PD-ABN-514
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A.I.D. EVALUATION SUMMARY - PART I

1. BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS.
2. USE LETTER QUALITY TYPE, NOT "DOT MATRIX" TYPE.

IDENTIFICATION DATA

A. Reporting A.I.D. Unit:
Mission or AID/W Office USAID/SENEGAL
(ES# _____)

B. Was Evaluation Scheduled In Current FY Annual Evaluation Plan?
Yes ☐ Slipped ☐ Ad Hoc ☐
Evaluation Plan Submission Date: FY ____ Q ____

C. Evaluation Timing
Interim ☒ Final ☐
Ex Post ☐ Other ☐

D. Activity or Activities Evaluated (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report.)

Project No.	Project /Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOP Cost (000)	Amount Obligated to Date (000)
685-0285	Natural Resources Based-Agricultural Research (NRBAR)	FY 91	July 98	19,750	12,300

ACTIONS

E. Action Decisions Approved By Mission or AID/W Office Director

Action(s) Required	Name of Officer Responsible for Action	Date Action to be Completed
- Appoint a single counterpart for each T.A. member.	ISRA	Dec 1995
- Integrate the TA team as a whole into ISRA's structure by ensuring that the TA and their counterparts effectively work together.	ISRA/CID	Dec 1995
- Develop an ISRA information system to meet the needs of a well functioning institute.	CID/ISRA	Dec 1995
- Establish the conditions for ISRA's use and gradual ownership of the management tools developed under NRBAR (GIS, Monitoring & Evaluation Plan, NRM strategy, Action Plans for ISRA stations).	CID/ISRA	March 96
- Establish mechanisms for the reintegration of ISRA researchers currently on long-term training.	ISRA	Dec 1995
- Release the funds budgeted for ISRA core NR Program by placing them under CID's direct management.	USAID	March 96
- Establishment whithin ISRA of a unit for consultations between researchers and users.	ISRA	Jan. 1996
- Agree to a gradual certification of ISRA financial management system.	USAID	March 96

(Attach extra sheet if necessary)

APPROVALS

F. Date of Mission Or AID/W Office Review Of Evaluation: (Month) (Day) (Year)

G. Approvals of Evaluation Summary And Action Decisions:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Name (Typed)	Mawa DIOP	N/A	Sounka NDiaye	Anne M. Williams
Signature	Mawa Diop		[signature]	[signature]
Date	11/20/96		11/20/96	

ABSTRACT

H. Evaluation Abstract (Do not exceed the space provided)

The project aims at supporting the Institut Sénégalais de Recherches Agricoles (ISRA) in the design of Natural Resources-Based Technologies to increase the productivity and sustainability of cereals-based cropping systems for four selected cereals: millet, sorghum, corn and rice. Its four stated objectives are:

- Improve ISRA research and financial management;
- Establish an improved research program based on natural resources management;
- Develop validated natural resources-based technologies available for adoption;
- Develop a farmer-participatory research system for designing, testing, and validating research.

The project is being implemented by CID and ISRA. This mid-term evaluation (February 1995) was conducted by a team made up of local consultants on the basis of a joint review of ISRA and project documents review, meeting with USAID staff, partners and customers, visits to centers of research and sites and debriefings. The purpose of the evaluation was to assess status of NRBAR's progress towards accomplishing its planned objectives and to make necessary recommendations.

The major findings and conclusions of the evaluation were:

- ISRA authorities should make the appropriate decisions to create the conductions for a gradual integration and appropriation of the several management tools developed under NRBAR;
- It is necessary to establish mechanisms for the integration of the researchers receiving long-term training into the different research programs.
- The $1 million budgeted for ISRA's Core NRM program should be released to CID for management and disbursement or a project extension process initiated.
- The entire technical assistance should be integrated into ISRA structure by having the technical assistants and their counterparts "share the same offices" in order to get them used to working together.

The evaluators noted the following lessons:

- there should be as few ambiguities as possible between the versions of a project document to avoid different interpretations of its main elements;
- it is not always easy to implement an institutional support project because it calls into question certain rigid work behaviors. It will certainly take some time for such a project to achieve its objectives;
- the effectiveness of a project always depends on the actual ability of the beneficiary to identify themselves with and adhere to the project in order to make the most of it. If there is no such ability, attempts should be made at correcting the shortcoming before establishing the project;
- project grants tied to too restrictive conditions precedent often deteriorate the working climate and may in the long run, jeopardize the accomplishment of its objectives.
- An institution which is a beneficiary of a project should be committed to its implementation and assume its responsibility. For this to happen, the institution should be fully empowered instead of being solely associated in the making of decisions.

COSTS

I. Evaluation Costs

1. Evaluation Team

Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S. $)	Source of Funds
Médoune Diène (Ag. Engineer)	Consultant	685-0285-0-00-5088-00	2005 900 F	NRBAR Project
Issa Dabo NDiaye	Consultant	685-0285-0-00-5099-00	2005 900 F	
Mamadou Daffé (Agronomist)	Consultant	685-0285-0-00-5089-00	1900 499 F	

2. Mission/Office Professional Staff Person-Days (Estimate) _____

3. Borrower/Grantee Professional Staff Person-Days (Estimate) _____

B

A.I.D. EVALUATION SUMMARY - PART II

SUMMARY

J. Summary of Evaluation Findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provided)
Address the following items:

- **Purpose of evaluation and methodology used**
- **Purpose of activity(ies) evaluated**
- **Findings and conclusions (relate to questions)**
- **Principal recommendations**
- **Lessons learned**

Mission or Office:	Date This Summary Prepared:	Title And Date Of Full Evaluation Report:

I. PURPOSE OF EVALUATION AND METHODOLOGY

The terms of reference required the team to assess the progress made by NRBAR towards the achievement of its objectives, and to possibly provide recommendations necessary for its reorientation.
The evaluation was conducted in two stages:
- The first stage: was carried out in conjunction with the ISRA donors. Because this stage failed to take into account the specific aspects of the NRBAR Project, it was decided to carry out a second phase which consisted in:
  - Working sessions with USAID project staff;
  - Reviewing the existing documents on the project and study of ISRA's midterm review;
  - Interviews and discussions with the Project partners, actors and beneficiaries;
  - Visits of selected research centers such as Bambey and Kaolack, and field trips; and
  - Debriefing sessions with representatives of ISRA, USAID and the technical assistance team leader.

II. Purpose of Activities

A. Research Planning and Organization

The purpose of this component is to institutionalize methods and to develop tools in order to improve ISRA's management and planning systems.

B) Natural Resource Based Research

The component's main objective is to increase ISRA's ability to develop low-cost technologies which can be adopted by the users for sustained natural resource management.

c) Outreach Program

The program intends to use any possible means to expand and diversify the groups concerned by the ISRA activities and to strengthen the links which may exist among them.

D) Financial management system asssitance

For an institution like ISRA whose activities are financed to a large extent (60-70%) by foreign assistance, a viable financial management system guarantees credibility vis-à-vis its main donors. The NRBAR project should contribute to this by achieving the improvements necessary for ISRA current financial management system.

III. Findings & Conclusions

A large number of researchers experienced difficulties in establishing good interpersonal relationships with the technical assistance in the development phase of the project due to the fact that the project was not considered as an integral part of ISRA.

The evaluation team noted that the achievements of the NR-based research component seemed to have had the greatest impact on both ISRA's institutional and scientific consolidation. By improving the quality of research and planning organization of the Institute, the actions taken undoubtedly contributed to the institutionalization of practices which definitely improved the scientific and technical performance of its programs.

The NRBAR project has made a significant contribution to the design of ISRA's Natural Resources Management program. The contribution has to a large extent enabled the design of a natural resources-based research strategy for the development of a coherent natural resources-based agricultural research program applicable to an ISRA strategic plan.

Regarding ISRA's financial management system, the mission noted that the Ernst and Young Firm made sufficient progress despite the lack of monitoring and of supervision by ISRA, which was a major constraint until the establishment of the Pilot Committee.

IV. RECOMMENDATIONS

To enable the NRBAR project to operate and to be managed in the best manner for ISRA and its numerous beneficiaries to obtain the expected outputs, it is important to take the following measures without further delay:

- Appoint a single counterpart for each member of the technical assistance;
- Integrate the entire technical assistance into ISRA structure by having the technical assistants and their counterparts "share the same offices" in order to get them used to working together;
- Enhance consultation and exchange of information among the technical assistants, their counterparts and the various components of the NRBAR project through regular consultation meetings.
- Institute in each binomial technical assistant-counterpart the establishment of mandatory work plans and programs of activities with a clear division of tasks.

- ISRA authorities should make the appropriate decisions to create the conditions for gradual integration and appropriation of the several management tools which were developed. In relation with the NRBAR technical assistance team, ISRA should take advantage of the scientific and institutional management tools such as the Geographic Information System, the Natural Resource Management Plan, and the monitoring/evaluation plan.
- Organize workshops to appraise the achievements and the steps towards the validation and/or adoption of research activities related to technologies.
- Scale down and redefine the collaborative research activities so as to have the populations, in general, only involved in the adoption process.
- Give, under the collaborative research, priority to technologies that the technology inventory study evidenced as of the greatest potentialities.
- Improve the circulation of information related to the financial management system and associate more closely to its design the users and other interested customers.

- Establish mechanisms for reintegrating the researchers currently in training status into the different research programs which will be selected within the framework of this program.

- Accept if possible a gradual certification of the ISRA management system, which would mean a gradual release of the funds subjected to that condition.

- Plan a possible extension of the project for at least 3 years to obtain significant results in the NRM program.

V. LESSONS LEARNED

- there should be as few ambiguities as possible between the versions of a project document to avoid different interpretations of its main elements;
- it is not always easy to implement an institutional support project because it calls into question certain rigid work behaviors. It will certainly take some time for such a project to achieve its objectives;
- the effectiveness of a project always depends on the actual ability of the beneficiary to identify themselves with and adhere to the project in order to make the most of it. If there is no such ability, attempts should be made at correcting the shortcoming before establishing the project;
- project grants tied to too restrictive conditions precedent often deteriorate the working climate and may in the long run, jeopardize the accomplishment of its objectives.

- An institution which is a beneficiary of a project should be committed to its implementation and assume its responsibility. For this to happen, the institution should be fully empowered instead of being solely associated in the making of decisions.
- To be efficient the technical assistance has to harmonize its methodological approach and to get along with customers.

ATTACHMENTS

K. Attachments (List attachments submitted with this Evaluation Summary; always attach copy of full evaluation report, even if one was submitted earlier; attach studies, surveys, etc., from "on-going" evaluation, if relevant to the evaluation report.)

COMMENTS

L. Comments By Mission, AID/W Office and Borrower/Grantee On Full Report

The evaluation team complied with the scope of work and made as agreed recommendations to help the NRBAR Activity attain its main objectives.

The evaluation report has raised the key-problems that need to be tackled in the future. It pointed out the strengths and weaknesses of the NRBAR project components. The evaluators researched and investigated the causes of the problems and made concrete proposals to improve program performances.
However, they failed to analyze in-depth the outreach role that ISRA should play in the technology diffusion process. This is a crucial point as it is related to the village-level impact that the NRBAR is expected to achieve.

USAID/Senegal and ISRA have pondered over all the issues raised by the Evaluation Team and decided to implement most of the recommendations. However, the following recommendations have not been completed yet:

- The execution of CID optional year (1997-1998)

- Organize a workshop for appraising the Research/Development Component achievements and the steps to be taken to carry out more effective actions and give more appropriate directions to next programs.

XD-ABN-514-A

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
(USAID - SENEGAL)

INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES
(ISRA)

THE CONSORTIUM FOR INTERNATIONAL DEVELOPMENT
(CID)
USAID CONTRACT NUMBER : 685 -02858 - C - 2329 - 00

MIDTERM EVALUATION OF THE NATURAL RESOURCES BASED AGRICULTURAL RESEARCH PROJECT (NRBAR)

Consultants:
- Médoune DIENE
- Issa Dabo NDIAYE
- Mamadou DAFFE

May 1995

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EXECUTIVE SUMMARY

The project is intended to support the Institut Sénégalais de Recherches Agricoles (ISRA) in the design of Natural Resources-Based Technologies to increase the productivity and sustainability of cereals-based cropping systems for four selected cereals: millet, sorghum, corn and rice. Its four stated objectives are:

- Improve ISRA research and financial management;
- Establish an improved research program based on natural resources management;
- Develop validated natural resources-based technologies available for adoption;
- Develop a farmer-participatory research system for designing, testing, and validating research.

The mission which consisted of a midterm assessment of ISRA's performance in the implementation of its five year plan and of the NRBAR project, was conducted in two stages:

Stage One (1/6-30/95) during which the evaluation team participated in the ISRA/World Bank/ USAID/IDRC//FAO/French Cooperation joint mission in order to :

- Assess the Institute's achievement of the objectives of its Five Year Plan;
- Assess the Institute's financial and research management strengths and weaknesses;
- Identify solutions to enhance the Institute's performance and to remove the constraints to the achievement of the research program objectives.

Stage Two (1/31 - 2/16/95) exclusively devoted to the evaluation of the NRBAR project and during which the team benefited from the conclusions of the midterm review of ISRA. Indeed, an in depth study of the various programs of the project could not be conducted in the first stage since the USAID evaluation team members were put in different groups whose themes were not always directly related to the specific components of the NRBAR project.

During this second stage, the appraisal mission held working sessions with USAID NRBAR team members to discuss and be given specifics on its mandate.

The team then reviewed the existing documentation and interviewed and discussed with the CID technical assistance team, partners, players and beneficiaries (see list of persons contacted in annex). Finally, they visited sites where field activities were carried out.

At the end of these visits, a meeting was held to review the team's findings with representatives of ISRA, USAID, and CID technical assistance.

On completing their study, the evaluation team developed the following main conclusions and recommendations:

. **Regarding the circumstances of the Project establishment and implementation**

The mission notes that, in certain of its main options, the NRBAR project is restrictive in comparison to ISRA's scope of action in the area of agricultural research. Indeed, since ISRA research activities are conducted throughout the national territory and cover all the products and agricultural production systems, there is a problem of compatibility with the limits fixed at the outset by NRBAR project whose interventions were restricted to 4 crops and to areas where rainfall exceeds 400 mm.

On the other hand, the mission observes that the mobilizable funds allocated to the project are managed by the CID technical assistance team and that ISRA is hardly involved in the management of the funds due to failure to meet the conditions precedent to the certification of its accounts. Because of this, NRBAR is considered by many researchers as a funds providing entity.

Furthermore, the geographical location of some members of the technical assistance team who are separated from their counterparts, and the existence of distinct NRBAR/CID offices, even though in the DRSPA department, makes NRBAR look more like a separate entity. Indeed a large number of researchers do not actually consider NRBAR as an integral part of ISRA, which may explain the problems of interpersonal relationships they had with the technical assistance team at the beginning of the Project, and the actual problems of integration and of symbiosis the members of some binomials were faced with when they were set up.

In this regard, the evaluation team noted while conducting this mission that only the chief of party had direct relationships with his counterpart at ISRA Management. As for the other members of the technical assistance:

- they only worked occasionally with their counterparts, hence a lack of close cooperation among technical assistants and researchers;
- they had all the facilities to carry out their work whereas their counterparts were often frustrated because faced with operating equipment problems.

This situation, together with in some cases the existence of many counterparts for the same technical assistant, and of many non-NRBAR responsibilities being assumed by ISRA employees has resulted in:

- Insufficient coordination for the achievement of NRBAR activities;
- Insufficient acceptance of responsibilities by certain counterparts, and risk for ISRA not to benefit from all the

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institutional support potential expected from the project and as a consequence, increased difficulties for the project appropriation.

Finally, the mission noted that certain project implementation elements like the significant level of technical assistance, the contracts negotiated and signed by USAID, and the over centralized decision making at USAID might restrict the possibilities of the project eventual appropriation by ISRA.

To remedy this and to enable the NRBAR project to operate and to be managed in the best conditions for ISRA and the many beneficiaries to obtain the expected outputs, it is important to take the following measures without further delay:

- Appoint a single counterpart for each technical assistant;
- Integrate technical assistance as a whole into ISRA structure by having the technical assistants and their counterparts "work in the same location" in order to get used to working together;

- Enhance consultation and exchange of information among the technical assistants and their counterparts and the various components of the NRBAR project through regular consultation meetings.
- Institute within each Binomial (technical assistance team member/ISRA counterpart), the establishment of mandatory work plans and of regular activities programs with a clear division of tasks.

. **Regarding the implementation of the research planning and organization component**.

The evaluation team notes that the achievements of this component seems to have had the greatest impact on both ISRA's institutional and scientific consolidation. By improving the quality of research and planning organization of the Institute, the actions taken have undoubtedly contributed to the institutionalization of practices which definitely improve the scientific and technical performance of its programs.

The key measures taken in this regard were:

- NRBAR assistance in the development of the Long Term Strategic Plan by permitting:
  + the organization of several visits to ISNAR for the Scientific Director(SD) and the BAME Coordinator to familiarize themselves with this institute's planning and organization methods;
  + the first proposal for research action priorities;

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- Assistance in ISRA institutional change with the design of an action plan for improved organization of the Institute's research stations management and the nomination of three deputy research directors in charge of station management (DRDSM) who, as such, received training in station management; the beginning of the second phase of Ernst & Young's action plan for the Institute management system and financial reorganization; the development of the first NRBAR procedures manual and the study of the arrangements to be made in order to update ISRA's manual;

- Assistance in the design and development of a monitoring and evaluation plan (MEP) to serve as a model for ISRA;

- Assistance in research impact studies on sorghum, millet and corn which enabled to ISRA establish a liaison with the services and bodies involved in the extension process;

- Design and implementation of the research management system with the INFORM software: a team was appointed and computer equipment provided to each operation unit at the level of Research Directorates.

- Development of a long term training program based on agreed research programs and needs in line with the research directors. The implementation of this plan resulted in the allocation of fellowship grants to several researchers: 5 PhD and 4 Masters (six others are to receive fellowships for Master degrees in June 1995).

.**Regarding the implementation of the natural resources component**

The NRBAR project has made a significant contribution to the design of ISRA's Natural Resources Management program. The contribution has to a large extent enabled:
- The establishment of the program planning committee in 1993, and the design of a Geographical Information System to set up a data base within the framework of the natural resources-based research actions;
- The design of a natural resources-based research strategy for the development of a coherent a natural resources-based agricultural research program applicable to an ISRA strategic plan. This assistance enhanced the efforts made by ISRA to establish NRM programs incorporating the biophysical and socio-economic factors of the research activities on the one hand, and to consolidate the Institute's Products and Production Systems teams and define a methodological intervention framework in 1991.

While awaiting the implementation of this plan, NRBAR initiated natural resources research grant programs for researchers and NGOs as early as in 1993. However, although these programs were set up within the context of the NRM research priority program, they are not the main stages, and their impact depends to a large extent on the amount of knowledge gleaned in the other components of the defined methodological framework.

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Furthermore, judging by their attitude vis-à-vis these grant programs, it looks as though ISRA researchers considered them as mere side line activities.

For most of them, this attitude is explained by the fact that they do not think realistic the strategy which consists of promoting research activities focused on cereals-based cropping systems for 4 cereals in the areas where rainfall exceeds 400 mm, and in setting a 3 or 4 year time frame for any type of research activities (even agroforestry).

In conclusion, the evaluation team notes that the NRBAR project can only achieve its main objectives if the activities listed in the Natural Resources Program are conducted in accordance with the defined methodological framework.

Because of the conditions precedent regarding the mobilization of funds for this to be achieved, it will be necessary to have the funds managed by CID in a cheaper way, or to start, as from now, the mechanisms for the Project extension.

Until these proposals are implemented, the evaluation team recommends that ISRA, in conjunction with the NRBAR technical assistance team, and while making the necessary arrangements to this end, takes advantage of the scientific management and institutional tools like the **Geographical Information System, the Monitoring Evaluation Plan and the Natural Resource Based Research Strategic Plan** developed with the Project assistance.

.Regarding the implementation of the research and development component

Despite the faltering noted at the beginning, the research and development program contributed to the improvement of ISRA's institutional capability with the tools and mechanisms it put at its disposal. They were:

- Design, management and monitoring instruments for the grant research actions;
- Institution of regular progress report mechanisms (regular production of monthly and annual reports);
- Institution of regular visits to the test sites by partner groups and ad hoc committees;
- Participatory evaluation of each campaign test results to assess all the lessons learned in order to improve on decisions regarding the following actions:
- Strengthening of the relations between ISRA and its partners (NGOs, bodies) in order to achieve more efficiently the collaborative research activities and to facilitate the diffusion of the validated technologies by the extension bodies;
- Gradual establishment among the researchers of the habit of getting together to design research grant activities, which will certainly facilitate pluridisciplinary research work.
- Development of a strong collaboration trend between the research and development program and UNIVAL to improve valorization of ISRA products by making the publications more appropriate to the target groups, i.e the scientists and the producers.

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However, weaknesses are still noted in the implementation of the Research and Development activities. For this reason, the evaluation team makes the following recommendations:

- Consolidate project experience in the implementation of the several research activities regarding the technologies to be tested on-farm in order to be validated and/or adopted in relation to the activities with the different actors in a workshop which would appraise the achievements and the steps to be taken to carry out more effective actions and to give a more appropriate direction to the next programs.

- Complete the grant activity submission protocols so that in the next programs the nature and the type of the planned activities (validation, adoption or others) are specified, the technology to be developed determined and characterized, and the time frame for the program implementation adjusted to its type and nature.

- Scale down and redefine the collaborative research activities so as to have the population as a whole solely involved in the adoption activities. The validation of technologies should be placed under the exclusive responsibility of the researcher who may set them up in carefully selected plots.
On the occasion of the tests carried out on-farm, the populations are involved in research activities which they cannot fully comprehend. This may jeopardize the future of the tested technologies.

- There is a very limited number of technologies currently implemented in the program. At this pace, the project is very unlikely to completely achieve its objective.
It is therefore necessary to undertake any actions which may permit to identify the NRM technologies which seem to have the greatest potential, and to give them priority when providing the future collaborative research grants.

- The project diffusion component comes under the activity grant component; but because of the discrepancy between ISRA's mission and this objective, it has become necessary to specify the strategy to fund this component.
To that effect, it is necessary to create a consultation structure for the researchers and the users in general.

.Regarding the implementation of the financial management component

As regards ISRA's financial management system, the mission notes that the Ernst and Young Firm has made enough progress despite the lack of monitoring and of supervision by ISRA, from which the firm had suffered at the beginning until the establishment of the Pilot Committee. The following shortcomings are however noted in their work to date.

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1. Incomplete inventory of ISRA's needs in the areas of:
   - Processing and monitoring by its centers of their financial data in real time (COBYS degraded system);
   - Incorporation of the IDA credit non accounting monitoring system and of the special arrangements into the integrated financial management system;
   - The establishment of a multimonetary monitoring system for external fundings.
2. Insufficient involvement of ISRA users in the system design;

3. Inadequacy of the proposed strategy for ISRA's actual needs in matters of financial management.

The E & Y firm will be able to complete its work and provide ISRA with a reliable financial management system approved by both USAID and the Institute, if it manages to correct these flaws. But this should be done by mid-1996 or at the end of 1996 at the latest. Then there will be one year for the project to achieve its overall objectives especially in matters of natural resource management (NRM).

This is definitely too short a period in view of the tasks to accomplish once the funds subjected to USAID certification are transferred to ISRA. Because of this reason, the team recommends at least a three year extension of the project due to the constraints related to ISRA's financial management.

As regards the funding of the project activities through "collaborative research grants" and " research grants", the process was gradually put in place. Despite some shortcomings observed at the beginning during the 1993 campaign, and the improvements made in the 1994 campaign, it should reach its cruising speed during the 1995 campaign.

The present provisions regarding the funding of these activities, in particular a reduced decision making power for the management committees as regards the monitoring of the use of the funds, the enforcement of the rules governing the funds, the determination of scheduled dates for the implementation of the funding programs, and especially the timely information and sensitization of the main players, should allow enlargement of the scope of the activities financed with these funds.

As regards the management proper of the funds already allocated within these programs, this was found to be satisfactory by the partner NGOs and other assimilated players.

But there remains some difficulties with ISRA researchers which may persist as long as the NRBAR project is not <u>effectively</u> owned by ISRA. Following appropriation, the researchers would be more involved in the achievement of its main objectives. It is important to note that this condition is tied to some extent to ISRA's <u>actual</u>

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empowerment in the management of the funds allocated to the natural resource management program (NRM) and in particular to those subjected to USAID certification of ISRA's financial management system.

It is therefore important to speed up the process whereby ISRA will be endowed with a reliable financial management system. Meanwhile arrangements should be made to improve the information and sensitization of the researchers on the potential benefits of the NRBAR project due to reasons such as which the termination of IDA funding in December 1995.

LIST OF ABBREVIATIONS

R

LIST OF PERSONS CONTACTED

1 ISRA - DAKAR

Dr Mouhamed H. LY	Director General ISRA - Director of NRBAR
Dr Pape A. SECK	Scientific Director ISRA Counterpart for the NRBAR Team Leader
Mr Ndiaga DIENG	Secretary General ISRA
Dr Pape N. SALL	Director of Forestry Research - Grant Coordinator

2 USAID

Mr Mawa DIOP	Project Officer NRBAR
Mr A.DANSOU	Project Financial Analyst NRBAR

3 NRBAR OFFICE

Dr Tom CUSACK	Technical Assistance Team Leader NRBAR
Dr Paul ANAMOSA	Natural Resource Planner
Mr D.HOLMES	Financial Adviser
Mr R.CALDWELL	New Program development Director
Miss Monica FISHER	Research student

4 WINROCK

Mrs SOW	Program Assistant
Mrs Sarah WORKMAN	Procers and linkage Specialist
Mamadou FAYE	Program Assistant

5 DAK village — Madiamé SENE (Farmer for OSDIL collaborative program)

6 ISRA KAOLACK

Désiré SARR	Researcher NRBAR Research and Development Technical Assistant Counterpart
Matar GAYE	Researcher
Babou NDOUR	"
Malaïny DIATTE	"
Fatimata DIA	"
Sambadane SOW	"
Astou SENE	"

7 GOSSAS

Mathieu DIOUF	Secretary General ARAF
Samba BADIANE	Treasurer

8 ISRA Bambey

Dr Amadou BA	Director of research on rainfed systems and crops. Counterpart of the natural resource planner
Mrs Aminata Badiane	Researcher
Mr Madiagne DIAGNE	"
Mr AMADO	"
Mr Jacob DIATTA	Bambey Center Management Officer

9 RODALE Thiès

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MIDTERM REVIEW OF THE NATURAL RESOURCE BASED AGRICULTURAL RESEARCH PROJECT (NRBAR)

FINDINGS AND CONCLUSIONS

METHODOLOGY

An evaluation team consisting of an agro-economist and an agro-pedologist was commissioned by USAID/Senegal to conduct a midterm review of the NRBAR (Natural Resource Based Agricultural Research) Project funded within the framework of the grant agreement N°685-0285 signed by the government of Senegal with the government of the United States of America.

The terms of reference in the annex of this report, required the team to assess the progress made by NRBAR towards the achievement of its objectives, and to possibly provide recommendations necessary for its reorientation.
The mission was conducted in two stages :

- One first stage which covers a period from January 16-30, 1995, which took place within the general framework of.ISRA joint review carried out in conjunction with the institute's donors. Because the purpose of this stage which included the overall ISRA programs was to integrate all the institute's areas of intervention failed to take into account the specific aspects of the NRBAR Project, it was decided to carry out a second phase or stage.

- The second stage which covers the period from January 31, through February 16, focused exclusively on the NRBAR project. It consisted in the following:

  - Working session with USAID Project coordination members;
  - Review of the existing documents on the project and study of ISRA's midterm review;
  - Interviews and discussions with the Project partners, actors and beneficiaries;
  - Visits of some research centers like Bambey and Kaolack as well as field trips;
  - Debriefing session with representatives of ISRA, USAID and the technical assistance team leader;

II. CONTEXT, OBJECTIVE AND CONDITIONS FOR THE PROJECT DEVELOPMENT AND IMPLEMENTATION

For an overall LOP of $ 23.5 million out of which $19.750 million were provided by the Government of the United States of America and $3.5 by the Government of Senegal, the Natural Resource Based Agricultural Research Project (NRBAR) represents the contribution of American cooperation in natural resource degradation control.

Its objective is to support the research activities of the Senegalese Institute for Agricultural Research(ISRA) aimed at designing technologies to increase productivity and sustainability of cropping systems based on millet, sorghum, corn and rice in the areas of the country with reliable rainfall.

The NRBAR project whose manager is the Director General of ISRA, is said to be implemented by ISRA supported by a team of technical assistants currently consisting of 4 individuals under USAID/CID contract.

However, ISRA's lack of direct involvement in the management of the funds allocated to Project which it should be managing, because of failure to achieve the condition precedent to the certification of its account, led to the present situation in which the Project funds are managed by the CID technical assistance team.

The fact that ISRA's employees are full members of the Committee of Approval of some activities - whose decisions can only be implemented after they are approved by USAID - does not change the situation at all.

Consequently, it appears that for many researchers, the NRBAR is a funds providing entity.

The geographical location of some members of the technical assistance who are accommodated in separate offices from their counterparts, and the existence of distinct NRBAR/CID offices, even though they are located in the DRSPA department, makes the NRBAR look even more like a singular entity.

Because of the circumstances in which the project was developed and implemented, a large number of researchers do not consider the NRBAR as an integral part of ISRA, which may explain the difficulties in establishing relationships among the researchers and the technical assistance team at the beginning of the Project.

Indeed, the contacts we had with the technical assistance team and the researchers revealed that there had been real problems of integration and of symbiosis between certain counterparts at the beginning.

Furthermore, although there seems to be no particular problems at the Direction Generale, in the different departments the members of the technical assistance:

- Work with their counterparts only occasionally;
- have at their disposal every operation facilities whereas their counterparts are often frustrated because confronted with material operating problems.

Because of this situation, the atmosphere of complicity which enhances a team efficiency cannot be created on a long term basis. This has resulted in:

- Insufficient circulation of information among the technical assistants and their counterparts despite the large amount of time devoted to trips and meetings;

This situation which had probably arisen from certain clauses of the CID technical assistance contract with USAID, the allocation of separate offices to the technical assistants, the existence, sometimes, of several counterparts for the same TA, the fact that ISRA counterparts have other responsibilities besides the NRBAR and finally ISRA's failure to own the NRBAR project, has led to:

- Insufficient coordination for the achievement of NRBAR activities;

- Insufficient acceptance of responsibilities among certain counterparts;
- Risk for ISRA not to benefit from all the institutional support potential expected from the Project;
- Increase of the project ownership problems;

To remedy this and to enable the NRBAR project to operate and to be managed in the best conditions for ISRA and for the many beneficiaries to obtain the expected outputs, it is important to take the following measures without further delay:

- Appoint a single counterpart for each member of the technical assistance;
- Integrate the technical assistance as a whole into ISRA's structure by having the technical assistants and their counterparts "work in the same locations" in order to get them used to working together;
- Enhance consultation and exchange of information among the technical assistants, their counterparts and the different components of the NRBAR project through regular consultation meetings;
- Institute for each technical assistant-counterpart from mandatory work pair mandatory plans and programs of activities with a clear division of tasks.

These overall measures will undoubtedly constitute a safe means of improving the conditions of development and implementation of the NRBAR project, and contribute to facilitating its ownership by ISRA and all its decentralized structures. Then the project would be able to sustainably achieve all its objectives.

III STATUS OF PROGRAM IMPLEMENTATION

3.1 Research planning and organization

3.1.1 Planned actions

The purpose of the project planning component, placed under the responsibility of the research planner who is the counterpart of ISRA Scientific Director and at the same time leader of the technical assistance team, is to institutionalize methods and to develop tools in order to improve ISRA's management and planning systems.

The main actions envisaged to this end are :

- Redefine ISRA's five year plan;
- study ISRA priorities based on the existing human, financial and physical resources, and regularly review the priorities;
- Plan and implement an institutional reorganization;
- Improve planning of the research processes in particular the decision making methods, their budgeting and implementation;
- Improve personnel use planning;
- Plan and coordinate the liaison activities in the research directorates, stations, on farm and on the international plane;
- Assess research methodologies;
- Diffuse the research results;
- Conduct regular program evaluations at the level of research directorates;
- Support consultation missions and the BAME for economic studies.

3.1.2 Achievements

3.1.2.1 Development of the five year plan and definition of priorities

The development of ISRA's five year plan is within the context of the efforts made by the Institute to establish its Long Term Strategic Plan (LTSP). The objective of the plan is to solve the dilemma of selecting research priorities, target crops, and agroecological zones where the research is to be carried out.

The objective is to determine "the scope of feasible research" (1) based on the overall human and material resources available and mobilizable.

The substantial support provided by NRBAR to the development of the Institute's LTSP involved various activities regarding the drafting of the plan Terms of Reference (TR) and visits to ISNAR by the Scientific Director (SD), the BAME coordinator and ISRA's Secretary General.

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(1) Midterm Scientific Management Commission Report

The visits were organized to give the officials an opportunity to appraise, each in his field of responsibility, the experience gained by others in the areas.

Within the framework of actions taken towards the development of the LTSP, NRBAR also provided support in the formulation of an initial proposal for the definition of major objectives and priority actions to be undertaken in the area of research. This proposal should be completed by the consultation study envisaged to this effect.

However, despite the significant progress made in the development of the plan, it is likely to take the Institute at least 6 months and several internal and external formal consultations before it is completed.

3.1.2.2 Institutional changes

ISRA's organizational changes are from our point of view the most important element of the Project Planning component since it determines de facto the conditions for ownership of the NRBAR by ISRA.

Indeed, the organizational change is the condition precedent stated by USAID for the certification of ISRA accounts. Its achievement conditions the release of the funds destined to support the natural resource program, base of the NRBAR project.

The activities conducted by the Project in this regard first enabled to start the second stage of the E & Y action plan on the management system and ISRA's financial organization. The activities first led to the nomination of internal controllers and auditors.

It is to be noted, however, that due to the limited success of this stage, the firm was invited to conduct additional investigations in order to put in place the tools and mechanisms necessary for the development of a satisfactory management system.

One of the most important aspects of the institutional reorganization consisted in the development of the first NRBAR procedures manual and in the study of the modalities to review that of ISRA.

Furthermore, a study of a **station action plan** was conducted based on the diagnosis made for rehabilitating most of the stations.

This action plan permitted in particular to appoint three deputy research directors in charge of station management, who for this purpose attended a course on station management in the United States. But due to insufficient delegation of authority, the appointees are actually unable to conduct their mission: their responsibilities and prerogatives have still remained very limited.

3.1.2.3 - <u>Development of decision making, budgeting and implementation methodological procedures</u>

The achievement of this activity is tied to the necessity for ISRA to meet, within the context of the challenges it is facing, the demand for accurate and reliable information, as quickly as possible, and on a regular basis.

The first activities undertaken within the framework of NRBAR assistance to this program component concerned the internal diagnosis of the current procedures and of their constraints. The analysis (2) revealed that the Institute's current planning method is inadequate as regards both ISRA authorities' periodic meetings and the workload of participants.

The other activities conducted concerned the drafting and completion of a **Monitoring and Evaluation Plan** (MEP), based on the logical framework, to serve as a model for ISRA. Prior to its implementation, NRBAR provided assistance by enabling three employees to participate in a seminar organized in the Gambia in 1994.

However, although the MEP was completed and "extended" to NGOs and to ISRA, it has yet to be implemented for data collection and the establishment of the anticipated data base, for the evaluation of the research results with users and for monitoring diffused technologies. In this regard, it can be said that it still has a limited impact on ISRA's scientific management. A study of the **impact of ISRA's research** was another activity related to the achievement of this component. It was an opportunity to train employees on the techniques used.

The work plan and methodology designed (based on the cotton research model) in the framework of this study was approved by the Technical and Scientific Committee (TSC). It enabled to complete an impact study of researches on **sorghum, millet and corn**, and to initiate a similar study on rice.

It should also permit to liaise with the services involved in the extension process.

It should finally be noted that a research management system was developed and implemented with INFORM. A team was appointed for each operation unit at the Research Directorate and provided with computer equipment.

3.1.2.4 Personnel planning

One of the main instruments of this component is the long term training program developed within the framework of NRBAR in conjunction with the Research Directors.

The design procedures, based on a concerted expression of the program objectives and needs, should permit the use of this plan as a reference for the development of ISRA's strategic plan.

Five researchers were given fellowship grants by the project to prepare phD degrees in agricultural economy, agricultural engineering, forest management, livestock sciences, and soil and water sciences. Studies are due to be completed in 1997.

Likewise, four (4) other researchers were sent to American universities for Masters in soil and water sciences, veterinary sciences, agronomical sciences, fish sciences, and meteorological sciences. Studies are due to be completed in 1996.

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(2) See the Scientific Management Midterm Review of January 1995

Finally, it is to be noted that 6 other researchers are to be given fellowship grants for Master's degrees in natural resource studies in June 1996.

In addition, the project provided assistance in the establishment of a data base developed in the framework of the UNIFORM system for ISRA's administrative unit's human resource management.

3.1.2.5 Research methodology planning, coordination and establishment.

One of the most important successes achieved through the NRBAR project was the assistance it provided to the Institute in the planning of scientific activities.

It is within this framework that the annual work plans which are based on the objectives of each of the components are developed and regularly modified when necessary.

The activities involved in the implementation of this component mainly consisted in the organization of workshops and meetings, related to the start-up of the NRBAR project, the establishment of the research strategic plan based on natural resources, the presentation of ISRA's results on technologies, the research coordination meetings organized to design ISRA's research plan, and the NRBAR annual review.

There were also activities related to the review of technology inventory survey proposals and to a proposal to take into account the economic aspects in the methods of validation or diffusion of technologies.

3.1.3 Problems encountered

The following were the main difficulties encountered in the planning and coordination of the project components:

- Problems which arose at the start of the project and which were related to the harmonization of the technical assistants' approaches. The group was composed of resource persons with different backgrounds put together to carry out a mission as a team.

There were not only problems of work relationships among certain technical assistants and their team leader (separation of counterpart teams), but also problems arising from different judgements of the content of the program in terms of priorities: According to those members, the strategic plan and geographical Information System (GIS) should take precedence over the research grant program. The team leader had a different opinion.

Although these difficulties are overcome today, they were warning signals for the team who should see to it that the technical assistance remains more consistent.

- Lack of sufficient time for the team leader to carry out specific tasks in his capacity as planning officer.

Most of his time was devoted to administrative and management tasks.(3)

That situation was, however, largely compensated by his commendable integration into the ISRA structures. The actions conducted in that component have undoubtedly contributed the most to the achievement of the Project objectives;

- Delays in the approval of some decisions by the ISRA Project officers who often have to accomplish other missions.

This situation is sometimes aggravated by the fact that, in general, though it was involved in the preparation of the project (through some officials), ISRA appeared to lack in-depth knowledge of certain aspects of the project especially in its implementation phase;

- Insufficient impact of certain tools like the monitoring evaluation plan which did not enable to collect any significant data to assess the progress made by the Project;
- Difficulties for ISRA to adopt a management system different from that which had always been obtaining in the institution.

3.1.4 Conclusions and recommendations

After completing a review of the achievements of the research planning and organization component and of encountered difficulties, the evaluation team concluded that the overall actions conducted or supported by the NRBAR project through the developed instruments and methodological tools, are undoubtedly major assets for ISRA's institutional and organizational strengthening.

However, most of these instruments are to be completed or approved before they can be used. This is the case of the **Long Term Strategic Plan, the Monitoring and Evaluation Plan, the Procedure Manual and the Station Action Plan**.

ISRA officials should therefore take decisions which would enable to create in their services and in their respective fields of competence, the conditions of integration and of gradual ownership of the various management tools which were developed. Most importantly, it is necessary to establish through the planning of the LTSP, mechanisms for the integration of the researchers currently receiving training, into de different programs which will be selected in the future in this plan.

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(3) In the case of NRBAR, the team leader thinks that 90 % of his time is spent coordinating, managing the contract and the relations with USAID and probably 10 % is spent conducting research activities.

3.2 Natural Resource Based Research

3.2.1 Planned Actions

The component's main objective is to increase ISRA's ability to develop low cost technologies which can be adopted by the users for sustained natural resource management.

This is to be accomplished through:
- Planning, implementation and evaluation of natural resource based agricultural research;
- Development of a coherent strategy and a natural resource management based agricultural research program adapted to ISRA's plan and long term development strategic plan;
- Development of an interdisciplinary research approach focused on a participatory method of research implementation and evaluation;
- Evaluation of the natural resource technologies available in Senegal and elsewhere;
- Establishment of a program to meet the most important needs in natural resource management.

3.2.2 Main achievements

3.2.2.1 Planning and evaluation of natural resource based agricultural research.

One of the main purposes of the NRBAR Project in its stated objective was to contribute to the reinforcement of ISRA's Natural Resource Management and food and nutritional resource program.

The most significant activities carried out to this end permitted to establish a planning committee in 1993 and to make a proposal for a natural resource management strategic plan.

As regards ISRA's achievements in natural resource researches, it can be noted that for many years, the Institute has been trying to establish programs through the integration of its actions on biophysical and socio-economical factors, and in 1991 combined its crop and production systems teams in order to achieve this objective.

As noted by the "Natural Resource Management Research" committee in the midterm review, the methodological framework defined to this end concerns:

a) Characterization and evaluation of natural resources to determine biophysical constraints;
b) Evaluation of production systems as regards their current management and their institutional and socio-economic environment.
c) Knowledge and evaluation of the opportunities to integrate existing technologies in "rural lands" or "farm" planning;
d) On-farm tests and validation of new technologies
e) Design and concerted optimization of development plans.

One of the project's main contributions in the development of this methodological framework was the design of a Natural Resource Based Strategic Research Plan.

The document was modified in december 1994 in a scientists' workshop organized in Bambey on the plan outputs. The plan which has been in the process of adoption for 18 months, should eventually provide ISRA with not only a research based intervention methodological tool, but also with a reference document for the implementation of the Long Term Strategic Plan.

However, Because the NRM program cannot be started without the fulfillment of the condition tied to the certification of ISRA accounts which has yet to be met, the actual scope of the plan remains very limited.

3.2.2.2 - Design and development of a geographical information system for ISRA

On the other hand, the project provided assistance in the design of a geographical information system to establish a data base on natural resource based agricultural research which should permit to reinforce the scientific and organizational management of the Institute's activities. But although it was completed, the system has not been installed because of the high investment cost involved in purchasing the required equipment. It was suggested to use instead smaller systems in the different research centers for the time being.

This proposal is currently implemented for the rehabilitation of the centers.

3.2.2.3 - Development of a coherent strategy and of a Natural Resource Management Based Agricultural Research Program adapted to the Plan.

This action mainly consisted in setting up a study group on on farm research and development through a participatory approach, in developing the terms of reference of a workshop on participatory approaches, and in making three field diagnoses.

As regards the assessment of the NR technologies available in Senegal and elsewhere, the project tried to develop validation criteria in order to standardize the types of data collected in the process with the aid of a technical assistant. A Rapid Rural Appraisal Method (RRA) was used in March 1995 to determine the farmers' acceptation criteria.

3.2.3 Problems

The sole contribution of the NRBAR project's natural resource component to date has been the development of research methodological tools. The actual NRM field activities only concern the grants provided to researchers and to NGOs.

However, although they were conducted within the context of the NRM research priority program, these actions are secondary as regards the methodological framework which had been defined for the implementation of the strategic plan. The impact of the research subjects depends to a large extent on the amount of knowledge gleaned in the other components of the defined methodological framework.

On the other hand, some researchers at ISRA behave as though these grant programs are mere secondary activities. This situation was due to the fact that some researchers who had prepared research actions for IDA funding were encouraged to present them to NRBAR when the actions targeted under this project could not yet be financed because of the failure to certify the Institute's financial system.

In addition, some researchers are of the opinion that the zone limits and the restriction of the project target crops to only four cereals reduce the room for maneuver of the researchers interested in the formulation of research actions. The same applies to some agroforestry researches generally limited to three years, which is not sufficient to obtain any significant result.

Also, observations were made regarding the attempts made by the technical assistance team at accelerating the implementation of the research activities.

For some researchers, this is not the best way to achieve the objectives of the Project. Indeed, one consequence of this is the currently growing number of contacts made by some NGOs with ISRA researchers for the implementation of activities which seem more motivated by the availability of funds than an accurate diagnosis of the users' needs.

3.2.4 Conclusions and recommendations

The above mentioned review of the natural resource component permitted the evaluation team to realize that the NRBAR project can only achieve its ultimate goal if the actions listed in the Natural Resource program are implemented within the above-mentioned defined methodological framework.

However, in view of the current constraints due to the conditions precedent laid down by USAID for the mobilization of the funds which would permit to move towards that direction, it is necessary to have the funds in question managed in a cheaper way by CID, or to initiate as of now, the mechanisms for a project extension.

Pending decisions in this regard, the evaluation team recommends that ISRA, in conjunction with the NRBAR technical assistance team, while making the necessary arrangements to this end, takes advantage of the scientific management and institutional tools like the Geographical Information System, the Monitoring/Evaluation Plan and the Natural Resource Based Research Strategic Plan.

3.3 Outreach program

ISRA has a long standing outreach experience. In the past, the results of research works conducted on station were subjected to multiarea experiments before they were proposed to producers.

The purpose of multiarea experiments was to confirm on farm the results obtained on station. They involved researchers (to participate in the definition of protocols), extension agents (to set up and monitor the test areas), and producers (who owned test plots and who were paid for their maintenance).

In a more recent past, the multiarea experimentation support points which were distributed throughout the country by agro ecological zones and were managed by the research and extension departments played the same role.

ISRA and regional rural development agencies (RDAs) also implemented support programs to rapidly solve the problems faced by producers. Finally the "Programme National de Vulgarisation Agricole" (National Agricultural Extension program), in conjunction with ISRA and in collaboration with the producers and their organizations, is conducting a major research and development program. The evaluation of this program conducted in February 1994 redefined all the mechanisms put in place for a more effective implementation of the program related to producers' needs and potential, the diagnosis of constraints, the drafting of protocols, and the organization, monitoring and evaluation of on farm tests.

Therefore, the NRBAR project was not established in a virgin territory. It introduced a new dimension by placing greater importance on natural resource based research actions to facilitate on farm adaptation, adoption and diffusion of the NRM technologies developed by researchers in order to increase the production of four(4) main cereals: millet,sorghum, corn and rice.

The ultimate objectives of this collaboration is the adaptation through on farm tests of 15 technology systems based on NRM in order to have them adopted once they are diffused among 30,000 producers on 145,000 ha, and to contribute to a significant increase in the production of the 4 specified cereals.

3.1.1 Planned actions

In order to achieve these objectives, the program intends to use any possible means to expand and diversify the groups concerned by the ISRA activities and to strengthen the links which may exist among them. This will involve:

- Development of protocol systems which specify the procedures for the allocation of grants to NGOs, farmers' organizations and extension bodies to enable them to help the farmers become more and better involved in the determination of research needs and priorities and validation of results for a greater adoption of developed technologies in their farming units;
- Organization of an outreach program;

- Establishment of a process for the adoption of the technologies developed through on farm adaptation and validation tests;
- Development of a monitoring and evaluation system;

All actions should contribute to:
- Improve ISRA's institutional capacity to work with NGOs and farmer organizations for the diffusion of NRM technologies;
- Improve the circulation of information among ISRA and its partners through the establishment of mechanisms and procedures destined to promote this mutual exchange of information and services;
- Institute a research and development program at ISRA through the establishment of a certain number of criteria to assess the NGOs and FOs institutional and management capacities, and to identify ISRA's services which will be in charge of the outreach activities, and through close collaboration with the existing structures like the polyvalent rural expansion centers (CERP), NGOs, and Producers' Organization (POs) for the joint definition of the technologies to be promoted.

3.3.2 Implementation and problems encountered

3.3.2.1 The grant program

3.3.2.1 Collaborative research grants

While conducting the inventory and identification of the NGOs and FOs which carry out activities in the project area, the outreach program provided 8 collaborative research grants (3 in 1993 and 5 in 1994) after it had designed and distributed the protocols which specified the eligibility criteria and requirements.

The grants were allocated to 7 NGOs and 8 FOs to carry out activities on:

a) Fertilization technologies consisting in the use of compost. ISRA and 2 NGOs (WINROCK and RODALE) were involved.

- For **WINROCK**, the activities were started after a diagnosis through demonstration tests conducted in four villages for one year. Afterwards 500 individuals among whom 316 producers were trained in 8 villages in the departments of Thiès, Mbour, Bambey and Diourbel. The technology was implemented with compost pits which were not lined with cement, and manure spreadings (3t/ha). It should be noted there was a concurrent seeds program.

- For RODALE, collaboration with ISRA dates back from 1988. As regards the compost technology, validation tests were conducted at NDiamsil in the department of Bambey. The first adoption occurred in 1990. Today, 7 producers out of a population of 350 inhabitants have a compost pit lined with cement.

Major constraints (difficulty in obtaining cement, water shortage, inadequate manure supply which a cattle fattening program established by 16 individuals is trying to remedy) limit a wide adoption of the technology in this area.

RODALE and ISRA tried to introduce a variant consisting of compost and manure improved with natural phosphate (2-4 t/ha and 10 Kg respectively). The variant high cost is likely to limit the technology diffusion.

The impact of the composting technique in the region of Diourbel -both in the area covered by RODALE and in the area covered by WINROCK- is relatively limited because it was adopted by a small number of farmers and implemented in small areas.

But elsewhere, in the regions of Fatick and Kaolack, the same technique modified by the farmers (compost pit with no cement lining, filled with clearing residues before the rainy season) is widely used: 50 families which form the ARAF (Fatick Farmers' Regional Association) are currently implementing a program consisting in the use of two pits a year by each family. Compost pits were dug with the aid of the PNVA and the "Regional Agricultural Inspectorate" of Kaolack, which enabled the farmers to manure 15,125 ha of corn in 1994/95 with average yields of 1,396 Kg/ha compared with 900 Kg/ha for test plots.

The producers who are convinced to obtain increased fertility and productivity with the technique are getting more organized to remove constraints to the use of the technology.

b) **Agroforestry technologies**. They consist in:

- Wind-breaks, live fences for OSDIL, WINDROCK, SAHEL 3000, KIRAYE and AFRICARE;
- Strip farming for OSDIL (Loul Sessène in the department of Fatick) and WINDROCK (Sinthiou Kalène in the department of Nioro);
- Introduction and rehabilitation of nitrogen fixing species with ARAF and AFRICARE;

Whereas strip farming limited by lines of *Leucena* and the introduction and rehabilitation of nitrogen fixing species, are developed enough to be demonstrated, the technology of wind-breaks and live fences are only at the validation stage.

In view of the experience gained in the implementation of the research activities carried out on the above cited technologies, NRBAR should organize a workshop review the situation with the different players. The seminar would make a critical review of achievements and steps to be taken in order to improve the actions and the orientation of future programs.

3.3.1.2 Research grants

Researchers who conduct research based on natural resource management may receive additional assistance to maximize the impact of their works.

Six grants were provided within this context by the outreach program for the following:

- Evaluation of research impacts on technology adoption and on the adoption process (Thysse Kayemor and Kounbidra in the region of Louga);
- Study of use of fish transformation residues for soil fertilization (regions of Fatick and Thiès);
- Study of the influence of technical itineraries on on farm plateau soil conservation (region of Ziguinchor);
- Valorization of the pastoral potential for the development of efficient and sustainable cereal systems in sub-humid areas (region of Kaolack);
- Study of the effects of cropping techniques on the variability of rainfed sorghum yields and its allopathic effects (regions of Diourbel and Kaolack);
- Improvement of the natural pastures of Senegal's breeding areas through the use of natural phosphate (Regions of Kolda and Louga).

Grants provided to researchers should help them rapidly develop technologies related to NRM which can be adapted by the populations and contribute to the achievement of the project objectives.

Six grants were allocated within this framework. But the question is whether all the research works will permit in a reasonable length of time, to develop technologies which can be adopted and diffused so as to contribute to the achievement of the project objectives.

It is therefore important to give special attention to the provision of grants to researchers in the future: the time-frames of the actions to be undertaken should be short enough and lead to the development of reliable technologies which can be easily adopted by the population. The technologies to be developed should be clearly characterized and their potential production level impact also indicated.

The grants should be given to the researchers on that basis in the future.

3.3.2.2 Quality of the procedures for the development of good research proposals

Criticisms levelled at the grant constraints by some researchers demonstrate that many of them do not seem to have properly used the protocol. The unjustified complains reveal insufficient knowledge of the contract provisions regarding the management of the funds made available to them.

Furthermore, it appears in practice that the tests carried out under the collaborative research protocol do not always correspond to the actual validation or adoption tests.

Besides, the study of some grant contracts reveals that the distribution of the activities among the actors is sometimes confusing when compared with the types of activities concerned.(4)

Although the distribution of responsibilities is clearly stated in the technical implementation plan, some NGOs seem to have more than one partner in the technical monitoring component. In Dak, the researcher was validating a wind break technique based on thorny plants while OSDIL was conducting adoption activities (organization of visits).

The evaluation team thinks that it is necessary to specify in a protocol not only the nature and the planned research activities (validation, adoption, etc...), but also the technology to implement.(4)

Finally, we should point out that the time frame set for some activities should be modified according to the nature of the activities.

3.3.2.3 Status of Producers' Participation in Grant Program Implementation

The main strategy for the implementation of the grant programs consists in allowing the different users to participate in the technology validation and adoption activities .

Though this participation was observed for most of the current activities, the evaluation team seriously doubts its effectiveness and efficiency.

Because of the manner in which the programs are currently implemented, it is to be feared that those users might be more confused than interested in the experiments.

To avoid this situation, the research activities should be formulated in the best possible way so as to make a clear distinction between the validation of the station results and the adoption of technologies already validated in real environment.

This specification should help have a more accurate determination of the level and the nature of the producers' participation in the activities and consequently improve the quality of the participation.

Several aspects of collaborative researches carried out to validate technologies in real environment have raised many questions:

. Should the farmers' plots be considered as real environment? If such is the case, should the farmer himself prepare the plot at his own cost when it involves complexities like establishing the Fischer bloc? Can the same validation research be considered as a demonstration research so as to permit the organization of producers' visit to the testing area?

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(4) For RODALE, the arrangements for collaboration with ISRA are defined in a protocol dated March 16, 1988. It seems that a covenant was envisaged to take into account NRBAR peculiarity. But we were unable to obtain the information. It was not annexed to the document provided to us as indicated.
On the other hand, the study of the technical implementation plan enables to see the distribution of responsibilities, but on some aspects, like the technical monitoring component, the partners do not seem to be involved. In this regard, we have noted that NRBAR does not seem to have received the technical report of the program main researcher.

If these questions may be overshadowed for the activities concerning the compost pits (digging pits and use of compost) many of which were established before the NRBAR project and whose positive impact on the improvement on the soil physical qualities and fertilization was demonstrated as well as the resulting increase in production, the questions take on a particular importance when they relate to a new technology to be tried and tested.

Will the live fence made of six forest species arranged in repeated and random lines rapidly protect the plot of the farmer at Dack village (Loul Sessène) and definitely solve his problems? What will be the impact of a failure on the populations who are often taken there on guided tours?

Because of these questions, it is important to distinguish the stages of generation, validation in real environment and diffusion of a technology in order to specify the role of each player.

We are all the more convinced of this as a technology generation and validation in real environment, even though carried out in a farmer's plot, is under the responsibility of the researcher who should be in a position to organize his test at his convenience, without causing a lot of constraints. Afterwards the test can be monitored by the researcher or by his development partner and the producer in whose plot the activities are conducted.

Although the producer participates in the determination of the constraints and in the specification of the technology to be generated, in the future, he should only be involved in the generation, validation, demonstration or adoption of a technology after he has shown plots with appropriate dimensions in his exploitation. And this should be done in collaboration with the extension structure and with the assistance of researcher when the latter is called upon.

In our opinion, such a process deserves special attention when conducting collaborative research activities and particularly when the results of the research are destined to be sold to the users (development bodies, producers and their organizations).

It is necessary to scale down and redefine the collaborative activities in such a manner as to involve the populations as a whole only in the technology adoption activities. If this was achieved, the validation of activities in real environment might be carried out by the researchers with only a reduced number of carefully selected producers.

3.3.2.4 Identification of the technologies to develop

The NRBAR project listed among its objectives to bring into general use 15 NRM technology systems ready for adoption and already implemented at the project termination.

As regards the grant program allocated to WINROCK, the responsibilities make the researcher look like a trainer of the NGO trainers as if it were the technology adoption or validation, whereas the nature of the activities is related to the validation of the results.

However, two or three years after the beginning of the project the number of technologies at various stages of the circuit is very limited.

Three technologies have reached the adaptation stage with/ or without association with other techniques.

Five are the subjects of other studies funded by the research grant. Only 3 of them are likely to be completed by the end of 1995.

Furthermore, three technologies were identified and brought to the attention of the public. But increased assistance is needed for their diffusion (variety of Niébé Mélakh and Mouride). Also, their design must be improved to allow for feedback from the populations (seeder disc designed in Bambey), and the technical charts reviewed (soil restoration). Research and development organizations have already been identified to implement these technologies.

This seems a very limited success in view of the objective of the project which is to obtain 15 technologies that can be adopted by the users.

For this reason we think that the list of technologies established by AFID should be examined carefully in order to select the technologies which have great potentialities and which might necessitate additional research activities (confirmation and adaptation) and make them rapidly adoptable. Priority should be given to these technologies in the provision of collaborative research grants.

In sum, it is necessary for ISRA to direct its partners towards activities which meet the actual needs of the users if it wants a chance of achieving the NRBAR Project objectives regarding the generation, validation and wide diffusion of the NRBAR technologies.

3.3.2.5 Needs Met by a Technology and Method of Diagnosis of the Needs

The technologies implemented to date in the collaborative grant programs respond to two types of needs confronting the producers: the growing lack of soil fertility because of low organic matter content and lack of protection from roaming animals and wind erosion.

The needs were diagnosed by the organizations involved in the implementation of the technologies.

Consequently, for **WINROCK** whose main field of activity is related to the seeds, decreasing productivity despite the use of selected seeds and of sometimes of mineral fertilizers revealed the very serious situation caused by the acute scarcity of organic matter.

As regards **OSDIL** whose activities are conducted in the areas where the soil is currently under restoration, its diagnosis was based on the fact that area is surrounded by sand dunes subjected to a significant wind erosion and open to roaming animals.

Also, Leucena was introduced and planted in lines along the cultivation stripes. It was selected because of the significant evaporation noted in the vegetable gardens, the inadequate occupation of the plots by women, and the soils lack of fertility.

The response to the needs of the plants consisted in creating a micro climate which made up for water losses while favoring nitrogenous nutrition.

As regards **RODALE**, its long experience in meeting regenerative agricultural needs enabled it to diagnose the soil organic matter deficiency and undertake research activities in conjunction with ISRA.

In actual fact, most of the Non Governmental Organizations initiated the same process which consists in providing the plants with nutritive elements and creating the conditions for a good water supply by assuring a good soil structure.

As regards the agroforestry techniques, they involve actions intended to prevent the cattle from eating or treading on the cultures, to limit the wind effects on the physiological development of the cultures and also to conserve and rehabilitate the environment.

3.3.2.6 Potentialities and constrained limits to the adoption of the technologies

Though the socio-economic conditions and present level of the soil resource degradation strongly militate in favor of the adoption of the techniques implemented in the current grant programs, some constraints are bound to limit their expected performance.

They are related to the availability of the following elements in the concerned areas:

- sufficient and accessible water for the compost and plant nurseries;
- cement to build compost pits;
- manure and sometimes crop residues;
- labor.

3.3.2.7 Follow up Mechanisms after the technology transfer

Under the present circumstances, no specific means has been envisaged to follow up the technologies after they are transferred.

This transfer can only be achieved through strengthening and formalizing collaboration between the researchers and the extension bodies.

For this to be achieved, a monitoring mechanism should be instituted within the framework of the NRBAR monitoring evaluation plan.

3.3.2.8 Procedures and methods for collecting data on the adoption by users and on the impact on production

Various experiences are currently conducted in this area by the several NGOs involved in the project. That of RODALE regarding the evaluation of participation should enable to design a standardized methodology for this collection.

Further, the logical framework should constitute a tool to/for designing MEP adapted to each program.

3.3.3 Conclusions and recommendations

Despite the faltering noted at the beginning, the research and development program contributed to the improvement of ISRA institutional capability with the tools and mechanisms it put at its disposal. They were:

- Development of grant research action design, management and monitoring instruments;
- Institution of regular progress report mechanisms (regular production of monthly and annual reports);
- Institution of regular visits to the test sites by partner groups and ad hoc committees;
- Participative evaluation of each campaign test results to assess the lessons learned in order to improve on the decisions regarding the following actions;
- Strengthening of the relations between ISRA and its partners (NGOs, bodies) in order to achieve more efficiently the collaborative research activities and to facilitate the diffusion of the validated technologies by the extension bodies;
- Gradual ingraining among the researchers of getting together in order to design research grant activities, which will facilitate pluridisciplinary research work.
- Development of a strong collaboration trend between the research and development program and UNIVAL for improved valorization of ISRA products by making the publications more appropriate to the target groups, i.e the scientists and the producers.

As regards the producers, the results of the researches are more valorized when they are under the form of didactic tools more appropriate for their diffusion.

However, weaknesses are still noted in the implementation of the research and development activities. For this reason, the evaluation team makes the following recommendations:

1 - The NRBAR project has gained some experience in the implementation of the several research activities conducted on the technologies to be tested in real environment in order to be validated and/or adopted. But there are still some confusions among the people involved.

For this reason, it is recommended to take stock of the

activities with the different operators in a workshop which would appraise the achievements and the steps to be taken in order to carry out more effective actions and to give a more appropriate direction to the next programs.

2 - The granted activities bid submission protocols do not clearly state the nature and the type of the planned activities (validation, adoption or other activities).

It is therefore necessary to use all the possible means to complete them without further delay so that in the next programs the nature and the type of activities to be conducted are specified, the technology to be developed determined and characterized and the time limit fixed for the program implementation adjusted to its type and nature.

3 - The NRBAR project can only achieve its main objective if the actions listed in its programs are carried out in all its components.

In view of the current conditions precedent, which do not authorize the mobilization of means to achieve such a scenario, it is recommended to have the CID manage the Natural Resource Management funds at a lesser cost, or to envisage initiating the project extension mechanism.

4 - The populations as a whole are generally involved in the research activity real environment tests which they can by no means quite understand. This may jeopardize the future of the tested technologies.

Consequently, it is recommended to scale down and redefine the collaborative research activities so as to have the populations in general only involved in the adoption activities, those concerning the validation of technologies should be placed under the exclusive responsibility of the researcher who may set them up in carefully selected plots.

5 - There is a very limited number of technologies currently implemented in the program. At this pace, the project is very unlikely to completely achieve its objective whereas an inventory of the available technologies was made by AFID.

That is why we recommend to undertake any action which may permit to identify in this inventory the NRM technologies which seem to have the greatest potentialities, and to give them priority when providing the future collaborative research grants.

6 - True enough, the project diffusion component was not clearly stated, but it actually exist and comes under the activity grant component.

However, due to the discrepancy between the vocation of ISRA and this objective, it has become necessary to specify the strategy for the accomplishment of this objective.

To that effect, the recommendations made in this regard by the midterm review regarding the official creation of a structure for consultations among the researchers and the users in general, should be taken into account.

3.4 NRBAR Project financial management component

The overall amount of USAID assistance to the NRBAR is $ 19,750,000 a part of which ($ 1,000,000) earmarked for the assistance provided to the natural resource management research program will be directly managed by ISRA when its financial management system is certified by USAID. This condition precedent is supposed to be achieved in 1995.

At the moment,the activities conducted by the project regarding natural resources are directly financed by CID in the framework of a contract with USAID.

To the end an advance was put at the disposal of CID by USAID and resupplied every other month, based on the expenses made in the period. Justification are sent every month by the project to the consortium leader represented by the University of Oregon.

The credit granted to the project are approved annually on the base of annual estimate expenditures made by CID.

This part entitled "financial management" addresses the funding by the NRBAR project of the natural resource research activities. It consists of two main sections:

- A first section which deals with the activities carried out by E & Y within the framework of the project in order to provide ISRA with a reliable and transparent financial management;

- A second part which deals with the financing and the management of the funds earmarked by the project for the implementation of the field NRM activities

3.4.1 ISRA Financial management system work status

3.4.1.1 Planned actions

For a institution like ISRA whose activities are financed to a large extent (60-70%) by foreign assistance, a performant and reliable financial management system guarantees credibility vis-à-vis its main donors. The NRBAR project should contribute to this by achieving the improvements necessary for ISRA present financial management system. The actions planned to that effect consist in:

- Providing ISRA with adequate sub-systems :
  * Performant transparent procurement system
  * Contract managing system.
  * Institute sub-contractor paiement and billing management system;
  * Institute sub-contractor management audit system.
  * Establishment of a performant institutional framework;
  * Establishment of operation procedures and of an internal audit system.
  * Establishment of a performant accounting system to manage and monitor the received fund.
- Improving the efficiency of the computerized accounting system;

- Consolidating the accounting process regarding the indirect cost;
- Produce financial analysis in due time with form suitable at every level of management;
- Develop a system for tracking all the grants provided by donors including the government of Senegal.

The implementation of these actions had been planned before the development of the project main technical programs for a good functioning of ISRA which would play its actual part in the project.

3.4.1.2 Achievement and encountered problems

In order to achieve these actions, Ernst and Young /Senegal was called upon and signed with USAID the contract n° 685-0285-C-00-2299-00. They started work in 1992.

The financial adviser of CID technical assistance took up his post in 1993 to assist for an efficient exploitation of the system. A steering committee in charge of monitoring and supervision the works was put in place in September 1994, at the start of the second phase of E & Y works.

The firm intervention was planned in two stages :

The first stage was to enable to make a diagnosis of ISRA accounting system by completing the reports made by the evaluation, review and audit missions. Recommendations were to be made whose implementation would help improve ISRA management system as regard performance, reliability and transparency.

On that second phase, E & Y produced a provisional report presented to USAID and ISRA in December 1992. The observations made by ISRA were sent to USAID in March 1993, which forwarded them to E & Y in April 1993. On the same date, A tripartite meeting was held by ISRA, USAID and E & Y. The final report was received by ISRA in August 1993 and was the subject of an internal seminar at ISRA in November 1993. Therefore, ISRA actually obtained the final conclusions of the work conducted in the first phase with an important delay.

The critical analysis of the E & Y conclusions observed that there were a certain number of flaws. They indeed focused exclusively on accounting centralization and computing. E & Y overshadowed ISRA decentralized structure and management and failed to propose a strategy or a logical framework for ISRA financial function.

The January 1995 midterm review conducted by ISRA in conjunction with it donors revealed other flaws regarding :

- Needs of the centers to process and monitor their daily operations in order to obtain their financial information in real time (COBYS degraded system).
- Integration of IDA credit off-accounting monitoring system and the particular conventions of the financial management integrated system;

- Establishment of a foreign funding plurimonetary monitoring system;
- Insufficient involvement of ISRA personal in the design of the strategy.
- Discrepancy between the strategy proposed and ISRA financial management needs.

Regardless, arrangements were made for a rapid implementation of the partial results of these works.

However, an appropriate computer software was only furnished 12 months later (instead of six months as it was planned)

Furthermore, there were delays in the negotiations conducted by USAID with E & Y in order to have the latter acknowledge the shortcomings, and to specify the additional tasks to fulfill in the second phase.

As a result, the second phase works only started in september 1994. It was to address the implementation of the recommendations made in the first phase but also correct the flaws noted in the conclusions made at the end of the first phase. It is due to be completed in December 1995.

This second phase has already started with a response to the needs of ISRA decentralized structures. This task should be accomplished by the end of March 1995.

However, it is important to note that the investigations made in midterm review revealed that SONATEL management system is quite satisfactory for what ISRA needs.

Indeed, it allows budgetary monitoring as are recorded forecasts, commitments of expenditures by the centers through letters or purchase orders and actual expenditures through suppliers' bills. Its environment requires softwares on AS/400 using SGBD of OS/400, with a version compatible with COBIS of PRESI.

The estimated time frame is 6 weeks for the study and development starting from the provision of data descriptions and COBIS test information. A 4 Person/weeks period should be added for loading the implementable programs, training the users, and functionality recipes. The system has a 6 months guarantee period with SONATEL starting from the functionality recipes.

Negotiations had been initiated by ISRA with Télécom Plus (SONATEL computer department) in order to purchase the system. But they were not yet concluded when this mission was conducted.

For the time being, arrangements are made by ISRA to implement some of the recommendations made by E & Y.

The implementation of the recommendation regarding ISRA organizational change (in particular the departments involved in the use of the system) is crucial for an efficient use of a system. It is currently underway with the institution of a management control and an internal audit unit. The officials in charge were appointed. But they have one assistant (instead of two), which make them less efficient.

It is important to note that implementation of the overall recommendations regarding the organizational changes cannot take place at once because of ISRA present status as an "Entreprise Publique à Caractère Industriel et Commercial". The Direction Commerciale has yet to be created. The procedures which would enable ISRA to change its status have been initiated. A draft document was produced. It establishes a legal framework of a new status, i.e an "Entreprise Publique à Caractère Scientifique et Technique", which meets ISRA need for self management. But it has not been presented yet to the concerned decision makers.

True enough, ISRA management system has undergone substantial positive changes, but it is necessary to improve on E & Y conclusions, to complete the installation of the new system, to make sure it can be implemented by ISRA, to complete the internal reorganization of ISRA financial management function. These constitute major tasks whose achievement will take quite a long time.

3.4.1.3 Conclusions and recommendations

The services provided by E & Y suffered for a long time from lack of monitoring and of supervision. ISRA was indeed associated to all the procedures which led to the selection of this cabinet, but the contract was negotiated and signed with USAID.

As a result, E & Y felt more bound to USAID than to ISRA. Under these conditions, it was difficult for ISRA to exercise any authority on this firm as regards the monitoring and supervision of the works, of which he is the main beneficiary.

It is true that the internal organization of ISRA "financial management" function did not facilitate an effective monitoring and supervision of the activities.

In fact, that function was shared by the Special Accountant (the right man to do the job, but he is handicapped because he is Treasury employee), the Secretary General and the Management Controller. Even the project Financial Adviser experienced difficulties for several months working under these conditions.

There were serious delays before the beginning of the second phase of E & Y works. They were related to delays in the approval and appropriation of the report on the first phase by ISRA, and in the negotiations between E & Y and USAID.

Overall, the new deadline for the completion of E & Y activities will not permit ISRA to achieve the appropriation of the financial management system before mid-1996.

If by this date all the conditions are met for the ISRA financial management system to be "certified" by USAID, there would be 24 months for ISRA to benefit from the assistance provided by USAID, and to initiate "natural resource management" program.

Consequently, even if the USAID condition precedent was justified, in view of the necessity to consolidate ISRA institutional capability, one has to acknowledge that it slows down the implementation of ISRA five year plan, particularly as regards its natural resource management component.

In addition, it is possible that the important means (human resources and equipment and logistics and the computers obtained by the project) will not be used to the full to achieve within the time allowed, the main objective of the project of which they were mobilized. This might substantially limit the project effectiveness.

Finally, there are three questions as regards the problem of ISRA financial management system:

1 - Will E & Y be able to fulfill his contract?

2 - Could ISRA management system be certified by USAID at the end of the contract?

3 - To what extent will ISRA manage to appropriate/adopt the proposed management system?

The mission entrusted to E & Y was not conducted in consultation with all the operators and beneficiaries of the financial management system at ISRA, particularly those in the research centers.

In this respect, it is crucial to have them all consulted and associated to the development of the management system, and to consolidate the supervision and monitoring capability of the steering Committee by providing it with some absolutely necessary tools (logical framework, strategic plan, activity monitoring chart, Gantt chart, responsibility chart, critical chart...).

Once those difficulties are overcome, the E & Y Firm will certainly be in a position to complete its contract. It should however seek assistance for the part of its work dealing with organization, training, and computing in agricultural research in order to correct the flaws noted in its report.

Also, E & Y should take into account the needs of the centers in the action plan, and incorporate the computerization of their financial management into the integrated system.

USAID will eventually be able to certify the ISRA financial management system after the proposed new system "gets into its stride" i.e after it is implemented for a period of 6 months at least and one year at most. Prior to this, the several sub-systems cited in chapter 3.4.1.1 should be established and made more efficient in accordance with the conditions laid down by USAID.

In order to have ISRA to approve/adopt the management system proposed by E & Y, it is indispensable to improve the circulation of information and to associate more closely to its design its users and other intended beneficiaries at the Institute.

Furthermore, a training policy should be developed for the administrative, financial, and accounting personnel more or less involved in the use of the system or of its outputs.

Because of the above explained situation the following recommendations can be made:

a) Regarding the works of the E & Y Firm

- Develop the necessary tools (logical framework, Gantt chart, responsibility chart, critical chart...) in accordance with the pertinent observations made by the midterm review;
- Take into account the observations and recommendations of the researchers, administrators and financiers of the centers in the framework of an integrated management;
- Conduct a review of the financial management needs of the centers;
  . Assess the achievements and the new opportunities given by the use of computers.
- Avoid a sudden break between the old and the new financial management systems as long as the operation of the latter is not fully mastered by ISRA and its efficiency proved.
- Associate to the extent possible all the users of the new system in order to create a favorable climate for its establishment.

b) Regarding ISRA

- Make provisional arrangements to have the financial management function carried out by one person with a solid experience in this field.
- Strengthen the Steering Committee to enable them to play their actual role in the monitoring and supervision of the works.

- Rapidly create the conditions for an effective appropriation of the new management system through:
  . Accelerated procedures for the change of statute;
  . Provision of the human resources, machinery and equipment necessary for an efficient operation of new structures in accordance with the needs of the new finance management system;
  . Training of managers and of support personnel destined to use the new management system;

c) Regarding USAID

- Improve the monitoring and supervision of the works of the E & Y firm, and make sure they meet their commitment;
- Increase sensitization of the E & Y Firm on ISRA authority in their capacity of owner and main beneficiary of the financial system within the framework of the contract signed between the firm and USAID;
- Accept if possible a gradual certification of the ISRA management system, which would mean a gradual release of the funds subjected to that condition;

The establishment of the different sub-systems required by USAID could be listed in order of priority so as to serve as progress criteria in the development of the new financial system.

- Envisage as from now a possible extension of the project for at least 3 years. This length of time is deemed as sufficient to obtain significant results in the NRM program. The final certification is likely to be made at best at the end of 1997 at the latest.

3.4.2 - Financing and management of the funds allocated to NRM field activities

The NRBAR is currently funding research activities based on Natural Resource Management through the following two types of grants:

- the "collaborative research grants"
- the "research grants" "grants to researchers"

The operation of the two types of grants is regulated by the same principles. A comprehensive evaluation of the two types of grants will be conducted with an emphasis on the status of budget implementation levels and on the management of the funds allocated to the operators charged with the implementation of the activities.

3.4.2.1- Planned actions

As regards the "collaborative research grants", the overall amount available in the CID is $ 1,612,500.

The financial package of the "research grants to researchers", is
$ 1,195,250 of which 380,250 are included in the CID contract, and 815,000 represent additional funds allocated by USAID to ISRA, but whose transfer is subjected to the "certification" of its financial management system.

The funds are distributed among technical components as follows:

- Actual research subsidies: $ 675,500 of which 225,500 in the CID contract;
- Site studies: $ 146,000 of which 101,250 in the CID contract;
- Sabbatical programs: $ 373,500 of which 53,500 in the CID contract.

In order to make a better use of the available means, ISRA will institute a more appropriate a decision-making body and appoint a grant coordinator. CID will provide the expertise through a team of technical assistants.

3.4.2.2- <u>Achievements and encountered problems</u>

The planned arrangements were made by ISRA. Two Management Committees were appointed in view of the technical and organizational peculiarities of each type of grant. They meet

once a year to examine the proposals made to ISRA, and decide upon their choice according to defined criteria. A grant coordinator is in charge of the Secretariat of the two committees.

To provide the expected expertise, CID posted a Research and Development Adviser for the information/sensitization of the operators (the NGOs and farmers' organization) and monitoring of the field activities.

In addition, besides his main function of research planning, the head of the technical assistance team monitors the grants with the aid of a deputy manager.

In the framework of the "collaborative research grants" eight grants were provided of which 3 in 1993 and 5 in 1994 for an overall amount of CFA F 191,168,450 ($ 382,337 at the rate of $ 1 for CFA F 500), which represents a 24 % rate of achievement in relation to the funds allocated to the program.

The grants were distributed as follows:

1993

NGO	Amount (CFA)	Associated researcher	Amount (CFA)
RODALE	6,987,750	ISRA	11,168,250
WINROCK	6,424,500	ISRA	12,325,500
OSDIL	14,030,500	ISRA	4,988,500
Sub-total	27,442,750 ($ 54,885)		28,482,250 ($ 56,964)

1994

NGO	Amount (CFA)	Associated researcher	Amount (CFA)
WINROCK	9,900,000	ISRA	17,622,000
SAHEL 3000	15,251,445	ISRA	8,228,000
KIRAYE	10,960,000	ISRA	16,960,000
AFRICARE	9,900,000	ISRA	17,622,000
ARAF	8,880,000	ISRA	19,920,000
Sub-total	54,891,445 ($ 109,783)		80,352,000 ($ 160,704)
OVERALL TOTAL	82,334,195 ($ 164,668)		108,834,250 ($ 217,668)

As regards the "grants to researchers", 4 grants were provided in 1993 and 2 in 1994, i.e 6 for an overall amount of CFA F 48,917,000 ($ 97,834) which represents a 14 % rate of achievement in relation to the overall amount provided to the program.

They were distributed as follows:

1993		1994	
Research Direction	Amount (CFA)	Research Direction	Amount
DRCSP/Bambey	7,403,000	DRCSP/Bambey	12,000,000
DRCSP/Bambey	2,480,500	LNERV/Dakar	11,408,000
DRCSP/Djibélor	8,118,000		
DRCSP/Kolda	7,507,500		
Sub-total	25,509,000 ($ 51,018)		23,408,000 ($ 46,816)
OVERALL TOTAL	48,917,000 ($ 97,834)		

The grant allocation process did not operate efficiently in 1993 because of the following main reasons:

- Deficient operation of the Management committees;
- Confusing protocols;
- Delays in the allocation of grants;
- Failure of the operators to fully comprehend the selection of criteria;
- Insufficient information/sensitization of the operators.

As a result, few proposals were accepted. There was in addition a serious delay in the establishment of the "revolving fund" which was eventually instituted at a wrong time to conduct field activities in view of the peculiarities of some technologies (e.g time to prepare and put in place the plant nurseries for agroforestry).

However, commencing from 1994, the lessons learned from that situation served to improve the implementation of the process. This trend was maintained in 1995 with the organization of a meeting of the Management Committees in order to prepare the campaign.

The arrangements already made to that effect regarding the main operators reflect the good functioning of the current fund allocation process.

On the other hand, the use and the operation of the "revolving fund" put at the disposal of the operators raises a certain number of difficulties to researchers at ISRA.

According to the Management Committees the rules they set are too restricting. In actual fact, the present difficulties are due to:

- Failure to manage the funds separately in the centers: the funds earmarked for a project are consolidated instead of being divided between the programs. Also, the manager does not always

take into account the instituted management principles; the resupply orders are made at the same time for all the programs of the same project with often many delays because the expense evidences are not sent in due time by all the concerned researchers.

- Failure of the researchers to monitor the accounts of their respective programs: expenses are often made regardless of the planned supplies available in budget line items and even of the revolving fund in general;
- Insufficient circulation of information among the project, the directors of centers and the researchers on the one hand, and among the managers and the researchers: the information documents drafted by the management committee are often sent directly to the directors of centers whereas the researchers seldom receive their copies in time;
- Loss of interest of the researchers in the project: according to them the funds are marginal compared with the grants obtained from other sources in view of their insufficiency and the difficulties involved in mobilizing them.

All the above cited result in practices not always in accordance with the rules: expenses exceeding the provisions of budget line items; financial technical reports sent occasionally, exhaustion of the revolving funds allocated to the researcher before those of the NGO causing among the former operational difficulties and reduced participation in the joint field activities.

3.4.2.3- Conclusions and Recommendations

The process of financing the project activities through "collaborative research grants" and "grants to researchers" was gradually established. After the shortcomings noted at the development period during the 1993 campaign, the improvements made during the 1994 campaign, it will certainly reach its cruising speed during the 1995 campaign.

The current arrangements which consist in making the management committees less cumbersome, the rules which regulate the funds more formal, the action plan and target dates specified, and above all in informing the main operators early enough, should give a wider scope to these activities.

However, as regards the use and management of the funds, the situation may be satisfactory for the NGOs and the other assimilated operators. But the many problems with the researchers at ISRA may persist for a long time in the future.

This is mainly due to the fact that the project has yet to become integrated into ISRA where it is perceived as an "appendice". As a result, there are good reasons to believe that ISRA researchers are not really involved in the project.

At the moment, the recommendations which could precisely be made on the use and the management of the funds would only contribute to "easing the pain without definitely curing the patient".

They could be summed up as follows:

- Improve the information of the researchers on the project by directly sending to them the documents published on the grant programs;
- Reinforce the information of the researchers on the accounts of their respective programs (particularly as regards the resupplies of the "revolving funds" and the shortcomings noted in the management of the funds they are granted);
- Reinforce the information-sensitization of the researchers on the stakes which the NRBAR project represents for ISRA namely because of the termination of the World Bank financial support in 1995.
- Develop at ISRA an information system to meet the need of a well functioning Institute.

LESSONS LEARNED REGARDING THE WORKS OF THE MISSION

The mission revealed a certain number of lessons which deserve to be reported:

- there should be as few ambiguities as possible between the versions of a project document to avoid different interpretations of its main elements;
- it is not always easy to implement an institutional support project because it calls into question certain rigid work behaviors. It will certainly take some time for such a project to achieve its objectives;
- the effectiveness of a project always depends on the actual ability of the beneficiary to appropriate the project in order to make the best of it. If there is no such ability, attempts should be made at correcting the shortcoming before establishing the project;
- project grants tied to too restrictive conditions precedent often deteriorate the working climate and may in the long run, jeopardize the accomplishment of its objectives.
- the institution beneficiary of a project should be committed to its implementation and assume its responsibility. For this to be achieved, it should have full power instead of being associated in the making of decisions.

For all that, this is the price to pay for the effective appropriation of the project. Consequently, the donor should show more flexibility as regards the conditions set for its assistance while keeping the main part of his power.

- it is very important for the technical assistance team to have the same methodological approach and avoid bringing into the open the "school quarrels". In addition, each of its members should have the social qualities necessary for their integration without any problem in the assisted institution.

OVERALL CONCLUSIONS AND RECOMMENDATIONS

Regarding the conditions of establishment and of implementation of the Project

The above described circumstances in which the NRBAR project was set up and is currently implemented witness the difficulties experienced by a large number of researchers in establishing good interpersonal relationships with the technical assistants in the development phase of the project due to the fact that the project is not considered as an integral part of ISRA.

The situation which probably had arisen from the clauses of the technical assistance contract between CID and USAID, the allocation of separate office space to the technical assistants, the existence sometimes of several counterparts for the same technical assistant, the limited availability of the ISRA counterparts who assume many responsibilities beside NRBAR and finally ISRA's failure to appropriate the NRBAR, has directly led to the insufficient integration and symbiosis which marked the beginning of the relationships between the members of some binomials when they were put in place.

Indeed, if there seems to be no particular problems at the Directorate General, in the different departments the members of the technical assistants:

- occasionally work with their counterparts;
- have at their disposal every operation facility whereas their counterparts are often frustrated because confronted with operating equipment problems;

Because of this situation, the atmosphere of complicity which enhances a team efficiency cannot be created on a long term basis in several binomies technical assistant-counterpart. This has resulted in:

- Insufficient circulation of information among the technical assistants and their counterparts despite the large amount of time devoted to trips and to meetings;
- Insufficient coordination in the accomplishment of the NRBAR activities;
- Insufficient acceptance of responsibilities among certain counterparts;
- Risk for ISRA not to benefit from all the potential institutional support expected from the project;
- Multiplication of the project appropriation problems;

To remedy this and to enable the NRBAR project to operate and to be managed in the best conditions for ISRA and the many beneficiaries to obtain the expected outputs, it is important to take the following measures without further delay:

- Appoint a single counterpart for each member of the technical assistance;
- Integrate the entire technical assistance into ISRA structure by having the technical assistants and their counterparts "cohabit" in order to get them used to working together;

- Enhance consultation and exchange of information among the technical assistants, their counterparts and the various components of the NRBAR project through regular consultation meetings.
- Institute in each binomial technical assistant-counterpart the establishment of mandatory work plans and programs of activities with a clear division of tasks.

These overall measures will undoubtedly constitute a safe means of improving the conditions of development and of implementation of the NRBAR project and contribute to facilitating its appropriation by ISRA and all its decentralized structures, which would enable the project to permanently achieve its objectives.

Regarding the achievement of the research planning and organization component

After the assessment of the achievements of the planning and organization component, the evaluation team thinks that all the actions conducted or assisted by the NRBAR project through the methodological instrument and tools designed in the several components are undoubtedly important elements for the institutional and organizational consolidation of ISRA.

However, most of these instruments or tools are to be completed or approved in order to be operational.

The same applies to the Long Term Strategic Plan (LTSP), the Monitoring and Evaluation Plan, The Station Action Plan ...

Therefore, ISRA authorities should make the appropriate decisions in order to create in the departments of their respective fields of competence, the conditions for a gradual integration and appropriation of the several management tools which were developed.

On the other hand, it is necessary to establish through the planning of the LTSP, the mechanisms for the integration of the researchers currently receiving training into the different research programs which will be selected within the framework of this program.

Regarding the natural resources-based research component

within the context of this component, the NRBAR provided assistance for the development of several methodological tools such as the Natural Resources-Based Research Strategic Plan, the Geographical Information System....

However, none of these tools can be used at the moment because of both failure to certify ISRA accounts and the decision making procedures at ISRA.

The sole research activities related to the component and which are conducted in the field concern the grant programs.

However, because these activities concern exclusively one aspect and one sequence of the methodological framework defined in this component, they are not main stages, and to a large

extent, can only have an efficient impact if sufficient knowledge is gained from the other components of this methodological framework.

Moreover, some researchers at ISRA behave as though these grant programs were mere side line activities.

The situation was due to the fact that the researchers who had prepared research actions in the IDA funding vehicle were encouraged to present them to the NRBAR when the actions that were the target of this project could not be financed yet.

Several other criticisms were levelled at the grant activities. They concern the 400 mm zonage restrictions and the Project limitation to 4 cereals.

As regards certain types of agroforestry researches for example, there are good reasons to stress the very limited time set to complete the researches.

On the other hand, for many researchers, the attempts made by the technical assistance team at accelerating the establishment of the collaborative research activities, is not the best way to achieve the Project objectives.

One of the consequences of this is the currently growing number of contacts made by NGO's in order to have the researchers implement activities which seem more motivated by the availability of funds than an accurate diagnosis of the users' needs.

For all these reasons, the mission notes that as regards the implementation of the natural resource component, the NRBAR project can only accomplish its main objective if the actions related to the component are implemented in accordance with the above mentioned defined methodological framework.

In view of the conditions precedent regarding the mobilization of the means which would enable to achieve such a prospect, it is necessary to have the funds managed by CID in a cheaper way or to initiate as of now, a project extension process.

While awaiting the decisions regarding the achievement of this prospect, the evaluation team recommends that ISRA, in relation with the NRBAR technical assistance team makes all the necessary arrangements to take advantage of the scientific and institutional management tools like the Geographic Information System, the NRM Strategic Plan and the Monitoring and evaluation plan.

Regarding the Research and Development component

Despite the faltering noted at the beginning, the research and development program contributed to ISRA institutional ability with the tools and mechanisms it put at its disposal. They were

- the grant research action design, management and monitoring instruments;
- Institution of regular progress report mechanisms (regular production of monthly and annual reports);

- Institution of regular visits to the test sites by partner groups and ad hoc committees;
- Participative evaluation of each campaign test results to assess the lessons learned in order to improve on the decisions regarding the following actions;
- Strengthening of the relations between ISRA and its partners (NGO's, bodies) in order to achieve more efficiently the collaborative research activities and to facilitate the diffusion of the validated technologies by the extension bodies;
- Gradual ingraining among the researchers of getting together in order to design research grant activities, which will facilitate pluridisciplinary research work.
- Development of a strong collaboration trend between the research and development program and UNIVAL for improved valorization of ISRA products by making the publications more appropriate to the target groups, i.e the scientists and the producers.

As regards the producers, the results of the researches are more valorized when they are under the form of didactic tools more appropriate for their dissemination.

However weaknesses are still noted in the implementation of the research and development activities. For this reason, the evaluation team makes the following recommendations:

1 - The NRBAR project has gained some experience in the implementation of the several research activities regarding the technologies to be tested in real environment in order to be validated and/or adopted. But there are still some confusions among the people involved.

For this reason, it is recommended to take stock of the activities with them in a workshop which would appraise the achievements and the steps to be taken in order to carry out more effective actions and to give a more appropriate direction to the next programs.

2 - The grant activities bid submission protocols do not clearly state the nature and the type of the planned activities **(validation, adoption or other activities)**.

It is therefore necessary to use all the possible means to complete them without further delay in order to have in the next programs the nature and the type of activities to be conducted specified, the technology to be developed determined and characterized and the time limit fixed for the program implementation adjusted to its type and nature.

On the occasion of the tests carried out in real environment the populations are generally involved in research activities which they cannot fully comprehend. This may jeopardize the future of the technologies tested.

Consequently, it is recommended to scale down and redefine the collaborative research activities so as to have the populations

in general only involved in the adoption activities, those concerning the technology validation should be placed under he exclusive responsibility of the researcher who may set them up in carefully selected plots.

There is a very limited number of technologies currently implemented in the program. At this pace, the project is very unlikely to completely achieve its objective whereas an inventory of the available technologies was made by AFID.

That is why we recommend to undertake any action which may permit to identify in this inventory the NRM technologies which seem to have the greatest potentialities, and to give them priority when providing the future collaborative research grants.

True enough, the Project diffusion component of the project was not clearly stated, but it actually exists and comes under the activity grant component.

However, due to the discrepancy between the vocation of ISRA and this objective, it has become necessary to specify the strategy for the accomplishment of objective.

To that effect, the recommendations made in this regard by the midterm review regarding the official creation of a structure for consultations among the researchers and the users in general, should be taken into account.

Regarding the NRM activity financial management and funding

As regards financial management, the services provided by E & Y suffered for a long time from lack of monitoring and of supervision. Although ISRA was associated to the process which led to the selection of the E & Y Firm, the contract was directly negotiated and signed by USAID.

Furthermore, the mission entrusted to E & Y was not conducted in consultation with all the operators and beneficiaries of the financial management system at ISRA, particularly those in the research centers.

In this respect, it is crucial to have them all consulted and associated to the development of the management system, and to consolidate the supervision and monitoring capability of the Steering Committee by providing it with some absolutely necessary tools (logical framework, strategic plan, activity monitoring chart, Gantt chart, responsibility chart, critical chart...).

Once those difficulties are overcome, the E & Y Firm will certainly be in a position to complete its contract. It should however seek assistance for the part of its work dealing with organization, training, and computing in agricultural research in order to correct the flaws noted in its report. Also, E & Y should take into account the needs of the centers in the action plan, and incorporate the computerization of their financial management in the integrated system.

USAID will eventually be able to certify the ISRA financial

management system after the proposed new system "gets into its stride" i.e after it is implemented for a period of 6 months at least and one year at most. Prior to this, the several sub-systems cited in chapter 3.4.1.1 should be established and made more efficient in accordance with the conditions laid down by USAID.

In order to have ISRA to approve/adopt the management system proposed by E & Y, it is indispensable to improve the circulation of information and to associate more closely to its design its users and other intended beneficiaries at the Institute.
Furthermore, a training policy should be developed for the administrative, financial, and accounting personnel more or less involved in the system exploitation or in the use of its outputs.

Because of the above explained situation the following recommendations can be made:

- Develop the necessary tools (logical framework, Gantt chart, responsibility chart, critical chart...) in accordance with the pertinent observations made by the midterm review;
- Take into account the observations and recommendations of the researchers, administrators and financiers of the centers within the framework of an integrated management;
- Conduct a review of the financial management needs of the centers; assess the achievements and the new opportunities given by the use of computers.
- Avoid a sudden break between the old and the new financial management systems as long as the operation of the latter is not fully mastered by ISRA and its efficiency proved.
- Associate to the extent possible all the users of the new system in order to create a favorable climate for its establishment.
- Make provisional arrangements to have the financial management function carried out by one person with solid experience in this field.
- Strengthen the Steering Committee to enable them to play their actual role in the monitoring and supervision of the works.

- Rapidly create the conditions for an effective appropriation of the new management system through:
  . acceleration of the procedures for the change of statute;
  . provision of the human resources, machinery and equipment necessary for an efficient operation of new structures in accordance with the needs of the new finance management system;
  . development of the training of managers and of support personnel destined to use the new management system;
- improve the monitoring and supervision of the works of the E & Y firm, and make sure they meet their commitment;
- increase sensitization of the E & Y Firm on ISRA authority in their capacity of owner and main beneficiary of the financial system within the framework of the contract signed between the firm and USAID;
- accept if possible a gradual certification of the ISRA

management system, which would mean a gradual release of the funds subjected to that condition;

The establishment of the different sub-systems required by USAID could be listed in order of priority so as to serve as progress criteria in the development of the new financial system.

- envisage as from now a possible extension of the project for at least 3 years. This length of time is deemed as sufficient to obtain significant results in the NRM program. The final certification is likely to be made at best at the end of 1997 at the latest.

As regards the funding of the NRM activities, a process was gradually established whereby the project activities are financed through "collaborative research grants" and " research grants". After the flaws noted in the development period during the 1993 campaign, the improvements made during the 1994 campaign, it will certainly reach its cruising speed during the 1995 campaign.

The current arrangements which consist in making the management committees less cumbersome, the rules which regulate the funds more formal, the action plan and target dates specified, and above all in informing the main operators early enough, should give a wider scope to these activities.

However,, as regards the use and management of the funds, the situation may be satisfactory for the NGOs and the other assimilated operators. But the many problems may persist for a long time in the future with the researchers at ISRA .

This is mainly due to the fact that the project has yet to become integrated into ISRA where it is seen as an "appendice". As a result, there are good reasons to believe that ISRA researchers are not really involved in the project.

At the moment, the recommendations on the use and the management of the funds would only enable to "ease the pain without definitely cure the patient". They could be summed up as follows:

- Improve the information of the researchers on the project by directly sending to them the documents published on the grant programs;
- Intensify the information of the researchers on the accounts of their respective programs (particularly as regards the resupplies of the "revolving funds" and the shortcomings noted in the management of the funds they are granted);
- Intensify the information-sensitization of the researchers on the stakes the NRBAR project represents for ISRA in particular because of the termination of the World Bank financial support in 1995.
- Develop at ISRA an information system to meet the need of a well functioning Institute.