



SENEGAL AGRICULTURE PRODUCTION SUPPORT PROJECT

FINAL REPORT

Project Number: 685-0269

Prepared for:

Government of Senegal and USAID/Senegal

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TABLE OF CONTENTS

	<u>Page</u>
List of Acronyms	i
Introduction	ii
EXECUTIVE SUMMARY	v
SECTION I PROJECT OBJECTIVES	1
A. General	1
B. Technical Activities	1
C. Program Management	5
SECTION II PROJECT INPUTS	9
A. Chemonics International	9
B. University of Arizona	10
C. USAID/Senegal	10
D. Government of the Republic of Senegal	11
SECTION III PROJECT ACCOMPLISHMENTS	13
A. Constraints	13
B. Technical and Related Activities	13
C. Project Management and Support Activities	24
SECTION IV MAJOR PROJECT ISSUES	29
A. Defective Project Design	29
B. Inflexible Project Design	31
C. Predetermined Evaluation Conclusions	31
D. Unilateral Actions by USAID	32
E. USAID Micro-management Style and Slow Response	32
F. Inadequacy of Host-country Mechanism and Joint Management Approach	33
G. Lack of GORS Interest in the APS Project	34
H. APS Responsibility without Authority	35
I. Delays in Recruiting TA Team	35
J. Unclear Channels of Command for Technical Advisors	36
K. Excessive Diversity of COP's Responsibilities	36
L. Inefficiencies in the Offshore Procurement of Project Equipment	37

TABLE OF CONTENTS
(continued)

	<u>Page</u>	
SECTION V	RECOMMENDATIONS	39
	A. Importance of Good Project Design	39
	B. Need for Flexible Project Design	40
	C. Need for Direct Contract Mechanism	40
	D. Better-adapted GORS Contribution to Project Funding	40
	E. Need for Project Monitoring Mechanism	41
	F. Avoiding Micro-management by USAID	41
	G. Shortening USAID's Reaction Time	41
	H. Need for Clearly Defined Lines of Authority and Responsibility	42
	I. Accelerating Recruitment of the Technical Assistance Team	42
	J. Need for Defining Lines of Authority for the Supervision of the Technical Assistance Team	42
	K. Streamlining the COP's Job Description and Responsibilities	43
	L. Improving the Offshore Equipment Procurement Process	43
ANNEX A	DETAILED TOTAL LIFE OF CONTRACT 1 IN U.S. DOLLARS AS OF 12/31/90	A-1
ANNEX B	DETAILED TOTAL LIFE OF CONTRACT 2 IN U.S. DOLLARS AS OF 12/31/90	B-1
ANNEX C	LOCAL CURRENCY EXPENDITURES OCT.-NOV.1990	C-1
ANNEX D	USE OF COUNTERPART FUNDS AS OF 12/14/90	D-1
ANNEX E	UNIVERSITY OF ARIZONA INVOICE	E-1
ANNEX F	FINAL REPORT, SEED QUALITY CONTROL AND CERTIFICATION	F-1
ANNEX G	FINAL REPORT, SEED PRODUCTION AGRONOMIST	G-1

LIST OF ACRONYMS

AAIC	Agricultural Assessments International Corporation
ADO/USAID	Agricultural Development Office
AIWG	Agricultural Inputs Working Group
APS	Agricultural Production Support Project
BIAO	Banque Internationale pour l'Afrique Occidentale
BICIS	Banque Internationale pour le Commerce et l'Industrie du Sénégal
CAISSE CENTRALE	Caisse Centrale de Coopération Economique, Paris or French International Development Agency
CHEMONICS	Chemonics International Consulting Division or the Contractor
CITIBANK	Citibank, N.A., West Africa or the Fiduciary Bank
CNCA	Comité National des Contrats Administratifs
CNCAS	Caisse Nationale de Crédit Agricole du Sénégal
CNRA	Centre National de la Recherche Agricole or National Agricultural Research Center
COP	Chemonics Chief of Party
DA	Direction de l'Agriculture or Directorate of Agriculture
DDI	Direction de la Dette et de l'Investissement or Director of Debt and Investment
DISEM	Division des Semences or Seed Division
DPCS	Direction de la Production et du Contrôle des Semences or Directorate of Seed Production and Quality Control
DSA	Division des Statistiques Agricoles or Agricultural Statistics Division
GIE	Groupement d'Intérêt Economique or Farmer Associations
GORS	Government of the Republic of Senegal
ISRA	Institut Sénégalais de la Recherche Agricole or Senegalese Institute for Agricultural Research
MDRH	Ministère du Développement Rural et de l'Hydraulique or Ministry of Rural Development and Water Works (the Contracting Agency)
MOEF	Ministry of Economy and Finance
MSI	Multi-Services International, Inc.
NAP	New Agricultural Policy or Nouvelle Politique Agricole (NPA)

PM	Person-months
PTS	Plan Triennal Semencier or Three-Year Seed Development Plan
SGBS	Société Générale des Banques du Sénégal
TA	Technical Assistance
UAZ	University of Arizona
USAID	United States Agency for International Development
USG	United States Government

INTRODUCTION

This is the final report on the technical assistance (TA) rendered by Chemonics International Consulting Division to the Senegal Agriculture Production Support Project (APS), under the U.S. Agency for International Development host country contract No. 685-0269. This contract was conducted in collaboration with the Ministry of Rural Development and Water Works of the Government of the Republic of Senegal (GORS).

This report covers the period from October 12, 1988 through January, 1991. This project was designed to be a 42-month project; however, due to start-up delays and a decision to terminate the project a year early for the convenience of the government, the official date of termination was changed to December 31, 1990.

Chemonics hopes that the information in this final report provides a concise and accurate summation of the technical assistance to the APS project and, more importantly, provides useful recommendations to the GORS and USAID in developing future projects to address the New Agricultural Policy (NAP) objectives.

EXECUTIVE SUMMARY

The Agricultural Production Support Project (APS) was designed to address some of the goals of Senegal's New Agricultural Policy. This policy was intended to reduce government intervention and to privatize the activities of the agricultural sector. The project's four main objectives were: a) privatization of input supply and seed production; b) expansion of input supplier credit; c) collection of agricultural statistics; and d) implementation of an educational media campaign.

A. Background

A precontract agreement was negotiated by Chemonics due to a delay in approval of Contract Number 1 by USAID and the Comité National des Contrats Administratifs (CNCA). This agreement, signed in October 1988, permitted Chemonics to begin mobilizing and fielding the technical assistance team early, pending final negotiations. Due to GORS regulations, two contracts had to be written to cover the total scope of work. Host-country Contract Number 1 was signed on January 5, 1989 by the contracting agency (Ministry of Rural Development and Water Works or MDRH) and Chemonics. The contract was approved by USAID/Dakar in February 1989, and subsequently ratified by the Senegalese Minister of State and Secretary General of the President's Office. Contract Number 1 provided a U.S. dollar budget of \$3,204,534 to cover technical assistance operations. The contractor's technical assistance team members arrived in Senegal between December 1988 and May 1989. They included the chief of party/private sector implementation advisor, the seed certification specialist, the seed production agronomist, and the agricultural statistics advisor.

On August 14, 1989, Chemonics and MDRH signed Contract Number 2, which provided an FCFA budget with a dollar equivalent of \$3,441,224 for local currency expenditures, and a U.S. dollar budget of \$2,322,813 to fund the participant training program and purchase of commodities. With the signing of Contract Number 2, the contractor's involvement in the joint management of the project's local currency funds began. Local currency expenditures under APS actually started on September 19, 1987. Between this date and August 14, 1989, the APS project was managed jointly by the APS director representing MDRH and Multi-Service International, Inc. (MSI) operating under a direct USAID contract.

As soon as project implementation started, it became obvious that the project design, as outlined in the Grant

Agreement dated February 27, 1987, contained conceptual flaws that would be detrimental to the smooth implementation of the project. This was especially true of the credit component, which accounted for 45 percent of the obligated project funds or \$20 million.

During the life of the project, the first two APS project directors and the Chemonics chief of party reviewed these deficiencies repeatedly with the minister of rural development and his staff, as well as with the personnel of the USAID mission in Dakar, including the project officer, the chief of the agricultural development office, the economist in charge of banking and credit, the deputy mission director and the two mission directors. Formal and informal proposals were submitted to USAID to modify the project design. The mission rejected them all and no corrective action could be taken. USAID further indicated that the formulation of new design alternatives would have to be postponed until the results of the interim project evaluation, initially scheduled for the first quarter of 1990, would be known and assessed.

Implementation of the project was also adversely affected by staffing problems involving the technical assistance (TA) team. The agricultural statistics advisor who arrived in Dakar on May 8, 1989, was repatriated on July 21 of the same year for medical reasons. Although a number of resumes of qualified individuals were submitted, it was only in November that a replacement candidate was accepted by the Government of the Republic of Senegal (GORS). The fifth team member, the seed quality research specialist never took his position. His recruitment was delayed for several months by the staff of the Institut Sénégalais de la Recherche Agricole (ISRA). When another (the seventh) highly capable candidate was identified, it was too late. By November 1989, USAID officials decided to "freeze" both positions pending their assessment by the interim evaluation team.

The evaluation team arrived in Dakar in early June 1990. On July 2, it presented its findings to the MDRH minister, the USAID mission director, and their respective staffs. The major recommendation was that the project be suspended and redesigned. The evaluation team held the view that limited progress had been achieved in attaining the highly ambitious and diverse project objectives and that it was unlikely that these goals could be met in the 18 months prior to the December 31, 1991 project completion date. Furthermore, the evaluation stated that the resources provided by the project design were insufficient to accomplish the project's objectives.

According to the evaluation team, major design errors such as the assumed willingness of the commercial banks to grant agricultural loans to eligible borrowers under the APS revolving

line of credit or the size and profitability of the certified seed market in Senegal were chiefly responsible for the failure of the APS project. Furthermore, an exceedingly complex and cumbersome management decision-making structure, which included diverse services of the GORS, USAID, APS, and various committees, impaired project management efficiency.

On July 27, 1990, the MDRH minister and the USAID mission director met privately. After the meeting, they announced that the project would be closed on or before December 31, 1990. On September 12, the GORS was formally advised by the USAID mission director that the APS project "is terminated effective December 31, 1990." Consequently, steps were taken to reduce the scope of technical activities, close the project as smoothly as possible, and transfer project assets to beneficiaries designated jointly by MDRH and USAID.

The chief of party departed Senegal on November 5, 1990, the seed certification specialist on December 8, and the seed production agronomist on December 22. A Chemonics' finance and administration specialist assisted the APS project staff in the transfer of assets and other project termination activities, including the closing of the joint APS/Chemonics local currency account with Citibank. The finance and administration specialist left Senegal on December 31, 1990.

By the time the project ended, two important documents were still awaiting final approval: Amendments Number 1 to both contracts. The UAZ subcontract had been signed by UAZ and Chemonics in December 1989 and was approved by the GORS. The proposed amendments received approval from the GORS and had been submitted to USAID in September 1990 and to the CNCA in December.

As the APS project closed, allocated project funds remained largely unused. Only \$5 of the \$20 million were spent since the beginning of the project in September 1987. Chemonics contract expenditures in U.S. dollar expenses as of January 31, 1991 under Contract No. 1 amounted to \$1,336,076 or 42 percent of the contract budget. U.S. dollar expenditures under Contract No. 2 were \$161,128 or 7 percent of the contract budget. Finally, local expenditures under Contract No. 2 as of December 31 totalled 208,926,219 FCFA or 18 percent of the budget. At the beginning of October, counterpart fund advances by the GORS Treasury to the project amounted to only 50,000,000 FCFA as compared to 602,000,000 FCFA as budgeted in the Grant Agreement. Further details are provided in annexes A through B.

B. Accomplishments

Despite these problems, the Chemonics team members' major accomplishments included the following:

1. Credit

The APS director and the chief of party contacted every commercial bank in Senegal and promoted the APS credit line to over 100 interested parties, which included input wholesalers and distributors, exporters, and farmers. These contacts made it possible to assess the demand for commercial bank financing of agricultural inputs at the distributors' level in the Fleuve area at \$3.5 million per year. Despite these assessments, the reaction of local financial institutions was mixed. Banks would not accept full risk under USAID conditions. The APS project management also attempted to promote alternate credit delivery systems outside the commercial bank system, but USAID did not accept these proposed activities. In conclusion, the APS project did ascertain that opportunities to extend short- and medium-term financing to credit-worthy participants in the agricultural sector through commercial banks or other mechanisms did exist. These opportunities were not seized because of the rigid adherence to the original credit component design and the uncompetitive operating conditions offered to the banks.

2. Seed Certification

The seed certification specialist conducted a survey of the quality of rice seed used by farmers in the Fleuve region to qualify and quantify the seed related problems in the region. The APS project rehabilitated a regional seed testing laboratory and assisted field agents, laboratory technicians, and departmental officers to set up their improved certification program. Stricter field inspection, timely laboratory analysis, and scrutiny of seed received at the conditioning plant marked a significant change in the enforcement of seed quality control. By the second season of this enhanced program, production of quality certified seed produced privately is estimated to have increased fourfold. In addition, the certification specialist prepared a document defining the technical norms for production, certification, and trading of seeds that formed standards for the implementation of the new national seed law. He also trained field personnel in basic certification concepts, field sampling methods, and warehouse recordkeeping, and was instrumental in organizing a seminar on the control of Red Rice.

3. Seed Production

The seed production agronomist carried out an integrated seed promotion package that included agricultural inputs and cultural practices recommended to the cereal producers through contact with farmers, demonstration plots, and mass media. Two of three demonstration plot schemes were successful. Many of the farmers acknowledged their adherence to the

production techniques proposed to them and expressed their desire to continue using these new practices. By the second season of the project, four private rice producers in the Senegal River valley were producing seed independently of SAED, which means that certified rice seed production was effectively privatized in that area. Together, the four private rice seed producers can produce five to ten times more seed than was produced two years ago.

The seed production agronomist also assisted in preparing a promotional film on input use and wrote two technical bulletins of recommended cultural practices to increase yields for rice and corn to be distributed to seed producers. He trained field agents to use improved agricultural inputs and conducted a survey on agricultural input use in the Senegal River valley, the results of which will be instrumental in planning promotional activities in the region. He also wrote the proceedings on the Red Rice seminar.

4. Agricultural Statistics

Before her medical evacuation, the agricultural statistics advisor and her DSA counterpart analyzed the unit's data sampling, gathering, processing, and analytical procedures and developed an initial methodology to improve the efficiency and accuracy of DSA's reports. The APS project sponsored the 1989 national seminar on Statistical Methodology focusing on data collection and sampling procedures. APS also contributed funds, fuel, and vehicles to assist in a country-wide agricultural survey.

SECTION I
PROJECT OBJECTIVES

A. General

Following two decades of heavy government intervention in every facet of the agricultural sector, declining cereal and groundnut production aggravated by a long period of drought, and a poor record of payment on agricultural loans, the GORS decided to reverse its policy starting in 1984. The New Agricultural Policy (NAP) was intended to reduce government intervention and privatize the activities of the agricultural sector. The APS project was intended as a meaningful adjunct to the NAP. USAID made \$20 million available to the GORS with a view to assisting the GORS with the implementation of this policy change, promoting agricultural credit to operators engaged in the distribution of inputs (especially those marketing certified cereal seeds), and facilitating the creation of a private cereal seed industry in Senegal.

B. Technical Activities

1. Definition of Project Objectives

The quantitative target of the APS project was to increase cereal production to an annual rate of 3.5 percent, with the assumption that increased production would result in greater profitability and increased farmer incomes.

The four main objectives were as follows:

- . **Privatization of Input Supply and Seed Production.** The project included support for quality improvement of cereal seed production, as well as for the privatization of seed production, seed marketing, and the distribution of other inputs used in cereal production.
- . **Expansion of Input Supplier Credit.** The project also included provision of credit for cereal seed production, input distribution, and crop storage, marketing, and processing. Although the target beneficiaries of this credit were to be large-, medium-, and small-scale firms engaged in these activities, the ultimate beneficiaries were to be cereal producers, to whom, it was presumed, the input suppliers would on-lend credit.
- . **Collection of Agricultural Statistics.** The project provided support to strengthen data collection on cereal production and input use. This data was considered

essential to support input distribution privatization efforts.

- . **Implementation of An Educational Media Campaign.** Funds for the development and presentation of a media campaign to disseminate information about cereal production techniques, GORS cereal policies, services available to farmers, and various other agriculture-related topics were included in this project. (The media campaign funds, however, were not a part of Chemonics' contract.)

The following project components or efforts were designed to meet the above project objectives:

- . The improvement of seed quality at the breeder seed level.
- . The institutional strengthening of seed certification and quality control functions within Direction de la Production et du Contrôle des Semences (DPCS), the government agency designated to provide this service. Improvement in the certification process was intended to protect both cereal seed producers and users by establishing consistent standards for production and sale of cereal seeds.
- . The increased participation of the private sector in the production and distribution of certified cereal seed and the marketing of other agricultural inputs. This component entailed reorganizing the seed production function controlled by DPCS on a country-wide basis, promoting all agricultural inputs including certified seed, paving the way for the privatization of the cereal seed production and distribution activities, and training seed producers and DPCS agents.
- . The extension of short- and medium-term credit to middlemen within the cereal subsector and to cereal producers/tradesmen through commercial banks. One major component of the project was the APS \$9 million revolving credit line, the use of which was controlled by USAID-defined eligibility conditions to be enforced by the fiduciary bank (Citibank). The fiduciary bank would have managed the loan program under the supervision of the Banking Committee chaired by the director of the Debt and Investment Division (DDI) within the Ministry of Economy and Finance (MOEF).
- . The institution building of the technical capability of the Division des Statistiques Agricoles (DSA) within the Direction de l'Agriculture (DA) with respect to data collection, analysis, processing, and dissemination. Since agricultural statistics in Senegal are incomplete and not

always reliable, it is important to improve DSA's ability to provide timely, reliable, and comprehensive statistical information to enable policy makers to make appropriate decisions, to satisfy the needs of the international donor community, and to help private investors with respect to their investment plans.

- . The training of nine Senegalese civil servants at the MSc. level in seed technology and agricultural statistics at institutions of higher learning in the United States, plus short-term technical training of other project personnel.

2. Definition of Stated Project Resources

In order to achieve these objectives, the use of five long-term technical advisors totaling 168 person-months (PM) was planned as follows:

- . Chief of party/private sector implementation advisor whose responsibilities included project management, supervising the technical assistance team, promoting the APS credit line to commercial banks and potential borrowers, integrating all project activities, implementing the agricultural input privatization program, coordinating short-term technical assistance activities, liaising with MDRH, GORS, USAID and private sector officials, participating in the formulation and implementation of the APS participant training program, and ensuring that the project was implemented in conformity with the contracts. The chief of party was scheduled to serve for 36 months.
- . Seed certification specialist to assist DPCS in organizing and installing an efficient seed certification service, provide on-the-job training to DPCS staff toward upgrading Senegal seed certification and quality control standards, and advise MDRH on the national seed law and policy. His assignment was to last 36 months.
- . Seed production agronomist to work with farmer associations and private entrepreneurs to promote private sector involvement in certified seed multiplication and improved agricultural inputs use and distribution, with the support of mass media campaigns, demonstration plots, and training. His participation in the APS project was set at 36 months.
- . Seed quality and selection agronomist to assist ISRA in the selection and production of breeder seed, with research emphasis on seed quality at all levels from breeder to certified seed, as well as the redirection of research efforts towards farmers' actual needs. His contribution to the project was planned for 36 months.

- . Agricultural statistics specialist to help upgrade the technical capability of DSA through introduction and implementation of an appropriate methodology for collection and analysis of statistical data and through training. This assignment was planned for 24 months.
- . Miscellaneous other assistance under the contracts included short-term technical work by short-term specialists in technical areas, home-office support, a training component, and a commodities component. Specifically, the contracts provided 48 PM of short-term technical assistance to be mobilized by Chemonics at the project's request, plus 9.50 PM of short-term time forecast for supervision and project management assistance by the contractor's home-office personnel. Twenty PM of the total short-term technical assistance plus the participant training activities were to be provided or managed by the University of Arizona under a subcontract. Agricultural Assessments International Corporation (AAIC) was also to provide up to 3.75 PM of the total short-term technical assistance under a subcontract.

With the exception of the chief of party assigned to the APS project headquarters where he worked jointly with the APS project director and the project administrative staff, all other technical assistance personnel were to be posted with the recipients of the APS technical assistance program, namely DPCS, ISRA, and DSA. These host institutions were to provide a full-time technical counterpart and adequate logistical support to each APS technical advisor. The APS project director and the chief of party were to co-manage project implementation and were to prepare annual work plans in close coordination with the Chemonics technical advisors and heads of DPCS, ISRA, and DSA.

The USAID-financed component of the APS project provided a number of TT plated vehicles to be used by the technical advisors and paid the advisors' travel per diem. The daily travel allowances of counterparts and other GORS personnel involved with project activities were to be paid by the APS project until February 23, 1990 in conformity with the provisions of the Grant Agreement. After that date, such expenses were to be paid with APS counterpart funds.

C. Program Management

The major inputs selected for providing the support required for the implementation of the APS project were the host country contract mechanism, the joint management approach, the contractor's role in the offshore procurement of equipment and capital goods, the subcontracting of training activities to UAZ, and the subcontracting of statistical services to AAIC.

1. Host-country Contract Mechanism

Although the direct contract mechanism was cited in the Grant Agreement, it was replaced by the host country formula after negotiations between the GORS and the USAID mission, resulting in host country Contracts Number 1 and Number 2 between MDRH and Chemonics. This formula allowed MDRH an increased role in project implementation and provided the ministry with more direct access to a number of USAID-financed assets, such as four AD plated vehicles, 15 motorcycles, as well as laboratory and field measuring equipment. At the same time, this formula obligated the GORS to provide and finance the director and deputy director to the project as well as to make a financial contribution in counterpart funds.

Under AID's host country contracting mechanism, USAID/Dakar, although not a party to the above mentioned contractual documents, formally approved the contracts and retained a financier's right to approve any or all project commitments, expenses, and activities. USAID/Dakar also retained the right to determine the conformity of proposed action plans contained in the work plans, or any other APS proposal, with USAID policies and regulations. Since MDRH was not certified under Section 221 of the Foreign Assistance Act to keep the APS accounting books and be entrusted with the safekeeping of U.S. government funds, USAID insisted that Chemonics bear a fiduciary responsibility for the handling of local currency account funds. In addition, Chemonics was to mobilize the technical assistance team and share the management of the project with the APS project director.

2. Joint Project Management

The joint and equal management of the APS project was intended as the cornerstone of project implementation is outlined in Article 20A of host country Contract Number 1. Although the contract provides for certain specific responsibilities of MDRH and Chemonics (e.g., the maintenance of AD and TT plated vehicles respectively and the contractor's obligation to prepare progress reports), it also clearly spelled out the major areas for joint management decision making and joint action in project implementation. The joint management areas included:

- . Approval of all financial commitments.
- . Signing of all local currency checks drawn on the joint APS/Chemonics local currency account replenished by periodic USAID advances.
- . Certification of monthly expense vouchers to USAID.
- . Preparation of annual work plans.

- . Coordination and integration of APS project activities including seed certification, privatization of seed multiplication, seed variety research, and agricultural statistics.
- . Direction and promotion of the APS credit program.
- . Supervision of APS participant training program.
- . Liaison with MDRH, USAID, GORS, banking, and private sector officials.
- . Supervision and assessment of technical assistance personnel.
- . Supervision and assessment of APS administrative personnel.

The joint management approach was limited to USAID-funded activities and resources while the counterpart or GORS-funded activities were managed solely by the project director. He retained the right to determine the scope and type of counterpart funded activities and the project director was the only authorized signature to draw on the APS account with the GORS Treasury.

3. Offshore Procurement

Since the offshore procurement of equipment and capital goods for the APS project is a highly specialized activity and since the contractor was experienced in this area, MDRH and Chemonics agreed that this function should be carried out by the contractor. Every purchase order was to be prepared by the APS administrative staff and approved jointly by the APS project director and the Chemonics chief of party.

4. Training

Chemonics selected UAZ as its subcontractor to handle all matters pertaining to the APS participant training program since the management of participant training requires a unique type of expertise and UAZ has an excellent record in this field. This relationship was formalized in a subcontract agreement signed by Chemonics and UAZ on December 8, 1989. Approval from USAID was received a year later.

The Training Committee, which was created in conformity with Contract No. 2, was made up of senior APS project officers, GORS, and USAID officials. The committee was responsible for coordinating with UAZ professors and administrative staff to select qualified participant training candidates, manage their English language training, prepare their applications with U.S. universities best adapted to their levels and interests, prepare

their travel plans to the United States, and provide funding of their academic programs. UAZ was obligated to report on a quarterly basis on the performance of the participant trainees and the level of expenditures relative to the budget.

**SECTION II
PROJECT INPUTS**

A. Chemonics International

Long-term technical assistance staff provided by Chemonics included the following professionals:

Chief of Party	Jean G. Crouzet (12/08/88 - 11/05/90)
Seed Certification	Claudio Bragantini (03/03/89 - 12/31/90)
Seed Production	Jacques C. Denis (04/01/89 - 12/31/90)
Agricultural Statistics	Patricia O'Neill (05/08/89 - 07/21/89)

Short-term technical assistance included:

Computer Specialist	David Hunsberger
Red Rice Specialist	Ford Eastin

Their participation in the APS project totalled 79 person-months (PM): 76.5 PM of long-term and 2.5 PM of short-term technical assistance.

In addition, a number of direct field assignments and procurement support totaling 9 PM were undertaken by members of Chemonics' home-office staff. This personnel included:

Project Supervision	David Dupras
Accounting	Jim Campillo
Financial Management	Richard Pronovost
Project Administration	Sarah Grote
Procurement	Charis Nastoff Stephanie Powell

The contractor also supplied a Chemonics home-office project management staff (whose time was not billable to the contract) that was responsible for backstopping over the course of the contract. This personnel included:

Chemonics Director	Thurston Teele
Project Supervisor	David Dupras
Project Administrator	Mary Ellen Ressler Sarah W. Grote
Project Assistant	Nathalie Nys Lauren Samuels

Chemonics' overall budget for the project under Contracts Number 1 and Number 2 was \$8,968,571 (including \$3,441,224 of local currency funds). The Chemonics contract accounted for 45 percent of the \$20 million budgeted for the project as a whole. For further details, please refer to annexes A, B, and C.

B. University of Arizona

The UAZ staff assigned to the project included the following individuals:

Director of International Programs College of Agriculture	Michael Norvelle
Coordinator, International Programs	Monika Escher
Administrative Assistant	Carol Davis
Academic Advisor	Don Slack

The UAZ subcontract budget for the project was \$806,640, which included the training funds. Short-term assignments and home-office undertaken by the UAZ staff totaled 5.75 PM. For further details, please refer to annex D.

C. USAID/Senegal

USAID mission staff for the APS project at various times over the course of the contract were:

Project Officer	Doral Watts David Delgado David Diop
Controller	Thomas Walsh Monica Gianni
Chief, Agricultural Development Office (ADO)	Wayne Nielsestuen
Deputy Chief, ADO	Jim Bonner

Economist, ADO	Rod Kyte
Economist, Credit & Banking	Richard Green
Executive Officer	Steve Wallace Michael Ireland
Deputy Mission Director	Gary Nelson
Mission Director	Sarah Jane Littlefield Julius Coles

USAID provided project funding as follows:

Technical Assistance	\$ 9,851,000
Commodities	745,000
Revolving Credit Line	9,000,000
All other costs	<u>404,000</u>
	\$20,000,000

D. Government of the Republic of Senegal

GORS officials most directly concerned with the negotiation and implementation of the APS project were as follows:

Minister of MDR/MDRH	Famara I. Sagna Cheika Khadre Cissoko
Director of MDR/MDRH Cabinet	M. Diop Alassane Fall
MDRH Technical Advisor	Baba Dioum
APS Project Director	Amadou Sougoufara Mamadou Diouf Ababacar Kane
Deputy Director	Thierno Fall Sidy Gueye
Project Administrator	Saliou Sambo
Director, Direction de l'Agriculture (DA)	Mahaw Mbodj M. Camara
Director, Division des Statistiques Agricoles (DSA)	Ibrahima Cheikh Ndiaye
Director, Debt & Investment Division (DDI)---MOEF	M. Toure

Director, ISRA	El Habib Ly
Director, CNRA	M. Cisse
Director, DPCS	Ousmane Seck
Director, Division des Semences (DISEM)	M. Camara

In accordance with the Grant Agreement, the GORS was to commit \$2,077,000 or 602,000,000 FCFA to the project (based on an exchange rate of \$1 US equivalent to 300 FCFA). In addition to assuming the financial responsibility for the salaries and benefits of the APS project director and his deputy, the Senegalese Treasury was to advance funds to defray project related expenses not financed by USAID.

**SECTION III
PROJECT ACCOMPLISHMENTS**

A. Constraints

As has been noted, accomplishments were limited for three primary reasons:

1. According to the evaluation team's report, project objectives set forth in the project design were not realistic or achievable.

2. USAID/Dakar froze long- and short-term personnel placement, procurement, participant training and many implementation activities in November 1989 (11 months after the first team member arrived).

3. USAID/Dakar decided to terminate the APS project only 16 months after the contractor began co-managing the project.

The 16 months of the contractor's formal involvement included an unusually difficult start-up reflecting delays in the mobilization of the technical assistance team and further bureaucratic delays by the financier and the contracting agency for the approval and ratification of contractual documents. The progress of technical, project support, and management activities was also affected by the quick succession of three different APS project directors and two deputy directors, as well as substantial staffing changes within the USAID mission. Nevertheless, some accomplishments were achieved.

B. Technical and Related Activities

1. APS Credit Program

The credit program was the project component that required the most attention from the APS project director and the Chemonics chief of party. They contacted every commercial bank in Senegal and promoted the APS credit line to over 100 interested parties, which included input wholesalers in Dakar and distributors in the Fleuve region, rice-producing Groupements d'Intérêt Economique (GIE), vegetable producers and exporters, and individual farmers. These contacts made it possible to assess the current demand for financing by commercial banks of agricultural inputs at the distributors' level in the Fleuve area at \$3.5 million per year. This figure would need to be increased by at least \$1.0 million in the future to accommodate the fast growing demand for medium-term loans covering equipment and other non-current projects.

Despite these assessments, the reaction of local financial institutions was mixed. Caisse Nationale de Crédit Agricole du Sénégal (CNCAS) and Banque Internationale pour le Commerce et l'Industrie (BICIS) did not react favorably to APS promotion efforts. CNCAS, which was deemed a major potential user of APS funds but was beset with unprofitability and major solvency problems, insisted on terms and conditions incompatible with the Grant Agreement.

BICIS, the largest and most profitable banking institution in Senegal, expressed reservations as to the allegedly high cost of the APS credit line, the impossibility to receive term deposits dictated by U.S. Treasury regulations, and the mandatory intermediation of Citibank for loan disbursement. USAID's lowering of the interest rate applicable to banks from 10 to 5 percent and the extension of maximum loan maturities from three to five years was not sufficient to motivate BICIS to sign a protocol with the APS project.

Société Générale des Banques du Sénégal (SGBS) was the only commercial bank that signed a protocol with the APS Project on May 23, 1989. After a slow start, SGBS submitted four loan proposals already approved by its Loan Committee to be financed under the APS credit line. Instead, USAID suggested that APS approach the bank concerning a \$120,000 loan to an inputs distributor located in Tambacounda. Although this transaction was considered eligible by USAID, it had not been approved by the bank and was considered the least attractive by SGBS.

SGBS did not react well to this approach. In a letter dated June 7, 1990 addressed to the APS project director, the SGBS managing director remarked that "unless the scope and purpose of the APS credit program are completely changed, we would have little interest in pursuing this experiment."

Banque Internationale pour l'Afrique Occidentale (BIAO) was anxious to use the APS credit line to finance the start of a new effort in the production and marketing of vegetable crops to 11 of its former employees. The overall amount of the loan to BIAO was \$300,000 and the ADO reacted favorably to this proposal. However, the proposed loan transaction had to be cancelled when BIAO/Senegal experienced a severe liquidity and solvency problem in December 1989. This incident demonstrated that the use of the APS credit line for loans through commercial banks burdened with a heavy financial condition represented an added and unduly high risk for the use of project funds.

Citibank, the fiduciary bank designated by USAID, was also interested in using the APS credit line to extend short-term credit to one of its blue chip customers engaged in contract growing and processing of canned tomatoes. This proposed

transaction was vetoed as ineligible and incompatible with the status of Citibank as the fiduciary bank of the APS project although it is not unusual for banks to act as commercial credit and fiduciary institutions while they serve the same customer.

The APS project management also attempted to promote alternate credit mechanisms outside the commercial bank system. A formal proposal for the creation of an APS sponsored credit unit was turned down by the USAID mission. Other informal proposals such as the establishment of a privately-owned agricultural finance corporation with an initial controlling equity or quasi-equity shareholding by USAID, or the creation of a loan guarantee fund, did not interest the ADO or other USAID staff.

In conclusion, it is clear that opportunities to extend short- and medium-term financing to credit worthy participants in the agricultural sector through commercial banks or other mechanisms did exist. Time and effort was spent by two APS project directors and the Chemonics chief of party to disburse funds under the APS credit line, yet this endeavor proved to be futile due to external constraints. Among those constraints were a faulty design of this component, narrow eligibility requirements, a rigid approach to alternative agricultural credit delivery systems, and mandated uncompetitive operating conditions.

2. Seed-related Activities

Since project resources were insufficient to carry out the stated seed production and certification programs on a country-wide basis, it was decided in the first work plan to concentrate the efforts of the seed-related technical assistance on one region with a lead cereal crop of rice and a secondary crop of corn, offering the best potential for the creation of a privately-owned and operated seed industry. The decision to select the Senegal River valley was based on the region's great potential for lucrative and diversified agriculture and its incipient private agribusinesses. USAID concurred with this approach. The evaluation team agreed that with limited funds a national program was not possible and that the scope should focus on a region. The evaluation also stated the opinion, however, that the assumptions regarding the increased demand for improved cereal seed were faulty and that research should have concentrated on the non-irrigated sector.

a. Seed Certification

The following summary is of the results presented by the seed certification specialist in his technical report, which is appended to this final report. The seed certification

specialist was charged mainly with assisting DPCS to organize and install an efficient seed certification service, provide training for DPCS staff, and advise MDRH on the national seed law and policy (please refer to annex A).

(i) Restructuring of the Seed Certification Function

The objective of this action program was to give DPCS the necessary tools to accomplish its function of controlling the quality of all seeds put on the market as a service for both seed producers and consumers. As a first step, the seed certification specialist conducted a survey of the quality of rice seed used by farmers in the Fleuve Region through interviews with farmers and laboratory analysis. The results of the survey allowed the expert to qualify and quantify the seed related problems in the region, including detection of the spread of Red Rice. In addition, APS proposed the remodeling of regional laboratories as well as the separation of part of the DPCS field personnel who were involved with both production and certification, to be involved exclusively with seed certification.

(ii) Improving Field Quality Control Procedures

The APS project assisted field agents, laboratory technicians, and departmental officers to set up their improved certification program. In addition, field agents were in contact with seed growers to show them the usefulness of the certification service to the seed producer and that it was not just another government intervention.

During the 1989-1990 season, tighter controls on programmed field inspections and laboratory analysis of seed samples from contracted seed multiplication plots resulted in a substantial reduction in seed lots that were fully approved for certification: from 173 to 64 hectares. Furthermore, SAED agreed to collect as seed only those lots approved by DPCS. This marked a significant change in the enforcement of seed quality control.

Another APS innovation brought to field quality control during the 1990-1991 season was the use of a simplified field inspection form that was designed for irrigated rice.

(iii) Establishing Strict Postharvest Seed Quality Control Procedures

Prior to the 1989-90 season, DPCS quality control stopped at harvesting time. The new certification program was implemented to include control at the reception of

seed material by the SAED processing plant in Richard-Toll, where only bags marked with spray paints by DPCS agents were allowed in and were tagged with certification labels. Consequently, each bag of certified seed was clearly identified, marking the first major step in the marketing of quality rice seed in the region.

At the market level, the APS seed experts started influencing local agricultural input merchants to go into the seed business. For the first time, a large part of SAED's certified seed production was sold before the growing season to local retail dealers that were present in Dagana. Their marketing of certified seed was limited only by the small quantity of certified seed available due to stricter quality controls.

The 1990-1991 season was marked by two important accomplishments: the total pull out of SAED from seed production and the immediate response of the private sector. The initial seed production surfaces had increased 2.5 times reaching a total of 420 hectares. It is estimated that the field rejection rate will drop from 60 to 40 percent this season and that about 1,000 metric tons of certified rice seed produced by private growers will be available in the market, up from the 256 tons available in 1989-1990.

**(iv) Rehabilitating and Expanding the Regional
DISEM Laboratory Buildings in Richard-Toll**

Through a modest investment of \$6,000, the seed testing laboratory working area was doubled and the electrical and water systems repaired. A subsequent proposal for \$15,000 submitted to USAID for the urgently needed upgrading of equipment and laboratory supplies was not approved.

**(v) Promoting the Creation of a Regional Seed
Council**

The seed certification specialist spent considerable time and effort in promoting the concept of regional seed production, certification, and marketing leading to privatization. The proposed establishment of a Regional Seed Council in Saint Louis would have required a total investment of \$35,000 in the first year of operation and was projected to be self-sufficient by the end of the project. However, the proposal was not deemed appropriate for USAID financing.

(vi) Preparing Technical Documents Required for the Implementation of the Proposed Seed Legislation

By the time the seed certification specialist arrived in Senegal, the draft of a National Seed Law had already been submitted to the National Assembly. A bill is now under consideration. One of DPCS' concerns focused on the availability of defined technical standards or norms required for the implementation of the law. The certification specialist prepared a basic document describing the norms for the production, certification, and trading of seeds. When the seed legislation bill is passed by the National Assembly, a re-evaluation of this document will be necessary to determine its compliance with the new law.

Another important aspect of the seed legislation is the presence of a Variety Release Committee that will be in charge of periodically publishing the varietal catalogue where varieties are described and officially accepted for certification. The seed certification specialist prepared a bibliographic revision or draft catalogue that furnished the necessary elements to describe the varieties currently being used in Senegal. This publication can be used by the committee as the base for the first catalogue.

(vii) Training Efforts

On-the-job training became a necessity following the large number of personnel changes resulting from the Seed Service reorganization in mid-1989 when DISEM succeeded DPCS. Field agents in the Fleuve region and the seed certification specialist's new counterpart received training in basic certification concepts, field sampling methods, warehouse record keeping, and other appropriate topics. During the last quarter of 1990, the certification specialist was also invited by the DISEM director to participate in the training session held in Thies for the benefit of new field personnel with no prior experience in certification activities.

Finally, the certification specialist played a major role in organizing a red rice seminar. Dr. Emery Ford Eastin, an internationally recognized red rice expert went to Senegal in November 1990 and held working sessions with Senegalese research, extension, and seed certification agents, as well as rice producers, to discuss methods to control this weed.

b. Seed Production and Agricultural Inputs Promotion

The following summary is from the seed production agronomist's attached report detailing his accomplishments with

respect to seed production (rice and corn), the promotion of improved agricultural inputs, and the promotion of private sector involvement in seed multiplication and agricultural inputs distribution (please refer to annex G).

(i) Seed Production Agronomist Work Plans and Approach

The seed production agronomist and his counterpart designed four main action plans on seed promotion, seed production, privatization of seed supply, and training. These were merged with the action plans designed by the seed certification specialist and his counterpart to form the APS seed component work plan.

All indications were that certified cereal seed use was at a low level. The current certified seed market was small, thus in his plan for the privatization of seed supply, the seed production agronomist emphasized seed promotion first, then seed production, and finally privatization of seed supply. Seed promotion activities would help change the non-certified seed users into certified seed users and, in the process, identify the best farmers able and willing to become seed producers. The plan was to organize farmers and seed producers into groups and form local triangles of clients between farmers, seed producers, and input distributors bound together by legal production contracts. The APS credit funds were to provide credit mainly to input distributors and seed producers, but also to those involved with crop storage, processing, and marketing. An input distributor would place a contract for certified seed production with a seed producer, then would include this certified seed in an input package to be provided on credit to local farmers for cereal production. When the grain is harvested, the input distributor can thus receive a share for credit payment, and buy on a cash-on-delivery basis any surplus the farmers wish to sell.

(ii) Promotion Activities

Seed promotion activities were carried out with an integrated package that included all agricultural inputs and cultural practices recommended to the cereal producers. The methods used for that purpose varied: an "individual" method, demonstration plots, a group method, farmer visits or field days on demonstration plots, and a mass media method such as a promotional film that was either presented on national television or projected on a portable television to a village audience. The radio was to be used in spot programs to broadcast short messages addressing specific problems identified in the field.

Three demonstration plots were established during the three production seasons of the life of the project: two rainy seasons and one cold off-season.

Two of these demonstration plots have had some success that led to two series of field days (March and December 1990) in which more than 200 farmers acknowledged their adherence to the production techniques proposed to them and expressed their desire to continue using these new practices in their cereal production. Many of these farmers have expressed their disappointment for the closing down of the APS project, which they have found very useful.

The promotional film on input use is being finalized. It is a 20 minute film intended to incite a cereal producer to use all available inputs and recommended cultural practices.

(iii) Support to Seed Production

Recommended cultural practices were written into two technical bulletins, one for rice and one for corn, that are to be printed in 1991. They will be distributed primarily to seed producers or potential seed producers. The bulletins should help the farmers increase their cereal seed yield. Neither APS nor USAID financed these publications. SENCHIM, a private institution involved in input distribution, agreed to print them through a contract with Plein Sud, a private promotion business located in Dakar.

(iv) Privatization of Seed Production and Distribution

There are four private rice producers in Dagana, the main rice-producing department of the Senegal River valley. They are acting independently of SAED, which means that certified rice seed production has effectively been privatized. Steps are being taken so that seed conditioning can be carried out independently of SAED by next season (1991). Together, the four private rice seed producers can produce five to ten times more seed than was produced two years ago. Both personal funds and CNCAS credit are being used to finance private seed production at this time. The APS credit facilities targeted for such producers never materialized.

The APS project has had a brief passage in the field but managed to establish seed certification as a necessity for privatization of seed supply by proving that seed quality is important to both seed producers and users.

(v) Training

Training was provided to 17 PNVA agents in the Bakel department using a text prepared for the occasion titled "Les parcelles de démonstration dans le contexte de la promotion des intrants agricoles."

In addition, some training was provided to the new seed certification agents on the seed production agronomist's approach to privatization of seed supply.

(vi) Other Activities of the Seed Production Agronomist

The APS seed production agronomist attended a seminar in Lomé, Togo on "Fertilizer Supply Options and Constraints in Developing Country Agriculture." A lengthy report was subsequently prepared with important information on privatization of input supply.

A preliminary survey on agricultural input use in the Senegal River valley was conducted by the APS seed production agronomist in October 1990. A separate document was presented to APS with the results of that survey; some of these results are included in his report (annex G).

A seminar on Red Rice was held in November 1990 at Saly-Portudal. The seed production agronomist played a major role in the preparation and organization of that seminar, for which he prepared the final report.

c. Seed Quality Research at the Breeder Seed Level

The technical advisor responsible for this program never took the position in Bambey since USAID froze his fielding; therefore, no project accomplishment was recorded in this area. The \$400,000 budgeted for procurement of research equipment for ISRA was also frozen by USAID in the fall of 1989.

3. Mass-media Campaign

Although \$400,000 were intended to be available to the APS project to conduct mass media campaigns designed to support the promotion of agricultural inputs and advertise the use of the APS credit line, these funds were controlled and used exclusively by USAID. During the 1989-1990 season, USAID contracted directly with a local media consultant for the preparation of a multi-media promotion program sponsored by the Agricultural Inputs Working Group (AIWG). AIWG is a coordinating body presided over by the DA director and representatives of the GORS and USAID, as well as representatives of the private sector. Spot messages on the radio and television and press coverage were heard or seen around the country. The amount of the local contract was \$100,000.

As part of this campaign, the APS project director was invited to address audiences mustered by local chambers of commerce in five major agricultural regions and to present the APS credit program. Audiences ranged from 20 to 60 persons

engaged in the production, marketing, and processing of cereal crops. A strong interest in the program was expressed by the audience in Saint Louis.

4. Agricultural Statistics

Even though the agricultural statistics specialist stayed in Senegal for only two months, the APS project was able to extend significant support to DSA. APS sponsored the 1989 National Seminar on Statistical Methodology focusing on data collection and sampling procedures. The cost of this seminar was 1,000,000 FCFA, equivalent to \$3,000.

Numerous qualified replacement candidates were proposed for the agricultural statistician position but all were refused by either the DSA or USAID and, eventually, USAID froze this component while awaiting the results of the interim evaluation. Due to suspension of this component, the AAIC subcontract for statistical services did not materialize.

APS also contributed funds, fuel, and vehicles to assist in the conduct of a country-wide agricultural survey. The overall APS participation in the survey amounted to 2,500,000 FCFA or \$8,500. APS had planned to further assist DSA with the purchase of field measuring tools, computers, and motorcycles. A sum of \$45,000 was incorporated into the procurement component of the first annual work plan for this purpose. However, USAID did not approve the allocation of any further resources to the DSA and, in November 1989, USAID froze all activities planned for DSA.

5. Participant Training

a. Long-term Academic Training

The Training Committee was created in January 1989 and immediately proceeded with the definition of criteria for the selection of nine qualified Senegalese candidates for graduate study fellowships at U.S. universities. The committee coordinated closely with UAZ Professor Donald Slack in the screening of more than 16 candidates submitted by DA, DPCS, and ISRA. Dr. Slack made two trips to Dakar in the spring of 1989 for the purpose of interviewing, selecting, and ranking candidates and preparing their applications. Seven promising candidates were identified. At the same time, the APS project sponsored 30 PM of English language training in Dakar for five candidates in order to enable them to sharpen their language skills prior to their departure for the United States. In November 1989, USAID froze the identification and placement of the additional four students originally intended to go on long-term graduate training.

The APS staff coordinated the details of the trainees' travel plans and academic programs with USAID, UAZ, and Chemonics so that the five participant trainees were able to leave Senegal in January 1990. They were welcomed by UAZ who finalized the financial and other details pertaining to the placement of the candidates in U.S. universities where they are currently pursuing programs of study leading to master of science degrees in seed technology or agricultural statistics as follows:

<u>Participant Trainee</u>	<u>University</u>	<u>Study Program</u>
Famara Massaly	Mississippi State	Seed Technology
Alassane Bakhom	Mississippi State	Seed Technology
Kisma Wague	Mississippi State	Seed Technology
Jean Paul Carvalho	U. of Arizona	Ag. Statistics
Harouna Soumare	U. of Iowa	Ag. Statistics

The UAZ academic advisor kept a close watch on the progress of each participant. UAZ has submitted quarterly progress reports on each candidate. It is expected that Messrs. Massaly and Bakhom will complete their course work by December 1991. Messrs. Wague and Carvalho should complete their course work by May 1992. If Mr. Soumare is allowed to continue his program at the University of Iowa, he would complete his course requirements at the close of the 1992 fall semester.

Upon their return to Senegal, and under the supervision of one of their U.S. professors, the masters candidates will spend one year preparing a thesis directly related to their professional interests. Funds had been allocated for this under the APS project. However, since the contractor's involvement with the training program is terminated, arrangements were made between AID/W and USAID for the continued monitoring of this academic training program and the required administrative coordination.

b. Short-term Professional Training

Virtually no short-term training was provided. DPCS candidates demonstrated an inadequate knowledge of the English language to attend short courses in the United States and training in French speaking institutions in Western Europe required a waiver by USAID (a time-consuming procedure). Efforts to send a DPCS employee to the National Germplasm Bank in Colorado for training in modern laboratory techniques were not successful. This contrasted with the strong interest of ISRA and DSA in short-term training. In November 1989, when USAID decided to "freeze" the APS related seed quality research and agricultural statistics programs, training plans for the staff of these institutions had to be terminated.

The only short-term training that materialized was the study tour of agricultural credit institutions in the United States and Morocco, which was organized by Chemonics. The APS director and the chief of party participated in the study tour program, which took place in December 1989.

c. Financial Aspects of the APS Training Program

As of February 28, 1991 UAZ reported to Chemonics that \$98,033 had been expended to provide subcontract services as compared to an overall budget of \$806,640. Expenses reported by UAZ were 12 percent of budgeted funds. This is because only five out of nine academic participant trainees had been in the United States for ten months as compared to the 24 months of training budgeted for each of nine participants. The UAZ short-term training budget was based on 25 participant trainees, but UAZ did not provide any actual short-term training service because short-term training activities were also frozen by USAID. For further details, please refer to annex E.

6. Commodities Procurement

Of the commodities purchased under the project, all items were inventoried and transferred at the close of the project to the appropriate GORS or USAID entities.

C. Project Management and Support Activities

The activities addressed under this heading cover the actual workings of the host country contract mechanism and of the joint management approach; the adequacy of accounting, administrative and financial controls; the administration of the technical assistance team; the relationship with the host institutions involved in project implementation; and liaising with MDRH and USAID.

1. Host-country Contract Mechanism and Joint Management Approach

The corollary of the host country contract mechanism involving MDRH and Chemonics in the implementation of the APS project was the joint management approach. This concept, which was negotiated and implemented with the first APS project director, worked reasonably well while he remained in his position until January 22, 1990. Yet, the two subsequent project directors and the deputy director alleged that the joint management approach represented a major hindrance to their executive authority. Furthermore, they complained that USAID regulations were not adapted to efficient project management.

Some of the contractor's stated responsibilities were to ensure the conformity of project actions and expenses with AID

policies and regulations and to minimize non-reimbursable expenses incurred by the project. In addition, the contractor was to make sure that project assets would be used in accordance with project objectives as stated in the Grant Agreement as well as in Contracts Number 1 and 2. There were major differences in the interpretation of these documents between some of the project directors and the contractor, which hindered project implementation.

2. Accounting, Financial, and Administrative Controls

As soon as Chemonics became involved in the joint management of the APS project, it turned its attention to the strengthening and improvement of the local currency fund financial, accounting, and administrative controls that had been installed by MSI to correct shortcomings identified by a non-federal audit of project expenditures. The following corrective measures were taken by the APS project director and the contractor:

- . Replacement of the manual accounting system with Solomon III, an electronic data processing accounting system that uses a single data base and makes it possible to provide detailed, accurate, and up-to-date accounting and financial reports and to keep an audit trail of all the transactions recorded in the general ledger.
- . Installation of project asset controls covering the inventories of capital goods and fuel, the consumption of fuel by vehicles, the maintenance of vehicles, as well as the monitoring of housing allowances.
- . Preparation of the APS project administrative, accounting and financial procedures manual and publishing it in English and French. The manual outlined detailed procurement and payment procedures for proper handling and itemization of project expenses in accordance with generally accepted accounting standards. The manual also covered procedures pertaining to inventory tracking, bank reconciliation, and preparation of monthly expenditure vouchers and advance requests for submission to USAID. The controller's office of USAID/Dakar praised the APS procedures manual and intended to adopt its format for use by other contractors in Senegal.

Although these accomplishments were not mentioned by the interim evaluation team, they significantly strengthened the project administrative capability.

3. Management of the Technical Assistance Team

The interim evaluation report pointed to a lack of cohesiveness among the members of the team. This criticism is

justified. However, some of the contributing factors should have been explained. The project design, which required that technical assistants be posted with GORS host institutions rather than with the APS headquarters, was instrumental in creating a divisive attitude. This was further aggravated by the struggle between the first APS project director and the DPCS director over the control of the seed certification specialist's and the seed production agronomist's activities. Given this arrangement, the line of authority issues were not resolved to all parties' satisfaction.

4. Relationship between the APS Project and GORS Entities Involved in the Implementation of the APS Project

The relationship between the first APS director and the DPCS director was uneasy. The DPCS director insisted that he should retain technical as well as administrative control over the two technical advisors assigned to his agency, including control of project funds for that purpose. This position was opposed by the APS project director and the chief of party who were responsible for the management and evaluation of the technical assistance team in conformity with host country Contract Number 1 (Article 20A). In spite of several meetings, the control issue was never resolved. However, procedures were agreed on for the approval of travel orders and the purchase of inputs for implementing the APS/DPCS action programs.

The relationship between APS and DPCS was affected by a fundamental difference in goals. The APS was designed as the instrument of change leading to the restructuring of DPCS and its withdrawal from seed production, whereas DPCS focused on peanut research and production supported by the French government. Another major difference was that the APS contribution focused on cereal seeds. Cereal seeds accounted for a minor part of DPCS's activities, which were dominated by peanuts. Furthermore, DPCS did not provide a sufficient level of support to the APS technical advisors to sustain planned activities. Their counterparts did not work on the APS program on a full time basis and during 1990, the seed production agronomist had to work alone after the resignation of his counterpart. Finally, the APS technical assistance, which consisted of two seed specialists and the funding of per diem and fuel allowances, contrasted sharply with that of the Plan Triennal Semencier (PTS) sponsored by Caisse Centrale (French), which entrusted the direct management of substantial funds and resources to the DPCS director who also served as the director of PTS.

Had a better working relationship between APS and DPCS prevailed, it is likely that the modest results obtained by the contractor's technical advisors could have been very different. As an example for the record, in September 1989, the same protocol draft that was proposed to and not accepted by the DPCS

director, was submitted to the director of DA who expressed his willingness to sign the document without any change.

5. Liaising with MDRH

Since the APS project director reported directly to the MDRH minister, all project related communications with the minister took place between him and the project director. With the exception of the second project director, no detailed written or oral briefing of such meetings was provided to the Chemonics chief of party or the other technical advisors. During the course of the project, the minister met only once with the Chemonics technical assistance team on March 8, 1990, when the team made an APS project presentation that was well received.

Moreover, the response of the minister and his staff to some important documents from the APS project was not always forthcoming. For instance, the January 1990 detailed report on the agricultural credit study tour to Morocco and the United States, which outlined a number of options for the APS credit program including the termination thereof, did not elicit any comment from the minister and his technical staff. Finally, the idea advanced by the minister for the creation of an APS Project Monitoring Committee was never implemented. The foregoing demonstrates that communications between the APS project and MDRH were not effective and that MDRH's interest in the project was minimal.

For the record, the contractor feels compelled to mention that the APS project director excluded the Chemonics chief of party from two important meetings on July 2 and July 27, 1990. These meetings concerned the termination of the APS project.

6. Liaising with USAID/Dakar

The relationship between the APS project and several officials of the USAID mission staff was a close one. As befits the situation, APS kept the financier up to date with the progress of the project and consulted the USAID staff with respect to policy issues. Major meetings were reported to the APS staff and the technical assistance team by the chief of party who usually prepared a written record thereof.

Another compelling reason for the close relationship between APS and USAID was the slow reaction time of the mission staff. The chief of party had to follow up repeatedly on the status of contractual documents, annual work plans, voucher payments, terms of reference for short-term assignments, and other matters awaiting approval at USAID. This close contact with the ADO personnel resulted in an informal but meaningful flow of information that was passed to the APS director and his deputy.

SECTION IV
MAJOR PROJECT ISSUES

This section of the report will focus on several major project design, implementation, and management issues that emerged during the course of the APS project. Technical issues will be treated separately in technical reports submitted by the seed certification specialist and the seed production agronomist. Twelve issues were identified as the cause of major problems during project implementation:

- . Defective project design
- . Inflexible project design
- . Predetermined evaluation conclusions
- . Unilateral actions by USAID
- . USAID micro-management style and slow response
- . Inadequacy of host-country contract mechanism and joint project management approach
- . Lack of strong GORS interest in the APS project and lack of DPCS interest in participant training
- . APS responsibility for project implementation without concomitant authority
- . Delays in recruiting the technical assistance team
- . Unclear channels of command for technical advisors
- . Excessive scope of COP's responsibilities
- . Inefficiencies in the offshore procurement of project equipment

A. Defective Project Design

This issue was by far the most serious one. As the mission deputy director pointedly remarked, "there was nothing one could do with a badly designed project and not even Einstein could have made it work." This overriding issue deserves a closer examination, and four illustrative examples follow.

1. Project Objectives

The objectives of the APS project were so ambitious and diverse that the feasibility of the project was questioned by the evaluation team. This constituted the first design flaw.

2. Credit Component

The second instance of defective design was in the fundamental assumption, used for the design of the credit component, that commercial banks would be willing to use the APS credit line. This assumption proved to be false. First, it ignored the high risk perception that commercial banks in Senegal associated with agricultural credit, in part due to the lack of collateral resulting from the land tenure system in rural areas. Second, the design did not take into account the current credit extension procedures used by commercial banks and the availability of more favorable credit terms and conditions offered by other donors, which were subject to less stringent conditionalities. Consequently, the APS credit line became unusable.

Another questionable component of the credit design was the creation of the Banking Committee that was intended to provide policy guidance to the APS project. No advice was ever offered by the chairman of the committee (the DDI director) and when his services were required for the ratification of the SGBS protocol, this process required no less than three months.

3. Resource Availability

The third example concerns the disproportion between stated objectives and resources, both human and financial. The project was designed with too many objectives and too few technical advisors and resources to implement them. The scope of the seed component was intended to cover all cereal crops (i.e., rice, maize, millet, sorghum, and cowpeas) throughout Senegal with two technical advisors and their part-time counterparts. The local currency budget did not include any funding for technical activities except per diem and fuel costs. As a result, the first annual work plan submitted by the seed specialists had to be reduced by a ratio of three to one to match available resources.

4. Creation of Private Seed Industry

The APS project was also intended to facilitate the creation of a privately owned cereal seed industry. This objective was faulty on at least three grounds. First, the size of this market is very small and at least five to seven years of extension and promotion efforts will be required to develop the market for certified and improved seed so that its scale may

attract private investors. Second, with the exception of rice seed, the profitability of non-hybrid corn or sorghum seed and of millet variety seed is generally very low. Third, the complete privatization of the cereal seed sector, that is, from seed multiplication to processing and brand identification, is a long-term process. Thus, the objective to privatize the cereal seed industry prior to the stated projected completion date of December 31, 1991 was not realistic.

B. Inflexible Project Design

The above project design deficiencies were identified by the technical assistance team shortly after their arrival in Senegal. These deficiencies were formally reported to USAID in a cover letter, dated July 5, 1989, accompanying the first annual work plan. Although the ADO chief was satisfied with the team's effort to highlight major project issues, no corrective action was taken since it was alleged that all design changes would have to be postponed until the results of the interim evaluation could be assessed.

The same message was repeated on several occasions by various members of the USAID mission. There was agreement in private that the project design (especially that of the credit component and the eligibility conditions thereof) was inadequate and that further delays in changing it would be detrimental to the progress of the APS project. Despite this, the official position of USAID did not waiver, although there was some discussion to extend the project an additional year at no additional cost due to its late start-up.

The slight modifications made by USAID in the spring of 1990 to the interest rate and maturity period were not significant enough to allow a turnaround of the situation. Thus, by the time the interim evaluation team landed in Dakar, no loan had been disbursed and the evaluators could only recommend the suspension and redesign of the project.

C. Predetermined Evaluation Conclusions

In retrospect, the interim evaluation process appears to have been carefully planned to provide the required official justification for sanctioning the termination of the APS project. The excuse for not considering changes to the project design until the analysis of the evaluation report enabled USAID to postpone a difficult action for nearly one year.

It is appropriate to remark that two components, namely seed quality research and agricultural statistics, were frozen by USAID in November of 1989, well before the definition of the scope of work for the interim evaluation. Moreover, the refusal of the mission staff in October of 1989 to consider major changes

to the APS credit program so that the credit line could be activated prior to the start of the 1990-1991 season is another indicator that a decision sealing the fate of the project had already been reached at that time. The early operability of the APS credit line was a high priority to the project management team but appeared to be of lesser importance to several members of the USAID mission.

D. Unilateral Actions by USAID

On several occasions, USAID acted unilaterally without any prior consultation with the contracting agency or the contractor. One such occasion was when USAID froze the activities of the agricultural statistics and seed quality research components under the APS project. Official notification of this important decision occurred while the APS project director and the Chemonics chief of party were in the United States on an agricultural credit study tour.

Another instance of unilateral action without any prior discussion with the APS project personnel occurred last spring when USAID refused to consider the extension of short-term credit from the \$300,000 APS pilot credit line designated for vegetable growers to an integrated tomato-growing and processing company. Upon receipt of an APS memorandum on the subject and without consulting APS personnel for any further information, the project officer alleged that the loan was not in accordance with the eligibility conditions for use of the APS credit line, and immediately initiated a course of action leading to the disapproval of the proposed transaction. Later, after further examination, the validity of the proposal was recognized but by then it was too late for the loan to qualify due to policy changes.

E. USAID Micro-management Style and Slow Response

Because the APS project was a difficult one and because its funding was substantial, the USAID project officer and mission staff displayed extreme care in the handling of project matters. The result was a very high degree of micro-management.

The approval of Contracts Number 1 and Number 2 is a good illustration of this point. Contract provisions negotiated and agreed upon by the contracting agency and the contractor were changed by the mission although the project officer or another mission representative attended the negotiations. New clauses and budget presentation formats were required by the mission. Mission personnel became involved in every detail of the contracts. USAID's approval process took five months. When it became necessary to amend these documents to reflect new NICRA overhead rates and the payment of the contractor's fee for the management of local currency funds, this micro-management process was repeated and mission approval took another six months.

USAID's micro-management style was compounded by an usually slow response pattern. APS files contain instances of APS memoranda that were not acknowledged by their addressees within ADO. Files also contain other instances of responses received two or three months late. This slow reaction time did not facilitate smooth implementation of the project and was detrimental to its progress.

For instance, the first annual work plan, which was revised in accordance with USAID comments, was submitted to USAID in early November 1989. It was not until April 18, 1990 that USAID's formal approval was received by the APS project office. By that time, the first year of the project was over. The USAID director became concerned about this situation and attempted to shorten the approval process for the second year work plan by promising that the document would be approved within ten days of its submission, yet the approval process still required two and a half months.

As the project neared the termination date of December 31, 1990, and following the arrival of the new deputy chief within ADO, USAID's reaction time improved considerably. Had this improvement occurred earlier, it would have certainly helped the implementation of the APS project.

F. Inadequacy of Host-country Contract Mechanism and Joint Management Approach

The legal and management mechanisms selected for the implementation of the APS project by the contracting agency and the contractor required a willingness to abide by contractual obligations, an equal commitment to achieve project objectives, and open lines of communication. As long as this climate prevailed, these mechanisms worked well. However, the climate changed after January 22, 1990 when the first APS director was removed. This change placed an added burden on the Chemonics chief of party who had to make sure that all activities were in conformity with the various project documents.

The second APS project director was interested in promoting such concepts as a direct credit system to agricultural producers under the aegis of the project, an autonomous project implementation organization to be financed by project funds, and financing and building of installations for the storage and handling of all crops and agricultural products. However valid these concepts may have been, they did not conform with the contracts' stated project objectives and the spirit of the Grant Agreement. Their formulation represented a diversion of project activities.

The third APS project director was involved in the termination of the project. He viewed the joint management

system as an untenable obstacle to his own authority and he would not always adhere to USAID policies (e.g., TT vehicle use) or APS internal control procedures. Consequently, his commitment to the APS system of joint management as outlined in Contract Number 1 was ambiguous.

With the departure of the first APS director, several aspects of the project did improve. Although aspects of project management were different, with the change of project directors and the changeover of DPCS activities to DA supervision, the seed certification specialist and seed production agronomist felt their situation much improved and had much more freedom to pursue their technical work unhindered by project management conflicts.

In retrospect, the host-country contract mechanism and its joint management corollary did not work in the best interest of the project. It did not encourage harmonious working relationships between the contracting agency and the contractor and it did not facilitate project implementation.

G. Lack of GORS Interest in the APS Project and Lack of DPCS Interest in Participant Training

GORS interest in the project did not seem to be very keen since it did not fund the project adequately and it did not follow the performance of the APS project at regular intervals. GORS' contribution to the project fell substantially short of the amount of counterpart funds mentioned in the Grant Agreement. And advances by the Senegalese Treasury Department were only eight percent of the earmarked amount. Furthermore, at the MDRH level, no monitoring mechanism was installed to oversee the project on a quarterly basis although the idea was suggested officially at least twice.

A different pattern of limited interest was evidenced at the level of the institutions hosting the APS technical advisors. Although great interest was displayed with respect to gasoline coupons, per diem allowances, and the funding of non-APS project activities, DPCS did not play its part fully with regard to counterparts and the logistical support to be provided to the seed certification specialist and the seed production agronomist. DPCS did not provide sufficient secretarial or even typing support and counterparts had very limited availability to travel for APS project work.

As for training, DPCS was allotted seven of the nine academic participant trainees under the APS/UAZ training program. DPCS only provided two of its employees who left in January 1990 for the United States. Since the DPCS director deemed it impossible for management efficiency reasons to release more qualified employees at the time, the Training Committee decided to grant one of the remaining five scholarships to the ISRA

agronomist responsible for the selection of cereal seed varieties at the breeder seed level. DPCS' failure to provide more qualified candidates before the long-term training program was frozen in November 1989 is largely responsible for the project's inability to meet stated objectives.

Although DPCS had planned short-term training activities in the first annual work plan, none of them took place. DPCS was slow in responding to specific training opportunities and selecting candidates for study tours in the United States and in India. Valuable opportunities to upgrade the technical level of DPCS employees were therefore lost.

H. APS Responsibility for Project Implementation Without Concomitant Authority

The role of the APS project director and Chemonics chief of party was to plan and coordinate the implementation of project activities with DPCS, DA, and ISRA, and to provide the required administrative and financial support. Although the APS project office did not have any line management authority over the above-mentioned GORS agencies, it was the only management unit that was directly responsible to MDRH and USAID for project implementation. Under these conditions, it was extremely difficult to convince the DPCS director (who pursued other interests in the seed area at the same time) to take appropriate measures. This situation was in contradiction with the management principle of responsibility with authority.

I. Delays in Recruiting the Technical Assistance Team

Chemonics' bid was submitted in early March 1988. Contract negotiations began four months later, but by the time the contract was finalized in January 1989, long after the initial schedule, the candidates submitted in the Chemonics proposal had accepted other employment and Chemonics had to recruit a new technical assistance team. Recruiting technical experts with fluent French in the United States who are willing to go to Senegal is not an easy task. Recognizing this difficulty, the contractor recruited candidates on a worldwide basis.

The contractor's efforts to deliver candidates in a timely fashion were not always successful but it should be acknowledged that the candidates submitted to the GORS were of high caliber. The initial ISRA candidate accepted by the GORS was later rejected when USAID changed the scope of work. ISRA subsequently adopted a very narrow selection approach that resulted in the elimination of several excellent professionals. The problem was also aggravated by delays in contract negotiation, approval, and ratification, which caused at least two candidates to reconsider. Chemonics proposed two outstanding candidates for the positions of advisors in seed quality research and agricultural statistics

who were formally accepted by the GORS. Unfortunately, USAID decided to freeze these components and the contractor's efforts were in vain.

The submission and approval of candidates to the GORS accounted for substantial time spent by Chemonics and the chief of party that could have been spent in a more productive manner toward project implementation. ISRA requirements were not always clearly defined and, eventually, ISRA lost the opportunity for the professional contribution of highly qualified researchers and much needed equipment.

J. Unclear Channels of Command for Technical Advisors

The channels of command as they applied to technical advisors were confused and proved to be divisive. The chief of party, as the contractor's senior representative in Senegal, was responsible for guiding the two technical advisors posted at DPCS in the preparation of annual work plans, trip reports, and quarterly reports in accordance with deadlines. The chief of party also assisted them in coordinating project activities, sharing information, and monitoring administrative details involving Chemonics and the technical assistance team. At the same time, the director of DPCS worked directly with these advisors on the technical aspects of their jobs on a day-to-day basis.

The APS project director and the chief of party perceived their role as shared management authority over the technical advisors and discussed project activities with them. However, the DPCS director sought to exercise complete control and authority over the two technical advisors hosted by his agency. This contributed to the atmosphere of suspicion between the APS project and DPCS. The technical advisors were caught in the middle and the issue was never resolved.

K. Excessive Diversity of Chief of Party's Responsibilities

Although the chief of party's job description was very detailed, it did not cover all the activities he had to undertake. He was spread too thin between several types of responsibilities that involved the supervision of the technical assistance team; the coordination of project components; liaising with USAID and GORS entities involved in project implementation; the preparation of progress reports and annual work plans; the promotion of the credit program to banks and potential users of the APS credit line; an active role in the planning of the participant training program; involvement in the preparation of the APS Procedures Manual; the monitoring of contractual documents; the approval of commitments and the payment of invoices jointly with the APS project director; the certification of monthly USAID local currency vouchers; the submission of

quarterly advance requests; and interfacing closely with the staff of the Accounting and Administrative Unit within the APS project. In addition, the chief of party had to respond to Chemonics' requests for various types of administrative matters.

The chief of party had too many tasks and was unduly immersed in detailed administrative matters. An administrative assistant would have helped him discharge his other responsibilities more efficiently. This assistant position was not forecast in the contractual documents and the first APS project director was strongly opposed to the recruitment of an expatriate mid-level professional, arguing that the existing Senegalese staff could assist the chief of party in these functions.

L. Inefficiencies in the Offshore Procurement of Project Equipment

The purchase orders placed by USAID were not always comprehensive. For instance, air conditioners were not included in the initial PIOC's. As a result of this omission, a USAID waiver for the purchase of higher priced air conditioners in Senegal was required and technical advisors had to do with one or two units (instead of four) during the summer of 1989. The freight forwarder also omitted to send 16 chairs that had to be shipped separately. Finally, the freight forwarder did not have any master packing list covering the shipment of hundreds of items originating from several suppliers. This made the identification of cartons by the receiving party unduly complicated. Finally, several cartons were marked with the wrong destination and sent to South Africa.

To be fair, not all of the commodities procured by the contractor were satisfactory. The purchase of computers and software handled by the contractor was marred by poor product quality. Two of the three computers had to be returned to the supplier in the United States under warranty since they did not function properly and these were replaced at the suppliers' expense.

**SECTION V
RECOMMENDATIONS**

The failure of the APS project underscores 12 important lessons in project implementation and management:

- . Poor project design
- . Inflexible project design
- . Inadequacy of host-country contract mechanism and joint project management
- . Inappropriate GORS contribution
- . Lack of project monitoring
- . USAID's micro-management style
- . Long USAID reaction time
- . Unclear lines of authority and responsibility for project implementation
- . Slow recruitment of the technical assistance team
- . Confused lines of authority for the technical assistance team
- . Excessive responsibilities of the chief of party
- . Time-consuming offshore equipment procurement process

Concrete recommendations are offered to correct these deficiencies so that the implementation of future USAID-sponsored projects can benefit from the APS experience. At the same time, the contractor believes it would be appropriate to consolidate project accomplishments, especially in the seed certification area. Specific technical recommendations are presented separately in annexes A and B. The contractor's recommendations concerning the structuring and management of technical assistance projects are discussed below.

A. Importance of Good Project Design

Major deficiencies in the design of the APS project were first uncovered by the technical assistance team and confirmed by the interim evaluation report. These shortcomings could have been avoided with a better understanding of the agricultural

inputs market in Senegal and the role of the private sector in inputs distribution activities, the seed production environment, and the agricultural credit mechanisms, and with a clearer definition of objectives and human/financial resources assigned to the project. Project design should rest on a sound and accurate perception of the problem or problems to be resolved. It is suggested that more time be allocated to a detailed and sound analysis of existing conditions in Senegal and that the contractor selected for the preparation of the project paper be directed to use qualified local consultants to assist them in establishing contacts, and gathering and interpreting information so that egregious design errors can be minimized in the future.

B. Need for Flexible Project Design

Many of the major flaws in the project design had been identified, and specific recommendations to correct the flaws had been proposed, long before the arrival of the evaluation team in Senegal in July 1990. Instead of allowing changes to be made to enhance project implementation, many of the project activities were frozen, awaiting the evaluation. These activities were suspended for half of the life of the project, from October 1989 to July 1990. This was an unduly long period of time spent waiting for an interim evaluation whose findings were to be used by USAID to improve project design. The project should have been allowed the flexibility to implement some of the major design changes proposed by Chemonics and MDRH.

C. Need for Direct Contract Mechanism

Since host country contracts did not resolve the problem of divergent approaches and interests of the contracting party and the contractor in the implementation of the APS project, and since two out of three APS directors were highly critical of the joint management system, the direct contract mechanism may be more appropriate for future technical assistance projects in Senegal. Unless a more reliable financial management structure can be implemented, the contractor should be the only party involved in the management of U.S. dollar and local currency funds provided by USAID in Senegal if it is to accept all the financial responsibility. In this fashion, the contractor's fiduciary responsibility for the management of project funds would go with full authority and the contractor staff would be in a better position to direct all of its time and energy towards attaining stated project objectives. A direct AID contract between Chemonics and USAID/Dakar would have greatly facilitated project implementation in almost every aspect of this project.

D. Better-adapted GORS Contribution to Project Funding

The contribution of the GORS to the project was insufficient and not well-adapted to the implementation of the project.

Future technical assistance agreements should contain provisions to guarantee fuller and faster advances by the GORS Treasury that could be linked to advances by USAID so that the GORS would have a more significant financial involvement in and display a meaningful commitment to project implementation. Future agreements should avoid the use of local funds to pay for the travel expenses of GORS employees serving with the project after a certain date. This provision of the grant agreement, which could not be changed, worked against the best interest of the project since Senegalese personnel refused to travel on the much lower GORS per diem rates than those they had become accustomed to receiving while USAID was funding their per diem. A sounder approach would require that the GORS' contribution consist of office space from the very beginning of the project. The cost of all improvements could be financed with USAID funding.

E. Need for Project Monitoring Mechanism

Future projects, regardless of the contractual mechanisms, should incorporate a monitoring body responsible for the ongoing review of accomplishments and constraints. This body ought to involve the participation of all parties concerned with project accomplishments including higher echelon personnel who would benefit from direct access to information. This mechanism would allow for better communications, especially for those involved in difficult decisions such as the freezing of certain activities.

F. Avoiding Micro-management by USAID

The implementation of the APS project was adversely affected by the micro-management style of the USAID mission. It is recommended that a more flexible and decentralized management style be adopted in the future. Decentralization that goes in tandem with increased accountability at all levels is not incompatible with the operating procedures of several U.S. government entities such as the Overseas Private Investment Corporation (OPIC) and the Farm Credit Administration (FCA). A decentralized, albeit prudent, management style on USAID's part would be better adapted to projects designed for the expanded role of the private sector not only in Senegal but in other developing countries.

G. Shortening USAID's Reaction Time

If future projects are going to be implemented in conformity with project stated objectives, the financier should be able to react promptly so that project implementation will not be delayed for bureaucratic reasons. Serious consideration should be given to the delegation of decision-making authority down to the level of the office chief within the mission. Practical criteria should be defined for delegation of authority and only matters involving policy decisions or major financial commitments should

involve clearance by all office heads. The implementation of future projects involving the development of private sector activities in Senegal should be based on a decentralized management structure and the delegation of authority within the USAID mission.

H. Need for Clearly Defined Lines of Authority and Responsibility

One of the major issues of the project was the management conflict between the APS project office and the GORS entities involved in project implementation activities. The APS project director did not have any line management authority over these entities and was placed in the difficult position of bearing full responsibility for project implementation although the directors of other entities such as DPCS did not share any. In the future, such situations should be avoided and the principle of project management through "ad hoc" task forces should be enforced. If an external project management structure is deemed indispensable, as was the case in the APS project, channels of line management authority between the head of the project and the entities involved in project implementation should be clearly defined. If the project head is to be fully responsible, he should be appointed the head of the task force with appropriate line management authority.

I. Accelerating the Recruitment of the Technical Assistance Team

In future projects, the recruitment of technical advisors could be accelerated if job description specifications of technical advisors were not changed after the award of the contract, if GORS officials responsible for the approval or disapproval of the candidates submitted by the contractor were less arbitrary, less bureaucratic, and more practical, and if the approval of contractual documents by USAID and the GORS did not require up to ten months. At the same time, firm deadlines should be negotiated and established for the submission of qualified candidates by the contractor.

J. Need for Defining Lines of Authority for the Supervision of Technical Assistance Team

If technical assistance teams of future projects are going to be managed efficiently, it is essential that lines of authority and reporting relationships involving technical assistance personnel be clearly defined. Technical advisors should report only to the chief of party who represents the contractor in situ. The absence of a formal reporting pattern or relationship between the chief of party and other technical advisors can only encourage independent behavior and related inefficiencies.

K. Streamlining the COP'S Job Description and Responsibilities

Although chiefs of party are expected to work hard and long hours, their tasks must be manageable. It is suggested that a strong administrator, familiar with USAID rules and regulations and with a good background in auditing, be provided so that the chief of party can devote his time to discharging his technical and management responsibilities.

L. Improving the Offshore Equipment Procurement Process

When dealing with the purchase of project equipment from the United States, USAID should give more attention to the preparation and handling of purchase orders. To minimize the cost of procurement, large purchase orders should be as comprehensive as possible. When shipping goods involving several suppliers, the freight forwarder in the United States should take great care in properly marking crates and cartons and in the preparation of a master packing list so that their identification by the receiving party does not require an unduly complicated and time-consuming process.

With respect to the procurement of the project's computer equipment, the contractor experienced problems with the supplier not having routinely conducted adequate trials and quality checks prior to shipment. Consequently, the two computers, including air freight tax from Senegal, were replaced at the supplier's expense. The purchasing agent should be more directly involved in the specification of accessories such as cables, internal drives, and transformers.

ANNEX A

**DETAILED TOTAL LIFE OF CONTRACT 1
IN U.S. DOLLARS AS OF 12/3/90**

CHEMONICS

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441

Senegal Agricultural Production Support Project
 Detailed Total Life of Contract - Contract Number 1
 In U.S. Dollars

Line Items	Contract Budget	Project to Date [1] Expenditures Through 10/31/90	Percentage Expended	Funds Remaining
I. TECHNICAL ASSISTANCE (T.A.)	2,194,872.00	730,932.52	33.30%	1,463,939.48
A. Contractor Salaries	1,043,900.00	355,902.84	34.09%	687,997.16
1. Long-Term T.A. Salaries	842,430.00	317,537.50	37.69%	524,892.50
2. Short-term T.A. Salaries	174,918.00	27,806.06	15.90%	147,111.94
3. Home Office Salaries	26,552.00	10,559.28	39.77%	15,992.72
B. Contractor Post Differential	119,023.00	44,033.08	37.00%	74,989.92
C. Contractor Fringe Benefits	177,463.00	60,503.45	34.09%	116,959.55
D. Contractor Travel/Per Diem/Transport	436,888.00	128,223.73	29.35%	308,664.27
1. International Travel	137,804.00	53,810.51	39.05%	83,993.49
2. Per Diem	124,312.00	20,595.37	16.57%	103,716.63
3. Shipping (HHE, etc.)	174,772.00	53,817.85	30.79%	120,954.15
E. Contractor Allowances	266,934.00	87,259.98	32.69%	179,674.02
F. Contractor Other Direct Costs	74,499.00	48,519.69	65.13%	25,979.31
Sub-Total - Contractor T.A.	2,118,707.00	724,442.77	34.19%	1,394,264.23
G. Subcontractor Salaries	47,835.00	2,413.80	5.05%	45,421.20
1. Short-Term T.A. Salaries	37,512.00	2,413.80	6.43%	35,098.20
2. Home Office Salaries	10,323.00	0.00	0.00%	10,323.00
H. Subcontractor Fringe Benefits	13,015.00	386.20	2.97%	12,628.80
I. Subcontractor Travel/Per Diem	15,315.00	3,689.75	24.09%	11,625.25
1. International Travel	6,045.00	2,683.00	44.38%	3,362.00
2. Per Diem	9,270.00	1,006.75	10.86%	8,263.25
Sub-Total - Subcontractor T.A.	76,165.00	6,489.75	8.52%	69,675.25
II. OTHER COSTS	1,009,662.00	336,546.67	33.33%	673,115.33
A. Contractor Overhead	688,834.00	238,270.37	34.59%	450,563.63
1. Long- & Short-Term Field T.A.	666,566.00	215,034.50	32.26%	451,531.50
2. Home Office T.A.	22,268.00	23,235.87	104.35%	(967.87)
B. Contractor General & Administrative	93,231.00	31,056.61	33.31%	62,174.39
C. Contractor Fixed Fee	197,822.00	65,903.69	33.31%	131,918.31
Sub-Total - Contractor Other Costs	979,887.00	335,230.67	34.21%	644,656.33
D. Subcontractor Overhead	26,710.00	1,316.00	4.93%	25,394.00
1. Short-term Field T.A.	20,850.00	1,316.00	6.31%	19,534.00
2. Home Office T.A.	5,860.00	0.00	0.00%	5,860.00
E. Subcontractor Fixed Fee	3,065.00	0.00	0.00%	3,065.00
Sub-Total - Subcontractor Other Costs	29,775.00	1,316.00	4.42%	28,459.00
GRAND TOTAL	3,204,534.00	1,067,479.19	33.31%	2,137,054.81

[1] JTD costs figures from Solomon rept. 6.65

45

Senegal Agricultural Production Support Project
 Budget Summary - Contract Number 1
 In U.S. Dollars

Line Items	Contract Budget	Project to Date [1] Expenditures Through 10/31/90	Percentage Expended	Funds Remaining
I. TECHNICAL ASSISTANCE (T.A.)	2,194,872.00	730,932.52	33.30%	1,463,939.48
Sub-Total - Contractor T.A.	2,118,707.00	724,442.77	34.19%	1,394,264.23
Sub-Total - Subcontractor T.A.	76,165.00	6,489.75	8.52%	69,675.25
II. OTHER COSTS	1,009,662.00	336,546.67	33.33%	673,115.33
Sub-Total - Contractor Other Costs	979,887.00	335,230.67	34.21%	644,656.33
Sub-Total - Subcontractor Other Costs	29,775.00	1,316.00	4.42%	28,459.00
GRAND TOTAL	3,204,534.00	1,067,479.19	33.31%	2,137,054.81

[1] JTD costs figures from Solomon rept. 6.65

1/6

ANNEX B

**DETAILED TOTAL LIFE OF CONTRACT 2
IN U.S. DOLLARS AS OF 12/31/90**

CHEMONICS

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47

Senegal Agricultural Production Support Project
 Detailed Total Life of Contract - Contract Number 2
 In U.S. Dollars

Line Items	Contract Budget	Project to Date Expenditures Through 10/31/90	[1] Percentage Expended	Funds Remaining
I. TECHNICAL ASSISTANCE (T.A.)	160,626.00	19,955.45	12.42%	140,670.55
A. U. of Az. Short-term T.A.	61,600.00	1,641.84	2.67%	59,958.16
B. U. of Az. Short-Term Fringes	10,226.00	313.61	3.07%	9,912.39
C. U. of Az. Travel/Transportation	20,000.00	0.00	0.00%	20,000.00
D. U. of Az. Per Diem	16,800.00		0.00%	16,800.00
E. Tech. Assist. Other Direct Costs	52,000.00	18,000.00	34.62%	34,000.00
II. TRAINING	659,041.00	85,455.24	12.97%	573,585.76
A. U. of Az. Management Fee	9,450.00		0.00%	9,450.00
B. U. of Az. Short Term	193,750.00		0.00%	193,750.00
C. Nine Participants, Msc. degree program	455,841.00	76,775.00	16.84%	379,066.00
D. Contractor Short Term	0.00	8,680.24	N/A	(8,680.24)
III. COMMODITIES	1,200,000.00	27,328.52	2.28%	1,172,671.48
A. ISRA Equipment	400,000.00		0.00%	400,000.00
B. Ag. Statistics Equipment	400,000.00		0.00%	400,000.00
C. Seed and Lab Equipment	400,000.00		0.00%	400,000.00
D. Other Equipment	0.00	27,328.52	N/A	(27,328.52)
IV. OTHER COSTS	303,146.00	14,907.39	4.92%	288,238.61
A. U. of Az./AAIC Overhead	33,758.00	1,086.97	3.22%	32,671.03
B. Tech. Assist. G & A	182,372.00	4,282.43	2.35%	178,089.57
C. Tech. Assist. Fixed Fee	64,077.00	9,537.99	14.89%	54,539.01
D. U. of Az/AAIC Fixed Fee	22,939.00	0.00	0.00%	22,939.00
GRAND TOTAL	2,322,813.00	147,646.60	6.36%	2,175,166.40

[1] JTD costs figures from Solomon rept. 6.65

Senegal Agricultural Production Support Project
 Budget Summary - Contract Number 2
 In U.S. Dollars

Line Items	Contract Budget	Project to Date ¹ Expenditures Through 10/31/90	Percentage Expended	Funds Remaining
I. TECHNICAL ASSISTANCE (T.A.)	160,626.00	19,955.45	12.42%	140,670.55
II. TRAINING	659,041.00	85,455.24	12.97%	573,585.76
III. COMMODITIES	1,200,000.00	27,328.52	2.28%	1,172,671.48
IV. OTHER COSTS	303,146.00	14,907.39	4.92%	288,238.61
GRAND TOTAL	2,322,813.00	147,646.60	6.36%	2,175,166.40

1 JTD costs figures from Solomon rept. 6.65

ANNEX C

**LOCAL CURRENCY EXPENDITURES
OCTOBER TO NOVEMBER 1990**

CHEMONICS

**2000 M St., N.W.
Suite 200
Washington, D.C. 20036**

**Tel: (202) 466-5340 or 293-1176
Fax: (202) 331-8202
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EXHIBIT I LOCAL CURRENCY EXPENDITURES FOR THE PERIOD FROM OCTOBER TO NOVEMBER 90

F CFA

ITEM	EXPENSES QUARTER	EXPENSES CUMULATIVE	TOTAL CFA BUDGET	EXPENSE TO BUDGET RATIO
I. TECHNICAL ASSISTANCE				
Transit & storage	447 086	6 721 930	10 940 000	0,61
Transport for goods	0	0	10 800 000	0,00
In country per diem	680 700	2 523 920	16 420 000	0,15
Consultants per diem	0	0	16 523 520	0,00
Housing & guards	3 338 614	46 286 495	148 385 855	0,31
Contract studies	0	0	11 918 000	0,00
SUBTOTAL	4 466 400	55 532 345	214 985 375	0,26
II. TRAINING				
Language & seminars	147 720	7 119 420	114 012 000	0,06
SUBTOTAL	147 720	7 119 420	114 012 000	0,06
III. COMMODITIES				
Expendable supplies	901 790	4 551 287	26 812 400	0,17
Fuel and lubricants	5 000	3 958 166	35 553 360	0,11
Local equipment	0	7 192 642	105 000 000	0,07
SUBTOTAL	906 790	15 702 095	167 165 760	0,09
IV. OTHER COSTS				
Salaries	6 809 113	54 444 049	163 057 882	0,33
Fringes	180 000	1 291 000	43 140 848	0,03
Admin. expenses	4 909 637	26 848 541	112 804 800	0,24
Per diem	488 240	2 552 095	15 675 888	0,16
Air fares	0	170 600	1 588 800	0,11
Vehicles maintenance	330 945	4 328 227	59 581 160	0,07
Motorcycle maintenance	0	198 400	20 585 000	0,01
Office equipt maintenance	495 686	7 257 507	5 858 000	0,38
Audit and evaluation	0	0	19 860 000	0,00
Miscellaneous	4 559 578	17 456 902	93 851 551	0,14
SUBTOTAL	17 971 199	105 540 421	536 203 929	0,20
GRAND TOTAL	23 492 109	1188 894 281	11 032 367 064	0,18

//

ANNEX D

USE OF COUNTERPART FUNDS AS OF 12/14/90

CHEMONICS

2000 M St., N.W.
Suite 200
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FONDS CONTRAIREPARTIE

14-Dec 90

DATE	NUMERO	LIBELLES	AVANCES	CENTRALISATIO	SOLDE	FONDS	CARBURANT	FORMATION	ENTRETIEN	ACHAT	AMELIORATION	FRAIS
	CHEQUES			DEPENSES	COMPTE	CONTRAIREPARTIE			REPARATION	D-INSTRANTS	SITES	CONSULTAT.
07/08/89		APPROVISIONNEMENT	25 000 000		25 000 000	(25 000 000)						
28/11/89	184 251	ACHAT 20000 CARBURANT		(8 299 983)	18 700 017		6 299 983					
28/11/89	184 252	Seminaire formation BAKEL		(541 000)	18 159 017			541 000				
28/11/89	184 253	Annule		0	18 159 017							
28/11/89	184 254	Carburant formation BAKEL		(504 000)	17 655 017		504 000					
01/12/89	184 255	Frais restauration semina		(211 800)	17 443 217			211 800				
11/12/89	184 256	Frais restauration format		(1 200 000)	16 243 217			1 200 000				
30/01/90	184 257	Frais restauration format		(720 800)	15 522 417			720 800				
17/04/90	184 258	Entretien veh. AD 1878		(137 931)	15 384 486				137 931			
17/04/90	184 258	Entretien veh. AD 0159		(129 890)	15 254 596				129 890			
17/04/90	184 258	Entretien veh. AD 1181		(32 520)	15 222 076				32 520			
30/05/90	184 259	Formation BAKEL		(1 971 805)	13 250 271			1 971 805				
30/05/90	184 260	Formation BAKEL		(2 387 180)	10 863 091			2 387 180				
30/05/90	184 261	Formation BAKEL		(1 566 250)	9 297 041			1 566 250				
30/05/90	184 262	Formation BAKEL		(250 000)	9 047 041			250 000				
07/08/90	184 263	Achat semences form. bakel		(347 385)	8 699 656					347 385		
25/08/90	184 264	Ent. veh. AD 1874 - 1181		(127 855)	8 571 801				127 855			
25/08/90	184 265	Ent. veh. AD 1874-1878-1591		(77 036)	8 494 765				77 036			
25/08/90	184 266	Ent. veh. AD 1811-1878		(71 191)	8 423 574				71 191			
25/08/90	184 267	Ent. veh. AD 0159		(157 980)	8 265 594				157 980			
25/08/90	184 268	Ent. veh. AD 1181		(113 970)	8 151 624				113 970			
25/08/90	184 269	Ent. veh. AD 1181-0159		(107 880)	8 043 744				107 880			
25/08/90	184 270	Ent. veh. AD 0159		(46 680)	7 997 064				46 680			
26/08/90	184 271	Transp. vitales/parcelles		(1 200 000)	6 797 064			1 200 000				
26/08/90	184 272	Haberement-restauration		(1 550 000)	5 247 064			1 550 000				
	184 273	ANNULE		0	5 247 064							
29/08/90	184 274	Aménagement aires/BAKEL		(4 200 000)	1 047 064	1 047 064					4 200 000	
	184 275	Closure revem. Tresor		0	25 000 000	(25 000 000)						
		APPROVISIONNEMENT	25 000 000		25 000 000							
14/09/90	208 028	ANNULE			25 000 000							
14/09/90	208 027	Ent. veh. AD 1181 505		(784 929)	24 615 071				384 929			
14/09/90	208 027	Ent. veh. AD 0159 NISSAN		(141 590)	24 473 481				141 590			
14/09/90	208 027	Ent. veh. AD 1181 AD 0159		(186 065)	24 287 416				186 065			
14/09/90	208 027	Ent. veh. AD 1874 PAJERO		(121 100)	24 166 316				121 100			
14/09/90	208 027	Ent. veh. AD 1874 505		(131 475)	24 034 841				131 475			
14/09/90	208 027	Ent. veh. AD 1181 505		(27 800)	24 007 041				27 800			
14/09/90	208 027	Ent. veh. AD 1878 PAJERO		(86 721)	23 940 320				86 721			
14/09/90	208 028	Carburant sem BAKEL		(187 263)	23 753 055				187 263			
21/09/90	208 029	Carburant sem BAKEL		(5 212 500)	18 540 555		5 212 500					
21/09/90	208 029	Restauration semina. Bakel		(6 000 000)	12 540 555			6 000 000				
05/10/90	208 030	Per diem babacar seme		(100 000)	12 440 555			100 000				
09/10/90	208 031	Frais consult. MLE R. 9Y1		(3 260 000)	11 180 555							1 260 000
12/11/90	208 032	Ent. veh. AD 0159		(337 767)	10 842 788				337 767			
12/11/90	208 032	Ent. veh. AD 1878		(323 461)	10 524 327				323 461			
12/11/90	208 032	Ent. veh. AD 0159 -AD1874		(39 620)	10 484 707				39 620			

FONDS CONTREPARTIE 14-Dec-90

DATE	NUMERO CHEQUES	LIBELLES	AVANCES	CENTRALISATIO DEPENSES	SOLDE COMPTE	FONDS CONTREPARTIE	CARBURANT	FORMATION	ENTRETIEN REPARATION VEHICULES	ACHAT D'INTRANS	AMENAGEMENT SITES DEMONSTRAT.	FRAIS CONSULTAT.
12/11/90	208 032	Ent.veh. AD 1874		(74 280)	10 410 427				74 280			
12/11/90	208 032	Ent.veh. AD 1181		(25 040)	10 385 387				25 040			
12/11/90	208 032	Ent.veh. AD 1878		(22 370)	10 363 017				22 370			
12/11/90	208 033	Achat 5000 l gaz oil		(1 050 000)	9 313 017		1 050 000					
14/11/90	208 034	Semences semin.BAKEL		(835 310)	8 477 707					835 310		
14/11/90	208 035	Angrais projet BAKEL		(1 320 000)	7 157 707					1 320 000		
14/11/90	208 036	Amenag.parcelles.p.BAKEL		(1 000 000)	6 157 707						1 000 000	
14/11/90	208 037	Transport seminaristes		(1 125 000)	5 032 707			1 125 000				
14-Dec-90	TOTAL		48 952 916	(43 920 209)	5 032 707	(48 952 916)	13 066 483	18 823 635	3 067 396	2 502 695	5 200 000	1 260 000

(5 032 707)

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54.

ANNEX E

UNIVERSITY OF ARIZONA INVOICE DATED 10/31/90

CHEMONICS

2000 M St., N.W.
Suite 200
Washington, D.C. 20036

Tel: (202) 486-5340 or 293-1178
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INVOICE

UNIVERSITY OF ARIZONA

To: Chemonics Invoice Period: 10/1/90-10/31/90
Washington, D.C. Invoice Number: 10

For: Services pursuant to the Subcontract dated December 7, 1989,
to Chemonics International - Senegal agricultural Production Project

	<u>Invoiced To Date</u>	<u>Budget</u>	<u>Remainder</u>	<u>This Invoice</u>
1. Salaries				
A. Short-Term Field	2,413.80	85,756.00	83,342.20	-0-
B. Home Office Personnel	<u>1,641.84</u>	<u>18,611.00</u>	<u>16,969.16</u>	<u>814.32</u>
Total Salaries	4,055.64	104,367.00	100,311.36	814.32
2. Fringe Benefits				
A. Short-Term - Field	386.20	15,693.00	15,306.80	-0-
B. Home Office - Training Coordinator	313.61	2,714.00	2,400.39	137.12
C. Home Office - Campus Coordinator	<u>-0-</u>	<u>877.00</u>	<u>877.00</u>	<u>18.42</u>
Total Fringe Benefits	699.81	19,284.00	18,584.19	155.54
3. Overhead				
A. Short-Term - Field	1,316.00	56,379.00	55,063.00	-0-
B. Home Office	<u>1,086.97</u>	<u>12,338.00</u>	<u>11,251.03</u>	<u>539.24</u>
Total Overhead	2,402.97	68,717.00	66,314.03	539.24
4. Training				
A. Masters of Science	63,693.00	396,907.00	333,214.00	8,479.00
B. English Language	7,233.00	21,915.00	14,682.00	-0-
C. UAZ Management Fee	1,160.00	9,450.00	8,290.00	145.00
D. Short-Term Training				
1. Training	-0-	84,000.00	84,000.00	-0-
2. Travel	<u>-0-</u>	<u>102,000.00</u>	<u>102,000.00</u>	<u>-0-</u>
Total Training	72,086.00	614,272.00	542,186.00	8,624.00
TOTAL INVOICE	79,244.42	806,640.00	727,395.58	10,133.10

56

OCTOBER, 1990
 BREAKDOWN OF STUDENT EXPENSES:
 SENEGAL AGRICULTURAL PRODUCTION SUPPORT PROJECT

<u>Bakhoun:</u>		\$ 762.00
Stipend		<u>762.00</u>
	Total:	\$ 762.00
<u>Carvalho:</u>		\$ 901.00
Stipend		770.00
Tuition Fees - UA - Fall 1990		<u>770.00</u>
	Total:	\$ 1,671.00
<u>Massaly</u>		\$ 762.00
Stipend		<u>762.00</u>
	Total:	\$ 762.00
<u>Soumare</u>		\$ 784.00
Stipend		3,538.00
Tuition & Fees - Iowa State - Fall 1990		200.00
Service Fee - Iowa State - Fall 1990		<u>200.00</u>
	Total:	\$ 4,522.00
<u>Wague</u>		\$ 762.00
Stipend		<u>762.00</u>
	Total:	\$ 762.00
	GRAND TOTAL:	<u>\$ 8,479.00</u>

ANNEX F

**FINAL REPORT
SEED QUALITY CONTROL AND CERTIFICATION**

CHEMONICS

**2000 M St., N.W.
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AGRICULTURAL PRODUCTION SUPPORT PROJECT
(APS PROJECT)

SEED QUALITY CONTROL AND
CERTIFICATION

FINAL REPORT

BY
CLAUDIO BRAGANTINI
CHEMONICS INTERNATIONAL CONSULTING DIVISION

TABLE OF CONTENTS

	<u>Pages</u>
1. Executive summary.....	3
1.1. Introduction.....	3
1.2. Scope of work.....	3
1.3. Principal accomplishments.....	3
1.4. Final remarks.....	8
2. Background.....	9
3. Project general approach.....	10
3.1. Introduction.....	10
3.2. Summary of APS Project components.....	10
3.3. APS seed component mode of action.....	11
4. The Seed Certification Specialists scope of work.....	13
4.1. General duties.....	13
4.2. Specific duties.....	13
5. The expert's detailed approach.....	15
5.1. Restructuring the Seed Certification Service.....	17
5.2. Creation of Regional Seed Councils.....	18
5.3. Seed legislation implementation.....	19
5.3.1. Norms and regulations for production, certification and commerce of seeds.....	20
5.3.2. Varietal catalog.....	20
5.4. Seed certification training program.....	20
5.4.1. On-the-job training.....	20
5.4.2. Seminars and workshops.....	21
5.4.3. Overseas long and short-term training.....	21

	<u>Pages</u>
6. Results.....	22
6.1. Restructuring the Seed Certification Service.....	23
6.1.1. Farmer's seed quality survey.....	23
6.1.2. Improving field quality control.....	31
6.1.3. Establishment of post-harvest quality control.....	34
6.1.4. Remodeling the Regional Seed Testing Laboratory.....	35
6.2. The creation of Regional Seed Councils.....	39
6.3. Seed legislation implementation.....	41
6.4. Training program.....	41
6.4.1. On-the-job.....	41
6.4.2. Seminars and workshops.....	41
6.4.3. Overseas long and short-term.....	42
6.5. Final remarks.....	43
7. Lessons learned.....	44
7.1. What to do.....	44
7.2. What not to do.....	44
8. Recommendations.....	46

1. - EXECUTIVE SUMMARY:

1.1. Introduction:

The Agricultural Production Support Project was the major USAID project to assist the GOS with the implementation of the New Agricultural Policy. The project's problem was how to effectively increase cereal production through expanded agricultural input supply and output marketing by the private sector.

The APS Project goal was to increase cereals production on the order of three and one half percent by the end of the project. This increase in production would result in greater profitability and increased farmers income. This goal was to be achieved through the privatization of agricultural inputs and seed multiplication activities.

1.2. Scope of work:

The seed certification specialist was to assist the 'Division du Contrôle et de la Certification des Semences' of DPCS through the following duties:

- . advise the MDRH on a National Seed Law and Seed Policy consistent with the framework of the New Agricultural Policy;
- . assist DPCS to install and organize an efficient seed certification service;
- . provide a training program for DPCS staff for seed certification and quality control program;
- . work with MDRH to design, evaluate and implement a seed certification program in the field.

1.3. Results:

Based on the project paper's general approach and on the scope of work, the Seed Certification Specialist, together with his counterpart, developed the APS approach, best suited to accomplish the project objectives. It became readily clear that the APS seed component goals were very ambitious and difficult to achieve, particularly because of the following reasons:

- a - The privatization of agricultural activities requires a market oriented approach that is not always easy when you deal with subsistence crops, which was the case of many cereal crops in Senegal.

- b - Although Senegal is not a large country, its diversity of climate and people requires different approaches for each region and for each crop.
- c - The relative low priority that DPCS was giving to cereal crops as compared to peanuts.
- d - The delays in project's start-up reduced the time available for its implementation.

In order to diminish the effects of these difficulties, the APS seed experts agreed that APS should concentrate its first efforts on one region of Senegal that has a cereal as a lead crop. Since privatization of cereal production was the main thrust of APS, the selected cereal crop to start with should be a cash crop, located in a region where the competition with peanuts were less and where the crop would be less vulnerable to adverse climate conditions.

Irrigated rice in Saint-Louis Region was selected to function as a "pilot project" for APS' first interventions. The positive experiences adapted to the characteristics of each cereal crop and region was supposed to be transferred to other regions in the following seasons.

The results of APS seed certification component were very promising if we take into account first the working environment the expert was subject to and that only one complete growing season was used to consolidate all the innovations proposed. APS is leaving Senegal in the middle of only its second seed production season.

DPCS, like many other governmental institutions in Senegal, was financially and administratively dependent on the French sponsored "Plan Triennial Semencier" (PTS). With the arrival of APS experts, a situation of conflict was created. The DPCS director, who was also PTS' director, wanted the APS seed component totally administered by him, technically and financially. In fact, DPCS' understanding was that APS would come and completely finance the cereal seed program, once established. From the very beginning, it became clear DPCS' lack of interest in APS' program, with its minimal financial assistance, and APS' administrative control of funds and technical assistance was used as excuse to block APS activities.

To aggravate the situation, these blockages were passively accepted by APS' director and chief of party.

In spite of all these problems, the results were the following, presented by action programs:

a - restructuring the seed certification service:

The first field activity in this program was a survey that gathered the necessary information about the quality of rice seed farmers were using in the 1989/90 season. Based on 613 questionnaires that were filled out

during interviews with farmers and the laboratory analysis made on 567 samples the expert could quality and quantify the seed related problems in the region. It was through the survey that the spread of red rice, an aggressive, economically important weed, was detected.

b - Improving field quality control:

With only two field agents, one laboratory technician and the departmental officer working exclusively on seed certification, APS started the 1989/90 season by assisting these people to set up their certification program. First, we contacted SAED's contract growers involved in rice seed production. It was very important to show that certification service was useful to the seed producer and not another governmental interference in their agricultural activities.

Changes in the certification program started being really felt when some farmers were advised that their field plots were rejected as seed sources. Since in the past DPCS never managed to have a full coordination with SAED, contract growers were still expecting that SAED would not consider the DPCS certification criteria.

At the same time certification agents were in the field the APS expert and his counterpart made periodic visits to SAED's offices and an agreement was made to enforce the certification program. Since SAED was the certified seed producer it agreed to support the certification program and only collect seed lots that the DPCS fully approved.

c - Establishment of a post-harvest quality control:

In previous years, DPCS quality control stopped at harvest time. The SAED team that was involved in collecting seed never consulted DPCS about the quality of their seed and DPCS was never fast enough to present the final results of laboratory analysis. Consequently, all seed was approved.

Before the 1989/90 season, the APS expert, his counterpart and DPCS personnel in Richard-Toll prepared a post-harvest control program that would enable the certification service to complete its control all the way through to the marketing of seed. Right after harvest, field agents would visit all plots taking samples of lots and immediately sent them to the DPCS laboratory in Richard-Toll. In ten days, the analyses were done and a list of the approved fields were in the hands of field agents that went back to the seed plots with spray paint to mark all bags that were approved. A copy of approved fields was sent to SAED.

The new seed certification program continued in SAED's seed conditioning plant, where only bags marked by DPCS were allowed to enter. A seed certification tag was designed for the Saint-Louis Region and each bag of certified rice seed was clearly identified with these tags.

At the market level, the APS seed experts started influencing local agricultural inputs merchants to go into the seed business. For the first time, a large part of SAED's certified rice seed production was sold before the growing season to local retail merchants of agricultural inputs in the production area.

The seed business is just starting in Saint-Louis. A client oriented type of policy is yet to be developed. By talking to inputs merchants, we learned they ran out of certified seed very soon in the season and started selling paddy rice as seed without any kind of quality control, causing complaints from growers. Since the seed law is not approved, seed certification agents' intervention was limited to advising the merchants about the risk they are taking in losing their clients and their reputations.

d - Remodeling the Regional Seed Testing Laboratory:

The idea to regionalize the seed sector requires the autonomy and self-sufficiency of regional institutions. In the area of seed certification, the need for a remodeled, better equipped Seed Testing Laboratory was readily visible. For the 1990/91 season, APS proposed and USAID accepted to finance the remodeling of the new DISEM Seed Laboratory in Richard-Toll. The work area was doubled and the electrical and water system repaired. Unfortunately, the procurement list with a few equipments they urgently need was not approved by USAID.

Before the arrival of the APS expert, USAID approved the procurement of a large list of very sophisticated laboratory equipment amounting to more than one hundred thousand dollars. Unfortunately, the equipment is useless for the incipient Senegalese certification program. Equipment for ELISA tests, used for virus detection and electrophoresis tests, for varietal identification requires laboratory facilities that are totally dust free and perfectly air conditioned. The APS expert tried to accommodate the situation by contacting many universities in the United States to train DPCS technicians in these areas. The answer was as expected: for virus detection through ELISA tests universities required technicians with at least, Master's degrees and strong backgrounds in plant pathology; the use of electrophoresis for variety recognition would be only feasible in a training program for a Ph.D study. DPCS never managed to propose candidates for these training programs.

e - The creation of Regional Seed Council:

The creation of Regional Seed Councils (RSC) was the most important action towards the regionalization and privatization of the seed sector. Since it implies major changes in the strongly centralized Senegalese administration, structure, it was not a surprise to find strong opposition inside DPCS. It took many endless meetings with DPCS technicians and administrators to get their acceptance on the concept of RSCs. What was surprising, however was the lack of interest shown first by the APS administration and by USAID, for

an approach that perfectly fits with the "New Agricultural Policy".

We estimated the establishment of a Regional Seed Council in Saint-Louis required an expense of \$ 35,000 during the first year with a plan of self-sufficiency by the end of the project. Besides the proposed expenses, the of Regional Seed Council establishment needed a lot of political support. Neither one of these supports were provided and the creation of the first RSC had to be dropped.

f - Seed legislation implementation:

By the time the APS Seed Certification Expert arrived in Senegal, a National Seed Law was prepared and proposed for approval. One of DPCS concerns was related to the norms that makes possible the application of the law. Taking into consideration the approach of regionalization, the APS expert prepared a basic document containing the guidelines to follow for the production, certification and commercialization of seeds. As soon as this seed legislation is finalized a reevaluation of this document will be necessary to determine its compliance with the law.

Another important aspect of the seed legislation is the presence of a "variety release committee" that will be in charge of publishing periodically the "variety catalog" where varieties are described and officially accepted for certification. A bibliographic annotated reference is available containing the necessary descriptions of the varieties currently being used in Senegal; this publication can be used by the committee as the basis for the first catalog.

g - The training program:

On-the-job training: this type of training was programmed in phases starting with basic concepts of seed certification, sampling methods in the field, warehouse record keeping, etc... Since DPCS field personnel were almost totally changed when DISEM took place, this training program became very useful to the newcomers during 1990 season. Results in this area are hard to measure not only due to the nature of this type of training but also because of the rotation of field people.

Seminars and workshops: the results in this training area was mixed. APS' expert planned the first seminar for November 1989. The objectives were first to present APS' approach to DPCS technicians from all regions and to introduce some technical concepts, i.e., essential elements of seed programs, seed certification, its role and components, etc... Another important objective of this seminar was to provoke debates about the seed production privatization process. This seminar never took place because DPCS director simply refused to sign the budget autorizing APS to make the expense.

With the dissolution of DPCS, a division was created, specifically for seed

certification purposes. The new DISEM began with a new mentality giving training a higher priority.

The APS expert was requested to collaborate in their training program in Thies, specifically designed for new field people that were unexperienced in certification activities.

During the second seminar, the Seed Certification Specialist's proposed role was in a completely different working environment with support from both APS and DISEM directors. The red rice weed problem, first detected during the seed quality survey and found widespread in the seed production fields, was the subject of an important seminar. At the seminar, technicians involved in research, extension, certification and production of rice had a chance to meet and freely discuss methods to control this weed, with the aid of Dr. Emery Ford Eastin, an authority on this subject.

1.4. Final remarks:

The second year of APS seed program started with the dissolution of DPCS in January 1990. At almost the same time, changes inside USAID had frozen all APS activities until the mid-term evaluation, completed nine months later, in August. Although the evaluation recommended continuing the seed certification support, USAID decided to terminate with the whole project.

Ironically, the organization of DISEM in July was very beneficial to APS' seed certification program. Unfortunately it was too late. APS assistance would terminate in December 1990 and was limited to the following activities:

- . remodeling of seed testing laboratory in Richard-Toll;
- . preparation of seed law parameters;
- . preparation of the varietal catalog;
- . organization of the Red Rice Seminar;
- . follow-up of seed certification activities in the field.

All these activities were successfully accomplished.

2. - BACKGROUND:

Senegal's agricultural performance has declined in the last three decades. In terms of food production, the country was able to produce around 70% of its cereal requirements in 1960 and only about 50% in 1989, showing that the rural sector is no longer able to produce enough food to meet the demand of the rapidly growing urban population. In fact, cereal crop management and plant decisions are made by small farmers, seeking primarily to meet family subsistence needs.

In 1983, the Government of Senegal and foreign donors began the new policy that would redirect the economic priority to agriculture, based primarily on the privatization of agriculture. The Government's objective was to progressively pull out of agricultural production functions and at the same time, encourage the private sector to take it over.

The Agricultural Production Support Project was the major USAID project to assist the GOS with the implementation of the New Agricultural Policy. The Project's problem was how to effectively increase cereal production through expanded agricultural input supply and output marketing by the private sector.

The large majority of Senegal's farmers are small and keep part of their harvest as seed for the next campaign. With the development of Senegalese agriculture, the need for an organized seed program became evident, particularly for the supply of peanut seeds, a cash as well as subsistence crop. The seed production program established was heavily dependent on government institutions: the government researchers selected improved varieties and produced breeder peanut seed which in turn was supplied to another governmental institution, ISRA. ISRA distributed the foundation seed to the RDAs to produce the breeder seed. The production was done through contract growers; farmers receiving the seed sign a contract with the governmental institution, and sell their harvest at a price a little higher than the regular grain. The governmental institutions clean and certify seed quality. Most of the certified seed was then distributed to farmers in the form of credit.

The governmental presence throughout the production program makes the seed production chain very cumbersome. A few efforts made by the private sector to break this governmental monopoly, mainly in the area of peanuts seed production, were rapidly quashed and seen as an unwanted competition. In the case of most cereal seeds, which are for internal consumption, the seed market is still to be developed; the governmental seed projects were primarily established to supply their own needs.

Therefore, intensified agriculture in Senegal, as envisioned in the design of APS, required greater use of improved seed varieties. The expanded use of improved seeds for millet, sorghum, corn, rice and cowpeas was considered to be the most important factor in increasing production in Senegal's farming regions.

3. - PROJECT PAPER GENERAL APPROACH:

3.1. Introduction:

The APS Project goal was to increase cereals production on the order of three and one half percent by the end on the project. This increase in production would result in greater profitability and increased farmer income. This goal was to be achieved through the privatization of agricultural inputs and seed multiplication activities, as mandated by the New Agricultural Policy.

3.2. Summary of projects components:

The Project was designed with four outputs:

- a - Privatization of input supply, including seeds
- b - Expansion of input supplier credit
- c - Collection of agricultural statistics
- d - Implementation of educational media campaign.

These outputs were to provide the resources needed to support growing private roles in agricultural input marketing and seed multiplication as it evolves. Project targets were that 80% of input supply and seed multiplication activities would be handled by the private sector by the end of the Project.

The Technical Assistance APS proposed was composed of:

a) Agricultural Management Specialist: the success of APS was heavily based on his Technical Assistance. The private agricultural management specialist would integrate each of the Project components as an effective means for promoting expansion of privately supplied inputs and coordinate the GOS private sector transfert and policy application. Secondly, this APS Specialist would assist the GOS to restore a measure of liquidity to the private sector, by means of a commercial bank operated credit revolving fund.

b) Agricultural Statistics Specialist: the collection and analysis of agricultural statistics was to be strengthened by APS Technical Assistance and would enable enable and private sector to better match supply and demand of inputs.

c) Media Specialist: the mass media campaign was proposed through an APS short-term Media Specialist and would provide vital information on products, supplies and services needed to increase crop yields.

d) **Seed Specialists:** the APS seed component counted on the support of three experts who would assist the GOS to redefine the tasks of each of its agencies and strengthen their capacities to carry out their tasks.

ISRA, the Senegalese Research Institution, would receive APS support through the Cereal Variety Selection Agronomist who would assist in the production of needed breeder seeds and would reorient research towards farmers' actual needs as well as to integrate research findings from the internationally recognized research institutions to the local crop production systems. Guidance on farm applied research trials was also to be provided.

DPCS, the MDR's Seed Production and Quality Control Agency responsible also for the certification of seed produced in the country received APS assistance through two experts.

The Seed Production Agronomist was to guide the interest of seed multiplication farmer associations and private entrepreneurs to multiply improved seed and promote the use of certified seed, agricultural equipment, crop protection products and fertilizer with on-farm demonstration and mass media campaigns.

The Seed Certification Specialist was to provide on-the-job training to DPCS staff responsible for seed certification and upgrading of Senegal's seed certification standards and assist them on the implementation of a sound seed quality control. The APS Expert was to assist DPCS to draft and issue a GOS seed decree in accordance with internationally accepted standards or norms which define seed certification procedures and seed quality characteristics and operating responsibilities. Equipment and supplies were included to assure a successful start of the Project's seed certification program.

3.3. The APS seed component mode of action:

Privatization was APS' major thrust. Private seed enterprises were to be established- difficulties were recognized for small farmers to carry out their own seed production program and invest in seed business. The most important constraints that inhibit the formation of seed enterprise were a lack of:

- . infrastructure for seed conditioning;
- . knowledge of technology to produce a quality product;
- . means of identifying seed (as opposed to common grain) in market channels; and,
- . a steady supply of foundation seed.

These difficulties were to be reduced by APS in order to facilitate the establishment of small and medium size seed enterprises. The following services were identified as key to the growth of the seed supply system:

- . seed certification (quality assurance)
- . seed conditioning
- . foundation seed production.

The project's general strategy was to work with DPCS to encourage the growth of private cereal seed production. The Seed Certification Specialist had to devote part of his time helping DPCS to re-evaluate criteria in use for selecting and monitoring its contract seed growers with a view towards identifying individuals, cooperatives and incipient agri-business firms that could most effectively multiply and maintain seed quality within commercial certification standards.

At the same time, the Seed Certification Specialist was to enhance DPCS' certification services through on-the-job, and more formal, personnel training; and, reevaluation of seed certification regulations and criteria used to select and monitor seed producers. Additionally, he would assist in the reorganization and streamlining on the DCC 'Division du Contrôle et de la Certification des Semences' and would coordinate with DPCS to establish seed associations to support the interests of cereal seed producers.

As a complement, the Seed Certification Specialist would assist in the creation of an independent seed quality control and certification agency. Finally, he would advise the GOS on a national seed law and seed policy. However, the Project was not advocating the creation of a strict seed law enforcing the use of DPCS certification in the early stages of the project, as it would hamper the development of the entrepreneurial spirit.

It was felt that once DPCS could improve its operations and certification standards, thereby guaranteeing a quality product to farmers, farmers would choose DPCS certified seed over uncertified seed, increasing the demand for the quality product in the market.

As APS made commercial annual production loans available to cereal seed producers, it would encourage new farmers to become involved in the seed business. DPCS would then gradually reduce its contracts as the private seed producers increase their production.

APS would also encourage the more successful seed producers to take out medium-term loans for the purchase of small seed conditioning units. Eventually, APS expected seed producers to get involved in foundation seed production, getting breeder seed directly from ISRA.

4. - THE SEED CERTIFICATION SPECIALIST SCOPE OF WORK:

The Seed Certification Specialist was to assist the 'Division du Contrôle et de la Certification' of DPCS. The need of APS Technical Assistance was phased down as the GOS Certification Service and the private sector seed industry become established and prove their capacity to do the job.

4.1. General duties:

- . Advise the MDRH on a national seed law and seed policy consistent with the framework of the New Agricultural Policy;
- . assist DPCS to install and organize an efficient seed certification service;
- . participate jointly with the ISRA Expert responsible for breeder seed production and seed quality research;
- . provide a training program to DPCS staff on the seed certification and quality control program;
- . advise on ways to enhance cooperation among the various agencies that are linked through seed certification;
- . work with MDRH to design, evaluate and implement a seed certification program in the field;
- . maintain close liaison with the COP and the MDRH Project Director to keep them advised of progress achieved, problems encountered, as well as recommend appropriate decisions.

4.2. Specific duties:

- . Provide management, leadership and technical guidance to collaborating DPCS staff in the areas of seed certification and quality control;
- . cooperate at MDRH request, in the implementation and update of the proposed national seed law;
- . provide technical training to DPCS staff personnel on:
 - .. field seed certification,
 - .. management of a seed testing laboratory and seed testing techniques,
 - .. application of the new seed law and specific regulations,
 - .. prevention of varietal mixtures and contamination,
 - .. optimal storage conditions;

- . work with the MDRH to develop the specifications and procurement plan for the equipment and supplies under the host country contract;
- . assist the MDRH in the selection of senegalese professional staff for Msc. training in seed industry development and implementation of national seed certification programs.

5. - THE EXPERT'S DETAILED APPROACH:

Following the project paper's general approach and scope of work, the Seed Certification Specialist, together with his counterpart, developed the APS approach to the work best suited to accomplish the project objectives. It became readily clear that the APS seed component goals were very ambitious and difficult to achieve, particularly because of the following reasons:

- a - The privatization of agricultural activities requires a market oriented approach that is not always easy when you deal with subsistence crops, which was the case of many cereal crops in Senegal.
- b - Although Senegal is not a large country, its diversity of climate and people requires different approaches for each region and for each crop.
- c - The relative low priority DPCS was giving to cereal crops as compared to peanuts.
- d - The delays in project's start-up and accelerated close-out reduced the time available for project implementation.

In order to diminish the effects of these difficulties, the APS Seed Experts agreed that APS should concentrate its first efforts on one region of Senegal that have a cereal as a lead crop. Since privatization of cereal production was the main thrust of APS, the selected cereal crop to start with should be a cash crop, located in a region where the competition with peanuts were less and where the crop would be less vulnerable to adverse climate conditions.

A very good parameter to measure the relatively low importance that was given to cereal seeds as compared to peanuts is the distribution of DPCS personnel. In 1989, more than ninety percent of DPCS field personnel was working full time with peanuts seed production and less than ten percent all other crops together, including cereals (Figure 1). This imbalanced distribution could be explained by comparing the amount of peanut seed produced in the country as compared to other crops. However, it was clear that all these peanut field agents were there to guarantee the reimbursement of loans DPCS/PTS had made to seed producers. Quality control was not their major concern.

Irrigated rice in Saint-Louis Region was selected to function as a "pilot project" for APS' first interventions. The positive experiences adapted to the characteristics of each cereal crop and region was supposed to be transferred to other regions in the following seasons.

Seed certification constraints were not the same for all regions and crops of Senegal. Maize seed production was in hands of the German Project which holds the monopoly of corn seed production in the country; project personnel were reluctant to privatize it. However, in the area of seed certification, APS would work jointly with this project, assisting DPCS to set up a seed quality control program at their production site during all phases of production until the placement of certified seed tag.

The other cereal crops needed other types of adaptation. Since their seeds were being produced in very small scale by the RDA's for a very limited market, the APS approach would be to promote an increase in production of better quality seed by a certain group of small farmers, financing its production in the first years and making sure they have good quality and at the same time set up a good promotional program through media channels to assure the market of their certified seeds. This approach would be multiplied in a few regions where these crops are important.

Since seed production is a very specialized activity, the seed certification specialist considered the target client for the certification services in the Saint-Louis Region was the more technical oriented, mid-size agricultural entrepreneurs that would be induced to get into rice seed business seeking higher incomes. Unfortunately, seed producers with this profile were not readily available. Groups were supposed to be formed at the same time that the current seed producers (small farmers grouped into GIE's working as RDA's contract growers) were encouraged to go private and get more technical training to meet the profile described above.

After studying the country's seed system, the APS seed certification program was prepared based on four action programs, discussed below:

- . restructuring the seed certification service;
- . creation of regional seed councils;
- . seed legislation implementation; and,
- . the seed certification training program.

5.1. Restructuring the Seed Certification Service:

This program involved the restructuring of DPCS itself. Seed production and certification activities are very related but they become antagonistic if performed by the same institution. In order to address this constraint, APS proposed the separation of part of DPCS field personnel that would be involved exclusively with seed certification. In the case of Saint-Louis Region, DPCS was producing rice foundation seed, while SAED, The Regional Development Agency (RDA) was producing rice seed certified by DPCS agents. Therefore, APS proposed a sizeable improvement of certification services that would, in the early stages, prove to the RDA and its contract growers, the usefulness and reliability of such service. By the end of project's life the service was supposed to become even more reliable and restrictly enforcing the newly established private seed production community to achieve higher standards of quality.

The Seed Certification Service that DPCS was providing to SAED consisted basically of one or two field visits to farmers that were selected by the

RDA to multiply the foundation seed they have purchased from DPCS. At harvest time, seed samples were taken and sent to DPCS Laboratory for analysis. The weakness of this service were evident after harvesting. SAED personnel in charge of buying the seed from contract growers never take into account if DPCS had in fact approved or rejected the fields. Very often, seeds were bought from contract growers and transported to the conditioning unit **before** DPCS could have the laboratory analysis done, showing the little importance the RDA give to the certification service.

The improvement on DPCS seed certification program proposed by APS consisted in a close monitoring of seed quality during all phases of seed production. Field visits were completed by filling out forms and prompt laboratory analyses would enable seed producers like SAED to know the approved lots that would be clearly identified while still in the field. Finally, a close follow up during conditioning would end up placing the certified seed tag only on seed bags that were fully certified.

The restructuring of DPCS' certification service proposed by APS involved also the provision of logistical infrastructure. Regional laboratories needed to be remodeled, some simple but important equipment should be purchased and field agents needed vehicles appropriate to road conditions.

5.2. The creation of Regional Seed Councils:

Although Senegal is made up of several regions, having contrasting climates and people of different ethnic origins, the decision-making is highly centralized leaving very little flexibility to develop in the context of regional environment. It was the need to promote and strenghten the institutional structure of the seed system at regional levels that convinced the APS Seed Certification Expert to propose the creation of Regional Seed Councils.

The RSCs' purpose was to make regional plans to coordinate the various institutions involved in seed business at the same time ensuring the operation of the Certification Service in the region. In other words, they were to join up with the MDRH in the region and support an effective certification service. RSCs would help obtain some financial resources through their private organization, the clients of the certification service, to provide the services on a self-sustaining basis.

It was planned that council membership could vary among regions, but would always be comprised of representatives of the principal organizations participating in the seed sector, such as: farmers organizations representing seed producers and consumers (GIE's, ONG's, etc...), the research institutions, extension service, Chambers of Commerce, seed merchants and the Seed Certification Service.

The presidency of RSCs would rotate among members and a perfect balance

between the private and public sector should be kept. The Regional Officer

of Seed Certification Service was supposed to be a non-voting member, and could serve as executive secretary to the Council.

To facilitate the development of market channels for the certified seed was type of activity the RSC would get involved through promotion campaigns for certified seed use and the establishment of local retail seed markets.

Another very important area the Regional Seed Council could get involved was the operation of existing state seed conditioning plants that were about to be privatized. The RSC could provide a transitorial mechanism while the privatization of governmental assets would take place.

The success of the privatization of the seed program would greatly depend on the creation of Regional Seed Councils. They would provide the linkage between the public and private sector and the necessary support for the development of the seed industry. However, the regionalization approach, totally new for Senegal, needed to be recognized and supported by the central government that would give them the authority to formulate and implement the regional seed policy. APS experts counted on the APS Project headquarters and USAID to politically influence the Senegalese Government policy formulators to support and promote the regional autonomy approach to privatization.

The Regional Seed Councils would be initiated by a facilitator specially hired and trained by APS Project for this purpose. He should concentrate his efforts first on promoting the council among private and public institutions in the region. He would then devote much of his time to organize the private seed sector : seed producers, distributors and consumers. During RSC meetings, he would serve as moderator keeping the balance of public and private sector participation.

Once established, the council would be able to start generating revenues to sustain its operations and the position of the facilitator could be phased out as the elected council's president would take over the facilitator functions.

5.3. Seed legislation implementation:

Prior to Chemonics' team arrival in Senegal, DPCS had already prepared and submitted a proposal of seed legislation with the presidential and ministerial decrees. Once approved, implementation of the National Seed Law requires detailed documentation on seed production, certification and marketing that clearly define, interpret and complement the National Law. APS assistance was present in the production two of these documents:

5.3.1. The norms and regulations for production, certification and commerce of seeds: APS proposed to prepare the first norms and regulations of the production, certification and commercialization of seeds that would provide the necessary information to all people involved in the seed program in order to comply with the Seed Law. Seed producers, for instance, will know how to prepare and maintain their fields, complete certification documents. Seed certification agents will be able to understand their role by following this certification procedures. Seed merchants will know exactly how to comply with the legislation of seed commerce.

Once the National Seed Law is approved, this document needs to be finalized.

5.3.2. Varietal catalog: the National Seed Legislation can only recognize as certified seed, the seed of varieties that were officially released by research, after having proved its superiorities. This certification process is to be done by a "varietal release committees" that will periodically publish a catalog of varieties that are currently being recognized. APS gathered the information available from local research documents and prepare a draft of what would be the first catalog with the varieties that are currently being used in Senegal.

It is important to mention that this catalog will be an APS aid to the varietal release committees that will be formed when the National Seed Law is approved.

5.4. The certification training program:

The APS training program proposed by the Seed Certification Expert was composed of 3 parts:

- . on-the-job training for field agents,
- . seminars and workshops at national level; and,
- . overseas long and short-term training.

5.4.1. On-the-job training was proposed as a routine type of training that was given during all phases of seed production starting with the preparation for the season, how to approach the seed producers, their responsibilities, techniques of field inspection, lot identification and laboratory analysis. The monitoring of seed lots throughout the production process all the way to the tagging of certified seed bags were also part of this training program.

- 5.4.2. **Seminars and workshops** were intended to gather technical people from several regions and train them in subjects such as seed physiology, laboratory analysis training and other special issues as needed. In the early stages of APS, these training programs would also be used to present APS approach to the regions and get them involved in our program.

During the second and third year, workshops were to be organized in the areas of seed conditioning and laboratory analysis.

- 5.4.3. **Overseas long and short-term training program on seed certification:** this training program would provide the preparation of a well trained group of seed technicians that would influence future of Senegal seed policy. For this reason, APS the Seed Certification expert would play an important role in helping the selection of best suited Senegalese technicians to send abroad. People involved with APS in seed certification would surely have priority increasing their interest on APS activities.

6. - RESULTS:

The results of the APS seed certification component were very promising if we take into account first the working environment the expert was subjected to and that there was only one complete growing season for APS to consolidate all the innovations proposed. APS is leaving Senegal in the middle of only its second seed production season.

DPCS, like many other governmental institutions in Senegal, was financially and administratively dependent on the French sponsored "Plan Triennial Semencier" (PTS). With the arrival of the APS experts, a situation of conflict was created. The DPCS director, who was also the PTS director, wanted the the APS seed component totally administered by him, technically and financially. In fact, the DPCS understanding was that the APS would come and finance one part of the program they established. Therefore it became clear their lack of interest in the APS program and the administrative incompatibility was used as an excuse to block APS activities.

To aggravate the situation, these blockages were accepted by the APS director and the contractor's chief of party, who seemed more interested in the success of the credit component.

As mentioned earlier, the APS seed experts selected the Saint-Louis Region to concentrate their efforts upon during the beginning of the project and, in spite of all the constraints, the achievements were very promising. They are presented here by action programs:

6.1. Restructuring the Seed Certification Service:

Seed certification under the context of privatization should be a service provided by the government, oriented primarily towards the emerging private seed producers.

The objective of this action program was to give the DPCS the necessary tools to accomplish its function of controlling the quality of all seeds put on the market as a service for both seed producers and consumers.

6.1.1. **Farmer's seed quality survey:** this first major field activity was related to the gathering of information of seed quality problems that the APS would face in the region. A farmer's seed quality survey, often called a "drill box survey" was set up and 613 questionnaires were filled out during interviews with farmers. Laboratory analysis made on 567 rice seed samples also gave us some means to qualify and quantify the seed related problems in the region. Since this survey was already presented in a separate document, this report will only highlight the main findings:

a) From the questionnaire:

Farm size: there were clear differences in production plot size and farming systems among the three studied zones. In Podor and Matam, irrigated plots farmers cultivate are much smaller, on average, than in Dagana (Figure 2).

The planting method used is also a very good parameter to characterize the farming system. While mechanized seeding is usually done by larger, highly mechanized farmers, manual broadcasting of pre-germinated seed is done by medium-size farmers and the labor intensive transplanting method can only be done by very small farmers that cultivate rice primarily as a subsistence crop. Although none of farmers surveyed mentioned the use of mechanical sowers, a tendency towards this planting method was noted in Dagana, where larger farmers are present. In Matam however, there is a large number of small farmers that do transplanting (Figure 3).

It is a general practice of farmers in the region to use their own harvest as seed in the next season. When farmers were questioned about the quality of their seed, the majority thinks their seed have good quality (Figure 4).

Rice in the Saint-Louis Region is a cash crop since the majority of farmers sell at least part of their harvest. This tendency is accentuated in Dagana where only 12% of farmers surveyed produce exclusively for family consumption.

A very important parameter to measure the possibilities of success on agricultural privatization is the farmer's opinion about the price of his product in the market. Farmers worldwide have a tendency to think that they are not well paid. It was surprising that about 50% of farmers did not complain about the price of their paddy rice (Figure 5).

b) From the analysis of farmer's seed samples:

Rice production in Saint-Louis is concentrated on two varieties only: JAYA with a stronger presence in the Senegal river basin and I KONG PAO found more often in the river delta (Dagana) (Figure 6).

Germination is the seed quality parameter more readily visible to the farmer. Surprisingly, the seed used by Dagana area farmers, which are bigger, more sophisticated, using more fertilizer, etc..., were the ones with lower germination rates (Figure 7). This important data shows that the demand for high quality certified seed can readily be highly increased, particularly considering that this zone produces more than 60 percent of the region's paddy production.

The infestation of red rice in farmers seed was the most important

finding of the laboratory analysis. Seeds of this noxious weed were found in alarming quantities in almost all samples collected during this survey and the variety I KONG PAO was much more infested with red rice than JAYA (Figure 8). **Based on these findings, the seed certification program aimed its efforts in the control of red rice infestation.**

Seed samples collected in Dagana had on average twice as much red rice than Podor samples. This difference is probably related to the increased prevalence of I KONG PAO, the variety more infested with this weed (Figure 9).

This important seed quality survey was only possible due to an administrative bypass unconsciously taken by the seed expert. The survey's budget was presented directly to the APS administration that approved it without the DPCS director's signature. The expert and his counterpart went to the field, collected the information, and, afterwards were criticized by the DPCS's administration that was forcing APS to finance activities through them.

6.1.2. Improving field quality control: with only two field agents, one laboratory technician and the departmental officer working exclusively on seed certification, the APS started the 1989/90 season by assisting these people to set up their certification program. First, we contacted SAED's contract growers involved in seed production. At the same time, field agents learned and advised these farmers that certification is a service that farmers need to request in order to receive. It was very important to show that the certification service was useful to the seed producer and not another governmental interference in their agricultural activities. As was expected, these changes do not happen from one day to another, but the first change farmers noticed was the constant presence of certification agents in their fields.

Another innovation APS brought to field quality control during the 1990/91 season was the use of a simplified field inspection form that was specially designed for irrigated rice. These forms were to be filled out during field visits with one copy handed to the farmer.

Changes in the certification program started being really felt when some farmers were advised that their field plots were rejected as seed. Since in the past the DPCS never managed to have a full coordination with SAED, contract growers were still expecting that SAED would not consider the certification restrictions.

At the same time certification agents were in the field, the APS expert and his counterpart made periodic visits to SAED's offices and one agreement was made to really enforce the certification

program. Since SAED was the certified seed producer they agreed to support the certification program and only collect as seed those lots that the DPCS fully approved.

The 1989/90 field season ended up rejecting 28 ha out of 173 ha that were initially inscribed under certification. Contract growers which have fields approved were informed that the harvested seeds would still have to pass through laboratory tests before getting the final approval.

- 6.1.3. Establishment of a post-harvest quality control program:** in previous years, the DPCS quality control stopped at harvesting time. The SAED team that was involved in collecting seed never consulted the DPCS about the quality of their seed and the DPCS was never fast enough to present the final results of laboratory analysis. Consequently, all seeds produced were approved.

Before the 1989/90 season, the APS expert, his counterpart and the DPCS personnel in Richard-Toll prepared a post-harvest control program that would enable the certification service to complete its control all the way to the marketing of certified seed. Right after harvest, field agents visited all plots, taking samples of lots, and sending them immediately to the DPCS laboratory in Richard-Toll. In ten days, the analysis was done and a list of the approved fields were in the hands of field agents who went back to the plots with spray paint to mark all bags that were approved. A copy of approved fields was then sent to SAED.

The reaction was mixed. SAED accepted the idea of only buying the approved seed. Contract growers that had fields rejected started to complain and a few farmers that had their fields approved refused to sell the seed to SAED in solidarity with their neighbors that had their fields rejected.

Later, political pressure from the small farmers organization (ASESCAW) over SAED and DPCS seed analyst increased. Since most of the field rejections were due to the presence of red rice, many requests came to the certification service to overlook this problem which they considered not their fault.

The new seed certification program continued in SAED's seed conditioning plant, where only bags marked by DPCS with spray paint were allowed to enter. A seed certification tag was designed for the Saint-Louis Region and each bag of certified seed was clearly identified with these tags (Photos 1 and 2).

At market level, the APS seed experts started influencing local agricultural input merchants to go into the seed business. For the

first time, a large part of SAED's certified seed was sold before the growing season to local retail dealers that were present in Dagana.

The APS programmed a promotion campaign for the certified seed to increase the demand but it was suspended due to the small amount of certified seed to be marketed. In fact, only 64 ha out of 173 were approved (Figure 10) which diminished the availability of certified seed in the market.

Only 256 tons of seeds received the certification tag last year. Although the DPCS direction was always defensive against the APS innovations, the utilization of the certification tags which the APS introduced was imitated for other crops and regions of Senegal. Unfortunately, the similarity was restricted to the tag only and not to the whole quality control program.

Seed business is just starting in Saint-Louis. A client oriented type of policy is yet to be developed. By talking to inputs merchants, we learned that they ran out of certified seed very soon in the season and started selling rice paddy as seed without any kind of quality control, which caused some complaints from consumers. Since the seed law is not yet approved, seed certification agents' intervention was limited to advising the merchants about the risk they are taking in losing their clients and their image.

The 1990/91 season was marked by two important accomplishments: the total pull out of SAED from seed production and the immediate response of the private sector. **The initial seed production area increased 2.5 times reaching a total of 420 ha.** Also, many seed fields were placed in brand new irrigated land which diminished the risks of red rice infestation. The season is not over yet but we estimate that the field rejection will drop from 60 to 40% this season, thus around **1.000 metric tons of certified rice seed, which represents almost 400% increase in one year, will be available in the market in 1991 (Figure 11).**

6.1.4. Remodeling the Regional Seed Testing Laboratory: the idea of regionalization of the seed sector requires self-sufficiency on the part of regional institutions. In the area of seed certification, the need of a remodeled, better equipped Seed Testing Laboratory was readily visible. For the 1990/91 season, the APS proposed and USAID agreed to finance the remodeling of the new DISEM Seed Laboratory in Richard Toll. The working area was doubled and the electrical and water system repaired (Photos 3 and 4).

Unfortunately, the procurement list with equipment they urgently

needed was not approved by USAID. Equipment such as rice dehullers, would have speeded up the laboratory analysis and would have made a more reliable count of the red rice grains present in the samples being tested.

Before the arrival of the APS expert, USAID approved the procurement of a large list of very sophisticated laboratory equipment amounting to more than one hundred thousand dollars which are useless for the incipient Senegalese certification program. Equipment for ELISA tests, used for virus detection and electrophoresis tests, for varietal identification require laboratory facilities that are totally dust free and perfectly air conditioned. The APS expert tried to correct the situation by contacting many universities in the United States to train DPCS technicians in these areas. The answer was as expected. For virus detection through ELISA tests universities required technicians with at least a Master's Degree and a strong background in plant pathology. The use of electrophoresis for variety recognition would be only feasible with a training program for Ph.D study. DPCS never managed to propose candidates for these training programs.

- 6.2. The creation of Regional Seed Council:** as it was mentioned before, the creation of RSC's was the most important action towards the regionalization and privatization of the seed sector. Since it implied major changes in Senegalese administration, it was no surprise to find a strong opposition inside the DPCS structure. It took many endless meetings with DPCS technicians and administrators to get their acceptance of the concept of RSC's. What was a real surprise, however, was the lack of interest showed first at the APS administrative level and further at USAID, for an approach that perfectly fit the so called 'New Agricultural Policy'.

The establishment of a Regional Seed Council in Saint-Louis required an expense of only US \$ 35,000 during the first year with a plan of self-sufficiency by the end of the project.

Besides the proposed expenses, **the establishment of Regional Seed Councils needed a lot of political support.** Neither one of these supports were provided and the formation at RSC had to be dropped.

It is difficult to figure how much further the APS project would have gone with the consolidation of privatization if the RSC establishment had been achieved. It is true that as a result of an integrated efforts of many donors, the APS Project found in Saint-Louis the RDA ready to get out of seed production. However, our project's intervention was very effective on the organization of private seed sector that took over seed production activities. In this aspect, the presence of a Regional Seed Council would surely have helped the consolidation and strengthen of such a fragile private seed sector.

6.3. Seed legislation implementation:

Experiences all over the world have showed that seed legislation is not a major requirement during the initiation of seed improvement programs. However, when the seed industry starts moving the development of a seed law that both encourages and regulates the use of improved seed becomes a must.

By the time the APS Seed Certification Expert arrived in Senegal, a National Seed Law was prepared and proposed for approval. One of DPCS' concerns was related to the norms that makes possible the application of the law. Taking into consideration the approach of regionalization, the APS expert prepared a basic document containing the norms to follow for the production, certification and commercialization of seeds. As soon as seed legislation is finalized a reevaluation of this document will be necessary to determine its compliance with the new law.

Another important aspect of the seed legislation is the presence of a "variety release committee" that will be in charge of publishing periodically the "variety catalog" where varieties are described and officially accepted for certification. A bibliographic revision furnished the necessary elements to describe the varieties currently being used in Senegal and this publication can be used by the committee as the base for the first catalog.

6.4. The training program:

6.4.1. **On-the-job training:** this type of training was programmed in phases starting with basic concepts of seed certification, in sampling methods in the field and in warehouse recordkeeping, etc... Since the DPCS field personnel were almost totally changed when DISEM took place, this training program became very useful to the newcomers during 1990 season. Results in this area are hard to measure not only due to the nature of this type of training but also because of the constant rotation of field people.

6.4.2. **Seminars and workshops:** the results in this training area was mixed. the APS expert programmed the first seminar for November 1989. The objectives were first to expose the APS approach to the DPCS technicians from all regions and also introduce some technical concepts like essential elements of seed programs; seed certification, its role and components, etc... Another important objective of this seminar was to provoke debate about seed production privatization processes.

At this time, aware of administrative blockage inside the DPCS, a detailed budget was presented directly to the APS administration which was returned to the seed certification expert requesting prior approval of the DPCS director who promptly rejected it because he wanted to see all the texts of lectures prepared in the form of documents before his approval of the budget. After one month, all the documents were ready but the excuse now was that field people from regions other than Saint-Louis were too busy to attend. The APS expert's last try was to make the training program only in Saint-Louis which again the DPCS Director refused without even trying to find another excuse.

Although the DPCS director's interest in blocking APS activities became clear in previous opportunities, the cancellation of the first seminar had a very negative effect on the seed certification expert who lost a lot of his time on this training program.

With the dissolution of the DPCS, a new division was created specifically for seed certification purposes. The new DISEM came with a new mentality giving training a high priority.

The APS expert was readily requested to collaborate in the DISEM training program in Thies, especially designed for new field people that were unexperienced in certification activities.

Thus the second seminar the Seed Certification Specialist proposed was in a completely different working environment with support from both APS and DISEM directors. The red rice problem that was first detected during the seed quality survey and later in the seed production fields was the subject of an important seminar where technicians involved in research, extension, certification and production of rice had a chance to meet and freely discuss methods to control this weed, with the aid of Dr. Emery Ford Eastin, an authority on this subject.

- 6.4.3. Overseas long and short-term training:** although the APS overseas training program was the responsibility of the Chief of Party, the seed certification expert thinks he should have played a major role in selecting the trainees in his area of certification. It is particularly important because the training program can be used to motivate local people towards project's activities.

Like all other APS activities that the DPCS director managed to put his hands on, the selection of candidates was also object of blockages that impeded the APS from achieving its training objectives. Only two seed technicians were sent to be trained in the area of seed technology and the APS seed expert was not even consulted on this subject.

6.5. Final remarks:

The second year of APS seed program started with the dissolution of DPCS in January 1990. At almost the same time, changes inside USAID forced all the APS activities to wait until the mid-term evaluation that ended in August. Although the evaluation considered the continuity of seed certification support to be very important, USAID decided to terminate this component along with the whole Project.

Ironically, the organization of DISEM in July was very beneficial to the APS seed certification program. Unfortunately it was too late. APS assistance would terminate in December 1990 and was limited to the following activities:

- . remodeling of seed testing laboratory in Richard-Toll;
- . preparation of seed legislation;
- . preparation of varietal catalog;
- . organization of Red Rice Seminar;
- . follow-up of seed certification activities in the field.

All these activities were successful accomplished.

7. - LESSONS LEARNED:

The short lifespan of the APS Project was full of experiences and provided many lessons that may be characterized as positive to be copied by other projects or countries, or as negative, to be avoided.

7.1. What to do:

- . Separate the country's regions by lead crops and tailor the seed certification program according to the specific needs of these regions;
- . during the process of privatization of seed production, make sure that many farmers will get involved in this process, stimulating competition towards seed quality;
- . identify a crop in a region for which the use of high quality seed can make the greatest impact, then promote the production of seed through local organizations, help them develop a market and make sure the seed produced is high quality through a rigorous quality control program;
- . promote the regionalization of seed production and certification, and give power to the region to decide about their own program;
- . concentrate seed production in the hands of the better, more technically oriented farmers. **Privatization of seed production is not a social aid but an agricultural business.**

7.2. What not to do:

- . Seed certification standards should not intimidate or inhibit the development of seed industry by setting too-high standards;
- . avoid an over elaborated seed certification program. It is preferable to have a simple, but functional program;
- . governmental programs that distribute seed to farmers must be avoided; rather they should promote the use and facilitate the acquisition of quality seed;
- . the selection of equipment and supplies should be part of the technical assistance duties prepared to fit his program's need rather than passing this responsibility to local personnel;

8. - RECOMMENDATIONS:

. In projects that deal with privatization, investments should be made for both public and private sectors avoiding the tendency of making large, non-refundable expenses only to the public sector and offering little to the private sector.

. In cases like Senegal, where the governmental institutions showed little interest in the project's seed certification approach, the technical assistance could be much more effective **helping the private sector directly** on the implementation of their own internal quality control program and promote the market of their seed.

. A project such as APS with its innovative concepts, such as privatization of some governmental activities and assets and decentralization of decision-making through regionalization, can only be successful by a joint effort. The effort comes first at the project's administrative levels and then at USAID and higher levels in the GOS.

. **The achievements made by APS' seed certification program in Saint-Louis are not consolidated yet.** The weakness of the seed certification agency is apparent when compared to the growth of private seed sector. **A failure of the new DISEM in accomplishing their task of seed quality control could seriously damage their image and frustrate the private seed producer.**

. Capitalize on field personnel's enthusiasm, which sometimes becomes covered by the slowness of centralized administration;

. Project administration and USAID should demonstrate their interest on project achievements with their presence, periodically in the field, accompanying the experts.

. **A media promotional program should be put out before the next rice growing season to help the private seed production to market their seeds.**

. **Each cereal crop requires a different approach for privatization of seed production and implementation of a certification service.** Maize seeds could have a similar program to what was established for rice in Saint-Louis. **Crops like millet, sorghum and cowpeas should start very small through non-governmental organizations, linked to a good promotional program of seed utilization aimed towards small farmers.**

. **The new DISEM needs assistance, both technical and financial, to implement the seed certification service in Senegal.** For the first time, this activity is totally separated from seed production which gives them a better chance of success. **Support to DISEM should be continued.**

. The real concept of technical assistance needs to be developed in Senegal. Action programs jointly agreed are supposed to be fully implemented by Senegalese technicians. Counterparts should work full-time in the project implementation.

. Experts cannot be totally exposed to the vices of local administration. Since we cannot change it, at least inside the project an American type of administration should prevail.

ANNEX G

**FINAL REPORT
SEED PRODUCTION AGRONOMIST**

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93

MINISTERE DU DEVELOPPEMENT RURAL ET DE L'HYDRAULIQUE

PROJET DE SOUTIEN A LA
PRODUCTION AGRICOLE

DIRECTION DE L'AGRICULTURE
Division des Semences

SEED PRODUCTION AGRONOMIST

FINAL REPORT

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G-1

Dakar, December, 1990

44

I. - APS PROJECT BACKGROUND AND OBJECTIVES :

Senegal never fully recovered from the negative impact of the 1970's droughts and oil crisis on its economy and agriculture. Starting back in 1979, the Government of Senegal (GOS) started to react to this situation with a series of new important policies that establish the bases for far-reaching economic, financial, agricultural, industrial and administrative reforms. By far the most important one for agriculture was the New Agricultural Policy (NAP).

The NAP was presented in 1984 and put into application in 1985. Its main objectives are to stimulate agricultural production so as to satisfy more of the country food needs, to create more jobs in the agricultural private sector and to promote agricultural exports in order to improve Senegal's balance of payments. To reach these objectives, two sets of programs were put together, one for institutional reforms that touch in particular agricultural cooperatives and credit and the other to stimulate increases in production, crop by crop. Cereal production was to be increased to reach on average 1,800,000 tons and cover 75 to 80% of the country needs from an actual level of 50%. The approach chosen for this increase in production was essentially through increases in cultivated area for both rainfed and irrigated agriculture. Some emphasis was to be put on maize in the areas of 700 to 800 mm annual rainfall and on rice, with the creation of some 72,000 ha of new irrigated perimeters in the Senegales River Basin. It should be noted that the planned increase in cultivated area was to be far greater for irrigated agriculture (six fold) than for rainfed agriculture (7%) by the year 2000.

The NAP legalized six major policy reforms:

- . the transfer of agricultural input supply from the GOS to the private sector;
- . the reform of the regional development agencies, limiting their functions to those of planning and extension essentially;
- . the removal of restrictions on agricultural trade;
- . the establishment of incentive level floor and market prices for agricultural commodities;
- . the reform of the cooperative movement, giving greater control to the producers, and;
- . the encouragement of local cereal (millet, maize and sorghum) consumption through price incentive policy and promotion of semi-industrial cereal transformation.

The NAP was followed in 1986 by a Cereals Plan that fixed the year 2000 as a target year for attaining self-reliance in cereals. From this Cereals Plan was put together a cereal seed plan of which the 'Direction de la Production et du Contrôle des Semences (DPCS)' was the main executor.

This is precisely in this context that in 1987, the Agricultural Production Support (APS), a host-country project, was designed and approved by the GOS and USAID. This was a 5-year 20-million \$ project to help the GOS reach the objectives of the NAP, namely to :

- . increase cereal production by 3.5% a year, by 1992 and;
- . encourage the private sector to:
 - .. multiply 60% of all cereal seeds,
 - .. distribute 75% of all agricultural equipment,
 - .. distribute 75% of all fertilizers, and,
 - .. distribute 75% of all crop production inputs.

In order to obtain these results, the APS Project was charged with facilitating the progressive withdrawal of the public sector from many agricultural support services such as input distribution and gradually passing these responsibilities over to the private sector.

II. - APS PROJECT COMPONENTS:

The APS Project has four components:

(1) Privatization of input supply including seeds.

The APS Project was to provide long and short-term technical assistance to the GOS to encourage the private sector to replace the public sector in input distribution. Expected outputs or targets are presented above. Therefore, while the NAP approach is to increase cultivated area in order to increase production, the APS Project was charged with the task of increasing farmer cereal productivity through greater agricultural input use.

(2) Expansion of input supply credit.

The APS Project was to provide technical and financial assistance in order to make available through commercial banks credit to private entrepreneurs for input production and supply, transportation and distribution.

(3) Collection of agricultural statistics.

The APS Project was to provide financial and technical assistance to the 'Division des Statistiques Agricoles (DSA)' in order to improve its methodology and enable it to obtain accurate and timely data on cereals for use by public and private sector decision makers.

(4) Implementation of an educational media campaign.

USAID was to provide technical assistance through APS to help GOS design and implement mass media campaigns to promote the use of agricultural inputs and improved technologies in order to increase cereal production.

III. - CHEMONICS PROPOSED APPROACH TO APS PROJECT IMPLEMENTATION:

Chemonics International Consulting Division which presented the successful bid for the implementation of the APS Project proposed both a general and a detailed approach in a strategy to reach the objectives of the APS Project.

The general approach has three elements:

- (a) Identify and work with progressive farmers who are already using improved agricultural inputs and technologies and encourage them to use still more and through demonstrations on their farms lead other farmers to follow their examples. This increase in input demand will in turn lead to the establishment of private input business to satisfy this demand.
- (b) to conduct a preliminary baseline survey in targeted areas proposed by APS counterparts to identify farmers demands and needs.
- (c) and to build upon the existing input network of the RDA's, other projects, cooperatives and local businessmen.
After completing the baseline survey, a comprehensive examination should be made to identify potential roles for the private cereal traders, marketing cooperatives, the RDA's and their progressive farmers.

The detailed approach presented activities for a 10-week start-up period and for the remaining implementation period of the Project.

The preliminary activities include:

- (1) Field the technical assistance team.
- (2) Review the status of work in each line of action of the Project.
- (3) Review the status of data availability.
- (4) Conduct a baseline socio-economic survey in project target zone.
- (5) Prepare a preliminary prioritized list of major issues.
- (6) Determine contents of studies and surveys to address these issues.
- (7) Establish a training plan based on a manpower needs assessment.
- (8) Prepare the first annual work plan.

The on-going activities for the remaining project implementation period were presented for each component separately although the linkages between them were clear. In each case, the description of the activities was preceded by the presentation of the strategy they were based on. Here are the proposed on-going activities for the privatization of input supply and seeds component. The strategy was to:

- (a) identify the public and private entities involved in input production and distribution, develop plans to privatize the public ones and strengthen the private ones;
- (b) draw a strategic privatization plan together with a detailed program evaluation procedure. The plan will identify existing and potential APS cooperators who could function as private sector agribusinesses.

The two main lines of activities are seed production and distribution of seeds and others inputs.

Quality assurance or seed certification, seed conditioning or custom cleaning and foundation seed production are identified as three key services needed for the establishment and growth of the seed supply system. The first two are judged more important to seed enterprises initially as they impact directly on their ability to develop the seed market whereas the third one becomes important only later on to assure the growth of the seed enterprises.

The Chemonics technical proposal went on to propose important activities for:

- . foundation seed research, to be conducted by the technical assistance team and their counterparts lead by an APS Crop Variety Selection Agronomist placed at ISFA;
- . seed multiplication and certification, to be carried out jointly by an APS Seed Production Agronomist and an APS Seed Certification Specialist placed at DPCS;
- . multiplication of cereal seed, by the APS scientists and their counterparts lead by an APS/DPCS Seed Production Agronomist, and;
- . seed certification for the APS/DPCS seed certification specialist.

It is obvious that Chemonics proposal is thorough and entirely based on a team approach. Nevertheless, each technical assistance team member had his own scope of work for which he or she was fully responsible under the terms of his or her contract with Chemonics.

IV. - THE SEED PRODUCTION AGRONOMIST SCOPE OF WORK :

1. General duties :

- a- Assist DPCS now DISEM/DA in the privatization of the GOS seed production and marketing activities.
- b- Collaborate in the creation of a private sector seed industry.
- c- Maintain close liaison and effective communication channels with the APS/COP and the APS Project Director to keep them informed of progress achieved , problems encountered and recommend appropriate solutions to these problems.

The general duties concern in fact the privatization of the 'cereal seed' subsector only.

2. Specific duties :

- a- Work jointly with DPCS technical staff to identify agricultural production zones best suited for effective seed production of selected varieties.
- b- Participate jointly with APS/DPCS Seed Certification Specialist in ISRA seed quality research
- c- Work with DPCS to restructure the seed sector for private sector production of foundation seed and certified seed for selected crop varieties as indicated by the national seed plan
- d- Collaborate with MDR to provide technical assistance to enhance establishment of collaborative, public and private seed associations that support qualified seed producers.
- e- Assist with MDR programs to supply assistance to private sector seed multiplication by providing necessary technical and management information.
- f- Collaborate with DPCS to develop a manpower training plan for DPCS staff and private sector personnel.
- g- Interface with ISRA staff and private sector personnel.

In 1990, MDR becomes Ministère du Développement Rural et de l'Hydraulique (MDRH) and DPCS, Division des Semences de la Direction de l'Agriculture (DISEM/DA).

V. - PROJECT IMPLEMENTATION:

- A. - Some important historical facts: The APS Project began its activities in August 1987. However, the technical assistance Chief of Party arrived in Dakar in December 1988, the Seed Certification Specialist in March 1989, the Seed Production Agronomist in April 1989 and the Specialist in Statistics some weeks later to remain at post only for a few weeks. Project implementation has been plagued with difficulties since the beginning. The problems encountered were from many sources and of varying degrees of difficulty. A mis-oriented mid-term evaluation did not help since it chose to stick to the obvious project design and management errors and recommend a suspension of project implementation.

At the end of that evaluation, it was a situation of on one side MDRH trying to reorientate and save the Project and on the other, USAID deciding to kill it no matter what. After a period of attrition, USAID prevailed by convincing MDRH to accept its decision.

The APS Project, in its brief history, has known three directors and two chiefs of party. It is only fair to say that things got better with time and that a lot has been done since the last director came on board and still more when he was joined by a new chief of party, about two months ago. Unfortunately, it was much too late since by then everybody was working with in mind the closing of the Project scheduled for December 31, 1990, exactly on year ahead of time.

It has to be noted that parallelly, some positive personnel changes took place in other institutions associated in APS Project implementation. The change from DPCS to DISEM/DA brought along a change of personnel at the head of the seed certification service. At USAID, the APS Project Officer has been replaced and for the first time, some interest was shown in visiting APS field operations. Finally, the opportunity was given to my counterpart to retire early with some money in his pocket. He seized the opportunity and has become since then a successful agribusinessman. He has been replaced by the former DPCS associate director who became the counterpart of both the APS Seed Production Agronomist and Seed Certification Specialist. Field technical personnel with whom APS worked with also changed recently. The Maize Project with financing from the GTZ is phasing out its activities. The PTS (Projet Triennal Semencier) has become PAS (Projet Autonome Semencier) with the former DPCS director as its head as usual. The two most important DPCS agents in the Saint-Louis region were commissioned by PAS and had to be replaced by two enthusiastic new agents. A third one retired voluntarily to start his own private business.

It is not superfluous to state that all these changes had to impact on the APS Seed Production Agronomist performance. During his tenure, it has been a question of keep trying often without succeeding for most of time but at the end a question of doing the most of what was technically feasible in order to leave a positive justification of APS passage in the field and bring about some possibility of personal satisfaction for having accomplished something useful before leaving.

8. - Preparation of the APS seed component work plans :

The preparation of the first work plan presented as a smooth activity in the project paper turned out to be a very long and difficult series of activities. First of all, DPCS had already prepared since February 1989 the Seed Production Agronomist work plan as an integral part of the work plan of the DAPPS Division (Division d'Appui à la Production et à la Promotion des Semences) in which he was to be placed. Therefore, the principle of having a work plan for the APS technical assistance team members placed at DPCS had to be presented argued and accepted by DPCS before starting its preparation.

The field trips programmed to establish status of work at DPCS which was to be taken into consideration in the preparation of the work plan, were never completed because primarily of tacit disapproval by the APS director. When two drafts were prepared by the two APS technical

assistants placed at DPCS and presented to APS, the APS Director insisted that they be integrated into a unique work plan for the seed component. It was a case of a director imposing his own common sense in technical matters totally outside of his competence. It was already generally accepted at MDR that DPCS's seed certification activities should be kept separated from seed production and promotion activities which were to be privatized while the former will become the sole activities of the seed certification service.

After going through this difficult phase of work plan preparation at DPCS and APS in which developing the technical aspects turned out to be the easiest part, it was then that the toughest part were to begin, that of getting the work plan officially approved by USAID. The first version of the work plan sent to USAID is dated July 5, 1989 and the version that finally got approved is dated November 1989. The APS Seed Agronomist went to an IFDC seminar in Lome (Togo) in November 1989, then left for vacation in December. Upon his return to Dakar in January, he was asked to start working on the second work plan which was to be presented to USAID in April. This time around, the process was much shorter. The work plan presented in April to USAID was approved by USAID in July. However, it was about the time for the mid-term evaluation to take its course, thus some activities had to be put on hold and others considered more important continue but on a limited basis. Soon, the results of the evaluation were known and the outcome was the suspension of Project implementation. Finally, to justify already made, it was decided that some activities be continued and others dropped with in mind a probable project closing date of November/December.

C. - Approved activities of the Seed Production Agronomist:

1. **In the initial (1989-1990) work plan :** the activities are presented in table form indicating first a description of the activities followed by the proposed methodology some words of justification, the chosen location for these activities and finally, the technical assistants who were responsible for these activities. The one who had primary responsibility is mentioned first (Table 1). Given the late official approval of that first work plan, the dates of execution are irrelevant and were omitted.

This work plan, as the long and difficult process of getting it prepared and approved would indicate, is the result of many negotiations and compromises between APS, DPCS and USAID. Judging by the amount of time used for putting it together and the time left for its execution, one can say in retrospect that much more importance was given to its preparation and content compared to its implementation. Indeed it was an important document, since only activities budgeted in this work plan will be financed by APS. So, the financial support to DPCS was to be provided through the activities of the APS technical assistants placed at DPCS. DPCS tried in vain to obtain some direct support from APS which had enough difficulty to find a budget for its

own technical assistants since no funds were budgeted in the APS Project for field activities of the APS/DPCS technical assistants. Funds for that purpose had to be taken from gaz, per-diem and contingency funds. Consequently, the final budget was about one fourth of what was originally proposed. From that point on APS became less important, less relevant to DPCS and support from DPCS direction for the APS/DPCS technical assistants field activities will never be neither spontaneous nor strong. Finally, USAID approved this work plan after its expiration date.

TABLE 1 - 1989-1990 APS SEED PRODUCTION AGRONOMIST WORK PLAN

DESCRIPTION	METHODOLOGY	JUSTIFICATION	LOCATION	TECHNICAL RESPONSIBIL
<u>Objective n° 1 : Improvement of seed quality control and certification</u>				
1. Introduction of New concepts	Through contact and work w/ interested individuals in the region	For regionalization of seed certification	North, Sine-Saloum	CB, JD, JC and DPCS counterparts
2. Creation of Regional Seed Council	Organize people interested in seeds in the region	Prepare the field for seed sector privatization	North	CB, JD and DPCS counterparts
<u>Objective n° 2 : Reorganization of cereal seed production</u>				
1. Choice of best sites for cereal seed production	Use of climate and socio-economic data	Site selection may influence outcome of privatization	North	JD, CB and DPCS counterparts
2. Choice of best farmers for cereal seed production	Through surveys	A rational choice of seed producers is necessary	North	"
3. Formation of seed producers associations and cooperatives	Organizing 'GIE' of seed producers	To facilitate services to seed producers	North	"
4. Seed production survey	Study and analyse seed system with or without privatization	To redistribute responsibilities for seed production	North, Sine-Saloum, Casamance	"
5. Monitoring seed quality during production	Monitor field activity to ensure seed quality	Better seed quality will help expanding certified seed market	"	"

G-10

103

DESCRIPTION	METHODOLOGY	JUSTIFICATION	LOCATION	TECHNICAL RESPONSIBIL
<u>Objective n° 3 : Intensification of promotion of agricultural inputs</u>				
1. Promotion of certified seed use	Through demonstration plots, field days and promotional film	To increase demand for certified seeds	North, Sine-Saloum Casamance	JD, DPCS counterparts and private sector
2. Contribution to the promotion of all inputs	"	Promotion of all agricultural inputs increase demand for good quality seeds	"	JD and DPCS counterparts
<u>Objective n° 4 : Preparing the field for privatization</u>				
1. Survey of cereal seed market	A socio-economic survey	Profit of seed producers is determined by size of seed market	North Sine-Saloum Casamance	JD, JC, CB and DPCS counterparts
2. Organizing the demand for certified seeds	Training farmers to better use agricultural inputs	To increase market for certified seeds	North	JD and counterparts
3. Inventory of DPCS materials, equipments and cooperatives	Identify and evaluate them and look for potential buyers	To privatize DPCS and RDA's seed facilities	North	JD, CB, JC, APS and DPCS
<u>Objective n° 5 - Legislation and legalization</u>				
1. Preparation of varietal catalogs	Study, description and publishing	Official catalog for the application of seed legislation	Dakar	CB, JD, ISRA, DPCS
2. Preparation of technical protocols	Description of legal responsibilities of each component in the seed system	Legalization of privatization producedures	"	JD, CB, DPCS, ISRA MOR and private sector

DESCRIPTION	METHODOLOGY	JUSTIFICATION	LOCATION	TECHNICAL RESPONSIBIL.
<u>Objective n° 6 : Training</u>				
1. Training of seed users	Contribution to extension service	To increase yield through the use of all agricultural inputs	North	JD, CB, DPCS and MDR
2. Training of seed producers	Training on seed production and management of seed enterprises	Increase seed producers technical and managerial skill level	"	JD, CB and DPCS
3. Training of DPCS				
a) Privatization of seed production	Training local agents on materials used for farmer training	Update and increase knowledge on seed production and privatization activities	"	"
b) Seed certification	Technical seminar for certification agents laboratory technicians and conditioning plants personnel	Special training based on needs of each group	Dakar	CB, JD and DPCS

105

5.2. The second workplan (April 1990 - March 1991): by the time the preparation of the second workplan started some important occurrences had taken place, that need to be mentioned:

1. DPCS had been dissolved. Although it continued to operate as usual until a new administrative structure is put in its place, but it was like an institution without a head since its former director had then become the Director of the new Projet Autonome Semencier that had replaced PTS (Plan Triennial Semencier).
2. My DPCS counterpart had taken the option of early voluntary retirement to go into private business. His position remained vacant for a while.
3. A clause of the APS Project has taken effect in late February making a big change in per-diem for senegalese personnel. The GOS and not the APS Project will now pay the per-diem of my counterpart which suddenly dropped to less than one fifth of what it used to be.
4. APS had a new director and that was a relief.

The second workplan was much simpler than the first one. By then, it has been accepted that APS field activities will concentrate on the North and that the crop concerned will be rice. The Region of Fatick and (?) would be the back-up region and crops. This was dictated by the size of the available budget, by the fact that it was better to try the new project concepts and approaches on a reduced scale first and then expand than to go directly to their wide application and finally that the North was better suited at this time for privatization of input distribution than the other regions. First, privatization is in effect already underway in the North, secondly, irrigated rice production can be quite lucrative and thirdly, three types of agriculture are practiced in the North: rainfed in non-irrigated areas, recessional in flooded areas and irrigated agriculture in irrigated perimeters, thus giving three complementary opportunities for increasing cereal production.

Although some small but legitimate optimum has been borne out of some of these changes since because of them many of the blockages to project implementation will disappear. The budget for the seed component went up from 36,624,930 CFA F in 1989/90 to 46,715,850 CFA F and US \$ 23,800 while at the same the project implementation area has been considerably reduced.

TABLE 2 - 1990/1991 SEED PRODUCTION AGRONOMIST WORK PLAN

DESCRIPTION	JUSTIFICATION	REGION	TECHNICAL RESPONSIBILITY
Objective n° 1 - Promotion of agricultural input use			
1. Maize and rice demonstration plots	Include certified seeds in recommended technological package to increase seed market.	Departments of Dagana, Podor, Matam and Bakel	JD and counterpart
2. Farmers visits on demonstration plots	Spread demonstration plots results and develop input market	"	"
3. Promotional film	For use in inputs promotion campaign	"	"
Objective n° 2 - Personnel training and information dissemination			
Place and train two APS agents	To strenghten field personnel and ensure follow-up of APS field activities	Regions of Saint-Louis and Fatick	"
Objective n° 3 - Provide technical support to seed production in order to ensure success of privatization			
1. Preparation and distribution of variety	To facilitate variety identification in seed production and distribution	Dakar, Saint-Louis and Fatick	CB, JD and counterparts
2. Preparation and distribution of technical bulletins	To promote increase in seed yield and use	Dakar and Saint-Louis	JD and counterpart

G-14

107

DESCRIPTION	JUSTIFICATION	REGIONS	TECHNICAL RESPONSIBILITY
1. Survey of agricultural input market	Objective n° 4. Preparation to privatization of seed production and distribution To determine agricultural input market size and establish bases of privatization of input production and distribution	Saint-Louis and Fatick	JD and
2. Preparation and distribution of technical materials for farmers "GIE"	Change traditional farmers into agricultural entrepreneurs and increase input demands	Saint-Louis	JD
3. Training of seeds producers (short-term media consulting requested)	Assure quality seed availability to meet demand	Saint-Louis and Fatick	JD, CB and counterpart
4. Training of input distributors (short-term marketing consulting requested)	Increase sale and profit for distributors and ensure continuity of input distribution	Saint-Louis	JD and counterpart
Establish RSC in Saint-Louis	Objective n° 5. Support to privatization of seed production and distribution To facilitate privatization of seed production and distributor	Saint-Louis	CB, JD and counterpart
Objective n° 6. Strengthening of seed quality control and certification system			
Legal documentation of privatization decisions	Objective n° 7. Preparation and distribution of legal documents Put privatization of seed production and distribution on legal grounds	Dakar, Saint-Louis and Fatick	JD, CB and counterpart

5.3. The final work plan: when it became clear that the APS Project is being closed down and the administrative and legal steps are yet to be taken, it was decided that in the meanwhile the technical assistance team should prepare a short list of activities whose execution can continue at a minimum cost to the Project. That list of activities was discussed with and approved by USAID/Dakar. For the Seed Production Agronomist, it was more a question of trying to get some results to justify expenses already made in particular in the demonstration plots and other on-going activities. The activities or outputs retained were: the demonstration plots, the farmers visits, the promotional film, the technical bulletins and the legal documents. Later on, approval was sought and obtained to replace the preparation of legal documents for seed sector for privatization purposes by the long overdue and by far presently more useful survey on agricultural on input use in the project implementation area

6. The Seed Production Agronomist approach:

The Seed Production Agronomist is directly concerned with the main goal of the Project which is to increase cereal production by 3.5% a year by the end of the Project in 1991. The approach chosen is through increased input use that should result from an increased involvement of the private sector in input production and distribution, in particular seed production and distribution.

The involvement of the private sector was interpreted by the SPA as an endeavor to satisfy a need for a profit, in this case, need for certified cereal seeds. To do that, the need or demand for certified seeds has to be organized, the certified seeds have to be produced and then distributed. All that had to be supported by a price structure that allows all the participants in the seed sub-sector to make a profit either by its production, distribution or use. The initial economic value of this demand for certified seeds was of paramount importance for all privatization efforts. Thus, an input use survey was planned early in the Project implementation period. However, all preliminary indications were that were few farmers are using certified seeds. The following project activities were to receive priority in the first year of project implementation:

- 1 - Promotion of certified seeds,
- 2 - Promotion of all agricultural inputs,
- 3 - Choice of best locations for cereal seed production,
- 4 - Choice of best cereal seed producers,
- 5 - Organization of cereal seed producers corporations,
- 6 - Evaluation of the market potential for certified cereal seeds,
- 7 - Organization of the demand for certified cereal seeds,
- 8 - Training of certified seed users,
- 9 - Training of private cereal seed producers and,
- 10 - Training of DPCS field personnel.

The motives for the choice of these activities were :

- . non-certified seed users were to be transformed into certified seed users through promotion of all agricultural inputs. They were to be organized and trained so as to best benefit from certified seed use, thus developing a reliable seed market;
- . seed production has to be strategically localized based on climatic and socio-economic consideration and handled by the best farmers in the rural community. Seed producers also have to be organized and trained so as to ensure a reliable seed supply.

In this context, a performing official seed certification service is seen as being indispensable. Its agents should be well informed about all privatization strategy and efforts directed at seed production and distribution activities. They should also be well trained and supported in order to do well such an important job as seed certification.

Regionalization of seed certification and creation of regional seed councils were two key activities that were to be conducted jointly by the Seed Certification Specialist and Seed Production Agronomist. Seed certification has greater impact and success when it is done on a regional basis because essentially of a greater participation of the community. People who have participated in the making of a decision are generally more supportive of that decision. The actual certification service is small and not well supported. Additional financial support for this service was to be generated through the creation of the regional seed councils. The regional seed councils are made of representations of all people or institutions, public and private, interested in seeds in a region. They were to be put in place by a facilitator in the influence of the public and the private sector in the council activities. The usefulness of such councils in Bolivia is cited as example in the project paper.

Finally, to facilitate input or seed distribution, the approach was to establish locally sets of clients that includes: seed producers, input distributors and the farmers. The farmers would buy or receive on credit all necessary agricultural inputs including seeds that were produced on contract by local seed producers for local or regional input distributors, after official certification by the seed certification service. Obviously, credit is very important in these seed transactions, particularly at the beginning of the process and credit recovery can be a problem. Fortunately, loan payments are generally less of a problem between local clients and can be greatly facilitated when input distribution on credit is tried up with output sales or commercialization. In this case, the farmer finds a sure market for his product whereas the distributor benefits from a sure market for his inputs.

7. Results:

Implementation of the project seed component activities has been limited to the Senegal River Bassin area where the project's concepts and approaches were to be tested first, before moving to other areas or full application on a national scale.

The area covered comprises four administrative departments corresponding to the four SAED Delegations or area districts: Dagana, Podor, Matam and Bakel.

. Promotion of agricultural input (?) - Maize and rice demonstration plots: an attempt was made during the 1989 raining season to establish a few rice demonstration plots in the Dagana Departement, the most important rice producing area, of the Saint-Louis Region, the senegalese region entirely located in the Senegal River Bassin. The demonstration plots were to be established and used in collaboration with SAED to promote the use of all agricultural inputs namely: agricultural equipment and materials, pesticides, fertilizers, certified seeds and the use of technical recommendation package and, to reintroduce a rice variety, KH998 that was supported to be cold-tolerant. Such a variety is needed for cold off-season production. At first, twenty hectares with several farmers were programmed. The seed availability forced to reduce that area to 6,72 hectare and also because essentially a late approval of this field activity only one farmer could be found to volunteer for this activity. Later during the season when it was verified that the farmer had not used in the demonstration plots all the KH998 seeds provided, a decision was made to withdraw APS support for this promotion activity.

During the 1989-1990 cold off-season, eight maize demonstrations were established with SAED collaboration in the Matam and Bakel Departments. All the necessary inputs were provided together with written information on the recommended cultural practices for corn production. Certified seeds for three improved varieties: Across 7728, Early Thai and Synthetic were to be compared with farmer seeds of the local varieties in 500 m² plots using the same recommended cultural practices. Data on production were received for all five demonstration plots in Nabadji-Ciwol (Matam) and only one out of the three demonstration plots in Bakel. The calculated yields averaged over the six demonstration plots were 2,329 kg/ha for Synthetic C, 2,140 kg/ha for Across 7728, 2,155 kg/ha for Early Thai and 1.479 kg/ha for the local varieties. Farmers have reported also having obtained greater production with the same improved varieties than the local varieties grown with unimproved farmers practices. These results thus indicate that both the improved varieties and the improved cultural practices lead to better corn yield than the local varieties and the unimproved farmers practices. At least, 50 % more corn production can be expected with these varietal and cultural recommendations.

During the 1990 rainy season, all necessary inputs were placed on time in the four departments for distribution to volunteer farmers for the establishments of 60 rice demonstration plots and 25 maize demonstration

plots. Some farmers insist on planting corn during the rainy season, particularly in Podor and Matam, although the recommendation is to use the cold off-season (December-March) for corn production. Only 56 rice and 8 corn demonstration plots were established. That number was low for three reasons: the news of the closing of the Projet, the fact that most farmers do not grow corn during the rainy season and finally, it was said at that time that the resulting production surplus will be shared with the participating farmers, a practice that many farmers would not agree to. The basis for the surplus sharing idea was essentially to remind the farmers that the inputs have a cost and are never free. Again, the technical recommendations were provided to the farmers, but not always correctly since that depends on the competence of the SAED Agricultural Advisor who is in direct contact with the farmer, the technical accuracy of the protocols distributed or both.

A questionnaire was prepared and given to each SAED agricultural advisor who has participated in the demonstration plot program, in order to obtain information on yields and technical follow-up (execution of cultural practices) for both the demonstration plots and the adjacent farmers fields. Besides this information, three important questions were asked on these questionnaires:

- 1 - What is the farmer's opinion on the demonstration?
- 2 - What is the agricultural advisor's opinion on the demonstration?
- 3 - Does this demonstration plot constitute a success that should be visited by other farmers? A yes or no answer was required for the last question.

A total of forty-nine filled-out questionnaires were received: thirty-nine for rice and ten for maize. The following table shows the results:

Was the demonstration plot a success?

CROP	YES	NO	NO ANSWER	TOTAL
Rice	29	3	7	39
Maize	4	4	2	10
TOTAL	33	7	9	49

This is a mixed result but very encouraging. It was a disappointment to obtain so few questionnaires back: fifty, of which one was eliminated for being incomplete. On the hand, it is encouraging to see that two-thirds

of these answers call the demonstration plots a success, which means far more farmers will be favorably impressed by these plots than would be indifferent or negative towards them.

A closer look at the answers, in particular the comments reveals that some obvious yes answers were turned in as, no answer or no comment. For example, in the case of rice demonstration plot at Thiaré (Matam) for which the farmer was not available for comment, the agricultural advisor says that the demonstration plot was better than the farmer's plot. Still he did not admit it was a success. He gave instead a no answer to that question. In Madina (Podor) the farmer says he is totally satisfy of the demonstration plot and the agricultural advisor says that the plot was well kept and that its yield potential was high. Still he did not reply when asked if it were a success or not.

Some yield data was obtained with these questionnaires. The average yield was 6 tons/ha, as expected. It could have been better since one farmer obtained only 2,7 tons/ha but two got 7 tons/ha and three 8 tons/ha. Here is a frequency table of the yield results:

Yield (t/ha):	2,7	4,5	5,4	5,5	5,8	6,0	6,2	6,6	7	8
N°	1	2	1	1	1	1	1	1	2	3

The success of a demonstration plot depends, to a large extent, on the works of the farmer and somewhat on that of his agricultural advisor. If some plots have given 8 tons/ha, it can be safely said that the technical package proposed was technically good and that it can help increase rice production in the area where it is applicable.

No yield data was presented on the ten maize questionnaires filled out (two demonstration plots were established very late in the season). However, one farmer says having sold for 50,000 CFA francs with of mature maize for fresh consumption. His agricultural advisor estimated the yield at 3,5 tons/ha. This is to compared with an average farmer's yield of less than 1 ton/ha.

. Organized farmers visits on demonstration plots (farmers yields days):
the first farmers visits were organized on March 23 and 24, 1990, on the eight maize demonstration plots establish at Matam and Bakel. Farmers from neighboring villages came to visit and transportation was provided so that all participating farmers from both Bakel and Matam can assist all the field visits. Interaction took place not only between farmers of the same region but also between farmers of the two regions Saint-Louis and Tambacounda. There were exchanges of views on good and bad results. So, there were many lessons learned which is to say that those visits were a great success. Many farmers (?) in public not to return to their local cultural practices and to follow as much as possible the recommended practices they have learning in this program.

It was on this occasion, at the March 24, 1990 visit in Nabadji-Ciwol (Matam) that the opportunity offered by the 'Projet Buffles de Makhana - Saint-Louis-' was presented to the farmer. It concerns acquiring some buffaloes for use in animal traction at bargain prices of 80,000 CFA francs an adult male and 50,000 CFA francs an adult female or young buffalo. This was well received and some farmers jumped in to place their orders on the spot. Those orders are already in the hands of the 'Projet Buffles' together with part of the money. The buffaloes were tested at work in Bakel last season. The results are being analyzed and a decision should be made soon whether or not to satisfy these demands. It is very unfortunate to report here that the 'Projet Buffles' is being closed down also, which means that if the buffaloes are delivered, the four-year care offered with the purchase contract will have to be provided by the 'Service d'Elevage' instead of the project as anticipated.

A series of five farmers visits on the rice demonstration plots has just been completed. It was recommended that only thirty people participate in each demonstration, of which at least twenty should be farmers.

The attendance was as follows:

DATE	PLACE	FARMER'S NAME	ADVISORS' NAME	FARMERS	OTHERS	TOTAL
11.19.90	Ndiaye (Dagana)	Madior GUEYE	Amadou Lamine Camara	34	6	40
12.12.90	Madina Ndiathé (Podor)	et	Aliou NDIAYE	29	6	35
13.12.90	Ndouloumadji Dembé (Matam)	Samba KANE	Demba THIOUB	31	6	37
13.12.90	Hamady Ounaré (Matam)	Oumar KANTE	Djibril NDIAYE	21	11	32
14.12.90	Grande-Digue (Dagana)	Assane BA	Amadou KANE	27	7	34

At least, one hundred and forty two farmers attended those visits together with thirty-four SAED agricultural advisors and supervisors. The yield of these plots were estimated at least 7 tons/ha. Some may produce as much as 9 tons/ha. The farmers were very pleased with the results. They understood how they were obtained. Contrarily to the previous farmers visits, there were very few negative results to talk about, except that two farmers were approached and asked by others to sell their paddy as seeds, something that was neither recommended nor proposed to at this time. This is now certified seed although R1 generation seeds were used. However, in those

114

places, there are no certification agents (Matam and Podor). Therefore this tendency could not be stopped. The message has been well received: a farmer should produce with surplus to satisfy both his food needs and his other needs. To do that, he needs to increase preferably his yield instead of his cultivated area which can be accomplished by using all recommended cultural practices and agricultural inputs. The inputs included: the agricultural materials and equipment to facilitate land preparation, the pesticides to protect his crop from pests, the fertilizer to increase his crop yield and finally, the certified seeds to make sure he gets good return from his investments and the seeds he uses are not of bad quality. The economics of rice production was also presented. In most cases, they received three to five times the amount spent, including that spent on irrigation and land preparation which were provided by the farmer.

. **Promotional film:** a promotional film has been made. It is a 20-minute film that emphasizes the need to use improved cultural practices and all agricultural inputs in order to increase rice yield. It incites the viewer to become an agricultural entrepreneur, making profit out of useful agricultural activity like rice production. Technically speaking, the film can be improved a lot. However, this is a first. It is intended to show the usefulness of the film as a mass method to promote the use of agricultural input. As such it completes the package of promotional activities used in the Project where the demonstration plots have been used as an individual method to convince a farmer of the need to use improved cultural practices and agricultural inputs to increase his yield; the farmers visits as a group method and the film as a mass method all to promote the same messages.

. **Personnel training and information dissemination:** the approval has never been received to contract and place the two APS agents at Podor and Matam where there are no DISEM (DPCS) seed certification agents. Some training was provided to the newly employed DISEM seed certification agents who came to replace the former DPCS agents now hired by the new PAS. Training was also provided to some seventeen 'Programme National de Vulgarisation Agricole (PNVA)' agents in Bakel as part of their preparation and orientation before being sent to their respective sectors or villages for work as 'AVB (Agents de Vulgarisation de Base)'. This programme is financed by FAO but my participation was financed by the counterpart (local) fund of the APS Project.

. **Technical support to seed production:**

1. The variety catalog has been prepared essentially by Mr. Adama KEITA, the DPCS counterpart of the APS Seed Certification Specialist. It is a very useful document, essential to the privatization of seed production.

2. The texts for two technical bulletins, one for rice and the other for corn production in the Senegal River Basin have been prepared and sent to 'Plein Sud' a printing business in Dakar. They will be distributed to seed producers primarily, but they will also be available to rice and corn producers. These technical bulletins numbered 1 to 2 were prepared by APS and DISEM with the technical contribution of ISRA, SAED, Projet Mais and the PAS.

VI. - PREPARATION TO PRIVATIZATION OF SEED PRODUCTION AND DISTRIBUTION

1. Agricultural input survey:

A preliminary survey on agricultural input use has been conducted during the month of October 1990 in the four Departments of Dagana, Podor, Matam and Bakel. This survey was made in (?) of the activities of preparation of legal documents for privatization. There were two subsamples, one made of questionnaires filled out by a set of two enqueteurs hired by APS and the other constituted of questionnaires filled out by SAED agricultural advisors. The APS subsample in each case was representative of the delegation or department make-up in terms of small, medium-size or large irrigated perimeters. The SAED subsample give the opportunity to a large number of agricultural advisors to represent what exists in his sector. The result has been a fairly good representation of the different irrigated perimeters through through the four departments of Dagana, Podor, Matam and Bakel. A report will be prepared exclusively on this survey. What follows concerns the information contained in the answer to one key question (= 13) the farmers were asked: If you had to buy only one input, what it be? Surprisingly only three farmers found it impossible to single out one input and cite all inputs in answering this question. The question was intended to give some in(?) into what is the most necessary or needed input in the project implementation area. The following table gives the frequency at which each listed input was mentioned as the most necessary input by a farmer.

INPUTS	DAGANA	PODOR	MATAM	BAKEL	TOTAL	FREQUENCY (%)
Fertilizer	25	26	13	6	70	28
Irrigation pump	20	10	22	5	57	23
Seeds	14	8	5	8	35	14
Tractors	5	8	7	10	30	12
Diesel	1	2	9	1	13	5
Combine harvester	8	1	-	-	9	4
Cart (animal)	-	2	3	3	8	3
Plow (animal)	-	-	1	5	6	2
Herbicide	4	-	2	-	6	2
Tools (manual)	-	3	-	3	6	2
Implements (tractor)	4	1	-	-	5	2
Trasher (rice)	1	2	-	-	3	1
All inputs	1	1	-	1	3	1
TOTAL ANSWERS	32	63	61	44	250	(96%)

This table gives many indications on what inputs should be produced or purchased, stored to be sold by input distributors in the Senegal River Basin. The four most important inputs are in decreasing order: fertilizers including urea and diammonium phosphate, irrigation pumps, certified seeds and tractors.

These results show also that animal traction is being replaced by tractor use in Dagana and Podor while it is still in demand in Matam and Bakel.

Certified seeds are in demand everywhere in the area surveyed. Their demand should be related to other factors than modernization of agriculture.

Diesel must not be readily available in Matam since it is mentioned as a necessity much more in Matam than in the other departments.

Herbicide was the only pesticide mentioned as a necessary input. Finally, it should be noted that as a group, the agricultural materials and equipment are more in demand, followed by fertilizers and then certified seeds. Pesticides are not yet perceived as necessary by the farmers surveyed.

2. Preparation and distribution of technical materials to farmers GIE:

Some farmers have kept the protocols prepared for the demonstration plots for use as technical bulletins in their corn or rice production. However, they were not intended for that purpose. Instead, the technical bulletins prepared for the seed producers were to be used to prepare simpler technical guidelines for the farmers. This activity was not retained among those to be carried out after the decision to close down the Project was known.

3. Training of seed producers:

Short-term technical assistance was requested to help in this activity but would not be approved because of the decision to close down the Project.

4. Training of input distributors:

This activity was announced to input distributors established in the project implementation area but never took place because the short-term technical assistance in marketing would not be available for the reason cited above.

VII. - SUPPORT TO PRIVATIZATION OF SEED PRODUCTION AND DISTRIBUTION:

The Seed Production Administrator was to participate in the establishment of the regional seed council listed under this objective in the 1990-1991 work-plan.

From the first time that it was proposed up to the time of the closing down of the Project, this activity has never received full support from any institution involved in the implementation of the APS Project. The reason for this is not clear since this approach is mentioned in the project paper as having obtained great success in a similar project implemented in Bolivia by Chemonics, and the project paper must have been approved by all participating institutions before the start of its implementation.

The main purpose of the regional seed council is to support privatization of seed production and distribution which it does directly and indirectly.

It lends its direct support to privatization of the seed sub-sector:

- . by determining the regional policies for seed production, promotion and marketing;
- . by implementing yearly regional seed production activities and;
- . by monitoring the strict observance of the DPCS seed quality control and certification procedures by all the private seed producers and distributors in the region.

The indirect support to privatization takes place when it:

- . coordinates the interests of all council members and maintains or restores proper balance between the public and the private sector of the seed industry;
- . proposes appropriate changes in the national seed legislation and;
- . prepares and approves complementary budget and work plan for regional seed certification and other related services.

This last role of the regional council is one of the most important and is well illustrated as a need by the present situation in the field. The status of field inspections for seed certification purposes in the Saint-Louis region is presented in the following tables. It gives the situation as of December 5, 1990 and was obtained from the regional seed inspection service on December 11, 1990. It can be seen that field inspections for quality control have been completed for one out of two varieties under K2 certified rice seed production and all the varieties for foundation rice seed production. Thus, the necessary field inspections at this late date have taken place only for the foundation seed production which is still in the hands of the official seed certification service. For the certified rice seed production which is being done by private seed producers more than forty percent of the R1 and more than a third of the R2 area are still to be inspected for control. This occurred essentially because of lack of gas for the controllers to put in their vehicles to go to the field. If there were a regional seed council, this

situation would have been avoided. The regional seed council would have provided the needed gas to the seed certification service using money collected as fees from the member seed producers. And this would have done in such a way as to avoid even appearance of impropriety or suspicions of favoring one seed producer over another. The economic loss that will result from the non-inspection of the private seed production fields will discourage many seed producers and severely limit the growth of the private seed industry. Support to the seed certification must come from one source or another. Obviously, the regional seed council is a good option.

VIII. - PREPARATION OF LEGAL DOCUMENTS FOR PRIVATIZATION OF SEED PRODUCTION AND DISTRIBUTION:

This activity has been replaced by the preliminary survey on agricultural input use in the Senegal River Valley.

R1 CERTIFIED RICE SEED PRODUCTION

	VARIETES					TOTAL
	IKP	JAYA	IR 1529	IR 6	IR 442	
Total area planted (ha)	89.65	120.10	105.22	11.40	8.00	
Area controlled (ha)	50.65	37.40	105.22	2.40	0.00	
Area accepted (ha)	48.27	31.60	93.67	2.40	0.00	
Area rejected (ha)	4.38	5.80	11.55	0.00	0.00	
Area left to control (ha)	39.00	82.70	0.00	9.00	8.00	

R2 CERTIFIED RICE SEED PRODUCTION

	VARIETES		TOTAL
	JAYA	DJ 12519	
Total area planted (ha)	55.00	31.30	
Area controlled (ha)	55.00	0.00	
Area accepted (ha)	30.00	0.00	
Area rejected (ha)	25.00	0.00	
Area left to control (ha)	0.00	31.30	

FOUNDATION RICE SEED PRODUCTION

	<u>IRP</u>	<u>IR 2</u>	<u>74YA</u>	<u>DJ 12519</u>	<u>ROCK 5</u>	<u>IR 442</u>	<u>144 P 9</u>	<u>IR 1529</u>	<u>DJ 6840</u>	<u>TOTAL</u>
Total area planted (ha)	3.50	2.28	4.00	2.60	0.50	3.00	0.45	3.00	1.00	
Area controlled (ha)	3.50	2.28	4.00	2.60	0.50	3.00	0.45	3.00	1.00	
Area accepted (ha)	3.50	2.28	4.00	1.30	0.50	3.00	0.00	3.00	1.00	
Area rejected (ha)	0.00	0.00	2.00	1.30	0.00	0.00	0.45	0.00	0.00	
Area left to control (ha)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

IX. - OTHER INPUTS:

1. The IFDC Seminar:

The Seed Production Agronomist attended last year an IFDC seminar in Lome (Togo) on Fertilizer Supply Options and Constraints in Developing-Country Agriculture. A report has been prepared on this seminar, whose main conclusions were:

. fertilizer use is very low and quite variable in Sub-Saharan Africa because of low fertilizer productions level and variable level of imports due to variable fertilizer world prices, irregular allocation of foreign exchange for fertilizer imports and lack of local political commitment;

improvement in fertilizer production, supply and distribution in SSA will depend on how much stability, management skill, financial autonomy and responsibility is deployed and maintained throughout the agricultural sector.

Sound private sector type management techniques and autonomous management responsibility will be necessary.

121

Best Available Document

2. The red rice seminar:

The Seed Production Agronomist help prepare and organize an APS seminar on Red Rice, a noxious weed found in rice fields in the Senegal River Valley. This weed can cause considerable loss of yield of white rice since it can spread fast and easily drops its grains in the field. The SPA sawer as editor of the proceedings of this seminar and prepared its final report.

X. - FINAL REMARKS:

The APS Project has had a brief passage in the field but has managed to establish seed certification as a necessity for privatization of seed supply by proving that seed quality is important to both seed producers and users. The new seed producers need the services of DISEM in order to survive and grow. DISEM is actually in need of support both human and financial to do the important job of seed certification. If present situation persists, it will simply kill the incipient private seed industry that would then take place at a time when there is no more public sector certified seed production as a result of privatization efforts. DISEM needs to be helped now or never. Some rice seed production fields may not be inspected on time or not at all this year for seed certification purposes for lack of means for the agents to get to these fields. This should not let to happen. This is exactly the kind of situation the regional seed council was designed to prevent. But that concept did not fly and there is no regional seed council in the field to help with this situation.

The certified seed has been portrayed by the APS Seed Production Agronomist as a necessary input to guarantee returns on both human and financial investments made in rice production. He explained in the field how (C) and continuous use of farmers own grains as seeds lead to loss of seed vigor and consequently yield loss. He has shown to seed producers, how much lucrative seed production can be and to farmers how economical the use of certified seeds always is and in particular when used with other inputs. These messages have been well received by many and are being spread. For unclear reasons to the Seed Production Agronomist, this work has been prematurely stopped, putting him many times in the awkward situation of explaining in the field why USAID and MDRH choose to stop this kind of activities and why now? Couldn't they wait a little two years for example. Enough to let us start putting into practice what you have taught us. I do not have the answer's to those questions, was my reply. There are other problems in the Senegal River Valley that need immediate attention from the GOS and the donor community. The water level in the Senegal River is getting dangerously low compared to the levels in only recent years. Recessional agriculture has suffered a major blow as a result in many SAED perimeters by pumping water from the river and into its tributaires like the Dioulol. This situation has to be investigated as soon as possible to find its causes and apply the appropriate remedies to correct it.

The commercialization of rice paddy has to be looked into. It is the key to increase in rice production in the Senegal River Valley. Rice producers should be able to receive payments for their rice as soon as possible at the

end of the season so they can start looking for inputs and preparing the following rice production season

XI. - LESSONS LEARNED:

1. The opinions of the donor about a project and its personnel performance are of vital importance throughout project implementation.
2. To work well in any project, both local and expatriate technical personnel should adhere at least in principle to its basic assumptions, concepts and approaches and give them their best chance to work at least until they can prove them to be not valid

XII. - RECOMMENDATIONS:

Project implementation should always start with a formal reassessment of project's assumptions, objectives and approaches particularly when much time has passed between project design and the start of its implementation. The main purpose of this reassessment is to reach consensus on these important ideas among those called to implement the Project before starting project execution.

There is a need to look for and find a formula to allow greater donor participation in (?) field activities and less interference in project management. Being there is always better than reading reports and publications no matter how well written they are. This gives encouragement and support to the technical personnel and some enthusiasm and comfort to the project beneficiaires.