p

R21 P Sarr, Moussa Diop P Dieye, Aida Gueye Influence des conditions hydriques et du travail du sol sur les effets ameliorants des amendements (organiques et inorganiques) Final report, July 1998

R22 M A BA, P N DIEYR Mise au point de techniques et de methodes pour l'amelioration des productions agricoles "amelioration du taurin Ndama par le schema genetique a noyau ouvert, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R22 Mamadou Ba, Papa Dieye, Malang Bayo, Saliou Niang, Abdoul Diallo, Ansoumana Dioukou, Aladjí Diack Amelioration du taurin Ndama par le schema d'amelioration genetique a noyau ouvert (sagno) Final report, 1998

R23 A DIATTA, Determination de la periode de semi et de la densite de peuplement des legumineuses fourrageres annuelles en association avec le maïs, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R23 Ambroise Diatta, Pape Dieye, Daniel Babene Determination de la periode de semis et de la densite de peuplement des legumineuses fourrageres annuelles en association avec le maïs Final report, June 1998

R24 P N DIEYE, A DIATTA, A FAYE, A A DIALLO D BABENE, R24, Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R24/R04 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La Haute Casamance Final report, 1997

R24/R04 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal Feb 1998

R25 Adbou Ndiaye Genetique et amelioration varietal du mais Final report, April 1998

R26 M Dasilva, O Toure et M Gueye, Programme NRBAR subvention R26, Septembre 1997, 5p

R26 Marie DaSilva, Omar Toure, Mamadou Gueye Contribution des microorganismes (rhizobiums et champignons cellulotiques) a l'amelioration de la fertilité des sols Final report, May 1998

R27 S Fall, Bordereau d'envoi, 6/10/97, 15p

R27 Safietou Fall, B Michalet-Doreau, E Traore, D Friot, D Richard Occurrence of digestive interactions in tree forage based diets for sheep

R27 Safietou Fall, E Traore, D N'Diaye, N N'Diaye, B Seye Utilisation des fruits de *Faidherbia albida* pour l'alimentation des bovins d'embouche paysanne dans le bassin arachidier au Senegal

R27 Safietou Fall, M Cisse, D Ditaroh, D Richard, N'Diaye Ndiaye, B Diaw In vivo nutrients digestibility in sheep and rumen cellulolytic capacity of cattle fed crop by-products based diets in the Sahel

R27 Safietou Fall, N S Ndiaye, and B Diaw Predicting protein value of tropical crop by-products

R27 Safietou Fall Methodes d'exploitation des fourrages ligneux influence sur la qualite du fourrage Final report, Jan 1998

Program pour le seminaire de demarrage du project de gestion des ressources naturelles, 21-23 Jan 1993 Saly Portudal, 5 pages

PAR 1 2 Vaque Ndiaye, Saliou Djiba, Lucien Ndecky, Sana Manga Etude et mise au point de techniques de lutte appropriée contre les degats causes par les poissons sur le riz au niveau des vallees amenees Final report, March 1998

PAR 1 4 Saliou Djiba, Activite caracterisation de l'entomofaune de manguiers et agrumes en BMC, Rapport trimestriel No 2, 6p

PAR 1 4 Saliou Djiba Caracterisation de l'entomofaune parasite des manguiers et agrumes en Casamance Final report, 1998

PAR 1 5 Amelioration des itineraires techniques de la culture de la patate douce Final report, 1998

PAR 2 6 Mankeur Fall, Moussa Ndoye, Mamadou Boudiaby, Mame Khemesse Thiaw, Ngor

Diagne Etude des effets de melanges de phosphate de Taiba et de Phosphogypse sur les cultures et les sols Final report, Aug 1998

PAR 2 7 Protection des graines de mebe stockees en fut ou en sac Evaluation de l'effet insecticide des feuilles de *Boscia senegalensis* Final report, 1998

PAR 3 2 Desire Sarr Amenagement de bas-fonds caracterisation socio-economique d'un site de recherche dans l'arrondissement de Wack-Ngouna Final report, Mars 1998

PAR 3 2/S22 ISRA/UCAD Bassin Versant de Koutango Caracterisations socio-economique et biophysique Final Report, 1998

PAR 4 2 Djibril Badiane Synthese des travaux sur les ravageurs des cultures cerealieres et de rente Final report, March 1998

PAR 4 3 Alphousseym Bodian Final Report, May 1998 Part 1 Rapport Analytique Etude de l'effet des feux sur l'evolution de la vegetation des ecosystemes jacheres, savanes et forets en zone sub-humide du Senegal Part 2 Rapport Analytique Test de comportement d'especes dans la technologies de la jachere ameloiree

PAR 4 11 Amadou Fofana Prospection et evaluation de varietes locales de cereales (mil, sorgho, mais et fonio) Final report, July 1998

PAR 4 13 M T SECK, A DIOKOU, PAR 4 13, Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du taurin Ndama en monoboef et en paire, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 4 13 Momar Seck, Ansoumana Diokou Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du taurin Ndama utilise en monoboef et en paire Final report, Feb 1998

LIR-02/STTA Rapport de mission de Richard Dick Appui au programme de la gestion des ressources naturelles July 1998

LIR-02 M Diack, A Badiane, M Sene, M Diatta, R Dick *Cordyla Pinnata* en association avec *Ptilostigma Reticulatum* impact sur la regeneration des sols degrades au Senegal Final Report, July 1998

LIR-02 M Diack *Ptilostigma Reticulatum* dans un parc a *Cordyla Pinnata* effet sur la regeneration des sols degrades au Senegal Memoire de titularisation, April 1998

LIR-02/STF Saliou Faye Rapport de stage Formation theorique et pratique aux techniques de mesure de la biomasse microbienne et de la caracterisation de la matiere organique du sol Feb/Mar 1998

LIR-02/STF Pape Sarr Rapport de stage Utilisation du TDR pour le suivi hydrique du sol
March, 1998

LIR-02 Modou Sene/Mateugue Diack Titre de l'activite scientifique Etude d'un systeme a
pare mixte *Cordyla pinnata/Piliostigma reticulata* effet sur la regeneration des sols degrades au,
Senegal Rapport d'activite, Mai a Septembre 1997, 3p

Mamadou Diop, PHD Thesis Design and Analysis of Open Nucleus Breeding Plans for Cattle
in Senegal,

Mouhamadou Sissokho – MS Thesis - Cattle Herd Dynamics and Performance Under Village
Husbandry in the Kolda Region of Southern Senegal, 1998

5 VALIDATION OF IMPROVED AG/NRM TECHNOLOGY

(The sequence of presentation of documents follows that of Table 5.1 of Chapter 5)

Compte rendu de l'atelier sur le suivi des projets de recherche collaboratives NRBAR 22/5/95 a
Thies, June 1995, 5 pages,

Compte rendu de la reunion de lancement du programme 1995, recherche collaborative,
Massamba Dieng, 7 pages, 22 NOV 94

S/V01 and S/V02 S Diangar, A Fofana, M Diagne, C Yamoah Millet-based cropping
systems in the semi-arid agro-ecosystem of Senegal 1998

S/V01 A Ndoye Evaluation des impacts socio-economiques du projet ISRA/NRBAR/Rodale
International sur les menages ruraux Sept 1997

S/V01 Aifa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif
ISRA-NRBAR-Rodale International sur les menages ruraux , Septembre 1997, 67p

S/V01 Centre Ressource pour une agriculture regeneratrice, RODALE/Senegal, Rapport annuel
July 1993-Dec 94, RODALE/NRBAR/ISRA, (S01), 12 pages, March 1995

S/V01 Essais Participatifs en milieu paysan dans le terroir de Ndiamsil (1990-1995) gestion de
la matiere organique pour la fertilite des sols Final report, 1996

S/V01 ISRA/Rodale, 1993 rapport d'activite sur les essais associations culturales mil-niebe du
projet de recherche collaborative ISRA/RODALE, Saliou Diangar, 30 pages

S/V01 M Diagne et M Fall, Gestion de la matiere organique pour la fertilite des sols et la lutte
contre la secheresse agricole, Draft, 90 a 95 21p

S/V01 M Diagne, M Fall, C Yamoah, R Dick Manure and Seasonal Rainfall effects on yields of millet and peanut in the semiarid region of Senegal 1998

S/V01 Rapport d'activites 3eme trimestre, Jan-mar 94, Valorisation des Ressources Naturelles, 3 pages

S/V01 rapport d'activites du 1er trimestre, valorisation des ressources naturelles, Rodale/ISRA Bambey, 5 pages, 1993

S/V01and S/V13 ISRA/RODALE Nebal le compostage Livret d'images a l'intention des producteurs agricoles en francais et en Wolof

S/V02 and S/V01 S Diangar, A Fofana, M Diagne, C Yamoah, R Dick Millet-based cropping systems in the semi-arid agro-ecosystem of Senegal 1998

S/V02 A Badiane, A Faye, B Lesage Rapport de Sunthese Essais agronomiques 1993-1995 Projet Winrock International Final report Feb 1996

S/V02 A Badiane, A Faye, C Yamoah, R Dick Use of Organic and Mineral Fertilizers for Millet Production by Farmers in the Semiarid Region of Senegal 1998

S/V02 A Badiane, A Faye Etude de la fertilisation organo-minerale en milieu paysan Jan 1994

S/V02 Aifa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif Winrock international-ISRA-, NRBAR-CCF sur les menages ruraux , Novembre 1996, 88p

S/V02 Alphonse Faye Programme de recherche collaborative entre WINROCK international et le laboratoire de biochimie de ISRA, Bambey, 11 Decembre 1995, 19p

S/V02 Aminata Badiane, Stephane Le Biavant et Alphonse Faye, Etude de la fertilisation organo-minerale en milieu Paysan, Fevrier 1995, 6p

S/V02 Aminata N Badiane, Alphonse Faye et Benoît Lesage, Rapport de synthese essais agronomiques 1993-1995 Projet WINROCK international, Fevrier 1996, 5p

S/V02 Aminata Niane Badiane et Alphonse Faye, Etude de la fertilisation organo-minerale en milieu Paysan, Janvier 1994, 24p

S/V02 Aminata Niane Badiane, Rapport technique trimestriel Janvier 95-Juin 95, 2p

S/V02 Aminata Niane Badiane, Thomas Arthur Osborn et Alphonse Faye, Annexe A Fiche technique de projet, 28 Avril 1993, 23p

S/V02 Babou Ndour, Alphonse Faye et Sarah Workman Subvention a la recherche collaborative ISRA-WINROCK-NRBAR, Rapport technique Annuel, Fevrier 1995, 14p

- S/V02 OFPEP, Annual report - Senegal 1996, 06/10/96, 15p
- S/V02 Tom Osborn, Compost activities with Christian Childrens Fund, June 28, 1996, 13p
- S/V02 Tom Osborn, Live fencing and Cassava program with Christian Childrens' Fund, May 1996, 7p
- S/V02 Tom Osborn, Millet activities with Christian Childrens' Fund, May 1996, 8p
- S/V02 WINROCK, Rapport trimestriel No 11, Janvier-Fevrier-Mars 1996, 9p
- S/V03 Aifa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif ISRA-NRBAR-OSDIL sur les menages ruraux et les groupements, Septembre 1997, 47p
- S/V03 C Seck, M Diatta Transfert de technologies agroforestieres mises au point par la recherche en milieu paysan Arrondissement de Fimela, Region de Fatick Final report, Nov 1996
- S/V03 M Diatta, A Bodian et O Diop, Valorisation des technologies agroforestieres mises au point par la recherche et, transfert en milieu reel, 28 Avril 1993, 21p
- S/V03 NRBAR, Rapport annuel de synthese, Janvier 1996, 20p
- S/V03 NRBAR, Rapport trimestriel des activites Juillet-Aout-Septembre, Septembre 1995, 5p
- S/V03 NRBAR, Rapport trimestriel des activites Avril-Mai-Juin 1995, Juillet 1995, 5p
- S/V03 NRBAR, Rapport trimestriel des activites Janvier-Fevrier-Mars 1995, Avril 1995, 4p
- S/V03 Organization Senegalaise Pour le Developpement des initiatives localisees, USAID/ISRA/NRBAR/OSDIL, Rapport Trimestriel, Jan-March 1994, 15 pages, (S03) agroforestry
- S/V03 Organization Senegalaise Pour le Developpement des initiatives localisees, USAID/ISRA/NRBAR/OSDIL, Rapport Trimestriel, Jul-Sept 1994, 15 pages, (S03) agroforestry
- S/V03 OSDIL, July-Sept 1993, 7 pages, financial report 9 pages
- S/V03 OSDIL, USAID/ISRA/NRBAR/OSDIL, Rapport Annuel Jan-Dec 1994, Transfert techniques agroforestieres mises au point par la recherche en milieu paysan Feb 95, S,V3, 30 pages
- S/V04 Alphonse Faye/Winrock, Rapport des activites de Juillet 1994 a Mars 1995, 11 Avril 1995, 9p

- S/V04 Amadou Ndiaye/Winrock, Compte-Rendu de mission, Decembre 1994, 3p
- S/V04 Amadou Ndiaye/Winrock, Compte-Rendu de mission, Du 10-10-94 au 14-10-94, 3p
- S/V04 B Ndour Amelioration de la production agricole par l'introduction de technologies agroforestieres en milieu paysan Final report, Aug 1998
- S/V04 Babou Ndour, Le comite de gestion des subventions a la recherche collaborative de l'ISRA s'est reuni le 19 Avril 1994 pour examiner votre demande de financement du projet intitule "Amelioration et diversification des productions agricoles en milieu reel par le biais d'agroforesterie", 19 Avril 1994, 25p
- S/V04 Temento Samba, Nemataba Mandingue, Linguetto, Ibrahima Nima, Sokoto, Ndiayene Poste, Rapport de mission no S04, 27 Mai au 02 Jun 1996, 10p
- S/V04 Winrock, Agroforestry Activity Report, 1994, 3p
- S/V04 Recherche collaborative ISRA/NRBAR/WINROCK, Rapport technique annuel, Babou Ndour, Alphonse Faye, Sarah Workman, Feb 1995, S,V4, 14 pages
- S/V05, Abdourhmane Tamba et Alioune Sarr, Amelioration de la productivite agricole cerealiere dans les cuvettes du lacs-de-guiers, Rapport final d'activites, 1996, 9p
- S/V05 A Tamba, A Sarr Amelioration de la productivie cerealiere par la protection des cultures dans les cuvettes du lac de guiers Final report, 1996
- S/V05 Recherche collaborative, ISRA/NRBAR/Sahel 3000, Amelioration de la productivite agricole cerealiere dans les cuvettes du lac-de-guiers, Premier rapport annuel d'activites, Feb 1995, Abdourahmane Tamba, Alioune Sarr, 6 pages
- S/V05 S Diangar, T Ba, C Yamoah, R Dick An Appraisal of Irrigated Temperate and Tropical Millet Varieties in the Semiarid Region of Senegal 1998
- S/V05 Abdourahmane Tamba et Alioune Sarr, Amelioration de la productivite agricole cerealiere dans les cuvettes du lacs-de-guiers, Fevrier 1995, 6p
- S/V06 Tamba et A Moussa, Etude de l'influence des brise-vent sur la productivite agricole dans la vallee du fleuve Senegal Rapport final d'activites, 1996, 6p
- S/V06 A Tamba, A Sarr, A Ba Amelioration de la productivie cereaaliere par la protectio ndes cultures dans les systemes de culture de la vallee du fleuve Senegal Final report, 1997
- S/V06 ISRA Recherche Collaborative, ISRA/NRBAR/Groupement des paysans de Kiraye, Etude sur les effets agronomiques des brise-vent dans la vallee du fleuve Senegal, Premier Rapport Annuel d'activites, Feb 1995, Abdourahmane Tamba, Amadou Ba, 7 pages

S/V07 A Ndoye Evaluation des impacts socio-economiques du project collaboratif ISRA/NRBAR/Africare sur les entreprises a base agricole April 1998

S/V07 Babou Ndour et Adrian Backus Projet de recherche collaborative en agroforesterie, 15-3-94, 28p

S/V07 Babou Ndour et Assane Ngom, V07/95, Rapport technique et financier de la subvention a la recherche collaborative ISRA/AFICARE/NRBAR, Avril 1996, 6p

S/V07 Babou Ndour et Sarah Workman, Soumission de proposition de recherche programme de subvention a la recherche collaborative, 11-3-94, 31p

S/V07 Babou Ndour, Rapport analytique 1995 des activites de recherche collaborative ISRA/AFRICARE-KAOLACK/NRBAR, 13p

S/V07 M Diatta, B Ndour, C Seck Rapport de synthese des resultats Final report, 1997

S/V07 M Satin A socio-economic evaluation of live fencing and windbreak agroforestry technologies in Kaolack, Senegal 1998

S/V07 M Satin Evaluation socio-economique des techniques d'agroforesterie liees aux haies vives et aux brise-vent a Kaolack, Senegal 1998

S/V07 M Satin Evaluation technique des interventions en matiere d'agroforesterie July 1998

S/V07 M Satin Rapport final de mission de Michael Satin Appui a la validation socio-economique des techniques d'agroforesterie April 1998

S/V08 Caracterisation des exploitations Agricoles dans la zone d'intervention de l'ARAF (Association Regional des Agriculteurs de Fatick), Jan 1995, ISRA/NRBAR/ARAF, 13 pages, S,V8

S/V08 D Sarr, M Sene Collaboration ISRA/ARAF Pour une meilleure gestion des ressources naturelles evaluation par les beneficiaries Final report, Feb 1998

S/V08 D Sarr, M Sene Production et valorisation de compost en exploitations paysannes Final report Jan 1998

S/V08 D Sarr, M Sene Production et valorisation de compost en exploitations paysannes Atelier "Agroforesterie et redressement de la fertilité des sols dans la zone Sud Bassin Arachidier" Feb 1996

S/V08 Mamadou Thiam et Amadou Ndiaye/ARAF, S08 Compte rendu de seminaire de formation sur les techniques de compostage et les etables fumieres, Avril 1995, 14p

S/V08 Test de l'effet du compost sur la productivite du mil en parcelles paysannes, Recherche collaborative ISRA/ARAF, Manievel Sene, Desire Sarr, Mamadou Thiam, Feb 1995, 14 pages

S/V08 A Ndoye Evaluation des impacts socio-economiques du projet collaboratif ISRA/NRBAR/ARAF sur les menages ruraux et leurs groupements July 1998

S/V08 NRBAR, Caracterisation des exploitations agricoles dans la zone d'intervention de l'association regionale des agriculteurs de FATICK (ARAF), Janvier 1995, 18p

S/V09 Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux villages du Sine-Saloum Final report, July 1998

S/V09 Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux villages du Sine-Saloum Atelier de presentation des resultats Dec 1997

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 3^{eme} trimestre Annee I – Projet S09, Avril 1996, 5p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 4^{eme} trimestre Annee I, Juillet 1996, 5p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 1^{er} trimestre Annee II, Septembre 1996, 4p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 2^e trimestre Annee II, Decembre 1996, 9p

S/V09 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, Amenagement anti-erosif et regeneration de la fertilite des sols a l'echelle du bassin versant Application a la station de Nioro pour la rehabilitation des terrains d'experimentation agronomique, 21-12-96, 12p

S/V09 NRBAR, Rapport d'activites du 1er trimestre Annee 3, Septembre 1997, 4p

S/V09 NRBAR, Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux villages du sine saloum , Juin 1995, 20p

S/V10 S Thiaw, A Sarr Intensification de la riziculture dans les vallees amenees par le GADEC Final report, Feb 1998

S/V10 Samba Thiaw et Abdoulaye Sarr, S-10, Recherche collaborative NRBAR ISRA GADEC, Rapport technique, 3p

S/V11 Aminata Badiane, Hyacinthe Mbengue, Ibrahima Darte et Fatima Dia, Gestion Integree des Ressources Naturelles par les Groupements Feminins dans les Groupements Feminins dans le Departement de Bambey, 1995/96, 27p

S/V11 Aminata Niane Badiane, Benoît Lesage, Fatimata Dia, Mbene Dieye Faye, Hyacinthe Mbengue, Babou Ndour et Mame Nahe Diouf, Rapport de synthese-1995/97, Gestion Integree des Ressources Naturelles par les Groupements Feminins dans les Groupements Feminins dans le Departement de Bambey, Mars 1997, 20p Final report

S/V11 Aminata Niane Badiane, Rapport technique trimestriel, Janvier 95 a Juin 95, 2p

S/V11 Gorgui Ndiaye, Rapport d'activites du 1er trimestre de l'an 2 du sous-projet S11, 18 Novembre 1996, 2p

S/V11 Gorgui Ndiaye, Rapport d'activites du 2e trimestre de l'an 2 du sous-projet S11, 20 Fevrier 1997, 3p

S/V11 Gorgui Ndiaye, Rapport d'activites du 2eme trimestre 1995, 15-01-1996, 3p

S/V11 Gorgui Ndiaye, Rapport d'activites du 4e trimestre de l'an 1 du sous-projet, 18 Août 1996, 2p

S/V11 Tom Cusack, Documentaire concernant la recherche collaborative ISRA-NRBAR, Foyer des jeunes de Bambey Sereres Subvention S11, 2 Fevrier 1996

S/V11 A Badiane, F Dia, I Diarte, B Lesage et H Mbengue, Rapport annuel 1995, Gestion integree des ressources naturelles par les groupements feminins dans le, departement de Bambey, Fevrier 1996

S/V12, S/V20 A Diouf, I Gano, S Dieng Rapport de synthese des resultats des sous-projets S/V12 et S/V20 Final report, Aug 1998

S/V12 Fiche Technique Les residus de transformation de poisson fume Draft, July 1998

S/V12 M Diagne, M Fall Gestion de la matiere organique pour la fertilite des sols et la lutte contre la secheresse agricole Essais participatifs dans le terroir de Ndiamsil Sessene de 1990 a 1995 1997

S/V12 M Ndiaye, M Faye Rentabilite economique de l'utilisation agricole des residus de poisson fume sur les cultures de mil et d'arachide au Senegal

S/V12 M Ndiaye, M Faye Valorisation agricole des residus de poisson fume pour la fertilisation des terres Mar 1998

S/V12 M Ndiaye Valorisation agricole des residus de poisson fume pour la fertilisation des terres cultivees Final Synthesis

S/V12 Mamadou Ndiaye et Mbene Dieye Faye, Valorisation des residus de transformation du poisson fume pour la fertilisation des terres, 08-05-95, 33p

S/V12 M Ndiaye, C Yamoah, R Dick Processed Fish By-Product as a source of Manure for Millet and Peanute Cropping Systems in Senegal 1998

S/V12 M Ndiaye Effets des residus de poisson fume sur les rendements du mil et de l'arachide du Senegal 1998

S/V13 NRBAR, Rapport annuel (Juillet 1996-Juin 1997) 1997, 23p

S/V13 Test de varietes ameliorees avec des amendements organiques et phosphates en parcelles paysannes dans le terrior de Ndof Final report April 1998

S/V13 ISRA/RODALE Nebal le compostage Livret d'images a l'intention des producteurs agricoles en francais et en Wolof

S/V14 D Souane, Compte rendu d'activites, 1p

S/V14 NRBAR, Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Annee 2, Rapport d'activite technique du 3eme trimestre, Decembre 1996 a Fevrier 1997, 6p

S/V14 OCRV Evaluation participative du comportement des paysans dans la perennisation des actions du project et de gestion des ressources naturelles dans l'environnement du projet Reseau MARP Final report, Mar 1998

S/V14 S Diallo, L Sonko, N Toure et O Diop, S/V14, Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Rapport d'activite technique du 1er Annee, 1995, 15p

S/V14 Diallo, Sonko, Toure et Diop, Rapport d'activite technique/1ere annee, 1995, 15p

S/V14 Lamine Sonko Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Rapport d'activite technique du 3eme trimestre, Decembre 1995 a Fevrier 1996, 7p

S/V15 F Massaly, S Diangar, A Da Sylva, S Thiaw, M Ndiaye, M Sene et I Diarte, Diversification des cultures a Sagnaneme, S15, Avril 1996, 30p

S/V15 Famara Massaly, Mactar Wade, Ousmane Ndoeye, Arthur Dasyilva, Ousseynou Diouf, Desire Y Sarr, Fatimata Dia, Matar Gaye, Cheikh Ndiaye et Fatou Mbaye, Application de la MARP a l'etude de la baisse de la fertilite des sols, du manque de semence d'arachide et de l'absence de diversification dans le village de Sagnaneme, Kaolack du 26 au 27 Avril 1995, 39p

S/V15 ISRA/CARITAS Rapport de Synthese Final report 1998

S/V15 M Sene, P Gueye, D Diouf et A Gueye, Evaluation en parcelles paysans de la valeur agronomique et technologique de la variete de Sorgho CE145-66, Juillet 1997, 24p

S/V15 Rapport d'activites du 1er trimestre Annee 3, Septembre 1997, 3p

S/V16 ISRA/CARITAS Amenagement Anti-erosif et redressement de la fertilite des sols de Bassin Versant de Diamaguene en zone periurbaine Final report, Jul 1998

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 1^{er} trimestre Annee II, Septembre 1996, 5p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 2^{er} trimestre Annee II, Decembre 1996, 4p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport des activites du 1^{er} trimestre Annee 1997, Avril 1997, 4p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 2^{er} trimestre Annee 1997, Juillet 1997, 2p

S/V16 Modou Sene, V Chery, D Y Sarr, M Diatta, I Diatte et Jean Louis Manga, Amenagement anti erosif et redressement de la fertilite des sols du bassin versant de Diamaguene en zone periurbaine Rapport annuel d'activites, Avril 1997, 11p

S/V17 A Beye, A Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998

S/V17 AJAEDO, OCRV Transfert de varietes ameliorees de riz dans les vallees salees du Pakao et du Kassa Final report

S/V17 O Diedhiou et J Diatta, Rapport d'activites du programme rizicole NRBAR/AJAEDO, Juin/Juillet 1997, 1p

S/V17 NRBAR, Rapport technique trimestriel, Juillet-Septembre 1997, 3p

S/V18 (final report is with R20)

S/V18 AFRICARE, Projet de restauration agronomique des sols sales (PRASS), September 30th 1997, 41p

S/V18 D Pasternak Rapport de mission Programme de restauration agronomique des sols sales (region du Sine Saloum) Jun 1998

S/V18 Yossi Ben Dov Rapport de mission Programme de restauration agronomique des sols sales (region du Sine Saloum) Mar 1998

S/V18 Staff du Prass, Rapport trimestriel Juin-Juillet-Aôut, 10 Septembre 1997, 34p

S/V19 M Diouf Rapport Technique de fin de projet Final report, Aug 1998

S/V20 (see also PAR 2-3,-4,-5,-6 and S/V12 See S/V12 for final report

S/V21 (see also PAR2-3 to 2-7, and S/V13) Rodale International Rapport Technique V13-S21 Final report, Aug 1998

S/V22 and R25 Abdou Ndiaye, Rapport d'activites trimestriel, 1 Octobre 1997, 6p

S/V22 K Sow Rapport de stage Valorisation du Bas-bonds de Koutango dans le Sud Bassin Arachidier, Contribution a sa caracterisation physique 1997

S/V22 R Malou, H Dacosta, L Akpo, F Diome, S Sambou Caracterisations Hydrologique et Hydrogeologique du bassin versant de Koutango Final report, May 1998

S/V23 A Diatta, P Dieye, M Savane, D Babene, H Diao Introduction de la culture fourragere de legumineuses annuelles en milieu paysan en vue de l'amelioration des productions cerealieres et animales en Haute Casamance au Senegal Final Report (rapport de premiere annee) April 1998

S/V23 A Diatta, P N Dieye, M Savane A Babene, H Diao, V23, Introduction de la culture fourragere de legumineuses annuelles en vue de l'amelioration des productions cerealieres et animales en haute casamance au Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

S/V24 A Tamba, C Fall, C Lo, M Dia, A Sarr Rapport d'execution technique du projet "Effets des bois rameaux fragmentes et du compost de litiere de *Casuarina equisetifolia* (filao) sur l'amelioration de la fertilite des sols et des rendements dans les cuvettes maraicheres des Niayes Final report, July 1998

S/V24 Premier Rapport d'execution technique et financiere, Effets de l'utilisation des bois rameaux fragmentes et du compost de litiere de filao sur l'amelioration de la fertilite des sols et des rendements agricoles dans les cuvettes maraicheres des niayes, S24, Juillet 1997, 2p

S/V24 Abdourahmane Tamba et Alhoun Sarr, Rapport d'activites trimestriel, Effets de l'utilisation des bois rameaux fragmentes et du compost de litiere de filao sur l'amelioration de la fertilite des sols et des rendements agricoles dans les cuvettes maraicheres des niayes, Septembre 1997, 3p

- S/V25 D Souane, Compte rendu d'activites 1er trimestre projet S25, Juin, Juillet, Août
- S/V25 A Beye, A Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998
- S/V25 A Beye, O Mane, J Malou, J Coly Rapport de campagne Selection et amelioration varietale riz de mangrove Feb 1998
- S/V25 A Beye, O Mane, J Malou, J Coly Rapport de campagne Selection et amelioration varietale riz irrigue Feb 1998
- S/V25 OCRV Etude exploratoire des ressources du terroir de la zone d'intervention du projet de transfert de varietes ameliorées de riz (terroir de sandiniery, Karantaba, Mareng) Reseau MARP March 1998
- S/V25 OCRV Formation et Planification surve et auto-evaluation rapport de synthese Feb 1998
- PAR 2 3/S12/S20 Alioune Diouf, Ibrahima Gano, Serigne Dieng Rapport de synthese des resultats des sous-projets Final report, Aug 1998
- S20/PAR 2 4 Test et diffusion de technologie en milieu paysan le compostage enrichi en phosphate naturel
- S20/PAR 2 5 Babou Ndour et Alioune Sarr, Projet gestion des ressources naturelles volet agroforesterie, Troisieme rapport trimestriel
- S20/PAR 2 5 Babou Ndour Rapport de synthese des activites agroforestrieres menees dans le cadre de la subvention NRBAR/GRN Test de confirmation et diffusion de technologies en milieu paysan, cas des haies vives defensives Final report, July 1998
- S20/PAR 2 6 Mankeur Fall, Moussa Ndoye, Mamadou Boudiaby, Mame Khemesse Thiaw, Ngor Diagne Etude des effects de melanges de phosphate de Taïba et de Phosphogypse sur les cultures et les sols Final report, Aug 1998
- S20/PAR 2 7 Protection des graines de mebe stockees en fut ou en sac Evaluation de l'effet insecticide des feuilles de *Boscia senegalensis* Final report, 1998
- S19/PAR 3 4 Desire Sarr, Francois Diouh Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles Rapport Annuel/Final Report, Avril 1998
- R04, NRBAR, Memorandum sur la visite des pasteurs de la zone de linguere au CRZ de Kolda et, de sa zone d'intervention, Mai 1997, 5p

R04 A Faye, P Dieye et A Diallo, R04, Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La haute Casamance, Rapport annuel, Mars 1994, 16p

R04 Monica Fisher and Papa Dieye Socio-Economic Evaluation of NRBAR R04 March 1998

R04 P Dieye, A Diatta, A Faye, A Diallo et D Babene, Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La haute Casamance, Rapport de deuxieme annee, Mars 1996, 21p

R04 P Dieye Etude et amelioration de l'elevage et de la gestion des ressources naturelles en zone sub humide du Senegal, 17/1/95, 6p

R04 Utilisation des sous-produits de transformation du poisson pour la transformation des champs de culture, Status report, Nov 1993, 8 pages, Desire Sarr, Mamadou Ndiaye

R04/R24 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La Haute Casamance Final report, 1997

R04/R24 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal Feb 1998

R18 Amadou Beye, Aminata Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998

R18 Compte Rendu de l'atelier de formation des formateurs sur las technologie semenciere riz en Casamance Sept 1997

R24 P N DIEYE, A DIATTA, A FAYE, A A DIALLO D BABENE, R24, Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 1 3 Demba Sidibe Installation de collections de fruitieres et tests de varietes d'agrumes, de manguiers et de bananiers en milieu paysan Rapport d'activites, 1998

PAR 1 8 Amadou Beye, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Rapport de campagne selection et amelioration varietale Riz Irrigue Final report, Feb 1998

PAR 1 8 Amadou Beye, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Rapport de campagne selection et amelioration varietale Riz de Mangrove Final report, Feb 1998

PAR 1 8 Amadou Beye, Souleymane Diallo, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Dossier de Soumission a l'homologation de 10 varietes de riz pour la Basse, Moyenne, et Haute Casamance

PAR 1 8 Compte Rendu de l'atelier de formation des formateurs sur la technologie semenciere riz en Casamance September 1997

PAR 1 8 Amadou Beye, Souleymane Diallo, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Mise en place d'une collection d'ecotypes locaux de riz Transfert de materiel adapte en milieu paysan Feb 1998

PAR 3 5 F D TOURE, Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovation performantes, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 3 5 Fatimata Dia, Mamadou Thiam, Amadou Ndiaye Evolution des differentes types de traction animale introduites dans le sud du Bassin ArachidierL Quelles perspectives de succes des houvelles techniques de travail du sol? Final report, July 1998

PAR 3 5 Fatimata Dia, Modou Sene, Abdou Fall Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovations performantes Final report, March 1998

PAR 3 5/PAR 3 7, Par 3 5, Fatimata Dia Toure, Rapport trimestriel (Juillet-Septembre 1997), 2p

PAR 4 5 Mamadou Alassane Ba Exploitation et valorisation des donnees du CRZ sur la reproduction du tarin Ndama Final report, Sept 1998

PAR 4 10 M A BA, M T SECK, PAR 4 10, Etude et amelioration des systemes de production et de la gestion des ressources naturelles Suivis zootechniques et sanitaires des elevages bovins villageois, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 4 10 Mamadou Ba, Momar Seck, Malang Bayo, Abdoul Diallo, Asnoumana Dioukou Suivis Zootechnique et sanitaire des elevages bovins villageois Final report, May 1998

PAR 4 12 A BODIAN, PAR4 12, Test des techniques de lutte contre l'erosion hydrique par l'utilisation des haies vives, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 4 12 Alphousseyni Bodian, Ousmane Niassy Test des techniques de lutte contre l'erosion hydrique par l'utilisation des haies vives Final report, May 1998

PAR 4 12 Monica Fisher and Alphousseyni Bodian Socio-economic evaluation of NRBAR
PAR 4 12 March 1998

LIR-01/STTF Papa Dieye Rapport de mission a l'universite de Tuskegee/Alabama/US June 1998

LIR-01/STTF Aladj1 Diack Rapport de mission a l'universite de Tuskegee/Alabama/US June 1998

LIR-01/STTA Ralph Noble Amelioration des sources de revenus diversifiees des femmes et jeunes du monde rural par le developpement et le transfert de la technologie des etables fumieres en Casamance, Senegal Final Report, short term technical assistance under LIR-01, June 1998

LIR-01/STTA Ralph Noble et Jianbang Gan, Rapport de mission Mai 1997-LIR 01, TU/ISRA Linkage project on improving income for women, young, and cattleless, farmers , 8p

LIR-01 Tuskegee University Improving diversified income for women and young cattleless farmers through development and transfer of manure stabling technology in Casamance region of Senegal Final report, July 1998

LIR-01 A FALL, A FAYE, P N DIEYE, A DIACK, LIR-01, Amelioration des sources de revenus diversifiees des femmes et des jeunes du monde rural par le developpement et le transfert de la technologie des etables fumieres en Casamance au Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

LIR-03/STTA E Rhoden, C Fall, M Gueye Evaluation of Selected under-utilized African Vegetable crops by Farmers (for Value-Added Purposes) in Senegal Project/Trip report, Feb 1998

LIR-03 C Fall Development of the Under-Utilized Vegetable Crops in Senegal Final Report, July 1998

LIR-03/STTA Conrad Bonsi, Rapport de mission Appui au programme des liaisons avec les institutions internationales , Evaluation of selected under-utilized African vegetable crops by farmers in Senegal

Mamadou Lo, MS Thesis Comparison of on-farm research and extension methods in small scale farm systems in lower Casamance, Senegal, 1997, 117p

6 INCREASED EXPOSURE TO IMPROVED AG/NRM TECHNOLOGY

(The sequence of presentation of documents follows that of Table 6 1 of Chapter 6)

Compte rendu de l'atelier sur le suivi des projets de recherche collaboratives NRBAR 22/5/95 a Thies, June 1995, 5 pages

Compte rendu de la reunion de lancement du programme 1995, recherche collaborative, Massamba Dieng, 7 pages, 22 NOV 94

S/V01 and S/V02 S Diangar, A Fofana, M Diagne, C Yamoah Millet-based cropping systems in the semi-arid agro-ecosystem of Senegal 1998

S/V01 A Ndoye Evaluation des impacts socio-economiques du projet ISRA/NRBAR/Rodale International sur les menages ruraux Sept 1997

S/V01 Aifa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif ISRA-NRBAR-Rodale International sur les menages ruraux , Septembre 1997, 67p

S/V01 Centre Ressource pour une agriculture regeneratrice, RODALE/Senegal, Rapport annuel July 1993-Dec 94, RODALE/NRBAR/ISRA, (S01), 12 pages, March 1995

S/V01 Essais Participatifs en milieu paysan dans le terroir de Ndiamsil (1990-1995) gestion de la matiere organique pour la fertilite des sols Final report, 1996

S/V01 ISRA/Rodale, 1993 rapport d'activite sur les essais associations culturales mil-niebe du projet de recherche collaborative ISRA/RODALE, Saliou Diangar, 30 pages

S/V01 M Diagne et M Fall, Gestion de la matiere organique pour la fertilite des sols et la lutte contre la secheresse agricole, Draft, 90 a 95, 21p

S/V01 M Diagne, M Fall, C Yamoah, R Dick Manure and Seasonal Rainfall effects on yields of millet and peanut in the semiarid region of Senegal 1998

S/V01 Rapport d'activites 3eme trimestre, Jan-mar 94, Valorisation des Ressources Naturelles, 3 pages

S/V01 rapport d'activites du 1er trimestre, valorisation des ressources naturelles, Rodale/ISRA Bambey, 5 pages, 1993

S/V01and S/V13 ISRA/RODALE Nebal le compostage Livret d'images a l'intention des producteurs agricoles en francais et en Wolof

S/V02 and S/V01 S Diangar, A Fofana, M Diagne, C Yamoah, R Dick Millet-based cropping systems in the semi-arid agro-ecosystem of Senegal 1998

S/V02 A Badiane, A Faye, B Lesage Rapport de Sunthese Essais agronomiques 1993-1995 Projet Winrock International Final report Feb 1996

S/V02 A Badiane, A Faye, C Yamoah, R Dick Use of Organic and Mineral Fertilizers for Millet Production by Farmers in the Semiarid Region of Senegal 1998

S/V02 A Badiane, A Faye Etude de la fertilisation organo-minerale en milieu paysan Jan 1994

S/V02 Aifa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif Winrock international-ISRA-, NRBAR-CCF sur les menages ruraux , Novembre 1996, 88p

S/V02 Alphonse Faye Programme de recherche collaborative entre WINROCK international et le laboratoire de biochimie de ISRA, Bambey, 11 Decembre 1995, 19p

S/V02 Aminata Badiane, Stephane Le Biavant et Alphonse Faye, Etude de la fertilisation organo-minerale en milieu Paysan, Fevrier 1995, 6p

S/V02 Aminata N Badiane, Alphonse Faye et Benoît Lesage, Rapport de synthese essais agronomiques 1993-1995 Projet WINROCK international, Fevrier 1996, 5p

S/V02 Aminata Niane Badiane et Alphonse Faye, Etude de la fertilisation organo-minerale en milieu Paysan, Janvier 1994, 24p

S/V02 Aminata Niane Badiane, Rapport technique trimestriel Janvier 95-Juin 95, 2p

S/V02 Aminata Niane Badiane, Thomas Arthur Osborn et Alphonse Faye, Annexe A Fiche technique de projet, 28 Avril 1993, 23p

S/V02 Babou Ndour, Alphonse Faye et Sarah Workman Subvention a la recherche collaborative ISRA-WINROCK-NRBAR, Rapport technique Annuel, Fevrier 1995, 14p

S/V02 OFPEP, Annual report - Senegal 1996, 06/10/96, 15p

S/V02 Tom Osborn, Compost activities with Christian Childrens Fund, June 28, 1996, 13p

S/V02 Tom Osborn, Live fencing and Cassava program with Christian Childrens' Fund, May 1996, 7p

S/V02 Tom Osborn, Millet activities with Christian Childrens' Fund, May 1996, 8p

S/V02 WINROCK, Rapport trimestriel No 11, Janvier-Fevrier-Mars 1996, 9p

S/V03 Aifa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif ISRA-NRBAR-OSDIL sur les menages ruraux et les groupements, Septembre 1997, 47p

S/V03 C Seck, M Diatta Transfert de technologies agroforestieres mises au point par la recherche en milieu paysan Arrondissement de Fimela, Region de Fatick Final report, Nov 1996

S/V03 M Diatta, A Bodian et O Diop, Valorisation des technologies agroforestieres mises au point par la recherche et, transfert en milieu reel, 28 Avril 1993, 21p

S/V03 NRBAR, Rapport annuel de synthese, Janvier 1996, 20p

- S/V03 NRBAR, Rapport trimestriel des activites Juillet-Aout-Septembre, Septembre 1995, 5p
- S/V03 NRBAR, Rapport trimestriel des activites Avril-Mai-Juin 1995, Juillet 1995, 5p
- S/V03 NRBAR, Rapport trimestriel des activites Janvier-Fevrier-Mars 1995, Avril 1995, 4p
- S/V03 Organization Senegalaise Pour le Developpement des initiatives localisees, USAID/ISRA/NRBAR/OSDIL, Rapport Trimestriel, Jan-March 1994, 15 pages, (S03) agroforestry
- S/V03 Organization Senegalaise Pour le Developpement des initiatives localisees, USAID/ISRA/NRBAR/OSDIL, Rapport Trimestriel, Jul-Sept 1994, 15 pages, (S03) agroforestry
- S/V03 OSDIL, July-Sept 1993, 7 pages, financial report 9 pages
- S/V03 OSDIL, USAID/ISRA/NRBAR/OSDIL, Rapport Annuel Jan-Dec 1994, Transfert techniques agroforestieres mises au point par la recherche en milieu paysan Feb 95, S,V3, 30 pages
- S/V04 Alphonse Faye/Winrock, Rapport des activites de Juillet 1994 a Mars 1995, 11 Avril 1995, 9p
- S/V04 Amadou Ndiaye/Winrock, Compte-Rendu de mission, Decembre 1994, 3p
- S/V04 Amadou Ndiaye/Winrock, Compte-Rendu de mission, Du 10-10-94 au 14-10-94, 3p
- S/V04 B Ndour Amelioration de la production agricole par l'introduction de technologies agroforestieres en milieu paysan Final report, Aug 1998
- S/V04 Babou Ndour, Le comite de gestion des subventions a la recherche collaborative de l'ISRA s'est reuni le 19 Avril 1994 pour examiner votre demande de financement du projet intitule "Amelioration et diversification des productions agricoles en milieu reel par le biais d'agroforesterie", 19 Avril 1994, 25p
- S/V04 Temento Samba, Nemataba Mandingue, Linguetto, Ibrahima Nima, Sokoto, Ndiayene Poste, Rapport de mission no S04, 27 Mai au 02 Juin 1996, 10p
- S/V04 Winrock, Agroforestry Activity Report, 1994, 3p
- S/V04 Recherche collaborative ISRA/NRBAR/WINROCK, Rapport technique annuel, Babou Ndour, Alphonse Faye, Sarah Workman, Feb 1995, S,V4, 14 pages
- S/V05, Abdourhmane Tamba et Alioune Sarr, Amelioration de la productivite agricole cerealiere dans les cuvettes du lacs-de-guiers, Rapport final d'activites, 1996, 9p

S/V05 A Tamba, A Sarr Amelioration de la productivie cerealiere par la protection des cultures dans les cuvettes du lac de guiers Final report, 1996

S/V05 Recherche collaborative, ISRA/NRBAR/Sahel 3000, Amelioration de la productivite agricole cerealiere dans les cuvettes du lac-de-guiers, Premier rapport annuel d'activites, Feb 1995, Abdourahmane Tamba, Alioune Sarr, 6 pages

S/V05 S Diangar, T Ba, C Yamoah, R Dick An Appraisal of Irrigated Temperate and Tropical Millet Varieties in the Semiarid Region of Senegal 1998

S/V05 Abdourahmane Tamba et Alioune Sarr, Amelioration de la productivite agricole cerealiere dans les cuvettes du lacs-de-guiers, Fevrier 1995, 6p

S/V06 Tamba et A Moussa, Etude de l'influence des brise-vent sur la productivite agricole dans la vallee du fleuve Senegal Rapport final d'activites, 1996, 6p

S/V06 A Tamba, A Sarr, A Ba Amelioration de la productivie cereaaliere par la protectio ndes cultures dans les systemes de culture de la vallee du fleuve Senegal Final report, 1997

S/V06 ISRA Recherche Collaborative, ISRA/NRBAR/Groupement des paysans de Kiraye, Etude sur les effets agronomiques des brise-vent dans la vallee du fleuve Senegal, Premier Rapport Annuel d'activites, Feb 1995, Abdourahmane Tamba, Amadou Ba, 7 pages

S/V07 A Ndoye Evaluation des impacts socio-economiques du project collaboratif ISRA/NRBAR/Africare sur les entreprises a base agricole April 1998

S/V07 Babou Ndour et Adrian Backus Projet de recherche collaborative en agroforesterie, 15-3-94, 28p

S/V07 Babou Ndour et Assane Ngom, V07/95, Rapport technique et financier de la subvention a la recherche collaborative ISRA/AFICARE/NRBAR, Avril 1996, 6p

S/V07 Babou Ndour et Sarah Workman, Soumission de proposition de recherche programme de subvention a la recherche collaborative, 11-3-94, 31p

S/V07 Babou Ndour, Rapport analytique 1995 des activites de recherche collaborative ISRA/AFRICARE-KAOLACK/NRBAR, 13p

S/V07 M Diatta, B Ndour, C Seck Rapport de synthese des resultats Final report, 1997

S/V07 M Satin A socio-economic evaluation of live fencing and windbreak agroforestry technologies in Kaolack, Senegal 1998

S/V07 M Satin Evaluation socio-economique des techniques d'agroforesterie liees aux haies vives et aux brise-vent a Kaolack, Senegal 1998

- S/V07 M Satin Evaluation technique des interventions en matiere d'agroforesterie July 1998
- S/V07 M Satin Rapport final de mission de Michael Satin Appui a la validation socio-economique des techniques d'agroforesterie April 1998
- S/V08 Caracterisation des exploitations Agricoles dans la zone d'intervention de l'ARAF (Association Regional des Agriculteurs de Fatick), Jan 1995, ISRA/NRBAR/ARAF, 13 pages, S,V8
- S/V08 D Sarr, M Sene Collaboration ISRA/ARAF Pour une meilleure gestion des ressources naturelles evaluation par les beneficiaries Final report, Feb 1998
- S/V08 D Sarr, M Sene Production et valorisation de compost en exploitations paysannes Final report Jan 1998
- S/V08 D Sarr, M Sene Production et valorisation de compost en exploitations paysannes Atelier "Agroforesterie et redressement de la fertilite des sols dans la zone Sud Bassin Arachidier" Feb 1996
- S/V08 Mamadou Thiam et Amadou Ndiaye/ARAF, S08, Compte rendu de seminaire de formation sur les techniques de compostage et les etables fumieres, Avril 1995, 14p
- S/V08 Test de l'effet du compost sur la productivite du mil en parcelles paysannes, Recherche collaborative ISRA/ARAF, Manievel Sene, Desire Sarr, Mamadou Thiam, Feb 1995, 14 pages
- S/V08 A Ndoye Evaluation des impacts socio-economiques du projet collaboratif ISRA/NRBAR/ARAF sur les menages ruraux et leurs groupements July 1998
- S/V08 NRBAR, Caracterisation des exploitations agricoles dans la zone d'intervention de l'association regionale des agriculteurs de FATICK (ARAF), Janvier 1995, 18p
- S/V09 Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux villages du Sine-Saloum Final report, July 1998
- S/V09 Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux villages du Sine-Saloum Atelier de presentation des resultats Dec 1997
- S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 3^{eme} trimestre Annee I – Projet S09, Avril 1996, 5p
- S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 4^{eme} trimestre Annee I, Juillet 1996, 5p
- S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 1^{er} trimestre Annee II, Septembre 1996, 4p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et Sonkorong, Rapport d'activites du 2^e trimestre Annee II, Decembre 1996, 9p

S/V09 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, Aménagement anti-erosif et regeneration de la fertilité des sols a l'échelle du bassin versant Application a la station de Nioro pour la rehabilitation des terrains d'experimentation agronomique, 21-12-96, 12p

S/V09 NRBAR, Rapport d'activites du 1er trimestre Annee 3, Septembre 1997, 4p

S/V09 NRBAR, Methode d'évaluation d'une strategie d'aménagement de terroir appliquee a deux villages du sine saloum , Juin 1995, 20p

S/V10 S Thiaw, A Sarr Intensification de la riziculture dans les vallees amenees par le GADEC Final report, Feb 1998

S/V10 Samba Thiaw et Abdoulaye Sarr, S-10, Recherche collaborative NRBAR ISRA GADEC, Rapport technique, 3p

S/V11 Aminata Badiane, Hyacinthe Mbengue, Ibrahima Daite et Fatima Dia, Gestion Integree des Ressources Naturelles par les Groupements Feminins dans les Groupements Feminins dans le Departement de Bambey, 1995/96, 27p

S/V11 Aminata Niane Badiane, Benoît Lesage, Fatimata Dia, Mbene Dieye Faye, Hyacinthe Mbengue, Babou Ndour et Mame Nahe Diouf, Rapport de synthese-1995/97, Gestion Integree des Ressources Naturelles par les Groupements Feminins dans les Groupements Feminins dans le Departement de Bambey, Mars 1997, 20p Final report

S/V11 Aminata Niane Badiane, Rapport technique trimestriel, Janvier 95 a Juin 95, 2p

S/V11 Gorgui Ndiaye, Rapport d'activites du 1er trimestre de l'an 2 du sous-projet S11, 18 Novembre 1996, 2p

S/V11 Gorgui Ndiaye, Rapport d'activites du 2e trimestre de l'an 2 du sous-projet S11, 20 Fevrier 1997, 3p

S/V11 Gorgui Ndiaye, Rapport d'activites du 2eme trimestre 1995, 15-01-1996, 3p

S/V11 Gorgui Ndiaye, Rapport d'activites du 4e trimestre de l'an 1 du sous-projet, 18 Août 1996, 2p

S/V11 Tom Cusack, Documentaire concernant la recherche collaborative ISRA-NRBAR, Foyer des jeunes de Bambey Sereres Subvention S11, 2 Fevrier 1996

S/V11 A Badiane, F Dia, I Diarte, B Lesage et H Mbengue, Rapport annuel 1995, Gestion integree des ressources naturelles par les groupements feminins dans le, departement de Bambey, Fevrier 1996

S/V12, S/V20 A Diouf, I Gano, S Dieng Rapport de synthese des resultats des sous-projets S/V12 et S/V20 Final report, Aug 1998

S/V12 Fiche Technique Les residus de transformation de poisson fume Draft, July 1998

S/V12 M Diagne, M Fall Gestion de la matiere organique pour la fertilite des sols et la lutte contre la secheresse agricole Essais participatifs dans le terroir de Ndiamsil Sessene de 1990 a 1995 1997

S/V12 M Ndiaye, M Faye Rentabilite economique de l'utilisation agricole des residus de poisson fume sur les cultures de mil et d'arachide au Senegal

S/V12 M Ndiaye, M Faye Valorisation agricole des residus de poisson fume pour la fertilisation des terres Mar 1998

S/V12 M Ndiaye Valorisation agricole des residus de poisson fume pour la fertilisation des terres cultivees Final Synthesis

S/V12 Mamadou Ndiaye et Mbene Dieye Faye, Valorisation des residus de transformation du poisson fume pour la fertilisation des terres, 08-05-95, 33p

S/V12 M Ndiaye, C Yamoah, R Dick Processed Fish By-Product as a source of Manure for Millet and Peanute Cropping Systems in Senegal 1998

S/V12 M Ndiaye Effets des residus de poisson fume sur les rendements du mil et de l'arachide du Senegal 1998

S/V13 NRBAR, Rapport annuel (Juillet 1996-Juin 1997) 1997, 23p

S/V13 Test de varietes ameliorees avec des amendements organiques et phosphates en parcelles paysannes dans le terroir de Ndof Final report April 1998

S/V13 ISRA/RODALE Nebal le compostage Livret d'images a l'intention des producteurs agricoles en francais et en Wolof

S/V14 D Souane, Compte rendu d'activites, 1p

S/V14 NRBAR, Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Annee 2, Rapport d'activite technique du 3eme trimestre, Decembre 1996 a Fevrier 1997, 6p

S/V14 OCRV Evaluation participative du comportement des paysans dans la perennisation des actions du project et de gestion des ressources naturelles dans l'environnement du projet Reseau MARP Final report, Mar 1998

S/V14 S Diallo, L Sonko, N Toure et O Diop, S/V14, Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Rapport d'activite technique du 1er Annee, 1995, 15p

S/V14 Diallo, Sonko, Toure et Diop, Rapport d'activite technique/1ere annee, 1995, 15p

S/V14 Lamine Sonko Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Rapport d'activite technique du 3eme trimestre, Decembre 1995 a Février 1996, 7p

S/V15 F Massaly, S Diangar, A Da Sylva, S Thiaw, M Ndiaye, M Sene et I Diaite, Diversification des cultures a Sagnaneme, S15, Avril 1996, 30p

S/V15 Famara Massaly, Mactar Wade, Ousmane Ndoye, Arthur Dasyilva, Ousseynou Diouf, Desire Y Sarr, Fatimata Dia, Matar Gaye, Cheikh Ndiaye et Fatou Mbaye, Application de la MARP a l'etude de la baisse de la fertilite des sols, du manque de semence d'arachide et de l'absence de diversification dans le village de Sagnaneme, Kaolack du 26 au 27 Avril 1995, 39p

S/V15 ISRA/CARITAS Rapport de Synthese Final report 1998

S/V15 M Sene, P Gueye, D Diouf et A Gueye, Evaluation en parcelles paysans de la valeur agronomique et technologique de la variete de Sorgho CE145-66, Juillet 1997, 24p

S/V15 Rapport d'activites du 1er trimestre Annee 3, Septembre 1997, 3p

S/V16 ISRA/CARITAS Amenagement Anti-erosif et redressement de la fertilite des sols de Bassin Versant de Biamaguene en zone periurbaine Final report, Jul 1998

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 1^{er} trimestre Annee II, Septembre 1996, 5p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 2^{er} trimestre Annee II, Decembre 1996, 4p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport des activites du 1^{er} trimestre Annee 1997, Avril 1997, 4p

S/V16 Modou Sene, Malany Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 2^{er} trimestre Annee 1997, Juillet 1997, 2p

S/V16 Modou Sene, V Chery, D Y Sarr, M Diatta, I Diarte et Jean Louis Manga, Amenagement anti erosif et redressement de la fertilite des sols du bassin versant de Diamaguene en zone periurbaine Rapport annuel d'activites, Avril 1997, 11p

S/V17 A Beye, A Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998

S/V17 AJAEDO, OCRV Transfert de varietes ameliorees de riz dans les vallees salees du Pakao et du Kassa Final report

S/V17 O Diedhiou et J Diatta, Rapport d'activites du programme rizicole NRBAR/AJAEDO, Juin/Juillet 1997, 1p

S/V17 NRBAR, Rapport technique trimestriel, Juillet-Septembre 1997, 3p

S/V18 (final report is with R20)

S/V18 AFRICARE, Projet de restauration agronomique des sols sales (PRASS), September 30th 1997, 41p

S/V18 D Pasternak Rapport de mission Programme de restauration agronomique des sols sales (region du Sine Saloum) Jun 1998

S/V18 Yossi Ben Dov Rapport de mission Programme de restauration agronomique des sols sales (region du Sine Saloum) Mar 1998

S/V18 Staff du Prass, Rapport trimestriel Juin-Juillet-Aôut, 10 Septembre 1997, 34p

S/V19 M Diouf Rapport Technique de fin de projet Final report, Aug 1998

S/V20 (see also PAR 2-3,-4,-5,-6 and S/V12 See S/V12 for final report

S/V21 (see also PAR2-3 to 2-7, and S/V13) Rodale International Rapport Technique V13-S21 Final report, Aug 1998

S/V22 and R25 Abdou Ndiaye, Rapport d'activites trimestriel, 1 Octobre 1997, 6p

S/V22 K Sow Rapport de stage Valorisation du Bas-bonds de Koutango dans le Sud Bassin Arachidier, Contribution a sa caracterisation physique 1997

S/V22 R Malou, H Dacosta, L Akpo, F Diome, S Sambou Caracterisations Hydrologique et Hydrogeologique du bassin versant de Koutango Final report, May 1998

S/V23 A Diatta, P Dieye, M Savane, D Babene, H Diao Introduction de la culture fourragere de legumineuses annuelles en milieu paysan en vue de l'amelioration des productions cerealieres et animales en Haute Casamance au Senegal Final Report (rapport de premiere annee) April 1998

S/V23 A Diatta, P N Dieye, M Savane A Babene, H Diao, V23, Introduction de la culture fourragere de legumineuses annuelles en vue de l'amelioration des productions cerealieres et animales en haute casamance au Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

S/V24 A Tamba, C Fall, C Lo, M Dia, A Sarr Rapport d'execution technique du projet "Effets des bois rameaux fragmentes et du compost de litiere de *Casuarina equisetifolia* (filao) sur l'amelioration de la fertilite des sols et des rendements dans les cuvettes maraicheres des Niayes Final report, July 1998

S/V24 Premier Rapport d'execution technique et financiere, Effets de l'utilisation des bois rameaux fragmentes et du compost de litiere de filao sur l'amelioration de la fertilite des sols et des rendements agricoles dans les cuvettes maraicheres des niayes, S24, Juillet 1997, 2p

S/V24 Abdourahmane Tamba et Alioune Sarr, Rapport d'activites trimestriel, Effets de l'utilisation des bois rameaux fragmentes et du compost de litiere de filao sur l'amelioration de la fertilite des sols et des rendements agricoles dans les cuvettes maraicheres des niayes, Septembre 1997, 3p

S/V25 D Souane, Compte rendu d'activites 1er trimestre projet S25, Juin, Juillet, Août

S/V25 A Beye, A Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998

S/V25 A Beye, O Mane, J Malou, J Coly Rapport de campagne Selection et amelioration varietale riz de mangrove Feb 1998

S/V25 A Beye, O Mane, J Malou, J Coly Rapport de campagne Selection et amelioration varietale riz irrigue Feb 1998

S/V25 OCRV Etude exploratoire des ressources du terroir de la zone d'intervention du projet de transfert de varietes ameliorees de riz (terroir de sandimery, Karantaba, Mareng) Reseau MARP March 1998

S/V25 OCRV Formation et Planification suivie et auto-evaluation rapport de synthese Feb 1998

PAR 2 3/S12/S20 Alioune Diouf, Ibrahima Gano, Serigne Dieng Rapport de synthese des resultats des sous-projets Final report, Aug 1998

S20/PAR 2 4 Test et diffusion de technologie en milieu paysan le compostage enrichi en phosphate naturel

S20/PAR 2 5 Babou Ndour et Alioune Sarr, Projet gestion des ressources naturelles volet agroforesterie, Troisième rapport trimestriel

S20/PAR 2 5 Babou Ndour Rapport de synthèse des activités agroforestrières menées dans le cadre de la subvention NRBAR/GRN Test de confirmation et diffusion de technologies en milieu paysan, cas des haies vives défensives Final report, July 1998

S20/PAR 2 6 Mankeur Fall, Moussa Ndoye, Mamadou Boudiaby, Mame Khemesse Thiaw, Ngor Diagne Etude des effets de mélanges de phosphate de Taïba et de Phosphogypse sur les cultures et les sols Final report, Aug 1998

S20/PAR 2 7 Protection des graines de niébe stockées en fût ou en sac Evaluation de l'effet insecticide des feuilles de *Boscia senegalensis* Final report, 1998

S19/PAR 3 4 Desire Sarr, François Diouh Analyse institutionnelle et recherche de stratégie de gestion communautaire des ressources naturelles Rapport Annuel/Final Report, Avril 1998

7 PROJECT RESOURCE COMPONENTS

IA COLLABORATIVE GRANTS PROGRAM

(The sequence of presentation of documents follows that of Table Ia 1 of Chapter 7)

Compte rendu de l'atelier sur le suivi des projets de recherche collaboratives NRBAR 22/5/95 à Thiès, June 1995, 5 pages,

Compte rendu de la réunion de lancement du programme 1995, recherche collaborative, Massamba Dieng, 7 pages, 22 NOV 94

S/V01 and S/V02 S Diangar, A Fofana, M Diagne, C Yamoah Millet-based cropping systems in the semi-arid agro-ecosystem of Senegal 1998

S/V01 A Ndoye Evaluation des impacts socio-économiques du projet ISRA/NRBAR/Rodale International sur les ménages ruraux Sept 1997

S/V01 Aïfa Fatima Ndoye, Evaluation des impacts socio-économiques du projet collaboratif ISRA-NRBAR-Rodale International sur les ménages ruraux, Septembre 1997, 67p

S/V01 Centre Ressource pour une agriculture régénératrice, RODALE/Senegal, Rapport annuel July 1993-Dec 94, RODALE/NRBAR/ISRA, (S01), 12 pages, March 1995

- S/V01 Essais Participatifs en milieu paysan dans le terroir de Ndiamsil (1990-1995) gestion de la matiere organique pour la fertilite des sols Final report, 1996
- S/V01 ISRA/Rodale, 1993 rapport d'activite sur les essais associations culturales mil-niebe du projet de recherche collaborative ISRA/RODALE, Saliou Diangar, 30 pages
- S/V01 M Diagne et M Fall, Gestion de la matiere organique pour la fertilite des sols et la lutte contre la secheresse agricole, Draft, 90 a 95, 21p
- S/V01 M Diagne, M Fall, C Yamoah, R Dick Manure and Seasonal Rainfall effects on yields of millet and peanut in the semiarid region of Senegal 1998
- S/V01 Rapport d'activites 3eme trimestre, Jan-mar 94, Valorisation des Ressources Naturelles, 3 pages
- S/V01 rapport d'activites du 1er trimestre, valorisation des ressources naturelles, Rodale/ISRA Bambey, 5 pages, 1993
- S/V01and S/V13 ISRA/RODALE Nebal le compostage Livret d'images a l'intention des producteurs agricoles en francais et en Wolof
- S/V02 and S/V01 S Diangar, A Fofana, M Diagne, C Yamoah, R Dick Millet-based cropping systems in the semi-arid agro-ecosystem of Senegal 1998
- S/V02 A Badiane, A Faye, B Lesage Rapport de Sunthese Essais agronomiques 1993-1995 Projet Winrock International Final report Feb 1996
- S/V02 A Badiane, A Faye, C Yamoah, R Dick Use of Organic and Mineral Fertilizers for Millet Production by Farmers in the Semiarid Region of Senegal 1998
- S/V02 A Badiane, A Faye Etude de la fertilisation organo-minerale en milieu paysan Jan 1994
- S/V02 Aïfa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif Winrock international-ISRA-, NRBAR-CCF sur les menages ruraux , Novembre 1996, 88p
- S/V02 Alphonse Faye Programme de recherche collaborative entre WINROCK international et le laboratoire de biochimie de ISRA, Bambey, 11 Decembre 1995, 19p
- S/V02 Aminata Badiane, Stephane Le Biavant et Alphonse Faye, Etude de la fertilisation organo-minerale en milieu Paysan, Fevrier 19995, 6p
- S/V02 Aminata N Badiane, Alphonse Faye et Benoît Lesage, Rapport de synthese essais agronomiques 1993-1995 Projet WINROCK international, Fevrier 1996, 5p

- S/V02 Aminata Niane Badiane et Alphonse Faye, Etude de la fertilisation organo-minerale en milieu Paysan, Janvier 1994, 24p
- S/V02 Aminata Niane Badiane, Rapport technique trimestriel Janvier 95-Juin 95, 2p
- S/V02 Aminata Niane Badiane, Thomas Arthur Osborn et Alphonse Faye, Annexe A Fiche technique de projet, 28 Avril 1993, 23p
- S/V02 Babou Ndour, Alphonse Faye et Sarah Workman Subvention a la recherche collaborative ISRA-WINROCK-NRBAR, Rapport technique Annuel, Fevrier 1995, 14p
- S/V02 OFPEP, Annual report - Senegal 1996, 06/10/96, 15p
- S/V02 Tom Osborn, Compost activities with Christian Childrens Fund, June 28, 1996, 13p
- S/V02 Tom Osborn, Live fencing and Cassava program with Christian Childrens' Fund, May 1996, 7p
- S/V02 Tom Osborn, Millet activities with Christian Childrens' Fund, May 1996, 8p
- S/V02 WINROCK, Rapport trimestriel No 11, Janvier-Fevrier-Mars 1996, 9p
- S/V03 Aïfa Fatima Ndoye, Evaluation des impacts socio-economiques du projet collaboratif ISRA-NRBAR-OSDIL sur les menages ruraux et les groupements, Septembre 1997, 47p
- S/V03 C Seck, M Diatta Transfert de technologies agroforestieres mises au point par la recherche en milieu paysan Arrondissement de Fimela, Region de Fatick Final report, Nov 1996
- S/V03 M Diatta, A Bodian et O Diop, Valorisation des technologies agroforestieres mises au point par la recherche et, transfert en milieu reel, 28 Avril 1993, 21p
- S/V03 NRBAR, Rapport annuel de synthese, Janvier 1996, 20p
- S/V03 NRBAR, Rapport trimestriel des activites Juillet-Aout-Septembre, Septembre 1995, 5p
- S/V03 NRBAR, Rapport trimestriel des activites Avril-Mai-Juin 1995, Juillet 1995, 5p
- S/V03 NRBAR, Rapport trimestriel des activites Janvier-Fevrier-Mars 1995, Avril 1995, 4p
- S/V03 Organization Senegalaise Pour le Developpement des initiatives localisees, USAID/ISRA/NRBAR/OSDIL, Rapport Trimestriel, Jan-March 1994, 15 pages, (S03) agroforestry
- S/V03 Organization Senegalaise Pour le Developpement des initiatives localisees, USAID/ISRA/NRBAR/OSDIL, Rapport Trimestriel, Jul-Sept 1994, 15 pages, (S03) agroforestry

S/V03 OSDIL, July-Sept 1993, 7 pages, financial report 9 pages

S/V03 OSDIL, USAID/ISRA/NRBAR/OSDIL, Rapport Annuel Jan-Dec 1994, Transfert techniques agroforestieres mises au point par la recherche en milieu paysan Feb 95, S,V3, 30 pages

S/V04 Alphonse Faye/Winrock, Rapport des activites de Juillet 1994 a Mars 1995, 11 Avril 1995, 9p

S/V04 Amadou Ndiaye/Winrock, Compte-Rendu de mission, Decembre 1994, 3p

S/V04 Amadou Ndiaye/Winrock, Compte-Rendu de mission, Du 10-10-94 au 14-10-94, 3p

S/V04 B Ndour Amelioration de la production agricole par l'introduction de technologies agroforestieres en milieu paysan Final report, Aug 1998

S/V04 Babou Ndour, Le comite de gestion des subventions a la recherche collaborative de l'ISRA s'est reuni le 19 Avril 1994 pour examiner votre demande de financement du projet intitule "Amelioration et diversification des productions agricoles en milieu reel par le biais d'agroforesterie", 19 Avril 1994, 25p

S/V04 Temento Samba, Nemataba Mandingue, Linguetto, Ibrahima Nima, Sokoto, Ndiayene Poste, Rapport de mission no S04, 27 Mai au 02 Juin 1996, 10p

S/V04 Winrock, Agroforestry Activity Report, 1994, 3p

S/V04 Recherche collaborative ISRA/NRBAR/WINROCK, Rapport technique annuel, Babou Ndour, Alphonse Faye, Sarah Workman, Feb 1995, S,V4, 14 pages

S/V05, Abdourhmane Tamba et Alioune Sarr, Amelioration de la productivite agricole cerealiere dans les cuvettes du lacs-de-guiers, Rapport final d'activites, 1996, 9p

S/V05 A Tamba, A Sarr Amelioration de la productivie cerealiere par la protection des cultures dans les cuvettes du lac de guiers Final report, 1996

S/V05 Recherche collaborative, ISRA/NRBAR/Sahel 3000, Amelioration de la productivite agricole cerealiere dans les cuvettes du lac-de-guiers, Premier rapport annuel d'activites, Feb 1995, Abdourahmane Tamba, Alioune Sarr, 6 pages

S/V05 S Diangar, T Ba, C Yamoah, R Dick An Appraisal of Irrigated Temperate and Tropical Millet Varieties in the Semiarid Region of Senegal 1998

S/V05 Abdourahmane Tamba et Alioune Sarr, Amelioration de la productivite agricole cerealiere dans les cuvettes du lacs-de-guiers, Fevrier 1995, 6p

- S/V06 Tamba et A Moussa, Etude de l'influence des brise-vent sur la productivite agricole dans la vallee du fleuve Senegal Rapport final d'activites, 1996, 6p
- S/V06 A Tamba, A Sarr, A Ba Amelioration de la productivie cereaalier par la protectio ndes cultures dans les systemes de culture de la vallee du fleuve Senegal Final report, 1997
- S/V06 ISRA Recherche Collaborative, ISRA/NRBAR/Groupement des paysans de Kiraye, Etude sur les effets agronomiques des brise-vent dans la vallee du fleuve Senegal, Premier Rapport Annuel d'activites, Feb 1995, Abdourahmane Tamba, Amadou Ba, 7 pages
- S/V07 A Ndoye Evaluation des impacts socio-economiques du project collaboratif ISRA/NRBAR/Africare sur les entreprises a base agricole April 1998
- S/V07 Babou Ndour et Adrian Backus Projet de recherche collaborative en agroforesterie, 15-3-94, 28p
- S/V07 Babou Ndour et Assane Ngom, V07/95, Rapport technique et financier de la subvention a la recherche collaborative ISRA/AFICARE/NRBAR, Avril 1996, 6p
- S/V07 Babou Ndour et Sarah Workman, Soumission de proposition de recherche programme de subvention a la recherche collaborative, 11-3-94, 31p
- S/V07 Babou Ndour, Rapport analytique 1995 des activites de recherche collaborative ISRA/AFRICARE-KAOLACK/NRBAR, 13p
- S/V07 M Diatta, B Ndour, C Seck Rapport de synthese des resultats Final report, 1997
- S/V07 M Satin A socio-economic evaluation of live fencing and windbreak agroforestry technologies in Kaolack, Senegal 1998
- S/V07 M Satin Evaluation socio-economique des techniques d'agroforesterie liees aux haies vives et aux brise-vent a Kaolack, Senegal 1998
- S/V07 M Satin Evaluation technique des interventions en matiere d'agroforesterie July 1998
- S/V07 M Satin Rapport final de mission de Michael Satin Appui a la validation socio-economique des techniques d'agroforesterie April 1998
- S/V08 Caracterisation des exploitations Agricoles dans la zone d'intervention de l'ARAF (Association Regional des Agriculteurs de Fatick), Jan 1995, ISRA/NRBAR/ARAF, 13 pages, S,V8
- S/V08 D Sarr, M Sene Collaboration ISRA/ARAF Pour une meilleure gestion des ressources naturelles evaluation par les beneficiaries Final report, Feb 1998

S/V08 D Sarr, M Sene Production et valorisation de compost en exploitations paysannes
Final report Jan 1998

S/V08 D Sarr, M Sene Production et valorisation de compost en exploitations paysannes
Atelier "Agroforesterie et redressement de la fertilité des sols dans la zone Sud Bassin
Arachidier" Feb 1996

S/V08 Mamadou Thiam et Amadou Ndiaye/ARAF, S08, Compte rendu de seminaire de
formation sur les techniques de compostage et les etables fumieres, Avril 1995, 14p

S/V08 Test de l'effet du compost sur la productivite du mil en parcelles paysannes, Recherche
collaborative ISRA/ARAF, Manievel Sene, Desire Sarr, Mamadou Thiam, Feb 1995, 14 pages

S/V08 A Ndoye Evaluation des impacts socio-economiques du projet collaboratif
ISRA/NRBAR/ARAF sur les menages ruraux et leurs groupements July 1998

S/V08 NRBAR, Caracterisation des exploitations agricoles dans la zone d'intervention de
l'association regionale des agriculteurs de FATICK (ARAF), Janvier 1995, 18p

S/V09 Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux
villages du Sine-Saloum Final report, July 1998

S/V09 Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a deux
villages du Sine-Saloum Atelier de presentation des resultats Dec 1997

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et
Sonkorong, Rapport d'activites du 3^{eme} trimestre Annee I – Projet S09, Avril 1996, 5p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et
Sonkorong, Rapport d'activites du 4^{eme} trimestre Annee I, Juillet 1996, 5p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et
Sonkorong, Rapport d'activites du 1^{er} trimestre Annee II, Septembre 1996, 4p

S/V09 Modou Sene et Malainy Diatta, D'aménagement de bassins versants a Ndiobene-Taiba et
Sonkorong, Rapport d'activites du 2^e trimestre Annee II, Decembre 1996, 9p

S/V09 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, Amenagement
anti-erosif et regeneration de la fertilité des sols a l'echelle du bassin versant Application a la
station de Nioro pour la rehabilitation des terrains d'experimentation agronomique, 21-12-96,
12p

S/V09 NRBAR, Rapport d'activites du 1er trimestre Annee 3, Septembre 1997, 4p

S/V09 NRBAR, Methode d'evaluation d'une strategie d'aménagement de terroir appliquee a
deux villages du sine saloum , Juin 1995, 20p

- S/V10 S Thiaw, A Sarr Intensification de la riziculture dans les vallees amenees par le GADEC Final report, Feb 1998
- S/V10 Samba Thiaw et Abdoulaye Sarr, S-10, Recherche collaborative NRBAR ISRA GADEC, Rapport technique, 3p
- S/V11 Aminata Badiane, Hyacinthe Mbengue, Ibrahima Darte et Fatima Dia, Gestion Integree des Ressources Naturelles par les Groupements Feminins dans les Groupements Feminins dans le Departement de Bambey, 1995/96, 27p
- S/V11 Aminata Niane Badiane, Benoît Lesage, Fatimata Dia, Mbene Diye Faye, Hyacinthe Mbengue, Babou Ndour et Mame Nahe Diouf, Rapport de synthese-1995/97, Gestion Integree des Ressources Naturelles par les Groupements Feminins dans les Groupements Feminins dans le Departement de Bambey, Mars 1997, 20p Final report
- S/V11 Aminata Niane Badiane, Rapport technique trimestriel, Janvier 95 a Jun 95, 2p
- S/V11 Gorgui Ndiaye, Rapport d'activites du 1er trimestre de l'an 2 du sous-projet S11, 18 Novembre 1996, 2p
- S/V11 Gorgui Ndiaye, Rapport d'activites du 2e trimestre de l'an 2 du sous-projet S11, 20 Fevrier 1997, 3p
- S/V11 Gorgui Ndiaye, Rapport d'activites du 2eme trimestre 1995, 15-01-1996, 3p
- S/V11 Gorgui Ndiaye, Rapport d'activites du 4e trimestre de l'an 1 du sous-projet, 18 Août 1996, 2p
- S/V11 Tom Cusack, Documentaire concernant la recherche collaborative ISRA-NRBAR, Foyer des jeunes de Bambey Sereres Subvention S11, 2 Fevrier 1996
- S/V11 A Badiane, F Dia, I Diaite, B Lesage et H Mbengue, Rapport annuel 1995, Gestion integree des ressources naturelles par les groupements feminins dans le, departement de Bambey, Fevrier 1996
- S/V12, S/V20 A Diouf, I Gano, S Dieng Rapport de synthese des resultats des sous-projets S/V12 et S/V20 Final report, Aug 1998
- S/V12 Fiche Technique Les residus de transformation de poisson fume Draft, July 1998
- S/V12 M Diagne, M Fall Gestion de la matiere organique pour la fertilite des sols et la lutte contre la secheresse agricole Essais participatifs dans le terroir de Ndiamsil Sessene de 1990 a 1995 1997

S/V12 M Ndiaye, M Faye Rentabilite economique de l'utilisation agricole des residus de poisson fume sur les cultures de mil et d'arachide au Senegal

S/V12 M Ndiaye, M Faye Valorisation agricole des residus de poisson fume pour la fertilisation des terres Mar 1998

S/V12 M Ndiaye Valorisation agricole des residus de poisson fume pour la fertilisation des terres cultivees Final Synthesis

S/V12 Mamadou Ndiaye et Mbene Dieye Faye, Valorisation des residus de transformation du poisson fume pour la fertilisation des terres, 08-05-95, 33p

S/V12 M Ndiaye, C Yamoah, R Dick Processed Fish By-Product as a source of Manure for Millet and Peanute Cropping Systems in Senegal 1998

S/V12 M Ndiaye Effets des residus de poisson fume sur les rendements du mil et de l'arachide du Senegal 1998

S/V13 NRBAR, Rapport annuel (Juillet 1996-Juin 1997) 1997, 23p

S/V13 Test de varietes ameliorees avec des amendements organiques et phosphates en parcelles paysannes dans le terrior de Ndof Final report April 1998

S/V13 ISRA/RODALE Nebal le compostage Livret d'images a l'intention des producteurs agricoles en francais et en Wolof

S/V14 D Souane, Compte rendu d'activites, 1p

S/V14 NRBAR, Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Annee 2, Rapport d'activite technique du 3eme trimestre, Decembre 1996 a Fevrier 1997, 6p

S/V14 OCRV Evaluation participative du comportement des paysans dans la perennisation des actions du project et de gestion des ressources naturelles dans l'environnement du projet Reseau MARP Final report, Mar 1998

S/V14 S Diallo, L Sonko, N Toure et O Diop, S/V14, Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Rapport d'activite technique du 1er Annee, 1995, 15p

S/V14 Diallo, Sonko, Toure et Diop, Rapport d'activite technique/1ere annee, 1995, 15p

S/V14 Lamine Sonko Amelioration de la fertilite des sols et gestion des adventices pour la production des cereales de plateau mil et mais Rapport d'activite technique du 3eme trimestre, Decembre 1995 a Fevrier 1996, 7p

S/V15 F Massaly, S Diangar, A Da Sylva, S Thiaw, M Ndiaye, M Sene et I Diarte, Diversification des cultures a Sagnaneme, S15, Avril 1996, 30p

S/V15 Famara Massaly, Mactar Wade, Ousmane Ndoye, Arthur Dasyilva, Ousseynou Diouf, Desire Y Sarr, Fatimata Dia, Matar Gaye, Cheikh Ndiaye et Fatou Mbaye, Application de la MARP a l'etude de la baisse de la fertilité des sols, du manque de semence d'arachide et de l'absence de diversification dans le village de Sagnaneme, Kaolack du 26 au 27 Avril 1995, 39p

S/V15 ISRA/CARITAS Rapport de Synthese Final report 1998

S/V15 M Sene, P Gueye, D Diouf et A Gueye, Evaluation en parcelles paysans de la valeur agronomique et technologique de la variete de Sorgho CE145-66, Juillet 1997, 24p

S/V15 Rapport d'activites du 1er trimestre Annee 3, Septembre 1997, 3p

S/V16 ISRA/CARITAS Amenagement Anti-erosif et redressement de la fertilité des sols de Bassin Versant de Biamaguene en zone periurbaine Final report, Jul 1998

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 1^{er} trimestre Annee II, Septembre 1996, 5p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 2^{er} trimestre Annee II, Decembre 1996, 4p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport des activites du 1^{er} trimestre Annee 1997, Avril 1997, 4p

S/V16 Modou Sene, Malainy Diatta, Desire Yande, E Sene et Vincent Chery, D'amenagement de bassins versants a Diamaguene (Nioro), Rapport d'activites du 2^{er} trimestre Annee 1997, Juillet 1997, 2p

S/V16 Modou Sene, V Chery, D Y Sarr, M Diatta, I Diarte et Jean Louis Manga, Amenagement anti erosif et redressement de la fertilité des sols du bassin versant de Diamaguene en zone periurbaine Rapport annuel d'activites, Avril 1997, 11p

S/V17 A Beye, A Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998

S/V17 AJAEDO, OCRV Transfert de varietes ameliorees de riz dans les vallees salees du Pakao et du Kassa Final report

S/V17 O Diedhiou et J Diatta, Rapport d'activites du programme rizicole NRBAR/AJAEDO, Juin/Juillet 1997, 1p

S/V17 NRBAR, Rapport technique trimestriel, Juillet-Septembre 1997, 3p

S18 (final report is with R20)

S18 AFRICARE, Projet de restauration agronomique des sols sales (PRASS), September 30th 1997, 41p

S18 D Pasternak Rapport de mission Programme de restauration agronomique des sols sales (region du Sine Saloum) Jun 1998

S18 Yossi Ben Dov Rapport de mission Programme de restauration agronomique des sols sales (region du Sine Saloum) Mar 1998

S18 Staff du Prass, Rapport trimestriel Juin-Juillet-Aôut, 10 Septembre 1997, 34p

S19 M Diouf Rapport Technique de fin de projet Final report, Aug 1998

S20 (see also PAR 2-3,-4,-5,-6 and S/V12 See S/V12 for final report

S21 (see also PAR2-3 to 2-7, and S/V13) Rodale International Rapport Technique V13-S21 Final report, Aug 1998

S22 and R25 Abdou Ndiaye, Rapport d'activites trimestriel, 1 Octobre 1997, 6p

S22 K Sow Rapport de stage Valorisation du Bas-bonds de Koutango dans le Sud Bassin Arachidier, Contribution a sa caracterisation physique 1997

S22 R Malou, H Dacosta, L Akpo, F Diome, S Sambou Caracterisations Hydrologique et Hydrogeologique du bassin versant de Koutango Final report, May 1998

S23 A Diatta, P Dieye, M Savane, D Babene, H Diao Introduction de la culture fourragere de legumineuses annuelles en milieu paysan en vue de l'amelioration des productions cerealieres et animales en Haute Casamance au Senegal Final Report (rapport de premiere annee) April 1998

V23 A Diatta, P N Dieye, M Savane A Babene, H Diao, V23, Introduction de la culture fourragere de legumineuses annuelles en vue de l'amelioration des productions cerealieres et animales en haute casamance au Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

S/V24 A Tamba, C Fall, C Lo, M Dia, A Sarr Rapport d'execution technique du projet "Effets des bois rameaux fragmentes et du compost de litiere de *Casuarina equisetifolia* (filao) sur l'amelioration de la fertilité des sols et des rendements dans les cuvettes maraicheres des Niayes Final report, July 1998

S/V24 Premier Rapport d'exécution technique et financière, Effets de l'utilisation des bois rameaux fragmentés et du compost de litière de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraîchères des niayes, S24, Juillet 1997, 2p

S/V24 Abdourahmane Tamba et Alioune Sarr, Rapport d'activités trimestriel, Effets de l'utilisation des bois rameaux fragmentés et du compost de litière de filao sur l'amélioration de la fertilité des sols et des rendements agricoles dans les cuvettes maraîchères des niayes, Septembre 1997, 3p

S/V25 D Souane, Compte rendu d'activités 1er trimestre projet S25, Juin, Juillet, Août

S25 A Beye, A Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Sénégal 1998

S/V25 A Beye, O Mane, J Malou, J Coly Rapport de campagne Sélection et amélioration variétale riz de mangrove Feb 1998

S/V25 A Beye, O Mane, J Malou, J Coly Rapport de campagne Sélection et amélioration variétale riz irrigué Feb 1998

S/V25 OCRV Etude exploratoire des ressources du terroir de la zone d'intervention du projet de transfert de variétés améliorées de riz (terroir de sandiniery, Karantaba, Mareng) Réseau MARP March 1998

S/V25 OCRV Formation et Planification suivie et auto-évaluation rapport de synthèse Feb 1998

IB RESEARCH GRANTS TO ISRA RESEARCHERS

(The sequence of presentation of documents follows that of Table Ib 1 of Chapter 7)

Invitation à la Soumission de Propositions de Recherche, Programme de Subventions aux chercheurs de l'ISRA pour la Recherche Collaborative, Sur les Technologies Basées sur la Gestion des Ressources Naturelles, le 24 Jan 1994

Compte rendu de la réunion de lancement du programme de soutien de Chercheurs de l'ISRA 1995, 15 Nov 1994, Massamba Dieng, 6 pages

Compte Rendu de la Réunion de sélection des propositions de recherche collaborative 1995, 27 mars 1995, Massamba Dieng, 4 pages

Mamadou Faye, Rapport trimestriel No 12, Avril-Mai-Juin 1996, 17p

Mamadou Faye, Rapport trimestriel No 13, Période Juillet-Août-Septembre 1996, 7p

Mamadou Faye, Rapport d'activités No 14 Octobre-Novembre-Décembre 1996, 13p

R01 M Ndiaye et D Sarr, R01, Utilisation des residus de transformation du poisson fume pour la fertilisation des terres effet du mode d'application sur la productivite des cultures, Janvier 1996, 9p

R01 M Ndiaye et D Sarr, Rapport technique, Juillet 1995 a Septembre 1995, 3p

R01 M Ndiaye, M Sidibe et D Sarr, R01, Rapport trimestriel, Janvier a Mars 1994, 3p

R01 Mamadou Ndiaye et Desire Y Sarr, Rapport technique, Juillet 1995 a Septembre 1995, 3p

R01 Mamadou Ndiaye et Desire Y Sarr, Utilisation des residus de transformation du poisson fume pour la fertilisation des terres Effet du mode d'application sur la productivite des cultures - Janvier 1996, 11p

R01 Mamadou Ndiaye et Desire Y Sarr, Utilisation des residus de transformation du poisson pour la fertilisation des sols resultats des enquetes et composition chimique des sous produits, 34p

R01 Mamadou Ndiaye, Valorisation agricole des residus de transformation du poisson fume Synthesis, des travaux realises dans le cadre de la subvention de recherche R01 du projet NRBAR, Janvier 1996, 22p

R01 Mamadou Ndiaye Valorisation agricole des residus de transformation du poisson fume synthese des travaux realises dans le cadre de la subvention de recherche Final report, Jan 1996

R01 Utilisation des residus de transformation du poisson fume pour la fertilisation des terres effet sur la productivite des cultures, R01, Mamadou Ndiaye, Desire Sarr, Djibril Diouf, April 1995, 19 pages

R01 Utilisation des residus de transformation du poisson fume pour la fertilisation des terres Effet sur la productivite des cultures, Avril 1995, 17p

R01 Mamadou Ndiaye, Desire Sarr et Mamadou Sidibe, Projet de recherche Etude sur l'utilisation agricole des ecailles de poissons fumes comme amendement organique des sols du Senegal, Mai 1993, 66p

R02 M Gaye et D Sarr, R02, Attitude des paysans des unites experimentales face a l'introduction de technologies et pratiques culturelles, Kaolack, Octobre 1994, 10p

R02 M Gaye et D Sarr, R02, Processus de diffusion des technologies par effet tache d'huile le cas des villages environnants des unites experimentales de Koumbidia et Thyse-Kaymor-Sonkorong, 23p

R02 Matar Gaye, Desire Sarr, Cheikh Diouf, Ousseynou Diouf, Amadou Ndiaye, Siaka Seck Technologies de gestion des ressources naturelles et niveaux d'adoption dans les villages des unites experimentales de Koumbidia et Thyse Kaymor-Sonkorong Final report, Nov 1994

R03 Mankeur Fall Influence des itineraires techniques sur la conservation des sols de plateau en milieu paysan en Basse Casamance Final report, 1994

R03 S Badiane, R03, Utilisation des especes legumineuses pour redresser le statut organique et de fertilité des sols en BMC, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R03 S Badiane, Rapport technique NRBAR, 1994, 6p

R04, NRBAR, Memorandum sur la visite des pasteurs de la zone de linguere au CRZ de Kolda et, de sa zone d'intervention, Mai 1997, 5p

R04 A Faye, P Dieye et A Diallo, R04, Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La haute Casamance, Rapport annuel, Mars 1994, 16p

R04 Monica Fisher and Papa Dieye Socio-Economic Evaluation of NRBAR R04 March 1998

R04 P Dieye, A Diatta, A Faye, A Diallo et D Babene, Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La haute Casamance, Rapport de deuxieme annee, Mars 1996, 21p

R04 P Dieye Etude et amelioration de l'elevage et de la gestion des ressources naturelles en zone sub humide du Senegal, 17/1/95, 6p

R04 Utilisation des sous-produits de transformation du poisson pour la transformation des champs de culture, Status report, Nov 1993, 8 pages, Desire Sarr, Mamadou Ndiaye

R04/R09 Monica Fisher, Papa Dieye, Adama Faye The Socio-Economic Impact of Stabling in the Region of Kolda August 1996

Document 1 An Analysis of the profitability of stabling in the Region of Kolda, 1994

Document 2 An Analysis of the profitability of stabling in the region of Kolda, 1996

Document 3 The Adoption and Adaptation of Stabling by Farmers in the Region of Kolda, 1994/1996

R04/R24 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La Haute Casamance Final report, 1997

R04/R24 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal Feb 1998

R05, Manievel Sene, Pape Mandoumbe Gueye, Birane Toure Ndiaye, Aida Gueye, Analyse de l'influences des systemes de culture su la variabilite des rendements de sorgho et sur son effet allelopathique en parcelles paysannes, Juillet 1997, 32p

R05 Effets des techniques culturales sur la variabilite des rendements du sorgho pluvial et sur son effet allelopathique, Premiers resultats du Project R5/NRBAR, Rapport technique Annuel, Campagne 1994, Manievel Sene, Ndiouga Samb, Birane Ndiaye, March 1995, ISRA/Bambey, 32 pages

R05 Manievel Sene, Ndiouga Samb et Birane T Ndiaye, R05, Rapport technique annuel campagne 1994, Effets des techniques culturales sur la variabilite des rendements du Sorgho, pluvial et sur son effet allelopathique, Mars 1995, 31p

R05 Manievel Sene Etude du fonctionnement du Sorhgo Variete CE 145-66 Analyse de la variabilite des rendements et de son effet allelopathique en parcelles paysannes Final report, Jan 1998

R05 Manievel Sene, R05, Rapport technique trimestriel (Juillet-Octobre), Novembre 1994, 9p

R06 A T DIOP, R06, Amelioration des parcours des zones d'elevages du Senegal par utilisation de phosphates naturels, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R06 A T Diop, A Badiane, D Friot, A Faye et S Fall, Amelioration des parcours des zones d'elevage du Senegal par utilisation des phosphates naturelles, Rapport d'etape de l'annee 1, Avril 1995, 6p

R06 A T Diop, A Badiane, D Friot, A Faye et S Fall, R06, Amelioration des parcours des zones d'elevage du Senegal par utilisation des phosphates naturelles, Rapport final de l'annee 1, Decembre 1995, 7p

R06 Amadou Tamsir Diop, Adminata Badiane, Safietou Fall, Adama Faye Amelioration des parcours des zone d'elevage du Senegal par utilisatio de phosphates naturels Final report, Aug 1998

R07 A DIATTA, P N DIEYE, M SAVANE, D BABENE, P ANOMOSA, R07, Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration des productions cerealieres et animales en zone sub-humide du Senegal La haute Casamance, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R07 A Diatta, A Faye, P Anamosa, O Diop, A Diallo et D Babene, Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration, des productions cerealieres et animales en zone sub-humide du Senegal La haute Casamance, Rapport de premier annee, R07, Mars 1996, 21p

R07 A Diatta, A Faye, P Dieye, P Anamosa, O Diop, A Diallo et D Babene, Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration, des productions cerealieres et animales en zone sub-humide du Senegal La haute Casamance, Rapport de deuxieme annee, Avril 1997, 33p

R07 Ambroise Diatta, Pape Dieye, Adama Faye, Paul Anamosa, Adboul Aziz Diallo, and Daniel Babene Valorisation du potentiel des legumineuses fourrageres en vue de l'amelioration des productions cerealieres et animales en zone subhumide du Senegal La Haute Casamance Final report, June 1998

R08 S Badiane, Influence de quelques especes ligneuses sur le redressement du statut organique, et de la fertilite des vieux champs sur sol ferrallitique en Casamance, Rapport technique annuel 1995, 23p

R08 S Badiane et B Dieng, R08, Influence de quelques especes ligneuses sur le redressement du statut organique, et de la fertilite des vieux champs sur sol ferrallitique en Casamance, Premier rapport trimestriel d'activites, Juin-Septembre 1995, 22p

R08 Souleye Badiane Amelioration de la fertilite et su statut organique des sols de plateau par des especes ligneuses Final report, 1998

R09 A Fall, Rapport de recherche Evaluation socio economique des etables fumieres dans la region de Kolda Approche methodologique, Août 1996, 22p

R09 Aifa Ndoye Evaluation des impacts socio-economiques du projet collaboratif ISRA-NRBAR-RODALE International sur les menages ruraux Sept 1997

R09 Aifa Ndoye Evaluatio ndes impacts socio-economiques du projet collaboratif ISRA-NRBAR-ARAF sur les menages ruraux et leurs groupements Sept 1997

R09 Aifa Ndoye Synthese des travaux d'evaluation des impacts socio-economiques des projet collaboratiufs ISRA-NRBAR-ONG-OP sur les menages ruraux et leur groupements Final report, Aug 1998

R09 Amadou Abdoulaye Fall Evaluation socioeconomique des etables fumieres dans la region de Kolda Approach methodologique Aug 1996

R09 Amadou Abdoulaye Fall, Mamadou Sidibe, Monica Fisher L'impact social de la recherche sur le riz dans la Valee du Fleuve Senegal June 1996

R10 F Dia, Rapport trimestriel, Effet de la stabulation sur les performances techniques et economiques de l'embouche bovine et sur la gestion de la fertilite dans les systems de culture, Decembre 1996, 5p

..

R10 Fatimata Dia, Aminata Badiane Etude des performances techniques et economiques de l'embouche bovine et de l'effet de la stabulation sur la gestion de la fertilite des sols Final report, July 1998

R10 F Dia, R10, Rapport semestriel, Effet de la stabulation sur les performances techniques et economiques de l'embouche bovine et sur la gestion de la fertilite dans les systems de culture, Août 1996, 6p

R10 F Dia-Toure, Rapport trimestriel Etat d'avancement des activites NRBAR R10, Juillet-Septembre 1997, 2p,

R11 Emile Coly Rapport technique L'etude de l'efficacite du neem dans la protection naturelle et la conservation des sols contre l'infestation des nematodes phytoparasites ravageurs des cultures maraicheres Final report, April 1998

R11 E Coly, Rapport technique Annuel, Mars 1997, 6p

R12 O Diop et N Toure, Rapport annuel, Novembre 1996, 34p

R12 O Diop et N Toure-Mane, R12, Inventaire des technologies basees sur la gestion des ressources naturelles et utilisees dans la production agricole en basse Casamance, Rapport finale, Septembre 1997, 61p

R12 Oumar Diop, N'Deye Toure Mane Inventaire des Technologies Basees sur la Gestion des Ressources Naturelles et Utilisees dans la Production Agricole en Basse Casamance Annual report, Nov 1996

R13 M Balde, M Ndiaye et M Faye, Projet NRBAR R13, Identification de technologies de la culture du mil/niebe en zone humide, Mars 1996, 27p

R13 M Balde, Rapport d'etape du projet NRBAR 13, Identification de technologies de la culture du Niebe en zone humide, 26/01/1996, 7p

R13 Mamadou Balde, Mbaye Ndiaye, Mbene Faye Identifiatiion de technologies de la culture du mil/niebe en zone humide Final report, Mar 1996

R13 Fofana, A Fiches des Principales Varietes de Mil Juin 1997

R14 Ibrahima Diatta Influence de la matiere organique sur la croissance du zizyphus mauritiana et le rendement des cultures dans le centre du bassin arachidier (Bambey) Final report, Jan 1996

R15 Cheikh Ba, Lucien Ndecky Etude comparee des determinants de l'adoption des technologies de gestion de la fertilite des rizieres en Basse Casamance et dans les perimetres irrigues du Bassin de l'Anambe Final report, March 1998

- R15 Lucien Ndecky, R15, Rapport technique Annuel 1995 Mai 1996, 23p
- R15 Lucien Ndecky, Rapport technique trimestriel, Fevrier 1996, 9p
- R16 O Diop et N Toure, Inventaire des technologies basees sur la gestion des ressources naturelles et utilisees dans la production agricole en basse Casamance, Rapport technique d'avancement, Mars 1996, 29p
- R16 Oumar Diop, N'deye Mane Inventaire des Technologies Basees sur la Gestion des Ressources Naturelles et Utilisees dans la Production Agricole en Moyen Casamance Final report, May 1998
- R17 Mamadou Khouma Adaptation de techniques accelerees de compostage Final report, Nov 1997
- R17 NRBAR, Compte rendu de l'atelier de formation des formateurs sur la technologie semenciere riz en Casamance, Velingara, 23-27 Septembre 1997, 75p
- R18 Amadou Beye, Aminata Mbaye Manuel de formation sur les normes et les techniques de production de semences de riz Cas de la zone sud du Senegal 1998
- R18 Compte Rendu de l'atelier de formation des formateurs sur las technologie semenciere riz en Casamance Sept 1997
- R19 Ibrahima Diatte Gestion et conservation des ressources phytogenetiques et de la biodiversite Final report, July 1998
- R20 M Diatta, M Sene, M Diack, A Thiam et A Mbaye, Rapport d'activite, Juillet a Octobre 1997, 7p
- R20 Malainy Diatta, Modou Sene, Mateugue Diack, Amsastou Thiam, Abdou Mbaye Programme de Restauration Agronomique des Sols Sales, Region de Sine Saloum Final report, Aug 1998
- R21 M Sene, Influence des conditions hydriques et du travail du sol sur les effets, ameliorants des amendements organiques et/ou minerales, Rapport d'activite trimestriel 1er trimestre, Juillet-Aout-Septembre 1997, 2p
- R21 P Sarr, Moussa Diop P Dieye, Aida Gueye Influence des conditions hydriques et du travail du sol sur les effets ameliorants des amendements (organiques et inorganiques) Final report, July 1998
- R22 M A BA, P N DIEYR Mise au point de techniques et de methodes pour l'amelioration des productions agricoles "amelioration du taurin Ndama pai le schema genetique a noyau ouvert, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R22 Mamadou Ba, Papa Dieye, Malang Bayo, Saliou Niang, Abdoul Diallo, Ansoumana Dioukou, Aladjɪ Diack Amelioration du taurin Ndama par le schema d'amelioration genetique a noyau ouvert (sagno) Final report, 1998

R23 A DIATTA, Determination de la periode de semɪ et de la densite de peuplement des legumineuses fourrageres annuelles en association avec le mais, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R23 Ambroise Diatta, Pape Dieye, Daniel Babene Determination de la periode de semis et de la densite de peuplement des legumineuses fourrageres annuelles en association avec le mais Final report, June 1998

R24 P N DIEYE, A DIATTA, A FAYE, A A DIALLO D BABENE, R24, Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

R24/R04 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Valorisation du potentiel pastoral pour le developpement de systemes cerealiers performants et viables en zone sub-humide du Senegal La Haute Casamance Final report, 1997

R24/R04 Pape Dieye, Ambroise Diatta, Adama Faye, Adboul Aziz Diallo, Daniel Babene Impact de la technique de stabulation sur l'augmentation des performances de production animale, cerealiere et l'amelioration des revenus des agropasteurs en zone sub-humide du Senegal Feb 1998

R25 Adbou Ndiaye Genetique et amelioration varietal du mais Final report, April 1998

R26 M Dasilva, O Toure et M Gueye, Programme NRBAR subvention R26, Septembre 1997, 5p

R26 Marie DaSilva, Omar Toure, Mamadou Gueye Contribution des microorganismes (rhizobiums et champignons cellulotiques) a l'amelioration de la fertilite des sols Final report, May 1998

R27 S Fall, Bordereau d'envoi, 6/10/97, 15p

R27 Safietou Fall, B Michalet-Doreau, E Traore, D Friot, D Richard Occurrence of digestive interactions in tree forage based diets for sheep

R27 Safietou Fall, E Traore, D N'Diaye, N N'Diaye, B Seye Utilisation des fruits de *Faidherbia albida* pour l'alimentation des bovins d'embouche paysanne dans le bassin arachidier au Senegal

R27 Safietou Fall, M Cisse, D Ditaroh, D Richard, N'Diaye Ndiaye, B Diaw In vivo nutrients digestibility in sheep and rumen cellulolytic capacity of cattle fed crop by-products based diets in the Sahel

R27 Safietou Fall, N S Ndiaye, and B Diaw Predicting protein value of tropical crop by-products

R27 Safietou Fall Methodes d'exploitation des fourrages ligneux influence sur la qualite du fourrage Final report, Jan 1998

II SUPPORT FOR ISRA'S NATURAL RESOURCES PROGRAM

(The sequence of presentation of documents follows that of Table II 1 of Chapter 7)

Program pour le seminaire de demarrage du projet de gestion des ressources naturelles, 21-23 Jan 1993 Saly Portudal, 5 pages

PAR 1 1 Mamadou Khouma, PAR1 1, Rapport d'activites, 30 Septembre 1997, 23p

PAR 1 2 Vaque Ndiaye, Saliou Djiba, Lucien Ndecky, Sana Manga Etude et mise au point de techniques de lutte appropriee contre les degats causes par les poissons sur le riz au niveau des vallees amenees Final report, March 1998

PAR 1 3 Demba Sidibe Amelioration des systemes de production fruitiere en Basse et Moyenne Casamance Final report, 1998

PAR 1 3 Demba Sidibe Approfondissement Diagnostic Participatif Rapport d'activites, 1998

PAR 1 3 Demba Sidibe Caracterisation des systemes de production fruitiere en Basse et Moyenne Casamance Rapport d'activites, 1998

PAR 1 3 Demba Sidibe Installation de collections de fruitieres et tests de varietes d'agrumes, de manguiers et de bananiers en milieu paysan Rapport d'activites, 1998

PAR 1 4 Saliou Djiba, Activite caracterisation de l'entomotaune de manguiers et agrumes en BMC, Rapport trimestriel No 2, 6p

PAR 1 4 Saliou Djiba Caracterisation de l'entomofaune parasite des manguiers et agrumes en Casamance Final report, 1998

PAR 1 5 Amelioration des itineraires techniques de la culture de la patate douce Final report, 1998

PAR 1 6 Demba Sidibe Diagnostic participatif Zone de Basse et Moyenne Casamance Final report, 1998

- PAR 1 7 Mamadou Khouma Mise en place d'un systeme d'information geographique, Basse et Moyen Casamance (SIG) Final report, 1998
- PAR 1 8 Amadou Beye, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Rapport de campagne selection et amelioration varietale Riz Irrigue Final report, Feb 1998
- PAR 1 8 Amadou Beye, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Rapport de campagne selection et amelioration varietale Riz de Mangrove Final report, Feb 1998
- PAR 1 8 Amadou Beye, Souleymane Diallo, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Dossier de Soumission a l'homologation de 10 varietes de riz pour la Basse, Moyenne, et Haute Casamance
- PAR 1 8 Compte Rendu de l'atelier de formation des formateurs sur la technologie semenciere riz en Casamance September 1997
- PAR 1 8 Amadou Beye, Souleymane Diallo, Ousmane Mane, Jean Pierre Malou, Jean Pierre Coly Mise en place d'une collection d'ecotypes locaux de riz Transfert de materiel adapte en milieu paysan Feb 1998
- PAR 2 2 Mame Diouf L'elevage du cheval au Senegal Aug 1998
- PAR 2 2 Mame Diouf Valorisation des residus de recolte de miebe dans l'alimentation des animaux etude preliminaire Final report, Aug 1998
- PAR 2 3/S12/S20 Alioune Diouf, Ibrahima Gano, Serigne Dieng Rapport de synthese des resultats des sous-projets Final report, Aug 1998
- PAR 2 4 Test et diffusion de technologie en milieu payson le compostage enrichi en phosphate naturel
- PAR 2 5 Babou Ndour et Alioune Sarr, Projet gestion des ressources naturelles volet agroforesterie, Troisieme rapport trimestriel
- PAR 2 5 Babou Ndour Rapport de synthese des activites agroforestrieres menees dans le cadre de la subention NRBAR/GRN Test de confirmation et diffusion de technologies en milieu paysan, cas des haies vives defensives Final report, July 1998
- PAR 2 6 Mankeur Fall, Moussa Ndoeye, Mamadou Boudiaby, Mame Khemesse Thiaw, Ngor Diagne Etude des effets de melanges de phosphate de Taiba et de Phosphogypse sur les cultures et les sols Final report, Aug 1998
- PAR 2 7 Protection des graines de miebe stockees en fut ou en sac Evaluation de l'effet insecticide des feuilles de *Boscia senegalensis* Final report, 1998

PAR 3 2 Desire Sarr Amenagement de bas-fonds caracterisation socio-economique d'un site de recherche dans l'arrondissement de Wack-Ngouna Final report, Mars 1998

PAR 3 2/S22 ISRA/UCAD Bassin Versant de Koutango Caracterisations socio-economique et biophysique Final Report, 1998

PAR 3 3 Astou Sene Analyse Socio-Economique de la technologie des haies vives dans le Sud Bassin Arachidier Final report, 1998

PAR 3 4 Desire Sarr, Francois Diouh Analyse institutionnelle et recherche de strategie de gestion communautaire des ressources naturelles Rapport Annuel/Final Report, Avril 1998

PAR 3 5 F D TOURE, Etude des facteurs limitants de la traction animale dans la mise en œuvre des techniques de travail du sol et test d'innovation performantes, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 3 5 Fatimata Dia, Mamadou Thiam, Amadou Ndiaye Evolution des differentes types de traction animale introduites dans le sud du Bassin ArachidierL Quelles perspectives de succes des houvelles techniques de travail du sol? Final report, July 1998

PAR 3 5 Fatimata Dia, Modou Sene, Abdou Fall Etude des facteurs limitants de la traction animale dans la mise en oeuvre des techniques de travail du sol et test d'innovations performantes Final report, March 1998

PAR 3 5/PAR 3 7, Par 3 5, Fatimata Dia Toure, Rapport trimestriel (Juillet-Septembre 1997), 2p

PAR 3 6 M SENE, Analyse du fonctionnement des exploitation agricoles dans la region de Kaolack, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 3 6 Manievel Sene, Ousseynou Diouf, Djiby Diouf, Francois Diouh, Birane Ndiaye Analyse du fonctionnement de quelques exploitations agricoles dans la region de Kaolack Annual report/Final report Feb 1998

PAR 3 7 Modou Sene, Rapport trimestriel Juillet-Septembre 1997, 2p

PAR 3 7 Modou Sene Mise en place d'un SIG dans le Sud Bassin Arachidier Final report, July 1998

PAR 4 1 NRBAR, Rapport du deuxieme trimestre sur les activites du projet ISRA/NRBAR/USAID dans la zone SOHC, Tambacounda, Septembre 1997, 12p

PAR 4 1 NRBAR, Rapport trimestriel sur les activites du projet NRBAR dans la zone SOHC,

PAR 4 2 Djibril Badiane Synthese des travaux sur les ravageurs des cultures cerealieres et de rente Final report, March 1998

PAR 4 3 Alphousseyni Bodian Final Report, May 1998 Part 1 Rapport Analytique Etude de l'effet des feux sur l'évolution de la vegetation des ecosystemes jacheres, savanes et forets en zone sub-humide du Senegal Part 2 Rapport Analytique Test de comportement d'especes dans la technologies de la jachere ameloiree

PAR 4 5 Mamadou Alassane Ba Exploitation et valorisation des donnees du CRZ sur la reproduction du taurin Ndama Final report, Sept 1998

PAR 4 10 M A BA, M T SECK, PAR 4 10, Etude et amelioration des systemes de production et de la gestion des ressources naturelles Suivis zootechniques et sanitaires des elevages bovins villageois, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 4 10 Mamadou Ba, Momar Seck, Malang Bayo, Abdoul Diallo, Asnoumana Dioukou Suivis Zootechnique et sanitaire des elevages bovins villageois Final report, May 1998

PAR 4 11 Amadou Fofana Prospection et evaluation de varietes locales de cereales (mil, sorgho, mais et fonio) Final report, July 1998

PAR 4 12 A BODIAN, PAR4 12, Test des techniques de lutte contre l'érosion hydrique par l'utilisation des haies vives, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 4 12 Alphousseyni Bodian, Ousmane Niassy Test des techniques de lutte contre l'érosion hydrique par l'utilisation des haies vives Final report, May 1998

PAR 4 12 Monica Fisher and Alphonseyni Bodian Socio-economic evaluation of NRBAR PAR 4 12 March 1998

PAR 4 13 M T SECK, A DIOKOU, PAR 4 13, Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du taurin Ndama en monoboef et en paire, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

PAR 4 13 Momar Seck, Ansoumana Diokou Effet d'une protection sanitaire contre l'infection trypanosomienne sur les performances au travail du taurin Ndama utilise en monoboef et en paire Final report, Feb 1998

III LINKAGES TO INTERNATIONAL RESEARCH INSTITUTIONS

(The sequence of presentation of documents follows that of Section III of Chapter 7)

LIR-01/STTF Papa Dieye Rapport de mission a l'universite de Tuskegee/Alabama/US June 1998

LIR-01/STTF Aladjí Diack Rapport de mission a l'universite de Tuskegee/Alabama/US June 1998

LIR-01/STTA Ralph Noble Amelioration des sources de revenus diversifies des femmes et jeunes du monde rural par le developpement et le transfert de la technologie des etables fumieres en Casamance, Senegal Final Report, short term technical assistance under LIR-01, June 1998

LIR-01/STTA Ralph Noble et Jianbang Gan, Rapport de mission Mai 1997-LIR 01, TU/ISRA Linkage project on improving income for women, young, and cattleless, farmers , 8p

LIR-01 Tuskegee University Improving diversified income for women and young cattleless farmers through development and transfer of manure stabling technology in Casamance region of Senegal Final report, July 1998

LIR-01 A FALL, A FAYE, P N DIEYE, A DIACK, LIR-01, Amelioration des sources de revenus diversifies des femmes et des jeunes du monde rural par le developpement et le transfert de la technologie des etables fumieres en Casamance au Senegal, Presented at the workshop "AGRICULTURE-GRN-ELEVAGE", 17-20 February, 1998, Kolda

LIR-02/STTA Rapport de mission de Richard Dick Appui au programme de la gestion des ressources naturelles July 1998

LIR-02 M Diack, A Badiane, M Sene, M Diatta, R Dick *Cordyla Pinnata* en association avec *Piliostigma Reticulatum* impact sur la regeneration des sols degrades au Senegal Final Report, July 1998

LIR-02 M Diack *Piliostigma Reticulatum* dans un parc a *Cordyla Pinnata* effet sur la regeneration des sols degrades au Senegal Memoire de titularisation, April 1998

LIR-02/STF Saliou Faye Rapport de stage Formation theorique et pratique aux techniques de mesure de la biomasse microbienne et de la caracterisation de la matiere organique du sol Feb/Mar 1998

LIR-02/STF Pape Sarr Rapport de stage Utilisation du TDR pour le suivi hydrique du sol March, 1998

LIR-02 Modou Sene/Mateugue Diack Titre de l'activite scientifique Etude d'un systeme a pare mixte *Cordyla pinnata/Piliostigma reticulata* effet sur la regeneration des sols degrades au, Senegal Rapport d'activite, Mai a Septembre 1997, 3p

LIR-03/STTA E Rhoden, C Fall, M Gueye Evaluation of Selected under-utilized African Vegetable crops by Farmers (for Value-Added Purposes) in Senegal Project/Trip report, Feb 1998

LIR-03 C Fall Development of the Under-Utilized Vegetable Crops in Senegal Final Report, July 1998

LIR-03/STTA Conrad Bonsi, Rapport de mission Appui au programme des liaisons avec les institutions internationales , Evaluation of selected under-utilized African vegetable crops by farmers in Senegal

IV PERSONNEL

IVa LONG TERM PERSONNEL

David W Holmes Final report, NRBAR Financial Advisor ISRA, May, 1996

Wendy Wilson End of Tour Report, Outreach Advisor ISRA, August 1996

Paul Anamosa End of Tour Report, Natural Resource Planner ISRA, August, 1996

Tom Cusack Final Report of Thomas J Cusack, Chief-of-Party/Research Manager, Senegal Natural Resources-Based Agricultural Research Project 1992-1998 ISRA, 1999

IVb SHORT TERM PERSONNEL

1993 Jean Kearns Rapport de Mission Procedures manual and project management

1993 Dave Acker Rapport de Mission Project Administration and Long term Training Plan

1993 Bill Roberts Rapport de Mission Monitoring and Evaluation

1993 Rochelle Rainey Rapport de Mission Project Administration and Grants Management

1993 John Sanders Octobre 1993, Rapport des missions Appui au programme du ISRA/Bame, 92p

1994 Caldwell, R , Acker, D , Wilcock, D , and Narendra Rustagi Rapport de Mission Early Evaluation of NRBAR

1994 Bill Roberts, Monitoring and evaluation plan for the NRBAR project, June, 1994, 70p

1994 David J Andrews, Rapport de mission Appui au programme de recherche sur les cereales en zones seches, Octobre 1994, University of Nebraska, 16p

1994 Papa Thuongane Rapport de mission External Evaluation of ISRA's research programs

1994 James Verdin and James Rowland Rapport de Mission GIS needs for ISRA

1994 Rochelle Rainey Rapport de mission Project Administration and Grants Management

- 1994 Louis Ndong and Samba Thiam Rapport de mission Strategies for extension
- 1994 Bashir Diop Rapport de mission NGO inventory
- 1994 David Andrews Rapport de mission Cereals NRM program
- 1994 Jamil Simon Rapport de mission Social Marketing/ Public Relations – Improving ISRA's communications with farmers Report submitted Feb 1995 50p
- 1994 Hannibal Muhtar Rapport de Mission Research Station Management
- 1994 John Sanders and Mamadou Sidibe (Octobre/Novembre 1994) Appui au programme du ISRA/Bame
- 1994 M Dicko, S Louis, A Diallo Rapport de Mission Evaluation de Programme Ressources Alimentaires et Nutrition 1-18 April, 1994
- 1994 Ted Brush Rapport de Mission Human Resources Management
- 1994 Rochelle Rainey Rapport de Mission Project Administration and Grants Management
- 1995 Ali Kissi Rapport de mission Appui aux comites regionaux pour l'etablissement des priorites de recherches au Niveau regional, Juillet 1995, 7p
- 1995 Bill Roberts Rapport de mission monitoring and evaluation, Juin 1995, 150p
- 1995 Catherine H Knott and Ramata Molo Aw, Rapport de mission Gender analysis Research design, methodology and planning, Avril 1995, 52p
- 1995 David Andrews Rapport de mission Appui au programme de recherche sur les cereales, Juin 1995, 29p
- 1995 Hannibal Muthar Rapport de mission appui au programme de la gestion de stations de recherche, Octobre/Novembre, 1995, 133p
- 1995 Jamil Simon Ameliorer la communication de L'ISRA avec les producteurs Rapport de mission, 26 Jun 1995, 60p/ 1995 Jamil Simon Improving ISRA's communications with farmers June 1995 Trip report, 26 June, 22p
- 1995 Hannibal Muhtar Rapport de mission Research Station Management
- 1995 Suchet Louis Rapport de Mission Evaluation of Livestock Research Program
- 1995 Richard Caldwell Rapport de Mission Project Administration

- 1995 Goudiaby, A , Ouane, A , and Henri Lo Rapport de Mission on-farm technology development
- 1995 David Hibbs Rapport de Mission (unfunded) Agroforestry Technologies
- 1995 Louis Ndong Rapport de Mission Communication of agricultural technologies
- 1995 John Russell Rapport de Mission On-farm Research
- 1995 Maty Ndiaye Sy Rapport de mission de Maty SY Mission de facilitation a l'ISRA Aug-Oct 1995
- 1995 Antonin Diouf Rapport de Mission Watershed Mapping
- 1995 Hannibal Muhtar Rapport de Mission Research Station Management
- 1995 John Ashburner Rapport de mission Evaluation du systeme de contrôle des immobilisations de l'ISRA et proposition d'un systeme permettant une gestion amelioree des unites de recherche, Decembre 1995, 50p
- 1995 Monica Fisher, Final report Research impact Stabling in the Kolda region, January-March 1995, 253p
- 1995 P I Thiongame Rapport de mission L'ISRA et son environnement Forces, Faiblesses, Opportunités, Menaces, Mai 1995, 59p
- 1995 Rochelle Rainey, Program support Rapport de mission Appui aux activites de soutien au projet, Novembre/Decembre, 1995 62p
- 1996 Amadou Gueye Rapport de mission Audit de la gestion des ressources humaines Rapport d'etape sur les propositions de procedures administratives de gestion du personnel, Decembre 1995/Janvier 1996, 53p
- 1996 Louis Ndong Rapport de Mission Communication of research results
- 1996 Vincent Bralts Rapport de Mission Ph D advisor, Boubacar Barry
- 1996 Robert Wilkinson Rapport de Mission Ph D advisor, Alioune Fall
- 1996 Amadou Gueye Rapport de mission Audit de la gestion des ressources humaines Rapport d'etape sur les propositions de procedures administratives de gestion du personnel, Janvier/Fevrier 1996, 32p
- 1996 Amadou Gueye Rapport de mission Audit de la gestion des ressources humaines Rapport d'etape sur les propositions de procedures administratives de gestion du personnel, Mars/Avril 1996, 84p

1996 Antonin Diouf Rapport de mission Appui a l'evaluation du patrimoine bâti et foncier de l'ISRA dans les regions de Dakar, Ziguinchor, Kolda, et Tambacounda, Septembre/Octobre 1996, 6p

1996 Antonin Diouf Rapport de mission Appui au programme de subventions a la recherche collaborative Projet S/V16, Mai/Août 1996, 15p

1996 Bill Roberts Rapport de mission Appui a l'elaboration du plan de suivi/evaluation en GRN dans les unites de la recherche regionale, Août 1996, 72p

1996 E Goze and P Letourmy Rapport de mission Formation en biometrie et appui a l'elaboration de protocoles de recherche de l'ISRA, 1er au 12 mai, 1996, 20p

1996 Hannibal Muhtar, Rapport de mission Appui au programme de gestion des stations de recherche, Juillet 1996, 86p

1996 Hannibal Muhtar Rapport de mission Appui au programme de la gestion de stations de recherche, Janvier/Fevrier 1996, 83p

1996 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche, Decembre 1996, 66p

1996 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche The determination of ISRA's indirect cost rate, Août/Novembre 1996, 37p

1996 John Ashburner Rapport de mission Contrôle et gestion des immobilisations de l'ISRA (Deuxieme mission), Fevrier 1996, 103p

1996 John Russell, Rapport de mission Consultations et atelier Conception et Analyse des essais en milieu paysan, Rapport Final, Mai/Jun 1996, 155p

1996 John Russell Rapport de mission Appui au programme de gestion de la recherche, Novembre 1996, 31p

1996 John Sanders Rapport de mission Appui au programme ura-socio-economie/politique agricole Les etudes d'impact et le plan strategique, Novembre/Decembre 1996, 22p

1996 Louis Suchet Rapport de mission Appui au programme des liaisons avec les institutions internationales de recherche, Septembre 1996, 26p

1996 Mamadou Sidibe Rapport de mission Appui au programme URA-socio-economie/politique agricole les etudes d'impact et le plan strategique, Mai/Jun 1996, 128p

1996 Monica Fisher Rapport de mission The socio-economic impact of stabling technology in the Kolda region, Jun/Août 1996, 114p

1996 Nicolas Dupuy Rapport de mission Appui a la synthese du plan strategique de l'ISRA, Rapport d'etape sur la synthese du projet d'entreprise, Juin 1996, 97p

1996 Nicolas Dupuy Rapport de mission Appui a la synthese du projet d'entreprise de l'ISRA Document de reference, Mai/Septembre 1996, 170p

1996 Nicolas Dupuy Rapport de mission Gestion et transformations de la matiere organique au Senegal Referentiel bibliographique des travaux de recherche et de developpement agricole de 1948 a nos jours, Decembre 1995/Avril 1996 Dakar, 232p

1996 P I Thiongane Des modalites de creation d'un systeme national de recherches agricoles et agro-alimentaires, from TDY Nov 1995, 88p

1996 Richard Dick Rapport de mission Appui a la valorisation des technologies du sol, Septembre 1996, 17p

1996 Rochelle Rainey, Rapport de mission Appui aux activites de soutien au Projet, Octobre 1996, 82p

1996 Gueye, Amadou Rapport de mission Audit de la gestion des ressources humaines Rapport d'etape sur la mise a jour et la regularisation de dossiers des agents, Janvier/Fevrier 1996, 30p

1997 Hannibal Muhtar Rapport de mission Appui au programme de gestion des stations de recherche, Fevrier 1997, 108p

1997 Jean Pascal Pichot Rapport de mission Appui au programme de conventions, Mai 1997, 33p

1997 John Ashburner Rapport de mission Aide memoire de la comptabilite matieres, procedure d'inventaire physique - controle et gestion des immobilisations de l'ISRA, Janvier 1997, 71p

1997 Suchet Louis Rapport de Mission LIR01 and LIR03

1998 Jianbang Gang and Ralph Noble Rapport de mission LIR/01

1997 Gretchen Le Van Rapport de Mission Intern in Project Administration

1997 Hannibal Muhtar Rapport de Mission Research Station Management

1997 Nicolas Dupuy Appui a la Direction Generale de l'ISRA dans l'elaboration et/ou la consolidation du Rapport Annuel 1996, du plan strategique et du projet d'entreprise Rapport d'etape, Septembre 1997, 93p

- 1997 Conrad Bonsi Rapport de Mission LIR03
- 1997 Richard Dick Rapport de Mission NRBAR research grants review and LIR02
- 1997 Antonin Diouf Rapport de Mission Evaluation of research facilities
- 1997 Louis Ndong Rapport de Mission Validation and communication of research results
- 1997 Dov Pasternak Rapport de Mission Halophyte diguettes
- 1997 Errol Rhoden Rapport de Mission LIR-03
- 1997 Nick Hobgood and Steve Mason Rapport de Mission Internship with CRODT
- 1997 Candace Buzzard Rapport de Mission OSU linkages (unfunded)
- 1997 Nicolas Dupuy Appui a la direction Generale de l'ISRA dans l'elaboration et/ou la consolidation des rapports annuels 1996 et 1995, du Bilan du plan quinquennal de l'ISRA (1990/94) du plan strategique et du projet d'entreprise, Rapport d'etape, 113p
- 1998 Cheikh Sarr Sustainable funding initiative Dec 97/Jan 98
- 1998 Suchet Louis Rapport de Mission LIR01 and LIR03
- 1998 Gilles Archimbault Rapport de Mission Equipment Installation and Training (LIR02)
- 1998 Aminata Ba Mbaye Appui a l'elaboration d'un guide pratique pour la production semenciere riz en Casamance Rapport de mission de Aminata Ba Mbaye Mar 1998
- 1998 Bill Roberts Appui a l'evaluation de progres institutionnel en survi/evaluation au Direction Scientifique a l'ISRA Rapport de mission de Bill Roberts July 1998
- 1998 Lamine Bocoum Rapport de Mission Research Support June 1997 to May 1998
- 1997 Charles Yamoah Appui a la revue technique des resultats de recherche sols/plantes, et a l'elaboration des articles scientifiques Rapport de mission de Charles Yamoah July 1998
(Also, five draft articles in grants and subs bibliography
Badiane, Faye, Yamoah, Dick
Diagne, Fall, Yamoah, Dick
Diangar, Ba, Yamoah, Dick
Diangar, Fofana, Diagne, Yamoah, Dick
Ndiaye, Yamoah, Dick)
- 1998 Cheikh Sarr Financing a national system of agricultural research 1998
- 1998 Hannibal Muhtar Appui a la gestion des stations Rapport de mission de Hannibal

Muhtar April 1998

1998 John Sanders Appui a l'évaluation de l'impact de la recherche agricole et de la vulgarisation Rapport de mission de John Sanders April 1998

1998 LIR-02/ A Badiane, M Diack, M Diatta, M Sene, R Dick Reserach and development proposal Restoration of degraded soils in the peanut basin of Senegal with native shrubs and trees Draft, July 1998

1998 LIR-02/ Richard Dick Appui au programme de la gestion des ressources naturelles Rapport de mission de Richard Dick July 1998

1998 LIR-03/ Ralph Noble Amelioration des sources de revenus diversifies des femmes et jeunes du monde rural par le developpement et le transfert de la technologie des etables fumieres en Casamance, Senegal Rapport de mission de Ralph Noble June 1998

1998 Mamadou Sidibe Appui a l'évaluation de l'impact de la recherche agricole et de la vulgarisation Rapport de mission de Mamadou Sidibe July 1998

1998 Mamadou Sidibe Appui a l'évaluation de l'impact de la recherche agricole et de la vulgarisation Rapport de mission de Mamadou Sidibe April-June 1998

1998 Marie Kane Seck Effets des technologies introduites par le projet NRBAR sur la situation des femmes du Bassin Arachidier Rapport de mission de Marie Kane Seck April 1998

1998 Mike Satin Sythese des resultats de la recherche sur l'agroforesterie Rapport de mission de Michael Satin June 1998

1998 Mike Satin Sythese des resultats de la recherche sur l'agroforesterie Rapport de mission de Michael Satin May-Aug 1997 April 1998

1998 Monica Fisher Analyses socio-economiques des resultats de la recherche sur les etables fumieres, et les techniques de lutte contre l'érosion hydrique par l'utilisation des haies vivres (region de Kolda) - subventions NRBAR R04 et PAR4-12 Rapport de mission de Monica Fisher Feb 1998

1998 Mouhamadou Lamine Bocoum Appui a la cellule recherche developpement de la Direction Scientife de l'ISRA Rapport de la deuxieme mission de Mouhamadou Lamine Bocoum Aug 1998

1998 Nicolas Dupuy Appui a l'ISRA dans l'elaboration de documents scientifiques et aux activites de cloture du projet NRBAR Rapport de mission de Nicolas Dupuy Sept 1998

1998 Richard Dick Consultant report - ISRA/OSU Project, January 5-23, 1998 Jan 1998

635

1998 Rochelle Rainey Letter Summary Reports for mission Feb/Mar 1998, April 1998, May/Sept

1998 S18/R20 Dov Pasternak Programme de restuaration agronomique des sols sales (region de Sine Saloum) Rapport de mission de Dov Pasternak June 1998

1998 Suchet Louis Synthese des resultats de la recherche sur les productions animales Rapport de mission de Suchet Louis June 1998

1998 Ted Brush Appui a l'evaluation de personnel Rapport de mission de l'ISNAR, M Edwin Brush Feb 1998

1998 Yossi Ben-Dov Program de restauration agronomique des sols sales (region de Sine Saloum) S18/R20 Rapport de mission de Yossi Ben-Dov Mar 1998

V TRAINING

Va LONG-TERM HIGHER DEGREE TRAINING OUTSIDE SENEGAL

ISRA "Life of Project Training Plan for ISRA LT-PTs under the NRBAR project", May 26, 1993, 8p + 16 annexes

Berkeley, California, Summary report Senegal Natural resources based Agricultural research project Professional enrichment program for Thomas Jefferson associates, Systems approaches for management of natural resources, December 17-26, 1994, 82p

Senegal natural resources based agricultural research project Participant training seminar, December 17-22, 1995, Tucson, Arizona, Tools for research management, 78p

NRBAR, Summary report Mid winter seminar December 16-20, Honolulu, Hawaii, 219p

Ba, T 1996 Water Use of a drought resistant grain sorghum cultivar under furrow irrigation MS Research paper

Tanou Ba with S/V05 S Diangar, T Ba, C Yamoah An Appraisal of Irrigated Temperate and Tropical Millet Varieties in the Semiarid Region of Senegal 1998

Boubacar Barry, PHD Thesis Impacts of Watershed management practices on water resources and anti-salt dam design in Casamance (Senegal), 10-7-97, 179p

Alioune Dieng, 1998 Master's Thesis L'offre et la demande cerealieres au Senegal, 1960-1995 Implications pour l'Autosuffisance Alimentaire/Cereal Supply and Demand in Senegal 1960-1995 Implications for Food Self-Sufficiency

B Diaw Note de synthese de projet "Quelques caracteristiques de l'upwelling senegalais et recherches sur les ondes piegees" 1998 Some upwelling characteristics and search for coastal trapped waves off Senegal, 1998

Mamadou Diop, PHD Thesis Design and Analysis of Open Nucleus Breeding Plans for Cattle in Senegal,

Alioune Fall, Ph D Thesis, Nov 1997, Outil d'aide a la decision pour l'evaluation de la traction animale en milieu paysan en Basse Casamance

Alioune Fall, PHD Thesis Methodology for Evaluating the Impact of Animal Traction at the farm level in a small Scale Multi-cropping System (Basse Casamance Region) November 1997

Rapport de mission de Robert Wilkinson sur la traction animale et la these de Doctorat d'Alioune Fall, Novembre 1996, 10p (also in TDY)

Gueye, M 1998 Master's Thesis Agronomic Effects of organic residue as soil Phosphorus amendment on cotton yield improvement in Senegal

Mamadou Lo, 1997 MS Thesis Comparison of on-farm research and extension methods in small scale farm systems in lower Casamance, Senegal, 1997, 117p

S Sall, D Norman, A Featherstone Adaptability of Improved Rice Varieties in Senegal 1997 Ph D research paper

S Sall, D Norman, A Featherstone Quantitative Assessment and the Adoption of Improved Rice Varieties in Casamance, Senegal The farmer's perspective 1997 Ph D research paper

Samba Sall, PhD Thesis A dissertation submitted in partial fulfillment of the requirements for the degree Doctor of Philosophy Department of Agricultural economics, college of agriculture, Kansas State University 1997, 202p

Sissokho, M 1998 MS Thesis Cattle Herd Dynamics and Performance Under Village Husbandry in the Kolda Region of Southern Senegal

I Thomas Research Proposal Evaluation of alternative sampling designs for estimating tree volume 1997

Tom Trail Long-term participant training management materials 1994

Vb SHORT-TERM TRAINING AND CONFERENCES OUTSIDE SENEGAL

Fatou Ba, Alassane Ndiaye, Babacar Ngom Gambie, Trip report suivi-evaluation, 1994

Mustapha Diop et al Trip report U of Arkansas, gestion des stations, 1994

Ndiaga Dieng, Trip report ISNAR, gestion/ressources humaines/INFORM, 1994

Adama Faye et al (8 researchers) Trip report Farming Systems Research and Development Conference and Workshop, Montpellier, France, 1994

B Ndour and A Tamba Trip report Germany – wind erosion 1994

A Badiane, F Jacquin, S Alfaia The fate of nitrogen fertilizers in some soils types 1994

Manievel Sene Rapport de mission seminaire sur l'analyse des donnees July 1994

Fatou Gueye Trip report Montpellier, France, research methodology 1995

Astou Sene Trip report Montpellier, France, data analysis, 1995

M H Ly et A Faye, Rapport de mission effectuee aux U S A , du 24/06 au 09/07/95, 18p

Dr Safietou Fall, Rapport de mission, Congres international des terres et parcours, 23-28 juillet 1995 a Salt Lake City, Utah, USA, Visite scientifique a Oregon State University, 29 juillet-7 août 1995 a Corvallis, Oregon, USA, 38p

Dr Moussa Bakhayokho, Amelioration des communications des organisations, cours international pour, cadres en management et specialistes en communication, 10 juin au 04 juillet 1995 (Universite Illinois, Interpaks), 21p

Dr Yaya Thiongane Rapport de mission 5th international congress on the impact of the viral diseases in the developing world, 09 au 18 juillet 1995 en Afrique du Sud, 4p,

Carla Roncoli, Bits of Wisdom and more to learn, Summary and synthesis of a workshop on participatory collaborative research methodologies, June 27-30, 1995, Tuskegee University, 106p

Dr Aly Ndiaye, Croissance racinaire initiale de trois acacias sahelien, 6 et 7 Avril 1995, Orleans, France, 5p

A Abdoulaye Fall, Rapport de mission aux USA du 4/4 au 31/7/95, 5p

Dr Pape Sall, Compte rendu de la reunion des chercheurs de l'ISRA et de leurs encadreurs a, Oregon State University, Corvallis, le 10 Avril, 1995, 6p

Pape N Sall, Rapport de mission, XXeme congres de l'organisation internationale des instituts de recherche, forestiere (IUFRO), Tempere (Finlande) 6-12 août 1995, 4p

Pierre Diene, Rapport seminaire sur le management financier, 15-28 Fevrier 1995, a Casablanca, Maroc, 56p

Kebe/Cusack trip report, Visit to ISNAR, 29 Apr-09 May 1995, The Hague, the Netherlands, 21p

Safietou Fall-Toure, Elhadji Traore, Keba N'diaye, N'deye Salane N'diaye et, Baye Mohammed Seye, Utilisation des fruits de *Faidherbia albida* pour l'alimentation des bovins d'embouche paysanne dans le bassin arachidier au Senegal , 24p

S Fall, M Cisse, D Ditaroh, D Richard, N D S Ndiaye and B Diaw, In Vivo nutrients digestibility in sheep and rumen cellulolytic capacity of cattle fed crop by-products based diets in the Sahel, 24p

S Fall Toure, B Michalet-Doreau, E Traore, D Friot et D Richard, Occurrence of digestive interactions in tree forage based diets for sheep, 23p

S T Fall, N S Ndiaye et B Diaw, Predicting protein value of tropical crop by-products 23p

Dr Safietou Fall, Visite scientifique effectuee aux USA du 23 Septembre au 15 Decembre 1996, compte rendu, 24p

Jean-Pierre Ndiaye, Mme Fatou Ndao Ba et Louis Sene, Rapport de mission a l'ISNAR (La Haye, Pays Bas), 02-14 Decembre 1996, 17p

Jean-Pierre Ndiaye, Rapport de mission aux Etats-Unis, Du 8 au 21 Decembre 1996, 11p

Dr Malainy Diatta, Rapport de mission en Israel Atelier de formation sur la diguette amelioree, Beer Shava du 23/11 au 24/12/1996, 6p

Papa Nouhine Dieye, Rapport de mission Stage en informatique et statistique pour le suivi des exploitations agricoles, Montpellier du 01 au 29 Fevrier 1996, 6p

Dr Malainy Diatta, Rapport de mission en Israel Atelier de formation sur la diguette amelioree, Berr Sheva du 23/11 au 24/12/1996, 4p

Deme Gningue, Rapport de la mission effectuee a Montpellier France, Du 30 Janvier au 31 Mars 1996, 2p

Aminata N Badiane and Modou Sene, Rapport de mission effectuee du 21 octobre au 15 novembre 1996 a Agricon, International, inc , Cambridge, Ontario, Canada, 13p

Jean Pierre Ndiaye, Rapport sommaire de mission de courte duree, 13-26 juillet 1997 a la Haye (Pays Bas), 10p

P N Sall, Rapport de mission XI Congres forestier mondial et consultation internationale sur la rôle de la foresterie dans la lutte contre la desertification, Antalya-Turque-October 1997, 6p

Ndiaga Dieng, Rapport sommaire de mission de courte duree (TDY), A Agricon, Cambridge, Ontario, Canada 04/10/97 au 01/11/97, 69p

Babou Ndour, Rapport de mission formation de courte duree sur agroforesterie et gestion durables des terres, Du 23 juin au 18 juillet 1997, Universite de Londres, Faculte agronomique de Wye, 20p

Moussa Bakhayokho DG/ISRA, Reunion annuelle de concertation ISRA/USAID/CID sur le projet de recherche pour la gestion des ressources naturelles (NRBAR) Rapport de mission, USA 30/6/97 au 06/07/97 5p

Manievel Sene Rapport de mission effectuee de 1 mai au 30 juin 1998 au laboratoire d'agronomie de l'INA-PG a Paris 1998

STTF Sene, M Trip Report, Guinea, Fouta Djallon Some observations in relation to research and development issues (an appendix to the main report by Modou Sene)

Astou Sene Rapport de mission June 1998

Mamadou Gueye Habilitation a diriger des recherches en ecologie microbienne June 1998

Ambroise Diatta Rapport de mission a la faculte universitaire des sciences agronomique de Gembloux en Belgique June 1998

Mamadou BA Rapport de mission - Tuskegee University June 1998

Fatimata Dia Rapport de mission - Tuskegee University June 1998

Azziz Diallo Rapport de mission - Tuskegee University June 1998

Malaigny Diatta Rapport de mission - UC Davis June 1998

Adbou M'Baye Rapport de stage techniques de multiplication de quelques halophytes et de mise en place et d'utilisation de serre June 1998

Adbourahamne Tamba Rapport de mission - Togo Feb 1998

Mamadou Nguer, Rapport de mission sur le Colloque International sur l'Audit interne et la formation en contrôle de gestion Du 02 au 09 juin 1998 a Casablanca, 17p

Vc SHORT-TERM TRAINING IN SENEGAL

Compte Rendu de la reunion du comite des conventions ISRA pour la revue finale du programme des subventions NRBAR, Saly - Portugal 22-27 juin 1998 STTS

Compte Rendu de seminaire de cloture du Projet de Recherche Basee sur la Gestion des Ressources Naturelles (ISRSA/NRBAR), Ngor Diarama, Senegal, 10-12 auot 1998 STTS

RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Fertilisation organique des sols dans le CNBA", Bambey 20 et 21 Mai 1997

Diallo, B , Toure, R , and Cheikh Ndione 1996 Rapport de mission Controle a ISRA Zone Sylvo-Pastorale 9p

Rapport de Synthese RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Riziculture Dans Les Regions de Basse et Moyen Casamance, du Senegal Oriental et de Haute Casamance", Tambacounda, 10-13 mars 1998

RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Agroforestrie et Fertilisation des sols dans le Sud Bassin Arachidier", Kaolack, le 10 et 11 decembre, 1997

Rapport de Synthese RP1/NRBAR Atelier Presentation des Resultats de Recherche Collaborative sur le Theme "Agriculture/GRN-Elevage dans les regions de Basse et Moyen Casamance, du Senegal Oriental et de Haute Casamance", Kolda, 17-20 fevrier 1998
Volume I Resume, Annexe 1, Annexe 2
Volume II Annexe 3

ISRA, Compte Rendu du Comite Scientifique et Technique, 7-14 Novembre 1994

ISNAR, Seminaire a l'intention des responsables de la recherche de l'ISRA, Introduction a l'INFORM systeme d'information de gestion pour la recherche agricole, 19 et 20 août 1994, 57p

Maty Sy Ndiaye, Rapport de mission Mission de facilitation a l'ISRA, Août/Octobre 1995, 16p

Amadou Gueye, Rapport de mission Audit de la gestion des ressources humaines Rapport d'etape sur les effectifs et la gestion, Decembre 1995/Janvier 1996 53p

ISRA/INFORM Workshop, Mbour, 8-20 Aug 1994 Evaluation and Recommendations

Amadou Gueye, Rapport de mission audit de la gestion des ressources humaines Rapport d'etape sur les propositions de procedures administratives de gestion du personnel, Mars/Avril 1996, 84p

Amadou Gueye, Rapport de mission Audit de la gestion des ressources humaines Rapport d'etape sur la mise a jour et la regularisation de dossiers des agents, Janvier/Fevrier 1996, 30p

NRBAR, Atelier Presentation des resultats de recherche collaborative sur le theme , "Fertilisation organique des sols dans le CNBA", Bambey 20 et 21 Mai 1997, 186p

NRBAR - Beye, Compte rendu de l'atelier de formation des formateurs sur la technologie semenciere riz en Casamance, 23-27 Septembre 1997 Velingara, Senegal, 79p

Dossier de soumission a l'homologation de 10 varietes de riz pour la basse, moyenne et haute Casamance, 30p

Bruce W Mueller, Brief report of an exchange trip by Peul Herders from the Linguere area to Peul, Agropastoralists participating in the stabling research program in Kolda, 4 June 1997, 2p

Johnson Moctar, Rapport de mission 28/8/97, 8p

NRBAR, Memorandum sur la visite des pasteurs de la zone de Linguere au CRZ de Kolda et, de sa zone d'intervention, Mai 1997, 5p

NRBAR, Plan strategique sectoriel, US information Scientifique et technique, 19p

NRBAR, Plan strategique de l'ISRA 1997-2003, Conclusions de la commission IST (Draft 1), Mai 1996

Moussa Cisse, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Prix des cereales seches, Novotel, Dakar, 23 Fevrier, 10p

Yankhoba Jacques Badji et Pierre Ndiaye, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Indices des prix as la consommation, Novotel, Dakar, 23 Fevrier, 9p

B Diagana, M Gaye, ISRA-Pase, Valery Kelly, MSU/USA, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Filieres cereales seches et arachide dans le bassin arachidier, Novotel, Dakar, 23 Fevrier, 9p

Amadou F Diouf, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Produits d'exportation, Novotel, Dakar, 23 Fevrier, 5p

Moustapha Kebe, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Note introductive, Novotel, Dakar, 23 Fevrier, 10p

Cheikh M Ndione, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Filiere betail-viande bovine Production et strategies de gestion des ressources pastorales, Novotel, Dakar, 23 Fevrier, 8p

Moustapha Kebe et Moustapha Deme, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Filiere Pêche artisanale maritime Rentabilite - exportations - consommation locale, Novotel, Dakar, 23 Fevrier, 14p

Amadou A Fall, Atelier de restitution "Impact de la devaluation du FCFA sur les revenus et la securite alimentaire au Senegal", Filiere riz dans la vallee du fleuve Senegal Coûts de production, Novotel, Dakar, 23 Fevrier, 7p

B Ndaw Diallo, R Toure et C Mbacke Ndione, Rapport de mission a l'ISRA zone Sylvopastorale, Dakar, le 20 Novembre 1996, 18p

Sene, L Questions Reponses sur le System Inform a l'ISRA Synthese des discussions en Comite de Programmation et de coordination 2APR96 April, 1996,

Vc LONG-TERM B S TRAINING FOR WOMEN IN SENEGAL

L01/IST Fatma Seck Initiation a la cartographie structurale Secteur de Bakel 1997

L01/IST Fatma Seck Rapport de stage Propsection de l'or et de ses substances connexes dans les formations d'age proterozoique inferieur du Senegal dans le permis de recherche de Bantata 1997

L01/IST Fatma Seck 1996 Initiation a la cartographie en zone sedimentaire Secteur Pelel

L01/IST Fatma Seck 1996 Initiation a la cartographie des zones profondes Secteur Lamina

L01/IST Aminata N'Doye Rapport de stage Synthese bibliographique sur la teledetection initiation au logiciel ER-Mapper de traitement d'images Nov 1997

L01/IST Aminata N'Doye Rapport de stage cartographie structurale 1997

L01/IST Aminata N'Doye Rapport de stage initiation a la cartographie en zone profonde 1996

L01/IST Aminata N'Doye Rapport de stage Initiation a la cartographie en zone sedimentaire 1996

L01/IST Khady Sow Valorisation du bas-fonds de Koutango dans le Sud Bassin Arachidier Contribution a sa caracterisation Physique 1997

L01/IST Khady Sow Rapport de stage Cartographie structurale etude du secteur de Bakel 1997

L01/IST Khady Sow 1996 Rapport de stage initiation a la cartographie en zones profondes

L01/IST Khady Sow 1996 Rapport de stage initiation a la cartographie en terrains sedimentaires

8 PROGRAM SUPPORT ACTIVITIES

PROGRESS REPORTS

NRBAR MONTHLY REPORTS/RAPPORTS MENSUELS

October 1992 Monthly report
November 1992 Monthly report
December 1992 Monthly report
January 1993 Monthly report
February 1993 Monthly report
March 1993 Monthly report
April 1993 Monthly report
May 1993 Monthly report
June 1993 Monthly report
July 1993 Monthly report
August 1993 Monthly report
September 1993 Monthly report
October 1993 Monthly report
November 1993 Monthly report
December 1993 Monthly report
January 1994 Monthly report
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January 1998 Monthly report
February 1998 Monthly report
March 1998 Monthly report
April 1998 Monthly report
May 1998 Monthly report
July 1998 Monthly report
August 1998 Monthly report
September 1998 Monthly report

NRBAR QUARTERLY REPORTS/RAPPORTS TRIMESTRIELS

January - March, 1995
April - June, 1995
July - September, 1995
October - December, 1995
January - March, 1996
April - June, 1996
July - September, 1996
October - December, 1996
January - March, 1997
April - June, 1997
July - September, 1997
October - December, 1997
January - March, 1998

April - June, 1998
July - September, 1998

OTHER NRBAR PROGRESS REPORTS

Biannual Report, July 1992 - June, 1993

Biannual Report, July 1992 - December, 1993

Biannual Report, January 1994 - June, 1994

Biannual Report, January 1994 - December, 1994

Biannual Report, January 1995 - June, 1995

Biannual Report, January 1995 - December, 1995

ISRA Compte Rendu de la reunion du comite des conventions ISRA pour la revue finale du programme des subventions NRBAR, Saly – Portudal 22-27 juin 1998

ISRA Compte Rendu de seminare de cloture du Projet de Recherche Basee sur la Gestion des Ressources Naturelles (ISRA/NRBAR), Ngor Diarama, Senegal, 10-12 août 1998

SAMPLE OF OTHER PROGRESS REPORTS

ISRA/NRBAR Sommaire du projet et resume du progres au 31 Dec 1993 January 1994 /Project Description and Summary of Progress to 31 December 1993 January 1994

ISRA 1998 Bilan du Plan Quinquennal de l'ISRA 1990-1995

ISRA 1998 Rapport Annuel 1997

ISRA 1998 Rapport Annuel 1996

ISRA 1998 Rapport Annuel 1995

PLANNING DOCUMENTS

ISRA/NRBAR Annual Workplan / Plan de travail annuel 1993

ISRA/NRBAR Plan de Survi et d'Evaluation pour le projet NRBAR, Monitoring and Eval plan for NRBAR, French version of 21 Jun 1993 english version, For external review, CID/USAID/ISRA, 54 pages

ISRA/NRBAR Annual Workplan / Plan de travail annuel 1994

ISRA/NRBAR L'elaboration du plan de suivi/evaluation de l'isra utilisation du cadre logique dans le processus 10 JAN95, Madame Ba, Massamba Dieng, Bill Roberts, 14 pages + annexes

Hyacinthe Mbengue, Madiagne Diagne, Modou Sene, Mamadou Ndiaye, Paul Anamosa, Natural resources management research strategy, A Pilot Strategy with the Programme for Research on Natural Resource Management, and Production Systems in the Dry Zone, 6 april, 1994, Bambey, 20p

ISRA Plan de suivi et d'evaluation pour le projet NRBAR, Juin 1994, 48p

ISRA 1994 Strategies a court et moyen terme du BAME

ISRA/NRBAR Annual Workplan / Plan de travail annuel 1995

ISRA 1995 Plan d'Urgence Octobre-December 1995

ISRA/NRBAR Annual Workplan / Plan de travail annuel 1997

ISRA/NRBAR Annual Workplan / Plan de travail annuel 1998

ISRA 1998 Plan Strategique de l'ISRA (1998-2003) Synthese des activites scientifiques et chiffrage

ISRA Projet d'Entreprise de l'ISRA ou la recherche agricole senegalaise a l'horizon 2015 1998

MANAGEMENT REPORTS

ISRA/NRBAR Rapport du Seminaire de Demarrage du Projet, 21-23 janvier 1993 a Saly-Portudal

ISRA/NRBAR Sommaire du Projet, Fev 1993

ISRA/Bambey Proce-verbal de la reunion du comite de programme de la DRCSP, 3-4 juin 1993, Bambey, 45 pages

Invitation a la soumission de propositions de recherche, Programme de subventions aux chercheurs de l'ISRA, 28 avril 93, 4 pages plus annexes

NRBAR Procedures manual first edition, April 1993, 212p

NRBAR Manuel de Procedures, Premiere Edition, avril 1993, 227p

Invitation a la soumission de propositions de recherche, Programme de subventions aux chercheurs de l'ISRA, 24 Jan 94, 4 pages plus annexes

Invitation a la Soumission de Propositions de Recherche, Programme ISRA/NRBAR, Subventions pour la Recherche Collaborative, Sur les Technologies Basee sur la Gestion des Ressources Naturelles, Le 24 Jan 1994, 5 pages plus 2 annexes

Visite de suivi par l'ISRA, l'USAID, CID et partenaires de l'ISRA, 17 Sept 1994, Massamba Dieng, 4 pages

ISRA/NRBAR Compte Rendu de la Reunion des partenaires du programme de recherche collaborative NRBAR 5/12/94, Jan 1995, Wendy Wilson, 5 pages

Diene, M, Ndiaye, I, Daffe, M Evaluation a Mi-Parcours du Projet de Recherches Agricoles Basee sur les Ressources Naturelles (NRBAR), USAID document, Mai 1995

Invitation a la soumission de propositions de recherche, Programme de subventions aux chercheurs de l'ISRA, 1995, 4 pages plus annexes

Invitation a la Soumission de Propositions de Recherche, 1995, Programme de subventions a la recherche collaborative, 6 pages plus annexes A-F, deadline 24 Feb 95

Deuxieme Invitation a la Soumission de Propositions de Recherche, 1995, Programme de subventions a la recherche collaborative, 6 pages plus annexes A-F, deadline 5 may 95

Senegal Natural Resources-Based Agricultural Research Project Management Meeting, 1996
10p + annexes

ISRA/NRBAR, Revue annuelle conjointe USAID/ISRA 1997, 3-5 Novembre 1997, 218p

ISRA/NRBAR, 1997 Management meeting report, 23p

Gretchen Le Van, Rapport de stage, 15 Mai-15 Août 1997, 48p

NRBAR Index of Journals with Guidelines for Authors, 1997

Senegal Natural Resources-Based Agricultural Research Project (NRBAR), 1997 Management Meeting Report, July 2, 1997, Corvallis, Oregon

ANNEX 1 FINAL PROJECT INVENTORY

	MISC PRINTER SUPPLIES AND PARTS	ROOM 33							CID
	MISC SOFTWARE MANUALS	ROOM 33							CID
	MISC OFFICE SUPPLIES	ROOM 33							CID
	MISC COMPUTER AND PHONE CABLES	ROOM 33							CID
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	7 HAYES 2400 BAUD SMARTMODEMS with 1	ROOM 36		1995					CID
	3 EXTERNAL TAPE BACKUP DRIVES	ROOM 36		1995					CID
	TRANSFORMER T40E / VDE	ROOM 36							CID
	TRANSFORMER POWER MODULE 1 MFD 93	ROOM 36				3301B	104200126		CID

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	MISC OFFICE SUPPLIES	ROOM 36							CID	
	MISC SOFTWARE & MANUALS	ROOM 36							CID	
	MISC COMPUTER AND PHONE CABLES	ROOM 36							CID	
	TYPEWRITER	ROOM 36							ISRA	
	AIRCONDITIONER	ROOM 36							ISRA	
	PRINTER CITIZEN MSP 25	ROOM 37							CID	
	1 TABLE EN ROTIN ROULANT	ROOM 37							USAID	Rod Kite s
BIT	COMPAQ DESKPRO	ROOM 37	\$2,729 74	09/23/97	DESKPR	8730HVU81987			CID	
	COMPUTER PACKARD BELL 486	ROOM 37	\$2,000 00	03/01/95	486 DX2	PBF 261CD 890387	309671		CID	
	COLOR MONITOR COMPAQ	ROOM 37				645 BC050 A 477			CID	
	2 COLOR MONITORS INFINITY	ROOM 37				PE05789, PE05969			CID	
	ONDULEUR	ROOM 37				573720492			CID	
	COMPUTER ALR	ROOM 37				0397769			CID	
OBBO	BUREAU MINISTRE PLATEAU 1800x900 MM	ROOM 37	cfa199 800						USAID	
OBBO	FAUTEUIL VISITEUR SAXO	ROOM 37	cfa69 900						USAID	
OBBO	FAUTEUIL VISITEUR SAXO	ROOM 37	cfa69 900						USAID	
	MISC SOFTWARE MANUALS	ROOM 37							CID	
	MISC OFFICE SUPPLIES	ROOM 37							CID	
	MISC COMPUTER CABLES	ROOM 37							CID	
OBBO	MEUBLE DE CLASSEUR A TIROIRS (4) AVEC	ROOM 37	cfa134 200						USAID	
OBBO	MEUBLE DE CLASSEUR A TIROIRS (4) AVEC	ROOM 37	cfa134 200						USAID	
OBBO	MEUBLE DE CLASSEUR A TIROIRS (4) AVEC	ROOM 37	cfa134 200						USAID	
	WALL CLOCK	ROOM 37							CID	
	3 SHELF LOW BOOKSHELF	ROOM 37							ISRA	
	AIRCONDITIONER	ROOM 37							ISRA	
OBBO	FAUTEUIL VISITEUR SAXO	ROOM 38	cfa69 900						USAID	
INTERF BUR	FAX TELECOPIER, XEROX 7009	ROOM 38		06/01/93	100 K08 5	2 992 590 168	301260			GIFT FROM VENDOR
INTERF BUR	PHOTOCOPIER	ROOM 38	cfa3 900 0	9/20/96	5334	212597196-5	314174		CID	Replacement of the original
	WALL CLOCK	ROOM 38							CID	
COMPUT-GTSI	ALR 386/33 80 5M(49) 1-44 MB	ROOM 38	\$2000,00			0397770			USAID	
COMPUT-GTSI	ALR FLEXVIEW 2x13 SUPER VGA COLOR M	ROOM 38				2010186			USAID	
OBBO	BUREAU SECRETAIRE PLATEAU 1500x900 M	ROOM 38	cfa229 700						USAID	
OBBO	CHAISE DACTYLO SAMBA	ROOM 38	cfa89 700						USAID	
MEUBLE AFR	CASIER DE RANGEMENT 90x35 CM	ROOM 38	cfa66 400						USAID	
MEUBLE AFR	CASIER DE RANGEMENT 90x35 CM	ROOM 38	cfa66 400						USAID	
MEUBLE AFR	CASIER DE RANGEMENT 90x35 CM	ROOM 38	cfa66 400						USAID	
ITS	TELEPHONE SYSTEM	ROOM 38	\$1,449 00						CID	
	1 FAX MAHINE CANON (EN PANNE)	ROOM 38	cfa300 000	06/11/92		V028 7097	301079		CID	FROM CUSACK HOUSE
	BINDING MACHINE	ROOM 38		06/01/93		27 271	301099		CID	
	MISC OFFICE SUPPLIES	ROOM 38							ISRA	
	AIRCONDITIONER	ROOM 38							ISRA	
COMPUT-GTSI	LASERJET III HP 8PPM IBM (5) PAR	ROOM 39	\$1850,00		HP	3208J35613			USAID	
OBBO	TABLE DE CONFERENCE 140x70 CM HAUTE	ROOM 39	cfa75 000						USAID	
	SYSTEM, CMPTR IBM 486-50 W/MNTR	ROOM 39	\$2245,00		486-50	03321	302621		CID	

38

652

		1 RETROPROJECTOR	ROOM 39	\$5,005 00						CID	
		PRINTER, HP LASERJET IV PLUS	ROOM 39	\$750 00	04/01/95	IV PLUS	USCC 380820	310154		CID	
COMPUT-GTSL		ALR 386/33 80 5M(49) 1 44 MB		\$2000,00						USAID	DAMAGED BEYOND REPAIR IN FIELD
OBBO		BUREAU MINISTRE PLATEAU 1800x900 MM	ROOM 39	cfa199 800						USAID	
		BIBLIOTHEQUE EN ROTIN DETACHABLE 2 E	ROOM 39							USAID	Rod Kite s
		286 CPU/MONITOR Sent by Rocky for Mary's	ROOM 39			DC2011E	2D2F80614918			OSU	Not working
		MONITOR INFINITI SYSTEM FCCID BJNCM 1	ROOM 39			IN8828N4	PE05967			CID	
		FAX/ANSWERING MACHINE PANASONIC KX	ROOM 39			KX F50B				CID	
		PRINTER EPSON LQ500	ROOM 39			P78PA	41003012			CID	
		2 ARMOIRES METALLIQUES GRIS	ROOM 39							CID	
		PRINTER DESKJET 500 HEWLETT PACKARD	ROOM 39	\$603 00			3321S29305			CID	
		PRINTER DESKJET 500 HEWLETT PACKARD	ROOM 39	\$603 00			3321S29327			CID	
		TYPEWRITER IBM	ROOM 39				HM/00/00728/003			OSU	
		TYPEWRITER OLIVETTI STUDIO 45	ROOM 39							OSU	
		MONITOR ALR FCCID A3KM017	ROOM 39			ALR	2021483			CID	
		4 BATTERY BACKUP SYSTEMS	ROOM 39			BC750LAN				CID	
		1 MULTI PRISE PLUG IN EXTENSION	ROOM 39							CID	
OBBO		1 FAUTEUIL VISITEUR SAXO	ROOM 39							USAID	
		COMPAQ MONITOR	ROOM 39				721BC050B480			CID	
		MISC COMPUTER AND PHONE CABLES	ROOM 39							CID	
		PORTABLE TOSHIBA	ROOM 39/ISR	\$2,200 00	6/94	486/33	1910CS	309612		CID	for consultant/ISRA short term use
		PORTABLE IBM	ROOM 39/ISRA		06/01/93	8543 (3T4	2323RWH94	300863		CID	for consultant/ISRA short term use
		AIRCONDITIONER	ROOM 39							ISRA	
		MISC SOFTWARE AND COMPUTER CABLES	ROOM 39							CID	
		MISC OFFICE SUPPLIES									
DIASEN		TOYOTA LANDCRUISER LJ79 STATION WAG	NRBAR	cfa7 075 000		8CV 8P1	000 5821			USAID	
		IMMATRICULATION 8216TTB1									
DIASEN		TOYOTA LANDCRUISER LJ79 STATION WAG	NRBAR	cfa7 075 000		8CV 8P1	000 5820			USAID	
		IMMATRICULATION 8217TTB1									
DIASEN		TOYOTA LANDCRUISER LJ79 STATION WAG	NRBAR	cfa7 075 000		8CV-8P1	000 5819			USAID	
		IMMATRICULATION 8218TTB1									
DIASEN		TOYOTA LANDCRUISER LJ79 STATION WAG	NRBAR	cfa7 075 000		8CV-8P1	000 5823			USAID	
		IMMATRICULATION 8219TTB1									
RENAULT		NEVADA TD DIESEL RENAULT 21 IMMATR 8	NRBAR	cfa5 900 000			0 9338653			USAID	
DECO-M		REFRIGERATEUR	CAFETARIA	cfa119 000	08/06/93					CID	

INVENTORY STATUS OF SEPTEMBER 26 1998

TECHNICAL ASSISTANT s RESIDENCE TOM CUSACK

- signed over to USAID directly 23 sept 98 - left at residence for next

SUPPLIER	Ref No	DESCRIPTION	LOCATION	UNIT COST	PURCH DATE	RECD DATE	MODEL	SERIAL	OSU IN No	FUND SOURCE	REMARKS
MEUBLE AFR		CANAPE 3 PLACES 195x90x83 cm	LIVING ROOM							USAID	USAID Personnel - 42 Fenetre Mermoz
MEUBLE AFR		CANAPE 2 PLACES 160x90x83 cm	LIVING ROOM							USAID	
MEUBLE AFR		TABLE D'ANGLE 53x65x55 cm	LIVING ROOM							USAID	
MEUBLE AFR		2 TABLES DE COIN 65x65x63 cm	LIVING ROOM							USAID	
MEUBLE AFR		1 TABLE DESSUS VERRE	LIVING ROOM							USAID	

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653

INVENTORY STATUS OF SEPTEMBER 26 1998

STORAGE SIMAF DELIVERED TO ISRA ON INSTRUCTIONS FROM ISRA DIRECTOR GENERAL 25 SEPT 1998

SUPPLIER Ref	DESCRIPTION	LOCATION	UNIT	PURCH DATE	RECD DATE	MODEL	SERIAL	OSU IN	FUND	REMARKS
	CANAPE 3 PLACES NOIR	FROM RM 34	FROM RM 34						USAI	
	FAUTEUIL GRAND MODELE NOIR	FROM RM 34	FROM RM 34						USAI	
	FAUTEUIL GRAND MODELE NOIR	FROM RM 34	FROM RM 34						USAI	
	FAUTEUIL TOURNANT ROULANT SAXO	FROM RM 37	FROM RM 37						USAI	
									USAI	
	1 TABLE SALLE A MANGER AVEC RALLONG	TO ISRA 9/98							USAI	
	10 CHAISES SALLE A MANGER ACAJOU CLA	TO ISRA 9/98							USAI	
	2 CHAISES SALLE A MANGER AVEC ACOUD	TO ISRA 9/98							USAI	
	1 VAISSELIER VITRE, 1 PORTE SANS BOUT	TO ISRA 9/98							USAI	
	ELEMENTS MEUBLE VITREE 2 PORTES, 2 TI	TO ISRA 9/98							USAI	
	1 COMMODE 2 PORTES SANS POIGNEES, 4	TO ISRA 9/98							USAI	
	1 TABLE BASSE CARREE ACAJOU CLAIR	TO ISRA 9/98							USAI	
	1 COMMODE ACAJOU CLAIR 6 TIROIRS	TO ISRA 9/98							USAI	
	1 ETAGERE BOIS, 5 COMPARTIMENTS	TO ISRA 9/98							USAI	
	1 BUREAU AVEC COFFRE 3 TIROIRS+1 AU	TO ISRA 9/98							USAI	
	1 CHAISE DE BOIS EN BOIS	TO ISRA 9/98							USAI	
	1 TABLE BASSE RONDE + VERRE	TO ISRA 9/98							USAI	
	2 CHEVETS 1 TIROIR ACAJOU CLAIR	TO ISRA 9/98							USAI	
	1 CANAPE 3 PLACES (TISSU SALE)	TO ISRA 9/98							USAI	
	1 CANAPE 2 PLACES (TISSU SALE)	TO ISRA 9/98							USAI	
	1 FAUTEUIL (TISSU SALE)	TO ISRA 9/98							USAI	
	1 TABLE BASSE RECTANGULAIRE ACAJOU	TO ISRA 9/98							USAI	
	1 TABLE SALON CARREE DESSUS VERRE	TO ISRA 9/98							USAI	
	1 TABLE RONDE ROTIN	TO ISRA 9/98							USAI	
	1 MEUBLE 2 PORTES COULISSANTES ACAJ	TO ISRA 9/98							USAI	
	1 MEUBLE 3 TIROIRS GM + 2 TIROIRS PM, 1	TO ISRA 9/98							USAI	
	1 COMMODE 9 TIROIRS	TO ISRA 9/98							USAI	
	1 CLIMATISEUR ZENITH AIR	TO ISRA 9/98							USAI	
	1 BUREAU METAL 2 COFFRES PLATEAU MA	TO ISRA 9/98							USAI	
	1 CUISINIERE 4 FEUX POIGNEE CASSEE	TO ISRA 9/98							USAI	
	1 REFRIGERATEUR 2 PORTES GENERAL EL	TO ISRA 9/98	\$768.00						USAI	
	1 ASPIRATEUR + ACCESSOIRES	TO ISRA 9/98							USAI	
	2 CLIMATISEURS WHITE HOUSE WESTINGH	TO ISRA 9/98							USAI	
	1 TABLE BASSE CARREE ROTIN SANS VERR	TO ISRA 9/98							USAI	
	5 ABAT JOURS DONT 1 EN MAUVAIS ETAT	TO ISRA 9/98							USAI	
	1 COMMODE 5 TIROIRS ACAJOU CLAIR	TO ISRA 9/98							USAI	
	1 TABLE BASSE CARREE	TO ISRA 9/98							USAI	
	1 TABLE BASSE CARREE EN ROTIN + DESS	TO ISRA 9/98							USAI	
	1 LIT 140 + SOMMIER TAPISSIER	TO ISRA 9/98							USAI	
	1 MATELAS 140	TO ISRA 9/98							USAI	
	3 MATELAS 90	TO ISRA 9/98							USAI	
	3 SOMMIERS TAPISSIER 90	TO ISRA 9/98							USAI	
	1 LIT 90 PANNEAU TETE	TO ISRA 9/98							USAI	

459

		1 ASPIRATEUR	TO ISRA 9/98								USAID
		4 FILTRES A EAU (1 EN PANNE)	TO ISRA 9/98								USAID

INVENTORY STATUS OF SEPTEMBER 26 1998

GRANTS ISRA

SUPPLIER	Ref	DESCRIPTION	LOCATION	UNIT	PURCH	REC D	MODEL	SERIAL	OSU IN	FUND	REMARKS
	No				DATE	DATE			No	SOURCE	
	PAR1 1	CLIMATISEUR GOLDSTAR	URR/BMC					705KA00312		CID	
	PAR1 1	CLIMATISEUR GOLDSTAR	URR/BMC					705KA00268		CID	
	PAR1 1	CLIMATISEUR GOLDSTAR	URR/BMC					705KA00157		CID	
	PAR1 1	CLIMATISEUR GOLDSTAR	URR/BMC					705KA00035		CID	
	PAR1 1	ORDINATEUR COMPAQ DESKPRO 2000 516	URR/BMC					8732HWC60256		CID	
	PAR1 1	ECRAN COULEUR	URR/BMC					725BC180B857		CID	
	PAR1 1	HAUT PARLEURS MLI 9 230W	URR/BMC					9608371		CID	
	PAR1 1	IMPRIMANTE HP LASERJET 6L	URR/BMC					CNWN041515		CID	
	PAR1 1	ONDULEUR PULSAR	URR/BMC					394053473		CID	
	PAR1 1	FAX CANON 265F	URR/BMC	cfa392 620	24/07/97		H11125 R	N4930746		CID	
	PAR1 1	PHOTOCOPIER CANON	URR/BMC	cfa3 950 0	27/07/97		F134400	UCC34234 992829L		CID	
POINT MI	PAR1 1	RETROPROJECTEUR 2770N 789236 5621 5	URR/BMC	cfa841 556	17/04/98			214199		CID	Resp Mamadou Khouma
	PAR1 1	PHOTOCOPIER NP6216	URR/BMC					UCW07287		CID	
	PAR1 1	COMPAQ PORTABLE, MODEM, BAG	URR/BMC					J824BT52E258		CID	
	PAR1 1	COMPAQ PORTABLE, MODEM, BAG	URR/BMC					J824BT52E597		CID	
	PAR1 1	SPLIT AIR CONDITIONER	URR/BMC					KF40GW31 231 700 11451		CID	
	PAR1 2	MOTO HONDA XL 125S	URR/BMC							CID	
	PAR1 2	AIRCONDITIONER	URR/BMC					KC 32103008000054		CID	
	PAR1 2	ORDINATEUR PORTABLE COMPAQ ARMAD	URR/BMC					J735BM540964		CID	
	PAR1 3	PORTABLE COMPUTER	URR/BMC							CID	
	PAR1 4	PORTABLE COMPUTER, MODEM, BAG	URR/BMC		13/07/98			J824BT52D654		CID	
	PAR1-6	PORTABLE COMPUTER, MODEM, BAG	URR/BMC		15/06/98			J824BT52E263		CID	
	PAR1 6	PORTABLE COMPUTER, MODEM, BAG	URR/BMC		03/07/98			J824BT52E265		CID	
	PAR1 7	ORDINATEUR COMPAQ DESKPRO 2000 516	URR/BMC					8732HWC81643		CID	
	PAR1 7	ECRAN COULEUR	URR/BMC					725BC180B268		CID	
	PAR1 7	HAUT PARLEURS MLI 9 230W (2)	URR/BMC					96098444		CID	
	PAR1 7	ONDULEUR PULSAR	URR/BMC					394653 G78		CID	
	PAR1 7	IMPRIMANTE HP DESKJET 690C	URR/BMC					ES77H190H2		CID	
	PAR1-8	ORDINATEUR PORTABLE COMPAQ ARMAD	URR/BMC					J734BM541206		CID	
	PAR1-8	IMPRIMANTE HP LASERJET 6L	URR/BMC					CNZM094982		CID	
POINT MI	PAR2 1	RETROPROJECTEUR AND SCREEN 2770N	URR/CNBA	cfa841 556	17/04/98		2770 AHC	212492		CID	Resp Dogo Seck
	PAR2 1	PHOTOCOPIER CANON NP 6030	URR/CNBA							CID	
	PAR2 1	SCANNER PURCHASE PAR2 1	URR/CNBA					SG 82A140DO		CID	
	PAR2 1	FURNITURE	URR/CNBA							CID	
	PAR2 1	HP LASERJET 6L PRINTER	URR/CNBA					450915		CID	
	PAR2 1	PRINTER	URR/CNBA					SG817B211S		CID	
	PAR2 1	COMPAQ COMPUTER	URR/CNBA					3564278727003		CID	
	PAR2 1	MONITOR	URR/CNBA					806AB11CN053		CID	
	PAR2 1	BATTERY BACKUP	URR/CNBA					573801860		CID	

4

69

	PAR4-1	AIRCONDITIONER	SOHC							CID	
	PAR4 1	AIRCONDITIONER	SOHC							CID	
	PAR4 1	COPIER CANON NP6216	SOHC					UCC57572		CID	
	PAR4 1	COPIER CANON NP6216	SOHC					UCC97354		CID	
	PAR4 1	Toshiba TECRA portable and modem	SOHC					58014726 P8280223151M		CID	
	PAR4 1	HP OFFICEJET COLOR	SOHC							CID	
	PAR4 1	SAMSUNG FAX/MODEM	SOHC					P8280223141M		CID	
	PAR4 1	TAXAPHONNE	SOHC							CID	
	PAR4 1	TELEPHONE STANDARD	SOHC							CID	
	PAR4 1	FAX MODEM	SOHC							CID	
	PAR4 1	DEMBA PRINTER HP 6L	SOHC							CID	
	PAR4 1	SYSTEME TELEPHONE	SOHC							CID	
	PAR4 1	SYSTEME TELEPHONE	SOHC							CID	
	PAR4 11	ORDINATEUR COMPAQ DESKPRO 2000 PEN	SOHC/KOLDA					8722HVU83746		CID	
	PAR4 11	ECRAN COULEUR	SOHC/KOLDA					25BC180B056		CID	
	PAR4 11	IMPRIMANTE HP LASERJET 6L	SOHC/KOLDA					CNWN041484		CID	
	PAR4 11	HAUT PARLEURS CREATIVE CS120 SPEAKE	SOHC/KOLDA					9608207		CID	
	PAR4 11	ONDULEUR MERLIN GERIN	SOHC KOLDA					3946553D89		CID	
	PAR 17	IMPRIMANTE HP LASERJET 6P	SOHC/KOLDA					LCB107143		CID	
	PAR4 12	ONDULEUR MERLIN GERIN	SOHC/KOLDA					394648588		CID	
	PAR4 12	APPAREIL PHOTO NIKON ZOOM 310	SOHC/KOLDA					7130653		CID	Resp Alphousseyni Bodian
	PAR4 12	COMPAQ ARMADA PORTABLE	SOHC					J824BJ52D593		CID	non recu on fiche, then received 13/8/98
	PAR4 12	PRINTER	SOHC							CID	
	PAR4 13	HP DESKJET 690C	SOHC							CID	
	PAR4 13	MOTO HONDA XL 125S	SOHC					571 1366		CID	
INTERACT	PAR4 13	PORTABLE COMPAQ ARMADA 1540 D WITH	SOHC/KOLDA	cfa1 775 0	17/04/98			J819BT51M016		CID	Resp Momar Talla Seck
ATI	PAR4 13	IMPRIMANTE LASERJET 6L	SOHC KOLDA	cfa360 000	17 04 98			CNZN333208		CID	Resp Momar Talla Seck
	PAR4 8	COMPUTER	SOHC					J734BM541404		CID	
	PAR4 9	HP SCANJET PRINTER	SOHC					SG8171408M		CID	
	PAR4 9	BALANCE	SOHC							CID	
	PAR4 9	APPAREIL PHOTO NIKON ZOOM 310	SOHC/TAMBA				NIKON Z	7071458		CID	Resp Djibril Badiane
	R01	PORTABLE COMPUTER PURCHASED AT OSU			mai 94	jull 94		7403HDR23340	306557	CID	
	R04	ORDINATEUR COMPAQ PROLINEA 5100 PE	SOHC/KOLDA				630	8601HTC20603		CID	
	R04	ECRAN SVGA COMPAQ COULEUR	SOHC/KOLDA					602AF19KE219		CID	
	R04	IMPRIMANTE LASERJET PANASONIC KX SP	SOHC/KOLDA					4JMCRC11678		CID	
	R05	PRINTER	URR/SBA					XAM29881		CID	
	R05	2 PAIRES DE PATAUGES	URR/SBA	cfa23 800	10/01/97					CID	
	R05	PORTABLE COMPUTER PURCHASED AT O	URR/SBA		mai 94	jull 94		7403HDR20518	306555	CID	
	R05	PRINTER	URR/SBA		20/6/95					CID	
	R07	ORDINATEUR COMPAQ DESKPRO 2000 513	SOHC/KOLDA	cfa1 407 0	17/07/97		DESKPR	8709HVT42302		CID	
	R07	ECRAN COULEUR	SOHC/KOLDA					712AF19KD824		CID	
	R07	MODEM 33 600 bps	SOHC/KOLDA				USRobotics			CID	
	R07	IMPRIMANTE LASERJET 6L	SOHC/KOLDA	cfa350 900	17/07/97		6P	JPWX050525		CID	
	R07	HAUT PARLEURS/MLI 65/125W (2)	SOHC/KOLDA					9609479		CID	
	R07	ONDULEUR MERLIN GERIN 750 VA off line	SOHC/KOLDA	cfa247 500	20/01/97		MERLIN	394638117		CID	
	R08	ORDINATEUR PORTABLE COMPAQ ARMAD	URR/BMC					J735BM540696		CID	
	R08	IMPRIMANTE HP LASERJET 6L	URR/BMC					CNZN101688		CID	
ATI	R09	ORDINATEUR PORTABLE COMPAQ ARMAD	URA/PASE					J735BM540708		CID	Resp Moustapha Kebe
INTERACT	R09	PRINTER HP LASERJET 6L	URA/PASE					CNZN143794		CID	Resp Moustapha Kebe
	R09	PORTABLE DX-4	DG Room 35		03/09/96			TN5D0067733		CID	

69
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5

	R09	PANASONIC PRINTER			03/09/96		KX 1624			CID	
	R09	HP LASERJET 5L	DG Room 37						JPVV132335	CID	
	R10	IMPRIMANTE EPSON STYLUS 820, STYLUS	URR/SBA	cfa255 537	03/20/96		P870A	2G2E019740		CID	Resp Fatimata Dia
	R10	ORDINATEUR PORTABLE MITAC	URR/SBA				4023	TN5C007459		CID	Resp Fatimata Dia
	R10	AC ADPTER	URR/SBA				LP486 AD	TN5C007463		CID	Resp Fatimata Dia
POINT MI	R10	COMPUTER BAG	URR/SBA	cfa190 000	17/04/98					CID	Resp Fatimata Dia
ATI	R15	IMPRIMANTE HP LASERJET 6L	URR/BMC	cfa360 000	17/04/98			CNZM018388		CID	Resp Ibrahimia Dia ???
INTERACT	R15	PORTABLE COMPAQ ARMADA 1540 D	URR/BMC	cfa1 775 0	17/04/98			J818BT510152		CID	Resp Ibrahimia Dia ???
	R16	ORDINATEUR PORTABLE COMPAQ ARMAD	URR/BMC					J734BM541250		CID	Resp Oumar Ba
	R16	HP LASERJET 6L								CID	
	R17	ORDINATEUR PORTABLE COMPAQ ARMAD	URR/BMC					J735BM540711		CID	
	R17	IMPRIMANTE HP LASERJET 6L	URR/BMC					CNZN155623		CID	
	R18	ONDULEUR MERLIN GERIN	URR/CNBA					396703089		CID	
	R18	ORDINATEUR COMPAQ DESKPRO 2000 PEN	URR/CNBA					8732HWC60254		CID	
	R18	ECRAN COULEUR	URR/CNBA					722BC180H466		CID	
	R18	IMPRIMANTE LASERJET 6L	URR/CNBA					CNWN041516		CID	
	R18	HAUT PARLEURS CREATIVE CS120 SPEAKE	URR/CNBA					9608443		CID	
	R18	ONDULEUR MERLIN GERIN	URR/CNBA					394648611		CID	
AFRIDIS	R18	MOTO HONDA XL 125S	URR/CNBA	cfa2 375 000				1572 TTC1		CID	Resp Arthur Dasyva
	R18	MOTO HONDA XL 125S	URR/CNBA					1570 TTC1		CID	
	R18	SEED CLEANER	URR/CNBA							CID	
	R18	COMPAQ ARMADA PORTABLE	URR/CNBA					J824BT52276		CID	
	R18	ONDULEUR MERLIN GERIN						396703089		CID	
	R19	MOPED			12/12/97			3010503		CID	
	R19	BATTERY BACKUP			15/06/98			573801553		CID	
	R19	COMPAQ COMPUTER			07/03/98			819BF24AE748		CID	
	R19	COLOR MONITOR						8819BK678082		CID	
	R20	ORDINATEUR COMPAQ DESKPRO 2000 PEN	URR/SBA					8722HVU86752		CID	
	R20	ECRAN COULEUR	URR/SBA					725BC180B013		CID	
	R20	IMPRIMANTE LASERJET 6L	URR/SBA					CNWN012479		CID	
	R20	HAUT PARLEURS CREATIVE CS120 SPEAKE	URR/SBA					9608372		CID	
	R20	ONDULEUR MERLIN GERIN	URR/SBA					3946553F08		CID	
	R22	CLIMATISEUR GOLDSTAR/12000 BTU/1,5CV	SOHC/KOLDA				LWC1261	705KA00381		CID	
	R22	ORDINATEUR COMPAQ DESKPRO 2000 513	SOHC/KOLDA	cfa1 407 0	17/07/97			871HVT41351		CID	
	R22	ECRAN COULEUR	SOHC/KOLDA					712AF19KE068		CID	
	R22	MODEM 33 600 bps	SOHC/KOLDA				USRobotic	S/V81 061140 00		CID	
	R22	HAUT PARLEURS/MLI 65/125W (2)	SOHC/KOLDA					9609991		CID	
	R22	ONDULEUR APC Back 600	SOHC/KOLDA	cfa223 500	17/07/97			GB 9721585918		CID	
	R22	IMPRIMANTE HP LASERJET 6L	SOHC/KOLDA					CNZN010156		CID	
	R23	MOTO HONDA XL 125S	SOHC/KOLDA					571 1383		CID	
	R24	HP LASERJET 6L PRINTER	SOHC/KOLDA					CNZM3339198		CID	
INTERACT	R24	PORTABLE COMPAQ ARMADA 1540 D	SOHC/KOLDA	cfa1 775 0	17/04/98			J819BT51M075		CID	Resp Papa Nouhine Dieye
	R25	ORDINATEUR PORTABLE COMPAQ ARMAD	URR/SBA					J734BM541391		CID	
	R25	IMPRIMANTE LASERJET 6P	URR/SBA					NLCB107119		CID	
	R26	ORDINATEUR COMPAQ DESKPRO 2000 513	URA/PV					871HV41351		CID	
	R26	ECRAN COULEUR	URA/PV					712AF19KE068		CID	
	R26	MODEM 33 600 bps	URA/PV				USRobotic	S/V81 061140 00		CID	
	R26	HAUT PARLEURS/MLI 65/125W (2)	URA/PV					9609991		CID	
	R26	ONDULEUR APC Back 600	URA/PV					GB 9721585918		CID	
	R26	IMPRIMANTE HP LASERJET 6L	URA/PV					SNWMO22346		CID	

5

663

R27	ORDINATEUR PORTABLE COMPAQ ARMAD	URA PA					J734BM541407			CID	
R27	BACHE PLATE EN TOILE PVC 8m x 10m	URA PA								CID	
V02	IMPRIMANTE HP LASERJET 5L	URR/CNBA				C3941A	JPW132371			CID	
V03	PORTABLE COMPUTER BOUGHT IN USA A	5/94	7/94				7403HDR23326	306556		CID	
V04	ORDINATEUR COMPAQ PROLINEA 5100 PE	URR/SBA				630	8619HTC20655			CID	
V04	ECRAN SVGA COMPAQ COULEUR	URR/SBA				630	602AF19KE184			CID	
V04	IMPRIMANTE LASERJET PANASONIC KX-SP	URR/SBA					4IMCRC08134			CID	
V04	ONDULEUR MERLIN GERIN 750 VA off line	URR/SBA	cfa247 500	20/01/97		MERLIN	394636451			CID	
V09	ONDULEUR MERLIN GERIN 750 VA off line	URR/SBA	cfa247 500	20/01/97		MERLIN	3946638457			CID	
V09	ORDINATEUR HP VECTRA PENTIUM 100	URR/SBA				480	FR61657083			CID	
V09	ECRAN COULEUR	URR/SBA				D2803A	KR60551864			CID	
V09	SOURIS MINI DIN/2 BOUTONS	URR/SBA								CID	
V10	ORDINATEUR PORTABLE COMPAQ ARMAD	SOHC/KOLDA					J735BM540684			CID	
V10	IMPRIMANTE HP LASERJET 6L	SOHC/KOLDA					CNZN1554321			CID	
V10	PORTABLE COMPUTER AND BAG	DS					J824BT52D242			CID	
V10	BALANCE	SOHC/KOLDA								CID	
V12	HP LASERJET 6L	URR/CNBA					CNZN199694			CID	
V1	ORDINATEUR PORTABLE	URR/CNBA				4023	TN500014			CID	
V2	AC ADPTER	URR/CNBA				7486 AD	TII50001			CID	
V12	IMPRIMANTE HP LASERJET 5L	URR/CNBA				C3941A	JPW132366			CID	
V13	ONDULEUR MERLIN GERIN 750 VA off line	URR/SBA	cfa24/ 500	20/01/97		MERLIN GERIN				CID	
V14	MOTO HONDA XL 125S	URR/BMC								CID	
V14	ORDINATEUR DESKTOP	URR/BMC					AGFR 01096			CID	
V14	ECRAN COULEUR	URR/BMC				FRENCH	662064073			CID	
V14	ONDULEUR MERLIN GERIN 750 VA off line	URR/BMC					394638469			CID	
V15	ORDINATEUR COMPAQ DESKPRO 2000 PEN	URR/SBA					8722HVU83658			CID	
V15	ECRAN COULEUR	URR/SBA					7255C180B277			CID	
V15	IMPRIMANTE LASERJET 6L	URR/SBA					CNWN077377			CID	
V15	HAUT PARLEURS CREATIVE CS120 SPEAKE	URR/SBA					960806			CID	
V15	ONDULEUR MERLIN GERIN	URR/SBA					394653 E06			CID	
V16	ORDINATEUR COMPAQ DESKPRO 2000 PEN	URR/SBA					8732HWC60457			CID	
V16	ECRAN COULEUR	URR/SBA					722BC180A068			CID	
V16	IMPRIMANTE LASERJET 6L	URR/SBA					CNWN025924			CID	
V16	HAUT PARLEURS CREATIVE CS120 SPEAKE	URR/SBA					9608373			CID	
V16	ONDULEUR MERLIN GERIN	URR/SBA					394648581			CID	
V23	ORDINATEUR PORTABLE COMPAQ ARMAD	SOHC/KOLDA					J734BM541264			CID	
V23	IMPRIMANTE LASERJET 6L	SOHC/KOLDA					CNZM017699			CID	
AFRIDIS	V23	MOTO HONDA XL 125S	SOHC/KOLDA	cfa2 375 0	20/04/98		5711,365			CID	Resp Ambroise Diatta
	V23	MOTO HONDA XL 125S	SOHC/KOLDA				1571 TTC1			CID	
	V24	RETROPROJECTOR	URR/NIAYES							CID	
	V24	SCANNER	URR/NIAYES							CID	
	V24	PRINTER HP DESKJET 690C COULEUR	URR/NIAYES				ES77H120F6			CID	Resp Abdourahmane Tamba

INVENTORY STATUS OF SEPTEMBER 26 1998

ISRA GENERAL

SUPPLIER	Ref	DESCRIPTION	LOCATION	UNIT	PURCH	REC D	MODEL	SERIAL	OSU IN	FUND	REMARKS
	No			COST	DATE	DATE	No	No	No	SOURCE	
		WALL CLOCK	SECR/DG							CID	

9

109

	ACT 486-50 COMPUTER	DIENG/SG	\$2245,00	09/01/93		486 50	03324	302624	CID	
	ALR COLOR MONITOR	DIENG/SG					2010176		CID	
	PRINTER, DESKJET 500	DIENG/SG					3321S28831		CID	
	ACT 486-50 COMPUTER	SECK/DS	\$2245,00	09/01/93		486 50	03322	302625	CID	
	INFINITI COLOR MONITOR	SECK/DS					PE05973		CID	
	PRINTER, DESKJET 500	SECK/DS					3321S29302		CID	
	COMPAQ COMPUTER, LAPTOP	J PIERRE		07/01/93		139410 0	7252HCH20913	301446	CID	
	VIDEO TAPE PLAYER/RECORDER MULTISY	ISRA/UIG	cfa175 000	31/01/97		PS31V	S1000726E		CID	
	TELEVISION 1 20m FOR RETRO PROJECTIO	ISRA/UIG	cfa1 762 5	31/01/97		LITE PRO	2XC0611034	314223	CID	
	ANTENNE TV AVEC CABLE ET ACCESSOIRE	ISRA/UIG		01/04/97					CID	
	ACT INTL 486/50 COMPUTER	ISRA/UIG	\$2245,00	11/06/97		486 50	03327	302619	CID	
	COLOR MONITOR	ISRA/UIG		11/06/97			PZ05796		CID	
	PRINTER, HP LASERJET IV	ISRA/UIG		09/01/93			JPBT036556	302541	CID	
	TAPE BACKUP 250 mb external	ISRA/UIG							CID	
BIT	HAYES MODEM 2400	ISRA/UIG							CID	
BIT	TOKEN RING CARD W/CABLE	ISRA/UIG	cfa402 382	03/02/95					CID	
	TOKEN RING CARD W/CABLE	ISRA/UIG	cfa402 382	03/02/95					CID	
	COMPAQ DESKPRO PENTIUM 166	ROOM 39	\$2729 74	10/13/1997		KPR	771BC050B		CID	
	COMPAQ COLOR MONITOR	ROOM 39		10/13/1997			W920514559		CID	
	BATTERY BACKUP	ISRA/DS					830HVU82010		CID	Delivered to DS Secretary
	COMPAQ DESKPRO PENTIUM 166	ISRA/DS	\$2729,74	09/23/97		DESKPR	845BC050B585		CID	
	COMPAQ COLOR MONITOR	ISRA/DS		09/23/97					CID	
	COMPAQ, LAPTOP	ISRA/BAME		07/01/93		139410 0	7251CH28297	301447	CID	Responsible Aifa Ndoye
RANK XEROX	PHOTOCOPIER XEROX 5026 III	ISRA/BAME	cfa2 550 0	06/01/93		5026 III	054 643 3	301108	CID	
OBBO	MEUBLE DE CLASSEUR A TIROIRS (4) AVE	ROOM 50	cfa134 200						USAID	
OBBO	FAUTEUIL VISITEUR SAXO	ROOM 50	cfa69 900						USAID	
OBBO	CASIER DE RANGEMENT 90x35 cm	ROOM 50	cfa66 400						USAID	
OBBO	1 ONDULEUR	ROOM 50							USAID	
OBBO	BUREAU MINISTRE PLATF AL 1800x900 mm	ROOM 51	cfa199 800						USAID	
OBBO	MEUBLE DE CLASSEUR A TIRORS (4), AVEC	ROOM 51	cfa134 200						USAID	
OBBO	FAUTEUIL VISITEUR SAXO	ROOM 51	cfa69 900						USAID	
OBBO	CASIER DE RANGEMENT 90x35 cm	ROOM 51	cfa66 400						USAID	
OBBO	ACT COMPUTER 486 50, EXTERNAL 2400 M	BAMBEY	\$2245,00	09/01/93		486 50	03325	302623	CID	
	COLOR MONITOR	BAMBEY					PC 05962		CID	
	PRINTER, DESKJET 500	BAMBEY					3244J39836	301888	CID	
	SURGE PROTECTOR	BAMBEY					161300 9G067 9300792		CID	
OBBO	BUREAU MINISTRE PLATEAU 1800x900 mm	BAMBEY	cfa199 800						USAID	
OBBO	FAUTEUIL VISITEUR SAXO	BAMBEY	cfa69 900						USAID	
OBBO	FAUTEUIL VISITEUR SAXO	BAMBEY	cfa69 900						USAID	
OBBO	FAUTEUIL TOURNANT ROULANT SAXO	BAMBEY	cfa88 900						USAID	
OBBO	MEUBLE DE CLASSEUR A TIRORS (4), AVEC	BAMBEY	cfa134 200						USAID	
	COMPUTER IBM 586 PENTIUM 100	BAMBEY					519623 3833		CID	Saliou Niang/Canada AGRICON Trg
	COLOR MONITOR						DKAM 1566		CID	Saliou Niang/Canada AGRICON Trg
	COMPUTER 586 PENTIUM 100	CDH				M1566P			CID	M Sarr/Canada AGRICON Trg
	COLOR MONITOR	CDH				GVC	5PTA 64B008168		CID	M Sarr/Canada AGRICON Trg
	SYSTEM, CMPTR IBM 486 50 W/MNTR	KAOLACK	\$2245,00	09/01/93		486 50	03326	302622	CID	Delivered to Desire Sarr
	PRINTER, DESKJET 500	KAOLACK					3321S28832		CID	Delivered to Desire Sarr
	SURGE PROTECTOR	KAOLACK							CID	Delivered to Desire Sarr
	TRANSFORMER (1000 WATTS)	KAOLACK							CID	Delivered to Desire Sarr
	FAX MACHINE, CANON 15	KAOLACK	cfa303 000	06/01/93		H11 091	V 028 1249	301098	CID	Delivered to Desire Sarr

5

665

	COPIER, XEROX 5026 III	KAOLACK	cfa2 550 0	06/01/93		5026 III	055 746 0	301080	CID	Delivered to Desire Sarr
	SYSTEM COMPUTER	KAOLACK							CID	Modou Sene/Canada AGRICON Trg
	PRINTER PANASONIC KX P1624 24PIN	KAOLACK							CID	Desire Sarr Loan
	PRINTER, DESKJET 500	ISRA/BAME					3244J39858	301889	CID	
	COPIER, XEROX 5026 III	ISRA/BAME	cfa2 550 0	06/01/93				301108	CID	
SERA	TRUCK, ISUZU 4X4 PICK UP	ISRA/CNBA	\$20,569 6	2/26/97		4X4 PICK	9 102 731	314177	CID	
SERA	TRUCK, ISUZU 4X4 PICK UP	ISRA/SBA	\$20,569 6	2/26/97		4X4 PICK	9-102 718	314179	CID	
SERA	TRUCK, ISUZU 4X4 PICK UP	ISRA/SOHC	\$20,569 6	2/26/97		4X4 PICK	9-102 730	314178	CID	
SERA	TRUCK, ISUZU 4X4 PICK UP	ISRA/ZSP	\$20,569 6	2/26/97		4X4 PICK	9 102 759	314176	CID	
	ARCH INFOR PC	ISRA							CID	Madiagne Diagne
NDAR EQUIP	AIR CONDITIONER, DELCHI	ISRA/HANN	cfa139 200	06/01/93		AQA 008	62Y 196 663	301104	CID	ISRA/UPVA Bureau Alassane Ndiaye
NDAR EQUIP	AIR CONDITIONER, DELCHI	ISRA/HANN	cfa139 200	06/01/93		AQA 008	62Y 196 631	301106	CID	ISRA/UPVA Bureau Michel Gomis
NDAR EQUIP	AIR CONDITIONER, DELCHI	ISRA/HANN	cfa139 200	06/01/93		AQA 008	62Y 196 664	301105	CID	ISRA/UPVA Bureau Lamine Beye
NDAR EQUIP	AIR CONDITIONER, DELCHI	ISRA/HANN	cfa139 200	06/01/93		AQA 008	62Y 196 373	301102	CID	Ex Bureau NRBAR Administrator
NDAR EQUIP	AIR CONDITIONER, AIRWELL	ISRA/HANN	cfa195 000	06/01/93		MAY 124	X 960 10215	301100	CID	ISRA/UPVA/NRBAR Bureau J Sarr
ITS	TELEPHONE SYSTEM W/SETS/CONSOLE/S	ISRA/HANN	cfa398 500	10/01/93		ALTO	N/A	303037	CID	ISRA/UPVA Alassane Ndiaye
NDAR EQUIP	AIR CONDITIONER, DELCHI	URR/TAMBA	cfa139 200	06/01/93		AQA 008	62Y 196 641	301107	CID	Delivered to Demba Farba Mbaye
	ACP 486-50 COMPUTER	URR/TAMBA	\$2245.00	09/01/93		486 50	03328	302618	CID	Delivered to Demba Farba Mbaye
	INFINITI SYSTEMS COLOR MONITOR	URR/TAMBA					PE 05955		CID	Delivered to Demba Farba Mbaye

INVENTORY STATUS OF SEPTEMBER 26 1998

GRANTS LIRs

SUPPLIER	Ref	DESCRIPTION	LOCATION	UNIT	PURCH	REC D	MODEL	SERIAL	OSU IN	FUND	REMARKS
	No			COST	DATE	DATE			No	SOURCE	
	LIR-01	ORDINATEUR COMPAQ PRESARIO	URA/PA				PRESARI	8722BKJ70144		CID	Resp Abdou Fall
	LIR-01	ORDINATEUR COMPAQ PRESARIO	URA/PA				PRESARI	8722BKJ70141		CID	Resp Abdou Fall
	LIR-01	MONITOR COMPAQ V70	URA/PA				PRESARI	716BD24EX720		CID	Resp Abdou Fall
	LIR-01	MONITOR COMPAQ V70	URA/PA				PRESARI	716BD24EZ935		CID	Resp Abdou Fall
	LIR-01	BATTERY BACKUP	URA/PA					573717505		CID	Resp Abdou Fall
	LIR-01	PRINTER LASERJET 6P	URA/PA				6P	NLCB001846		CID	Resp Abdou Fall
	LIR-01	BUREAU MINISTRE	URA/PA	cfa130 000	22/07/97					CID	Resp Abdou Fall
	LIR-01	2 FAUTEUILS	URA/PA	cfa170 000	22/07/97					CID	Resp Abdou Fall
	LIR-01	4 CHAISES VISITEURS	URA/PA	cfa80 000	22/07/97					CID	Resp Abdou Fall
	LIR-01	BUREAU MINISTRE	URA/PA	cfa230 000	22/07/97					CID	Resp Abdou Fall
	LIR-01	CANON PHOTOCOPIER	DS					UCW14894		CID	DIRECTION SCIENTIFIC
	LIR-01	HP PRINTER/SCANNER/COPIER	DG					SG81DC808D		CID	
	LIR-01	HP PRINTER/SCANNER/COPIER	DG					SG81CC813Y		CID	
	LIR-01	HP OFFICE JET PRINTER	DS					SG81CC81F6		CID	
	LIR-02	MATERIEL DE LABORATOIRE SCIENTIFIQUE	URR/NCNBA					5071697&831420		CID	Resp Aminata Badiane
	LIR-02	PORTABLE TOSHIBA	ISRA/DS				SATELLIT	97185428E		CID	Resp Aminata Badiane
	LIR-02	DISK DRIVE/ZIP PARALLEL PORT	URR/SBA				Z100P2	PRCH3426EN		CID	Resp Modou Sene
	LIR-02	LABORATORY BALANCE	URR/SBA							CID	
	LIR-02	HP PRINTER	URR/SBA					SG81CC80MM		CID	
	LIR-02	HP LASERJET 5L PRINTER	URR/SBA							CID	
	LIR-02	FAX MACHINE	URR/SBA					2994316250		CID	
	LIR-02	ONDULEUR	URR/SBA					573803157		CID	
	LIR-02	HP DESKJET 340C	URR/SBA					SG816120PP		CID	
	LIR-02	COMPAQ DESKPRO	URR/SBA							CID	

5

665

LIR-02	COMPAQ COLOR MONITOR	URR/SBA					807BF26AJL98			
LIR-02	FAX/MODEM	URR/SBA					3517986140165		CID	
LIR-02	PORTABLE TOSHIBA TECRA	URR/SBA					58014357		CID	
LIR-02	ONDULEUR	URR/SBA					573803160		CID	
LIR-02	2 COMPUTER BAG	URR/SBA							CID	
LIR-02	SPECTROPHOTOMETER	URR/SBA							CID	
LIR-02	2 CHANNEL RECORDER	URR/SBA							CID	
LIR-02	BALANCE	URR/SBA							CID	
LIR-02	TRACE	URR/SBA							CID	
LIR-02	RELASKOP	URR/SBA							CID	
LIR-03	HP OFFICE JET 635 PRINTE5R	URR/NIAYES					SG81CC81GH		CID	
LIR-03	PORTABLE COMPUTER PENTIUM 166	URR/NIAYES				TECRA 73	77102307E		CID	Resp Alassane Fall
LIR-03	PRINTER DESKJET 340 CBI	URR/NIAYES				C2671A	SG78M12021		CID	Resp Alassane Fall
CADECUR	LIR-03	BALANCE ELECTRONIQUE	URR/NIAYES	cfa665 000	27/04/98				CID	Resp Alassane Fall

INVENTORY STATUS OF SEPTEMBER 26 1998

LONG TERM TRAINING ISRA PARTICIPANTS (PURCHASED ON PIO/P BUDGETS WITH USAID APPROVAL)

SUPPLIER	Ref No	DESCRIPTION	LOCATION	UNIT COST	PURCH DATE	REC D DATE	MODEL	SERIAL	OSU IN No	FUND SOURCE	REMARKS
		COMPUTER & SCREEN	URR/BMC				MATRIX	E139761(SP)	309130	CID	Responsible Samba SALL
		1 2GB HARD DRIVE	URR/BMC				QUANTU	692701034329		CID	Responsible Samba SALL
		PRINTER DESKJET INKJET	URR/BMC				HP	1367001		CID	Responsible Samba SALL
		PENTIUM W/ FAX/MODEM	URR/BMC				AREA CO	JWN26A51206244		CID	Responsible Mamadou Lo
		COMPUTER & SCREEN	URR/KOLDA				INTEL	96X001483 11345		CID	Responsible Mouhamadou Sissoko
		PRINTER CANON K10145	URR/KOLDA				HP	EGV12509		CID	Responsible Mouhamadou Sissoko
		HP PAVILLION COMPUTER	URR/BMC					US71953639		CID	Responsible Alioune Fall
		COMPUTER & SCREEN	URR/BMC					J61203558		CID	Responsible Boubacar Barry
		COMPUTER & SCREEN	LNERV				AREA CO	J965100874 PPT36C61107982		CID	Responsible Mamadou Diop
		PRINTER DESKJET	CRODT					SG79F1133H		CID	Responsible Bassirou Djaw
		HP PAVILLION COMPUTER	CRODT							CID	Responsible Bassirou Djaw
		PACKARD BELL MONITOR	CRODT					GVMN64009309		CID	Responsible Alioune Fall
		PENTIUM, MODEM AND MONITOR	BMC				GATEWA	150050 2744919	310013	CID	Iba Thomas
		PENTIUM AND MONITOR	OSU					96X00200S 11345		CID	MASSAMBA THIAM
		BUBBLEJET COLOR PRINTER	OSU				HP	EGV1165		CID	MASSAMBA THIAM
		PENTIUM AND MONITOR	OSU					1563A 11345		CID	EVELYNE NDIAYE
		BUBBLEJET COLOR PRINTER	OSU				HP	EGV01158		CID	EVELYNE NDIAYE
		PENTIUM AND MONITOR	OSU					TD1536A 11345		CID	AISSATOU NDIAYE
		BUBBLEJET COLOR PRINTER	OSU				HP	EGU55752		CID	AISSATOU NDIAYE
		TOSHIBA LAPTOP	CDH					12455984	310212	CID	TANOU BA
		TOSHIBA SATELLITE W/ MODEM	KOLDA					4780493		CID	MOUR GUEYE
		TOSHIBA PORTABLE	BAME					67037481		CID	ALIOUNE DIENG
		CANNON BUBBLEJET PRINTER	BAME							CID	ALIOUNE DIENG
		DESKTOP COMPUTER	UCDAVIS					17004A019195		CID	FANA BA
		HP 694C PRINTER	UCDAVIS					US7481G08D		CID	FANA BA

5

67

INVENTORY STATUS OF SEPTEMBER 26 1998

GRANTS NGO

SUPPLIER	Ref	DESCRIPTION	LOCATION	UNIT	PURCH	REC D	MODEL	SERIAL	OSU IN	FUND	REMARKS
	No				DATE	DATE			No	SOURCE	
	S01	MOBYLETTE	RODALE		07/12/93			59322428		CID	
	S03	SAMSUNG COMPUTER	OSDIL					H8VCC000023		CID	
	S03	EPSON PRINTER	OSDIL					32T7003124		CID	
	S03	ANAMOMETER	OSDIL					HP27HB		CID	
	S05	2 BAZOOKAS	SAHEL 3000		30/11/94					CID	
	S07	TOSHIBA PORTABLE	AFRICARE		25/03/96			8531687		CID	DEFECT SHIPPED TO OSU 9/98
	S07	ORDINATEUR PORTABLE PENTIUM	AFRICARE	cfa1 999 8	16/01/97		PENTIUM			CID	
	S07	IMPRIMANTE LASERJET PANASONIC KX-SP	AFRICARE					4JMCRC12720		CID	
	S08	CLIMATISEURS 12000 BTU GOLDSTAR 1,5C	ARAF				LWC1261	705KA00073		CID	
	S08	ONDULEUR MERLIN GERIN 750 VA off line	ARAF	cfa247 500	20/01/97		MERLIN	394638473		CID	
	S08	ORDINATEUR COMPAQ DESKPRO 2000 513	ARAF	cfa1 407 0	17/07/97			8709HVT42428		CID	
	S08	ECRAN COULEUR	ARAF					712AF19KE070		CID	
	S08	MODEM 33 600 bps	ARAF				USRobotics			CID	
	S08	IMPRIMANTE LASERJET 6L	ARAF	cfa350 900	17/07/97		6P	JPWX048355		CID	
	S08	HAUT PARLEURS/MLI 65/125W (2)	ARAF							CID	
	S09	ORDINATEUR COMPAQ PROLINEA 5100 PE	CARITAS				630	8612HTC22317		CID	
	S09	ECRAN SVGA COMPAQ COULEUR	CARITAS					602AF19KE		CID	
	S09	IMPRIMANTE LASERJET PANASONIC KX-SP	CARITAS					4JMCRC11061		CID	
	S10	IMPRIMANTE HP LASERJET 6L	GADEC					CNZM094920		CID	
	S10	ORDINATEUR PORTABLE COMPAQ ARMAD	GADEC					J735BM540709		CID	
	S11	DECORTIQUEUR CIS + MOULIN SISMAR + M	FJBS	cfa2 600 0	30/01/97					CID	
	S12	ORDINATEUR PORTABLE MITAC	AHDIS				4023	TN5C4360		CID	
	S12	AC ADAPTER	AHDIS				LP486-AD	TN5C007796		CID	
	S12	IMPRIMANTE LASERJET PANASONIC KX-SP	AHDIS					5BMCRC16023		CID	
POINT MI	S12	COMPUTER BAG	AHDIS	cfa190 000	17/04/98					CID	
BIT	S12	COMPAQ DESKPRO 2000 5166X	AHDIS	cfa845 000	17/04/98	2705/98		8745BK527725		CID	
	S12	COLOR MONITOR	AHDIS		28/05/98			743 AH19AJ693		CID	
	S12	SCANNER	AHDIS		06/05/98					CID	
	S12	PULVERISATEUR/SCALE	AHDIS		03/04/96					CID	
	S13	COMPAQ PORTABLE	RODALE		29/05/98					CID	
	S13	AIR CONDITIONER	RODALE		03/07/98			KC3210300800 0021		CID	
	S13	AIR CONDITIONER	RODALE		03/07/98			KC3210300800 0040		CID	
	S13	AIR CONDITIONER	RODALE		03/07/98					CID	
	S13	IMPRIMANTE HP LASERJET 6P	RODALE					NLBB400389		CID	
POINT MI	S13	COMPUTER BAG	RODALE	cfa190 000	17/04/98					CID	
	S14	ORDINATEUR COMPAQ DESPRO 2000	OCRV				PENTIUM	8732HWC60269		CID	
	S14	ECRAN COULEUR	OCRV					725BC180B848		CID	
	S14	PRINTER LASERJET 6L	OCRV					CNWN022346		CID	
	S14	HAUT PARLEURS-CREATIVE CS120 SPEAKE	OCRV					9608382		CID	
	S14	ONDULEUR MERLIN GERIN	OCRV					394648580		CID	
	S16	MICRO ORDINATEUR PORTABLE	CARITAS	cfa1 800 0	16/01/97					CID	
INTERACT	S16	PORTABLE COMPAQ ARMADA 1540D	CARITAS	cfa1 775 0	17/04/98			J819BT51M081		CID	
	S16	PHOTOCOPIER	CARITAS		13/05/98			UCH16115		CID	

3

890

	S16	COMPAQ DESKPRO 2000 5166X	CARITAS	03/07/98			8816BK677730		CID
	S16	COLOR MONITOR	CARITAS				819BF24AE749		
	S16	EPSON COLOR PRINTER	CARITAS	03/07/98			3KNY003435		CID
	S16	BATTERY BACKUP	CARITAS	07/07/98			573801550		CID
	S18	MOTOCYCLE	AFRICARE	29/07/97			5710681		CID
	S18	MOTOCYCLE	AFRICARE	29/07/97			5710704		CID
	S18	MOTOCYCLE	AFRICARE	29/07/97			5710678		CID
	S18	MOTOCYCLE	AFRICARE	29/07/97			5710715		CID
	S18	MOTOCYCLE	AFRICARE	29/07/97			5710685		CID
	S18	COMPAQ DESKPRO 2000	AFRICARE	18/08/97					CID
	S18	CD ROM DRIVE 12X	AFRICARE	18/08/97					CID
	S18	COMPAQ DESKPRO 2000	AFRICARE	18/08/97					CID
	S18	COLOR MONITOR	AFRICARE	18/08/97					CID
	S18	CD ROM DRIVE 12X	AFRICARE	18/08/97					CID
	S18	EXTERNAL STREAMER	AFRICARE	18/08/97					CID
	S18	COMPAQ PORTABLE	AFRICARE	18/08/97			FB V1433VQL1J		CID
	S18	HP LASERJET 5	AFRICARE	18/08/97					CID
	S19	ORDINATEUR PORTABLE COMPAQ ARMAD	ARAF				J734BM541404		CID
	S19	IMPRIMANTE HP LASERJET 6L	ARAF				CNWN050387		CID
	S19	CLIMATISEUR GOLDSTAR	ARAF				705KA00386		CID
	S20	AGRAFEUSE GEANTE	AHDIS				ETONA 260		CID
	S20	CISAILLE 560 35 cm	AHDIS						CID
	S20	MACHINE A RELIER STAR	AHDIS				9753111		CID
	S20	ORDINATEUR COMPAQ DESKPRO 2000 513	AHDIS	cfa1 407 0	17/07/97		8709HVT40589		CID
	S20	ONDULEUR	AHDIS	cfa223 500	17/07/97		573801688		CID
	S20	ECRAN COULEUR	AHDIS				712AF19KE850		CID
	S20	MODEM 33 600 bps	AHDIS			USRoboti	213823B790RL		CID
	S20	HAUT PARLEURS/MLI 65/125W (2)	AHDIS				9609599		CID
	S20	CLIMATISEUR 12000 BTU GOLDSTAR 1,5CV	AHDIS			LWC1261	705KA00169		CID
	S20	CLIMATISEUR 12000 BTU GOLDSTAR 1,5CV	AHDIS			LWC1261	610KA00673		CID
	S20	4 DECAMETRES	AHDIS	cfa88 000	04/03/96				CID
	S20	1 PESEAU 100 Kg	AHDIS	cfa52 000	04/03/96				CID
ATI	S20	IMPRIMANTE HP LASERJET 6L	AHDIS	cfa360 000	17/04/98		CNZM339205		CID
INTERACT	S20	PORTABLE COMPAQ ARMADA 1540D	AHDIS	cfa1 775 0	17/04/98		J818BT510226		CID
	S20	PORTABLE COMPAQ ARMADA 1540D	AHDIS				J818BT510233		
SBI	S20	DUPLICOPIEUR RISO	AHDIS	cfa3 350 0	17/04/98				CID
	S20	MOTO YAMAHA DT125 W/ HELMET	AHDIS		10/09/97		65920		CID
	S20	MOTO YAMAHA DT125 W/ HELMET	AHDIS		10/09/97		65932		CID
	S20	COMPUTER BAG	AHDIS		17/04/98				CID
	S20	RETROPROJECTOR	AHDIS		12/05/98		215913		CID
	S20	RETROPROJECTOR	AHDIS		12/05/98		315415		CID
	S20	AIR CONDITIONER	AHDIS		03/07/98		851000053		CID
	S20	BATTERY BACKUP	AHDIS		03/07/98		67583999		CID
	S21	ORDINATEUR COMPAQ DESKPRO 2000 516	RODALE				8723HVVU89838		CID
	S21	ECRAN COULEUR	RODALE				725BC180B964		CID
	S21	HAUT PARLEURS/MLI 9/230W (2)	RODALE				9608059		CID
	S21	IMPRIMANTE HP LASER 5	RODALE				NL1W152881		CID
	S21	ONDULEUR MERLIN GERIN	RODALE				394648348		CID
ATI	S21	IMPRIMANTE HP LASERJET 6MP	RODALE	cfa360 000			NLCF018616		CID
INTERACT	S21	PORTABLE COMPAQ ARMADA 1540D	RODALE	cfa1 775 0	17/04/98		J8178T510182		CID

5

669

SUPPLIER	Ref	DESCRIPTION	LOCATION	UNIT	PURCH	REC D	MODEL	SERIAL	INVENT	FUND	REMARKS
	No			COST	DATE	DATE					
SECOMEB	L01	10 CHAISES	IST		21796					CID	
SECOMEB	L01	1 TABLE BANC	IST		21796					CID	
SECOMEB	L01	2 CHAISES	IST		30796					CID	
SECOMEB	L01	2 LITS DE CAMPEMENT	IST		30796					CID	
SECOMEB	L01	5 CHAISES	IST		32396					CID	
SECOMEB	L01	1 TABLE BANC	IST		32396					CID	
MAT INFO	L01	IMPRIMANTE JET D ENCRE HP DESKJET CO	IST		40296					CID	
MAT INFO	L01	CARTE FAX MODEM	IST		40296					CID	
SECOMEB	L01	1 TABLE BANC	IST		41396					CID	
SECOMEB	L01	1 LIT DE CAMPEMENT	IST		41396					CID	
SECOMEB	L01	4 TABLE BANCS	IST		51096					CID	
	L01	1 TRANSFORMATEUR	IST		61596					CID	
	L01	POTENTIOMETRE	IST		61596					CID	
B & TEISSE	L01	PHOTOCOPIEUSE	IST	efa3 500 0	12696			UBJ62531	313991	CID	
	L02	COMPUTER COMPAQ PRESARIO	ENSA				4160 SER	8718BKTG004		CID	Resp Moussa Fall
	L02	MONITOR 15	ENSA				1525 SER	716BD24EZ519		CID	Resp Moussa Fall
	L02	COMPUTER COMPAQ PRESARIO	ENSA				4160 SER	8710BKT60021		CID	Resp Moussa Fall
	L02	MONITOR 15	ENSA				1525 SER	716BD24EZ568		CID	Resp Moussa Fall
	L02	COMPUTER COMPAQ PRESARIO	ENSA				4160 SER	8707BKTG1301		CID	Resp Moussa Fall
	L02	MONITOR 15	ENSA				1525 SER	715BD24ES710		CID	Resp Moussa Fall
	L02	COMPUTER COMPAQ PRESARIO	ENSA				4160 SER	8710BKTG0068		CID	Resp Moussa Fall
	L02	MONITOR 15	ENSA				1525 SER	716BD24EZ518		CID	Resp Moussa Fall
	L02	PRINTER LASERJET 6P	ENSA				6P	NLBB206582		CID	Resp Moussa Fall
	L02	PRINTER LASERJET 6P	ENSA				6P	NLBB206593		CID	Resp Moussa Fall

Le Directeur General
de l'ISRA
Moussa BAKHAYOKHO

10/1