SENEGAL SOUTHERN ZONE WATER MANAGEMENT PROJECT

ANNUAL WORK PLAN
and
ANNUAL WORK PLAN BUDGET

Calendar Year 1991

Contract No. 685-0295-C-00-0019-00

Project No. 685-0295-3-90075

PROJECT MANAGEMENT UNIT

LOUIS BERGER INTERNATIONAL, INC.

May 1991

ACKNOWLEDGEMENT

The Project Management Unit and Louis Berger International, Inc. wish to express their sincere appreciation to all contributors to this Annual Work Plan and Budget for their dedicated and valuable assistance.

Entities to which this expression is particularly directed include:

- Ministere du Developpement et de l'Hydraulique
- Direction du Gènie Rural et de l'Hydraulique
- United States Agency for International Development
- Comite Technique de Suivi, Ziguinchor
- Comite Technique de Suivi, Kolda
- Equipe Regional de Gestion de l'Eau, Ziguinchor
- Equipe Regional de Gestion de l'Eau, Kolda

We are truly grateful for this invaluable dedication to the best interest of the Senegal Southern Zone Water Management Project.

First Year Work Plan
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1. Introduction

This Annual Work Plan and Budget for 1991 is submitted in response to Section F.3(b)(v) of Contract No. 685-0295-C-00-0019-00, dated June 15, 1990, between USAID and Louis Berger International, Inc. (LBII) for technical services in support of the Senegal Southern Water Management Project (SZWM). Its goal and purpose as stated in the Project Paper is to increase cereal production through improved water control and management.

The plan draws from the Project Paper dated August 1, 1988, the LBII Technical Proposal dated February, 1990, and the contract.

It was prepared by the Project Management Unit (PMU) which consists of the LBII Technical Assistance Team and its Senegalese counterparts. The plan contains two major sections: Section 2, Annual Work Plan describes project activities and their schedule; and Annex B contains the Life of Project Training Plan.

The annual work plan is founded on the management strategy of the PMU, i.e.:

- Definition of objectives
- Focus on accomplishment
- Responsibility for action
- Monitoring of results

1.1 Overview

The SZWM Project is designed to increase cereal production in low elevation degraded watersheds that lie within the Casamance Basin. Watershed degradation evolves from drought-related salt water intrusion and from chemical processes that acidify soil. Other disturbances that adversely affect watershed equilibrium are caused by water mismanagement, and by upland expansion of tillage and grazing to compensate for reduced lowland crop production. The SZWM Project employs a multi-faceted approach to resolve these issues. To achieve this, the Project Paper contains four major components. These include: 1) Control and management of water to increase cereal production; 2) Strengthening institutions including government, community, private organizations and water user groups; 3) Operational and applied research to identify practices that maximize project benefits; and 4) Project monitoring, natural resource management and baseline data collection to support project management and evaluation.

2. Work Plan

2.1 Project Organization

A general organization chart was presented in the Draft Annual Work Plan and Work Plan Budget (November 1990). Within the context of this general structure we clarify in this document the operational relationships between the members of the Project Management Unit (PMU) the Regional Water Management Teams (ERGES) and the Regional Technical Committees. This more detailed organization chart is shown in Figure 1. The major aspects of this structure are:

1. The technical assistance team members at the PMU work directly with the ERGES technicians. These teams essentially comprise specialists from three major technical fields (Rural Engineering, Agronomy/Soils and Sociology). The Work Plan and the activities of the regional teams are therefore organized according to these three major fields (a fourth field, environmental studies, encompasses these three fields, and will be assured by the PMU, with the aid of the technicians). In terms of the planning, implementation and monitoring of watershed improvements, the specialists in each field coordinate their activities with the specialists from the other fields (see section 2.2, "Planning, Coordination and Implementation Process").

2. The PMU's role is to carry out planning, coordination, support and monitoring of all project activities. In particular:

   - The Documentation Center serves as a central point that maintains all technical and mapping information in the project's zones of intervention (i.e. the Regions of Ziguinchor and Kolda).

   - The PMU, through its Administration and Finance Office, provides logistical support to the PMU and ERGES technicians, namely:

     - management of vehicles;

     - travelling and lodging expenses;

     - training activities;

     - procurement of equipment and technical instruments;

     - administration of contracts for construction activities; and

ORGANIGRAMME DU PROGES

FIGURE . I

COMITE NATIONAL DE COORDINATION

S . P . R

M D R H — M E F P

U S A I D

TUTELLE

MINISTERE DELEGUE AUPRES DU MINISTRE
DU DEVELOPPEMENT RURAL ET DE L'HYDRAULIQUE
CHARGE DE L'HYDRAULIQUE

SOUS COMITE TECHNIQUE

DA / MDRH — DGRH / MDRH — U S A I D

REGION DE ZIGUINCHOR

C·R·D

COMITE TECHNIQUE DE SUIVI
DIRECTEUR DU **PROGES**
X . **BADJI** L. **DIEME**
Ing D.R.H Ing I.R.A

CVGE

ERGES

GENIE RURAL C. GASSAMA
G.R - TOPO A. NYASSE
AGRO / PEDO L. COLY
SOCIOLOGIE A. SAGNA

UNITE DE GESTION DU PROJET - UGP

CHEF D'EQUIPE A.T.A W. KELLEY

DIRECTEUR DU PROGES D. S. DIOP

DIRECTEUR
Admin et Finance
P . DACOSTA
I . GUEYE

GENIE RURAL
N. [illegible]EN

AGRO / PEDO
S. [illegible]NG

SOCIOLOGIE
W. [illegible]TTERSON

EXPERTS
COURT TERMES

REGION DE KOLDA

C·R·D

COMITE TECHNIQUE DE SUIVI
DIRECTEUR DU **PROGES**
A. **DIOUF** Y. **SEYE**
Ing D.R.H Ing I.R.A

ERGES

GENIE RURAL I. THIAM
G·R - TOPO O. BALDE
AGRO / PEDO I. SAGNA
SOCIOLOGIE ( )

CVGE

Autorité et Responsabilité

Coordination

C.R.D = Comité Régional de Développem

ERGES = Equipe Rég. de Gestion de l'Eau

C.V.G.E = Comité Villageois de Gestion de l

A.T.A = Assistance Technique Américai

- administration of contracts and personnel required for applied research and monitoring activities.

- Certain logistical support for the ERGES is provided by the Government of Senegal (GOS), namely office space; equipment and instruments; and the office operations.

- The logistical and financial needs will be determined on a regular basis by the PMU and the ERGES (see Operations Manual for the Project).

3. The PMU, under the direction of the National Director of PROGES, coordinates all activities with the Regional Technical Committees. These committees participate in the selection of sites, provide input to the technical approaches and methodologies and assist in the implementation of field activities.

2.2 Planning, Coordination and Implementation Process

The project's approach to program planning has been to develop a general scenario of activities, followed by detailed assessments of individual work tasks in each technical field. Following a general meeting held at the PMU, the technicians in each field separated into working groups and developed individual time-phased work programs. This was followed by further general meetings to harmonize and readjust the work schedules. This participatory and iterative approach enabled the development of close working relationships between the technical assistance team members and their counterparts for each discipline.

This planning and coordination process resulted in the production of a planning schedule ("Planning d'Activités", Figure 2), in which the activities of each discipline are set out, in relation with the other work tasks. This will provide a tool for the PMU to coordinate and monitor a coherent program of activities.

The planning schedule in Figure 2 is complemented by individual work schedules, developed by members of the PMU and ERGES for each discipline (see the "Fiches d'Activités" in Annex A).

2.3 First Year Activities

2.3.1 Objectives

The Grant Agreement between the Government of Senegal and USAID, the Project Paper (685-0295, of August 22, 1988), and the LBII contract specify a major objective of the project to be the

reclamation of about 60 valleys and about 15,000 hectares by the year 1999. Since the LBII contract is for a period of five years (from August 1990 to July 1995), and understanding field implementation realities, our general goal for the life of the project will be to effectively begin a process of training, development and production improvements in the maximum number of valleys over the next five years. Our objective is that this process, once effectively launched with USAID assistance, will carry on with the continued support of the public and private sectors.

In view of the fact that selection, planning and implementation activities require careful coordination of numerous disciplines, training at several levels and close participation of the population, our goal for the first year will to begin this process in earnest in two sites. In these sites we will apply and test our initial methodologies in planning, coordination and implementation, and, through close monitoring, accumulate experience that will serve to improve and refine our approaches during the coming years. In the first year we will identify and select additional sites to be developed during the ensuing two years.

During this first year, we will also coordinate closely our activities as much as possible with other governmental and non-governmental organizations. This will be done with a view towards expanding the project's range of possibilities for interventions in more valleys and bring it closer to attainment of the project's long term objectives.

In the next section, we present the activities of the project in general and for each discipline.

2.3.2 Activities

Following the planning process presented in section 2.2, the PMU, in collaboration with ERGES technicians, established an integrated program of activities for the remainder of 1991 (from March 1991) and through 1992. This program, presented in Figure 2, follows directly on the heels of the mobilization and preselection activities that occurred during the period August 1990 to March 1991.

In sum, the activities of the project have been divided into four main phases. Taken together, these phases represent a cycle of tasks in watershed management planning and implementation. These phases are:

- Selection
- Preconstruction (Planning)

- Construction
- Monitoring, Operations and Maintenance

In order to clarify the sequence of this cycle, Figure 2 shows projected activities for the period 1991-1992. This schedule also shows that each discipline follows a defined series of activities in each phase; each discipline discussed these activities with the other disciplines in order to coordinate their actions.

We note also that the planning schedule in Figure 2 is the result of several iterative discussions at the PMU with the ERGES. It provides a basis for immediate field work, and the actual activities will be refined and readjusted as the initial results and experiences are gained.

Activities were scheduled following the rainfall pattern in the area and seasonal labor availability for construction. One important aspect of the schedule is that the study and design phase is carried out a year ahead of physical construction. There is also a continual identification and selection process for new sites to enable preconstruction activities to follow immediately. It is noteworthy to recognize that the site at Djiguinoum, while not among those identified in the Project Paper, will be considered as a potential site for future development. The schedule of Figure 2 shows that the technicians of the Sociology discipline will be responsible for the initial identification and preselection of the valleys (It was agreed that, because of the "participative" approach of the project, the sociological selection criteria are most important in the first instance, and should therefore be the first to be verified).

2.3.2.1 Selection

The selection procedure for the first sites began with a pre-selection phase, which was carried out by the PMU, in collaboration with the Regional Water Management Teams. The pre-selection phase consisted of a preliminary assessment of certain criteria judged to be significant factors in site implementation. These factors were divided into categories of sociology, soils, agronomy and hydrology. The assessment was carried out based on existing data, as well as site visits.

The preselection exercise was limited to six sites, located in the Department of Sedhiou, in the Kolda Region, following the priority zones identified in the project paper.

This assessment resulted in a first evaluation of the six sites and a Summary Report, submitted to the Subcommittee on March 4, 1991.

Following the pre-selection phase, the PMU and regional teams developed a program of selection, which consisted of the definition

of the site selection criteria, the collect and analysis of data, and the final recommendation. These activities culminated in a series of data analysis and site selection meetings during the week of April 1, 1991.

The site selection methodology consists of an evaluation of multidisciplinary criteria, which provides a basis for comparing the relative merits of the pre-selected sites for implementation in the first year. The three principal technical disciplines are: Sociology, Rural Engineering and Agronomy/Soils.

Each disciplinary team established a standardized evaluation form and scoring procedure which enabled the ranking of each site in relation to the others. The internal distribution of points for each discipline's evaluation form reflects the relative importance or weight given to these criteria. In addition, the total number of points given to each of the three disciplines reflects the project's overall priorities with respect to the initial selection. In particular, we have accorded a relatively higher priority to sociological considerations. Above all, in the first year, the project seeks sites where the population has shown an understanding of the project's objectives, and where there appear to be limited problems in land tenure, organization, etc.

It was therefore agreed to maintain the following scoring for the three major disciplines:

-	Sociology	40 points
-	Rural Engineering	30 points
-	Agronomy/Soils	30 points
-	Total	100 points

The selection criteria for each discipline is as follows:

Sociology:

1. Receptivity of the populations
2. Land Tenure Problems
3. Labor Availability
4. Village Organizations
5. Existent Extension Services

Rural Engineering:

1. Hydrology
2. Location
3. Will the dike function as a road?
4. Surface area
5. Ratio of dike length to protected surface area
6. Complexity of the water control structures
7. Topographic characteristics
8. Complexities of projected development

9. Existing infrastructure

Agronomy/Soils:

1. Percentage of soils difficult to reclaim
2. Configuration (size) of site
3. Proportion of cultivated to total surface area
4. Importance of rice production compared to other crops

The results of the selection procedure are presented in the "Summary Report: Selection of First Sites" submitted to USAID and the GOS on April 8, 1991.

2.3.2.2 Pre-Construction

One of the major components of the SZWM Project is a high level of farmer participation. Farmers are not only to provide labor for the construction, but are to be involved in planning and design as well as operation and maintenance. During this pre-construction phase, the project will work very closely with villagers in order to assure their participation in planning and design.

The participation of farmers will be ensured through the Village Water Management Committees (VWMC). As soon as the sites are selected, the sociologist and his counterpart, the village liaison officer, will start a series of discussions in the villages about the project. These discussions will serve to acquaint the villages with the goals and philosophy of the project, to obtain their ideas and suggestions, and to encourage and assist in the organization of the VWMC. While the exact nature of the village organization is site-specific, the emphasis will be on strengthening the existing associations where feasible instead of creating new ones.

If the villagers have no experience in giving feedback to project technicians, they need to be assured that the project is interested in their ideas and will take them seriously. Sessions of "sensibilization/animation" will be needed with the goal of helping the villagers to define their responsibility in solving their problems (of salt water intrusion, lack of control over water, declining production, potential land tenure conflicts, etc.). Sessions will also be needed to describe the technology of control bearms, retention dikes, and anti-salt dikes. These sessions will be used to prepare the villages for discussions and "walk throughs" with project engineers of the initial plans and layouts for the development of their valley. The goal is that the villagers will have constructive suggestions for the engineers in making their final design.

Later sessions will be needed to prepare the villagers for the "pre-construction conference". After the final engineering plans have been approved, there will be a conference between the VWMC's and the technicians of the project. The conference will discuss

the role of the project, the role of the VWMC's, and the role of the private sector in construction, operation, and maintenance. From this conference will emerge a contract, negotiated between the VWMC's and the project that will explicitly outline the tasks and activities expected of each party. Once this contract has been signed, the VWMC's are then expected to perform as promised.

At some of the sites, there are local NGO's that are quite active (such as AJAC, Association des Jeunes Agriculteurs de la Casamance). These NGO's will be encouraged to become involved in the "sensibilization/animation" activities of the project and their members will be eligible for some of the project's training programs.

Other pre-construction activities consist of the initial topographic studies, the development of the draft watershed management plans, and the definition of the applied research and monitoring studies. These activities are targeted to arrive at presenting draft watershed management plans to the villagers for discussion, for sites "1 and 2" by September 1991 (see site location map on Figure 3).

Because of rapid approach of the next rains, the topographic surveys will not be completed before June 1991. The Rural Engineering technicians will therefore endeavor to implement the length and width profiles of the two valleys, in order to specify the location of the major structures for site 1 (NGuindir) and a topographic map for site 2 (Mayor). They will utilize the preconstruction period to organize a full survey team, as well as assess the possibilities of engaging a local firm to carry out surveys for further sites.

2.3.2.3 Construction

The construction phase will be the actual execution of the planning and preparation done during the pre-construction phase. During this phase, the building of the anti-salt and water retention dikes will be done with manual labor provided by the villagers and organized by the VWMC, in collaboration with the project's team members. The concrete structures including control gates will be built by the private sector following the guidelines and technical specifications provided by the project. All of the work done during this time will be closely supervised and monitored by the project's engineers.

The construction phase for sites 1 and 2 will begin in January-February 1992, based on the first design and the availability of construction equipment. During this period also, more detailed surveys for the design-level maps at scale 1:2 000 will be carried out. It is planned to accomplish part of the construction at sites 1 and 2 prior to the 1992 rainy season and to complete construction later in the year.

Project		Zone
1	Tanaff	Sedhiou
2	Samine Escale	Sedhiou
3	Kinndiri Medina	Sedhiou
4	Bounkiling	Soungroungrou
5	Ndiama	Soungroungrou
6	Mayor	Soungroungrou
7	Diatok	Bignona
8	Balingore	Bignona
9	Djimande	Bignona
10	Essoum	Baila

FIGURE 3

2.3.2.4 Monitoring, Operation, and Maintenance

Monitoring:

The applied research and monitoring studies will be defined during the preconstruction period by all the technicians. These studies will be:

Soils Studies	Studies on the methods for salinized soil recuperation and the monitoring of soil evolution. Also studies of the morpho-pedologic characteristics and constraints of soils leading to definition of soils maps and agricultural capacity. Objectives and terms of reference will be defined with the assistance of a short-term soil specialist in April-May, 1991. Subcontract anticipated with ISRA, ORSTOM, or other agencies.
Study of the Project's Impact on Population	Monitoring of the water management activities and the receptivity of the approaches on introduced to the village water management committees. Possibly subcontract with ISRA. Participation of village "animators" and "monatrices" (women animators).
Agronomic Studies	Studies and monitoring of the rice yields obtained in the recuperated areas, as well as other cereals in the zones of intervention. Monitoring of the evolution of production based upon the baseline data from preliminary surveys. Collaboration on methodologies and subcontracts anticipated with ISRA, ORSTOM.
Hydrological Studies	Regular collection of hydrological data, in connection with the rural engineering, agronomic and environmental studies. Objectives, parameters, methodologies and location will be determined during April-June, 1992.
Environmental Studies	Definition of a program of studies, monitoring and incorporation of environmental criteria into the selection and planning process. Consulting assignment planned for August-September, 1991.

Contracts	Proforma contracts with administrative procedures for subcontracts planned for applied research, topography and construction. Special consultant assistance in April and August-September 1991.
Watershed Planning	Harmonizing the multi-disciplinary approaches for the definition of a general watershed planning methodology. Consulting assignment expected in July-August, 1991, during the development of the first preliminary watershed plans.

Operations and Maintenance

The operation of an anti-salt dike consists of two major activities, gate operation and exploitation of land protected by the dike:

Gate operation:
Two major activities are anticipated:

- Regulation of water level upstream according to crop water demand and growing cycle to assure salt flushing in the beginning of rainy season without risk of water shortage at the end of the season.
- Evacuation of exceptionally high floods to protect infrastructures and crops from being damaged by over-topping or prolonged inundation.

Water is a valuable resource. Redistribution of water may lead to conflict among villagers. Efforts will be made to work with the VWMC to anticipate these conflicts and to find solutions.

Exploitation of land protected by the dike:

The main objective of the project is to increase cereal production by the development of watersheds. Construction alone is not sufficient to increase production. In order to meet these goals, efforts will be concentrated on increasing cultivated area and yields.

Increasing the area cultivated will be accomplished by:

- recuperating abandoned lands due to water or salt problems (short term goals)
- recuperating the "tanne" or unproductive land over the long term, and
- expanding cultivated area of sloping lands by building contour berms.

Increasing the crop yields will be accomplished by:

- better water distribution practices including leveling of parcels, terracing of sloping lands, and the building and reinforcing of permanent levees with simple water control
- better choice of adaptable varieties (salt tolerance, short cycle, floating varieties, etc.)
- application of improved production techniques such as fertilizer application, pest control, transplanting, and cropping schedules.

Infrastructure design, construction and operation will be made considering the effects on the environment and the need for soil conservation. Efforts will be made to maximize soil fertility, and soil-water retention while minimizing upland sheet erosion and sedimentation of dike sites. As a result, soil moisture will be improved for crop production.

Many of these actions depend on the willingness of the producers to invest in their resources since all of the work of constructing anti-erosion dikes, leveling plots, and reclaiming salt infested land will be theirs. The project will provide training, technical advice and follow-up. However, for the farmers to accept to invest in their parcels, they must be convinced of the advantage it is to do so. To convince them requires more than verbal efforts, but concrete demonstrations of visible differences between the traditional and the new practices. To this end, the project proposes the following approach:

- To create trial plots adapting different crops, especially rice, according to soil type. These plots will be developed based of the model designs of the project such as anti-erosive dikes, small plot level dikes, terracing, etc. The technical themes will be selected on the basis of the research results from several years of study by ISRA, with emphasis on newly created anti-salt and retention dikes.

- the creation of trials of reclamation of salt infected lands based on the model studied by ISRA.

- the organization of study visits to the improved plots by villagers so that they can appreciate the observed differences and give feed-back on new techniques.

- the organization of training workshops and field visits to other similar projects.

The maintenance of the infrastructures is fundamental for the continuity of the project. Both the operation and the maintenance will be done by the villagers through the VWMC. The villagers will receive training and clear guidelines on how to operate and maintain the infrastructures. This operation and maintenance will be closely monitored by the project.

Ultimately, the project will not only leave in place physical dikes, water control structures, etc., but also village organizations that have a proven track record of working with their neighbors in mobilizing resources, managing conflict, constructing, operating, and maintaining dikes, and interacting as partners with both Senegalese and expatriate technicians.

2.3.2.5 First Year Training Activities and Cost

The training activities for 1991 are explained in detail in the Life of Project Plan (refer to Annex B). They are summarized as follows:

1. Long-term training. The first two of four participants to be sent to U.S. universities for academic training leading to MS degrees will be selected.

2. Short-term training. Two of the Senegalese counterparts will attend short term courses (of about six weeks) outside of Senegal.. An example of the type of courses available is the course entitled "On-Farm Water Management" which is offered by the Institut Agronomique et Vétérinaire Hassan II in Morocco.

3. Observation Tour (USA). Two participants will be sent on a two week tour to the U.S. They will visit LBII, USAID/Washington, and tour the rice producing area of Louisiana. Visits will be made to LSU, Virginia Polytechnic Institute and State University, and the U. of Arizona campuses to meet with faculties and review their facilities and programs.

Observational Tour (Africa). An observational tour may be made to another Africa country such as Mali by some of the counterparts to the TA team. They will observe other projects with experiences useful for the SZWM project.

4. Workshops.

Village Workshops (2 Sites). The TA team sociologist, agronomist, and civil engineer will conduct workshops in each site selected to participate in the project. Two workshops are planned with farmer groups and non-governmental organizations (including women's groups) for the purpose of creating interest in project activities and getting their cooperation and participation in dike construction. These workshops will be held in the villages where dike construction is planned.

Language Instruction (English and Manding). English language will be provided for counterparts. Manding language instruction will be offered for counterparts and TA team members.

Computer Instruction (Word processing, Data Base Systems, and Pagemaker). Instruction in computer operational skills will be provided for project office personnel and counterparts.

Instructional Materials Development. Slide presentations, handouts, posters and flipcharts will be developed for use in presentations made in the villages.

5. Seminars (water management and agriculture). Two seminars are planned for 1991. Seminars to be held include workshops for:

- water management engineers working in the Casamance, and

- GOS and other agriculturists working the Casamance.

6. When dike construction begins in February of 1992 demonstrations will be made. No demonstrations are planned for 1991.

7. Field Trips (Gambia and Senegal). Three field trips are planned for 1991. They include trips to:

-soil and water management unit project in The Gambia by TA team members and their counterparts,

-agroforestry sites in Senegal by the TA members and their counterparts, and

-agroforestry sites in Senegal by a group of farmers.

8. On-the-job Training (Counterparts, WMTs & Contractors). On-the-job training will be used primarily in working with counterparts, but will also be used to a lesser degree in training village WMTs and contractors.

Training activity plans. Detailed plans will be prepared prior to the start of any training activity except for OJT activities. These plans will include:

-training objectives,

FIGURE T.1 SCHEDULE AND COST OF TRAINING FOR 1991

ACTIVITES	J	F	M	A	M	J	J	A	S	O	N	D	COST
. Long-Term Training - 4 MS degrees participants, GOS													
a. Selection of first two degree candidates													
. Short-Term Training:													12,80
a. Water Management course, Morocco, 2 participants, GOS													
. Observation tours													3,00
a. United States, participants													3,00
b. Haute Vallée, Mali, 4 participants													
. Workshops													1,00
a. English (part-time), 9 participants, GOS													1,00
b. Manding (part-time), 7 participants, TA team and GOS													1,00
c. Computer (part-time), 10 part. GOS and office personnel													30
d. Sociologist - 20 participants, one group of farmers													1,00
e. Sociologist - 20 participants, one organization group													
5. Seminars													1,50
a. Engineers - 20 participants, 1 group of engineers													3,00
b. Agriculturists - 25 participants, one group of GOS													
6. Demonstrations - starts in 1992, farmers													
7. Field Trips													1,40
a. The Gambia, 14 participants, TA team and counterparts													
b. Agroforestry in Senegal													1,50
(1). One group, 15 participants, TA team and Counterp.													30
(2). One group, 20 participants, farmers													
8. On-The-Job Training - GOS, village WMTs, Contractors													
9 Meetings TOTAL													
a. GOS and counterparts													
1. Number of meetings 21	1	1	2	2	2	2	2	2	2	2	2	1	
2. Number of participants 156	13	13	13	13	13	13	13	13	13	13	13	13	
b. Farmer groups													
1. Number of meetings 21		1	2	2	2	2	2	2	2	2	2	2	
2. Number of participants 525		25	50	50	50	50	50	50	50	50	50	50	
c. Organizations													
1. Number of meetings 10								2	2	2	2	2	
2. Number of participants 250								50	50	50	50	50	

TOTAL $ 42,80

Other SOS personnel (BNE)

Function	Name	Starting date
Accountant	Abdou Diakhate	01 Dec 1990
Secretary	Marième Sambou	01 Dec 1990
Draftsman	Ibrahime Sambou	01 Feb 1991
Draftsman	Ahmed Badji	01 Mar 1991
Clerk	Papa Diop	01 Mar 1991
Clerk	Mamadou Sarr	01 Mar 1991
Aid Operator	Alioune Gueye	01 Apr 1991
Aid Operator	Land Diedhiou	01 Apr 1991
Aid Operator	Lamine Sy	01 Apr 1991
Aid Operator	François Diatta	01 Apr 1991
Aid Operator	Paul Gama	01 Apr 1991
Aid Operator	Oumar Coly	01 Apr 1991

Short Term Technical Assistance in 1991

Position	Name	Date Arrival	Date Departure
Project Dir.(LBII)	Robert Fishbein	7 Mar	9 Apr
Training Specialist	A.J. Abshire	2 Mar	13 Apr
		3 weeks in July	
		3-4 weeks in Oct	
Training Advisor	Ruth Harris	30 Mar	14 Apr
		2 weeks in Sept-Oct	
Contracts Specialist	Fabrice Signor	14 Apr	16 Apr
		2 weeks in Aug-Sept	
Soils Scientist	Alain Aubrun	21 Apr	10 May
Watershed Planning Specialist	to be determined	4 weeks in July-Aug	
Environmental Specialist	to be determined	6 weeks in July-Aug	

LBII Contract Local Staff

Assistant Administrator	Issa Gueye
Secretary	Gnagna Cisse
Motorpool Supervisor	Mamadou Lamanara Ba
Driver	Sidy Tendeng
"	Omer Badji
"	Mamadou Sonko
"	Daouda Badiane
"	Ousmane Diatta
"	Victor Sagna
"	Mamadou Lamanara Ba
"	Falilou Mbacké Sow
Office Cleaner	Baraya Guèye

USAID Project Site Monitor Staff

Site Monitor, USAID	Donald Broussard
Secretary, USAID	Zahra Thiam
Driver, USAID	Ibrahima Toure

2.3.4 Procurement Plan

1. Responsibility

LBII will be responsible for all foreign exchange and local procurement.

2. Equipment and Commodity List

According to projected activities the general equipment and commodity list attached as Table 0 to this plan will be purchased with project funds. More exact details and specifications will be developed by LBII for both local and all procurement if required.

3. Source and Origin

In line with "Buy American Guidelines", (Notice Number 90-073 of November 9, 1990 and State 3558, State 276461, State 267071) except as noted under the Item 6 "Justification" the authorized source will be in accordance with AID current procurement procedures, i.e. geographic code 000 will be considered to the extent possible.

4. Method of Procurement

No individual procurement will exceed US$ 10,000, consequently the use of Formal Procurement Procedures and IFB are not foreseen. However, good commercial business practices will be observed for all procurement, (US and local). Specifically Pro-Forma Invoices will be obtained from two or more suppliers prior to procurement implementation. Local procurement shall be at reasonable prices and consistent with local laws and practices.

5. Small Value Procurement

Table 0 Section II consists of those items with an individual value of less than US$ 500. They will be procured in the US and locally. The items that we contemplate to procure locally are mainly artisanal in nature. See justification in Item 6 .

6. Justification

a) Reason for immediate need

Theodolite
In order to start watershed planning and detail design of infrastructures, 1/2000 scale topographic maps should be made

TABLE O/TABLEAU O

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QTE	U.PRICE PRIX UNIT.	AMOUNT TOTAL $	SOURCE SOURCE	RESP RESP.	REQUIRED DATE AT PROJECT
SECTION I								
NON EXPENDABLE SUPPLIES/NON CONSUMABLES (AS PER TABLE 7 OF THE ORIGINAL BUDGET OF US$ 144,670) (SELON LE TABLEAU 7 DU BUDGET ORIGINAL DE US$ 144,670)								
1	LAP TOP COMPUTER MICRO ORDINATEUR PORTATIF	EQUIVALENT TO DELL 316LT	3	$3,000.00	$9,000.00	USA	LBI	DEC/1991
2	DESTOP COMPUTER ORDINATEUR DE BUREAU	EQUIVALENT TO IBM PS/2	2	$5,000.00	$10,000.00	USA	LBI	ASAP
3	LASER PRINTER IMPRIMANTE LASER	LASER III HP PRINTER	1	$2,000.00	$2,000.00	USA	LBI	ASAP
4	DOT MATRIX PRINTER IMPRIMANTE MATRICIELLE	EQUIVALENT TO PANASONIC KX-P1624	1	$2,000.00	$2,000.00	USA	LBI	DEC/1991
5	SCANNER SCANNER		1	$1,500.00	$1,500.00	USA	LBI	DEC/1991
6	PHOTOCOPY MACHINE PHOTOCOPIEUSE	EQUIVALENT TO XEROX 5028	1	$7,000.00	$7,000.00	USA	LBI	DEC/1991
7	FAX MACHINE TELECOPIEUR	EQUIVALENT TO FACSIMILE M1850	1	$3,000.00	$3,000.00	USA	LBI	ASAP
8	TYPEWRITER MACHINE A ECRIRE	IBM 6784	1	$2,000.00	$2,000.00	USA	LBI	ASAP
9	TELECOM SYSTEM SYSTEME TELECOM		1	$10,000.00	$10,000.00	USA	LBI	DEC/1991
10	BINDING MACHINE MACHINE RELURES		1	$1,000.00	$1,000.00	USA	LBI	ASAP
11	STEEL CABINET ARMOIR EN ACIER	SHEET 45"x35",FIBER BOARD. OFFICE PRODCTS CAT No:F4-3005-IS	5	$800.00	$4,000.00	USA	LBI	DEC/1991
12	FIVE DRAWER FLAT FILES STORAGE CLASSEUR PLAT	SHEET 45"x35",FIBER BOARD. OFFICE PRODCTS CAT No:F4-3005-IS	2	$500.00	$1,000.00	USA	LBI	DEC/1991
13	SOFTWARE E.G PAGEMAKER LOGICIELLE PAGEMAKER		1	$3,000.00	$3,000.00	USA	LBI	DEC/1991
14	SECRETARY DESK AND CHAIR TABLE SECRATARIALE ET CHAISE		1	$1,500.00	$1,500.00	USA	LBI	DEC/1991
15	ELECTRONIC THEODOLITE	EQUIVALENT NIKON NTD-4 COMPLETE SYSTEM	1	$9,450.00	$9,450.00	USA	LBI	ASAP

TABLE O/TABLEAU O

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QTE	U.PRICE PRIX UNIT.	AMOUNT TOTAL $	SOURCE SOURCE	RESP RESP.	REQUIRED DATE AT PROJECT
	THEODOLITE ELECTRONIQUE	THE SURVEY SHOP CAT No:65004000 PAGE 19						
16	ACCESSORIES FOR THEODOLITE ACCESSOIRES POUR THEODOLITE	PRISM, TRIPOD PRISM TREPIED	1	$3,000.00	$3,000.00	USA	LBI	ASAP
17	STEREOSCOPE STEREOSCOPE	TROPICALIZED MIRROR MIRROIR TROPICALISE	1	$3,000.00	$3,000.00	USA	LBI	DEC/1991
		SUB_TOTAL:			$72,450.00			

SECTION II - ITEMS WITH AN INDIVIDUAL VALUE UNDER US$ 500

SMALL CONSTRUCTION EQUIPMENTS
EQUIPEMENTS D DE CONSTRUCTION (LEGER)

1	WHEELBARROW BROUETTE	LOCAL MADE IN SENEGAL	120	$60.00	$7,200.00	SENEGAL	LBI	NOV/1991
2	HAND TAMPER DAME	LOCAL MAKE IN SENEGAL	150	$30.00	$4,500.00	SENEGAL	LBI	NOV/1991
3	PICK PIOCHE	LOCAL MADE IN SENEGAL	200	$12.00	$2,400.00	SENEGAL	LBI	NOV/1991
4	SHOVEL PELLE	LOCAL MADE IN SENEGAL	200	$11.00	$2,200.00	SENEGAL	LBI	NOV/1991
5	GARDEN WATERING CAN ARROSOIR A MAIN POUR JARDIN	GARDEN TYPE, LOCAL MADE	80	$11.00	$880.00	SENEGAL	LBI	NOV/1991
		SUB_TOTAL:			$17,180.00			

DRAFTING TOOLS AND MATERIALS
MATERIEL ET EQUIPEMENT DE DESSIN

1	DRAFTING SET BOITE DE COMPAS	TELEDYNE POST COMPASS SET,PROFESSIONAL OFFICE PRODUCT CATALOG N.06_38_0E_01E	1	$79.00	$79.00	USA	LBI	JULY 1/1991
2	DRAWING TABLE AND BASE TABLE DE DESSIN ET PIED	OFFICE PRODUCT CATAL.No:ST-WHT-364980 BASE CAT.No:ST-EUX001-WHT	1 1	$92.00 $136.00	$92.00 $136.00	USA USA	LBI LBI	JULY 1/1991 JULY 1/1991

TABLE O/TABLEAU O

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QTE	U.PRICE PRIX UNIT.	AMOUNT TOTAL $	SOURCE SOURCE	RESP RESP.	REQUIRED DATE AT PROJECT
3	DRAFTING CHAIR SIEGE DESSINATEUR	UNITED CHAIR,ADJUST HEIGH,100% NYLON OFFICE PRODUCT CAT.No:UC-D-43HC_BK	1	$118.09	$118.09	USA	LBI	JULY 1/1991
4	DRAWING MACHINE APPAREIL A DESSINER	TELEDYNE POST. 15" ARM. RIGHT	1	$227.00	$227.00	USA	LBI	JULY 1/1991
5	SCIENTIFIC CALCULATOR CALCULATRICE SCIENTIFIQUE	CASIO.GRAPHIC.SCIENTIFIC.196 FUNCT.PROGRAMABL OFFICE PRODUCT CAT No:K9-FX-7500G	1 1	$150.00 $109.95	$150.00 $109.95	USA	LBI LBI	JULY 1/1991 JULY 1/1991
6	PEN SET JEU DE PLUMES ROTRING	ROTRING STEEL PEN SET, 8 PENS,ESSCO DRAFTING SUPPLIES. CAT No:KO 155903	1	$108.00	$108.00	USA	LBI	JULY 1/1991
7	LEROY STANDARD LETTER SET COFFRET DE TRACE LETTRE LEROY	LROY II TEMPLATES,11 PEN,ESSCO DRAFTING SUPPLIES.CAT No:KE 612901	1	$329.43	$329.43	USA	LBI	JULY1/1991
8	PLAN MEASURER PLANIMETRE	INCH AND 1/10 INCHE. ESSCO DRAFTING SUPPLIES CAT. No:KE-620335	1	$60.64	$60.64	USA	LBI	JULY 1/1991
9	PAPER CUTTER GUILLOTINE PAPIER	STANDARD STANDARD	1	$100.00	$100.00	USA	LBI	JULY 1/1991
10	PANTOGRAPH PANTOGRAPHE	TELEDYNE POST.OFFICE PRODUCT CAT NO-0-[illegible]9-H PAGE NO-698	1	$22.25	$22.25	USA	LBI	JULY 1/1991
11	LEAD HOLDER CRITERIUMS	FABER CASTEL.OFFICE PRODUCT CAT No:6611 .PAGE 70	10	$4.50	$45.00	USA	LBI	JULY 1/1991
12	LEAD MINES DE RECHANGE	FIBER CASTEL. OFFICE PRODUCT CAT No:T9-00008_ PAGE 699	5	$7.25	$72.50	USA	LBI	JULY 1/1991
13	ROTARY LEAD POINTER TAILLE MINE	STEADER MARS. MANUEL.OFFICE PRODUCT CAT No: 07-502. PAGE 699	2	$6.95	$13.90	USA	LBI	JULY 1/1991
14	DRAFTING PENCIL CRITERIUMS 0.5 MM	SYSTEM 3. 0.5 MM. OFFICE PRODUCT CAT No: 09-H585. PEGE No701	5	$5.98	$29.90	USA	LBI	JULY 1/1991
15	LEAD FOR DRAFTING PENCILS MINES DE RECHANGE	CRIPTO,MEDIUM. TUBE OF 12.OFFICE PRODUCT CAT No:SI-F350-HB. PAGE 682	2	$20.00	$15.80	USA	LBI	JULY 1/1991
16	PORTABLE DRAWING BOARD PLANCHETTE A CROQUIS	SIZE 18"x24":OFFICE PRODUCT CAT No:06-38-AA-1 PAGE 702	10	$1.00	$17.80	USA	LBI	JULY 1/1991
17	DRAFTING MACHINE SCALE REGLE POUR APPAREIL A DESSINER	TELEDYNE POST.ENGINEERING TYPE. OFFICE PRODUC CAT No:06-34HX-15M PAGE 703	18	$2.00	$35.70	USA	LBI	JULY 1/1991
18	CLEAR TRIANGLE EQUERRE TRANSPARENT	TELEDYNE POST. OFFICE PRODUCT CAT NO: 06-38-DC-412 FOR 45 DEGREE. 12 " TRIANGLE	4.9	$1.00	$4.85	USA	LBI	JULY 1/1991
19	TEMPLATES GABARIT	GENERAL PUEPOSE,OFFICE PROD1 CAT No:0-7-R18 PAGE 707	5.7	$1.00	$5.70	USA	LBI	JULY 1/1991

TABLE O/TABLEAU O

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QTE	U.PRICE PRIX UNIT.	AMOUNT TOTAL $	SOURCE SOURCE	RESP RESP.	REQUIRED DATE AT PROJECT
20	RULERS REGLE	WEST COTT METAL 2 ENDS. OFFICE PRODUCT CAT No Q5-R394-30. PAGE 708	1	$4.00	$4.00	USA	LBI	JULY 1/1991
21	BLUE PRINT PAPER PAPIER OSALID	36X50 YD ROLL. ESSCO DRAFTING SUPPLIES. CAT N KE211159T	20	$18.79	$375.80	USA	LBI	JULY 1/1991
22	DRAFTING PAPER PAPIER DESSIN	CHRISTALENE TRACING PAPER. ESSCO DRAFTING SUP CAT No:KE 109155C	4	$21.33	$85.32	USA	LBI	JULY 1/1991
23	DRAFTING FILM PAPIER CALQUE	MATTE 1 SIDE .003, ROLL 36X20 YD. ESSCO DRAFT	2	$75.11	$150.22	USA	LBI	JULY 1/1991
24	GRIDDED TRACING PAPER PAPIER MILLIMETRE	VELUM DRAFTING PAD? 4X4 GRID? 48 SHT? 11X17 ESSCO DRAFTING SUPPLIES CAT No:DZ 197N41-	2	$14.76	$29.52	USA	LBI	JULY 1/1991
25	PEN CLEANER LIQUIDE NETTOYANT DES PLUMES	1 QT BOTLE. ESSCO DRAFTING SUPPLIES CAT No: KO 30867	2	$11.25	$22.50	USA	LBI	JULY 1/1991
26	INK ENCRE DE CHINE	UNIVERSAL PLOTTER INK FOR PAPER AND FILM.1 OZ ESSCO DRAFTING SUPPLIES CAT No:KO 38QO	10	$2.12	$21.20	USA	LBI	JULY 1/1991
27	ERASER GOMME	SOFT WHITE [illegible] PAPER OR FILM. ESSCO DRAFTING SUPPLIES CAT [illegible] ST 52652	17	$20.00	$34.20	USA	LBI	JULY 1/1991
28	DRAFTING TAPE RUBAN ADHESIF	ESSCO DRAFTING SUPPLIES CAT No:DZ-3853 FOR [illegible] CHEM. INVISIBLE TAPE	5	$3.92	$19.60	USA	LBI	JULY 1/1991
29	FRENCH CURVE PISTOLET	SET OF 4 WITH NYLON CASE. ESSCO DRAFTING SUPP CAT No:TP 38120	1	$54.00	$54.00	USA	LBI	JULY 1/1991
30	FLEXIBLE CURVE REGLE FLEXIBLE	18" FLEXIBLE. ESSCO DRAFTING SUPPLIES CAT No: LU 118	1	$4.30	$4.30	USA	LBI	JULY 1/1991
31	MAP MEASURER CURVIMETRE	IN INCH AND IN CM. ESSCO DRAFTING SUPPLIES CA No:XE620300	1	$29.03	$29.03	USA	LBI	JULY 1/1991
32	OFFICE ADDING MACHINE MACHINE A CALCULER	EQUIVALENT TO CANON [illegible]	2	$150.00	$300.00	USA	LBI	JULY 1/1991
33	THREE HOLE PUNCH PERFOREUSE DE PAPIER(3 TROUS)	OFICE PROD. CAT. # [illegible]98	3	$83.20	$249.60	USA	LBI	JULY 1/1991
34	MOUSE SOURIS		1	$200.00	$200.00	USA	LBI	JULY 1/1991
35	HEAVY DUTY STAPLER AGRAFEUSE	OFFICE CAT # X9-56160	3	$62.95	$188.85	USA	LBI	JULY 1/1991
				SUB TOTAL	$3,541.65			

TABLE 0/TABLEAU 0

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QTE	U.PRICE PRIX UNIT.	AMOUNT TOTAL $	SOURCE SOURCE	RESP RESP.	REQUIRED DATE AT PROJECT
	TARRIERE A RALLONGE							
20	TUBE AUGER PELLE A VASE		3	$280.00	$840.00	USA	LBI	DEC/1991
21	PH EH METER AND ELECTRODES PH EH METRE ET ELECTRODES		1	$400.00	$400.00	USA	LBI	DEC/1991
22	PORTABLE STEREOSCOPE STEREOSCOPES PORTATIFS	WILD	2	$140.00	$280.00	USA	LBI	DEC/1991
23	STEREOSCOPE STEREOSCOPE A MIRROIRS	WILD	1	$3,000.00	$3,000.00	USA	LBI	DEC/1991

SUB_TOTAL: $6,126.00

GRAND TOTAL: $99,297.65

available before June 1991. PROGES is now renting a theodolite for the topo team.

Computer and Printer
The desk top computer and the printer are needed ASAP to respond to the secretarial needs of the project planned activities. It will also respond to the various needs of the other PMU technicians.

Telefax Machine
The telefax machine is needed most urgently. At present the project is operating with a fax modem which prevents sending large documents requiring the use of outside source (Sonatel) which is not the most economical.

Binding Machine
The local market does not provide for binding services and the project need for binding is increasingly high.

b) Justification for Procuring Locally

- Wheelbarrows
- Hand Tampers
- Picks
- Shovels
- Watering Cans

Given the nature of the above items (artisanal) it would not be economical to buy from the US. The procurement of those items in the host country would to a certain extent encourage the local small businesses.

7. Risk Management and Insurance

LBII will arrange for all risk insurance (reimbursable) in the amount of the CIF cost of the commodities.

8. Transportation and Modal Choice

Air transport will be considered for those light items considered to be needed as soon as possible, and the fragility of some items indicates air transport as being most economical. Other items shall be shipped by sea freight. The use of American Flag Carrier will be considered to the extent possible. If not possible a waiver for transportation will be issued accordingly.

9. Delivery

US sourced items will be imported into Senegal on a CIF basis (where feasible).

10. Receipt of Commodities

LBII (Ziguinchor) will be responsible for the proper reception and clearance of incoming commodities. However USAID will provide the necessary exoneration documents since USAID retains the signatory power for exoneration. Inspection by LBII of the goods will be made accordingly. Receiving documentation will be issued and any insurance claim will be initiated. The transportation of the commodities from Dakar to Ziguinchor will be made by LBII on project vehicles.

11. Timing

It is planned that orders for major procurement items will be initiated within 30 (thirty) days of the approval of this procurement plan and procedures manual.

2.4 First Year Budget

Targets of accomplished activities provide the principal source of input to the budget. Table 1 shows the key targets for the year, derived form Figure 2, Planning of activities and from collaborative work sessions of the PMU in the two ERGES.

Monthly budget projections for 1991 are shown in Table 2. They are presented in detail for the four major operative objectives i.e.:

1. Construction
2. Applied Research and Monitoring
3. Training
4. Equipment

The remainder of budget categories are in support of these and are shown as total estimates per category. Thus the first year budget corresponds directly to the schedule of activities and its targeted accomplishments.

2.5 Projected Activities and Budgets 1992-1995

As for the first year budget, projected targets of accomplishment through the life of the LBII contract form the basis of the projected budget for 1992 - 1995.

These estimated accomplishments are the result of intensive, coordinated discussions and analyses by the PMU and the two ERGES. They will be monitored and updated as project experience and actual results are realized.

Estimated annual targets for the life of the contract are presented in Table 3, and the corresponding annual budget projections are shown in Table 4.

Targets and budgets are structured to focus on the four major operative objectives of the project, heretofore cited, thus they are directly interrelated.

TABLEAU 1/ TABLE 1

CATEGORIE/CATEGORY	MOIS/ MONTH	REPERE/TARGET
Construction: Aménagements des Bassins Versants/ Watershed Developments	Avril/ April	-Sélection Sites 1 et 2
	Août/ August	-Sélection Sites 3 et 4
	Sept/ Sept	-Plans d'Aménagements Sites 1 et 2/ Watershed plans
	Fev/ Feb (1992)	Démarrage travaux Sites 1 & 2/ Start construction
Recherche Appliquée et Suivi/ Applied Research and Monitoring	Août/ August	Démarrage collecte des données agricoles sites 1 & 2 par ISRA/ Start agricultural data collection, sites 1 & 2 by ISRA
	Oct/ Oct	Démarrage études cartographique et pédologique/ Start cartographique and soils studies
	Jan/ Jan (1992)	Démarrage aménagements des parcelles de démonstration, sites 1 et 2/ Start developing démonstration parcels, sites 1 & 2
Formation/ Training	Avril/ April	Plan de Formation/ Training Plan
	Juin/ June	Identification 2 candidats en Masters/ Identify 2 MS degree candidates (Autres repères détaillés sont indiqués dans section 2.3 "Activitiés pour la première année, tableau T-1/ other detailled targets are indicated in sect.2.3 "First Year Activities" Table T-1)
Sociologie/ Sociology	Juin/ June	Mise en place CVGE, sites 1 et 2/ VWMC in place, sites 1 and 2
	Nov/ Nov	Signatures contrats PROGES/ CVGE sites 1 et 2/ Contracts signed SZWM/ VWMC, sites 1 & 2

CATEGORIE/CATEGORY	MOIS/ MONTH	REPERE/TARGET
Environnement/ Environment	Sept/ Sept	Définition méthodologie des études environnementales/ definition of methodology for environmental studies -Préparation du Suivi des études sur le terrain/ preparation for field monitoring studies

TABLEAU/TABLE 2
BUDGET ANNUEL ESTIME/ESTIMATED ANNUAL BUDGET
ANNEE/YEAR 1991

ACTIVITE/ACTIVITY	JAN/JAN	FEV/FEB	MARS/MAR	AVRIL/APR	MAI/MAY	JUIN/JUNE	JUILLET/JULY	AOUT/AUG	SEPT/SEPT	OCT/OCT	NOV/NOV	DEC/DEC	ANNEE/YEAR EXPENSES TOTAL	FIN 1990	BUDGET	BALANCE
1. CONSTRUCTION																
Topographie - Bureau d'Etudes												4000	4000			
Topography - Private Service												4000	4000		1944000	1940000
TOTAL CONSTRUCTION																
2. RECHERCHE APPLIQUEE/APPLIED RESEARCH										7000	6000	7000	20000		200000	180000
-Etudes Pedologiques/Soils Studies										3000	3000	4000	10000		135000	125000
-Etudes d'Impact au Niveau des Populations/ Villager Impact Studies										4000	2000	4000	10000		100000	90000
-Etudes Hydrologiques/Hydrologic Studies										4000	2000	4000	10000		250000	240000
-Etudes Agronomiques/Agronomic Studies										3000	3000	4000	10000		100000	90000
-Photos Aeriennes/Aerial Photos										25000			25000		50000	25000
-Autres Etudes/Other Studies															100000	100000
TOTAL RECHERCHE APPLIQUEE/APPLIED RESEARCH										45000	16000	23000	85000		935000	850000
3. FORMATION/TRAINING															345000	345000
-Long Terme(USA)/Long Term							5000	7800					12800		172200	159400
-Court Terme(USA)/Pays Tiers)/Short Term						7000	8000		7000				18000		55000	37000
-Tournees d'Observations (USA/Pays Tiers)/ Observation Tours (USA/3rd Countries)						300	400	400	500	800	1400	500	4300		112500	108200
-Ateliers/Workshops										150	3000		4500		43800	39300
-Seminaires/Seminars															9000	9000
-Demonstrations													3200		32500	29300
-Visites Pratiques/Field Trips				400		7300	13400	8200			4400	500	42800		770000	727200
TOTAL FORMATION/TRAINING																
4. EQUIPEMENT/MATERIEL							18000					35820	53820	2443	60000	3737
-Bureau/office							12450					3000	15450		32758	17308
-Topographie/Topography												6108	6108		9870	3762
-Pedologie/Soils											17180		17180		17500	320
-Materiel de construction: outils/tools							3542						3542		3542	0
-Dessin/Drafting																
-Entretien et Maintenance/ O&M					300	300	300	400	400	400	400	400	2900		21000	18100
TOTAL EQUIPEMENT/MATERIEL					300	300	34292	400	400	400	17580	45328	99000		144670	45670
5. OPERATIONS BUREAU/OFFICE OPERATIONS	2597	5196	[illegible]	[illegible]	3300	2900	[illegible]	2000	2818	1900	2900	2743	35240	9940	168520	123340
TOTAL OPERATIONS BUREAU/OFFICE	2597	5196	[illegible]	[illegible]	3300	2900	[illegible]	2000	2818	1900	2900	2743	35240		168520	133280
6. TOTAL VOYAGES ET PER DIEM/TRAVEL & PER DIEM	9167	[illegible]	[illegible]	16000	18000	13000	[illegible]	10000	18000	20000	20000	16633	169000	50270	786624	567354
7. TOTAL AUTRES COUTS DIRECTS/OTHER DIRECT COSTS	1309[illegible]	5724	3906	13000	12000	13000	1[illegible]	[illegible]	13000	13208	12800	13018	138650	26140	656432	491642
8. TOTAL SALAIRES/SALARIES	4[illegible]	3900	8300	25000	25000	25000	[illegible]0	[illegible]	25000	24000	24000	25885	292300	81274	1169189	795595
9. TOTAL FRAIS SOCIAUX/FRINGE BENEFITS	702	2412	2412	6300	6300	6300	[illegible]500	[illegible]	6300	6000	6000	14374	74100	22877	296220	199243
10. TOTAL FRAIS GENERAUX/OVERHEAD	10253	9603	9503	16000	16000	16000	9000	[illegible]	20000	19500	19500	13225	191684	76757	912781	644340
11. TOTAL LOGEMENTS, SCOLARITES/HOUSING & ALLOWANCES	18167	9306	12128	14780	14780	14780	[illegible]780	16780	16780	16780	16906	14833	180800	42857	723276	499619
12. TOTAL LSU FRAIS GENERAUX/GEN'L & ADMIN EXPENSES	0	[illegible]0	0	4000	3400	3400	3400	5400	5400	5000	4800	4064	38864	3347	129548	87337
13. TOTAL DES COUTS/TOTAL COSTS	65333	45565	40173	101980	99080	101980	151272	[illegible]4280	112698	155388	144886	177603	1351438	315925	8636260	6981280
14. BENEFICE/FEE	5000	1581	1394	4539	4438	4539	6900	[illegible]00	6800	6800	6000	6509	60000	20000	300000	220000
TOTAL GENERAL	70333	47146	41567	106519	103518	106519	158172	129780	119498	162188	150886	184112	1411438	335925	8936260	7188897

TABLEAU 3/ TABLE 3

P R O G E S

REPERES ANNUELS ESTIMES / ESTIMATED ANNUAL TARGETS

ACTIVITES / ACTIVITIES	INDICATEURS / INDICATORS	1990	1991	1992	1993	1994	1995	TOTAL
) CONSTRUCTION AMENAGEMENT DES BASSINS VERSANTS / WATERSHED DEVELOPMENTS	- N° Plans d'Aménagement/ Watershed Plans	0	2	2	3	4	4	15
	- N° Des Bassins Versants Aménagés/ Watersheds Developed	0	0	2	3	4	4	13
	- N° Ha Protégés/ Ha Protected			600	650	650	650	2550
	- N° Digues Anti-sels/ Anti-Salt Dikes	0	0	2	3	4	4	13
	- N° Digues de Rétention/ Retention Dikes				4	5	5	15
	- N° Km Diguettes en courbe de niveau/ Km Contour Berms				10	15	15	40

P R O G E S

REPERES ANNUELS ESTIMES / ESTIMATED ANNUAL TARGETS

ACTIVITES / ACTIVITIES	INDICATEURS / INDICATORS	1990	1991	1992	1993	1994	1995	TOTAL
RECHERCHE APPLIQUEE ET SUIVI / APPLIED RESEARCH & MONITORING	- Augmentations de rendements et Productions céralières / Increase in cereals yield and production							
	- N° de parcelles de démonstration et d'adaptation de - riz pluvial - riz de bas fonds - autres céréales / Parcels tested and adaptated for : - rainfall rice - aquatic rice - other cereals			6 6 6	9 9 9	12 12 12	12 12 12	39 39 39
	- N° d'Ha amélioré - zone intermédiaire - bas-fonds / Ha improved - middle zone - low ground				20 40	65 120	125 250	210 410

TABLEAU 3/TABLE 3

P R O G E S

REPERES ANNUELS ESTIMES / ESTIMATED ANNUAL TARGETS

ACTIVITES / ACTIVITIES	INDICATEURS / INDICATORS	1990	1991	1992	1993	1994	1995	TOTAL
RECHERCHE A APPLIQUEE ET SUIVI APPLIED RESEARCH & MONITORING	- Augmentation cumulative de rendement - Riz pluvial - Riz bas fonds (Kg/Ha) / - Cumulative Increase in yield - Rainfall rice - Aquatic rice (Kg/Ha)				150 250	300 500	450 750	450 750
	- Augmentation estimée de production rizicole (Tonnes) / Estimated rice production increase				13	80	244	337
	- N° Etudes agronomiques (avec ISRA) / Agronomic studies (with (with ISRA)	*	2	2	3	4	4	15
	- N° Etudes Pédologiques/ Soils studies	*	2	2		4	4	15
	- N° Etudes Environnementales / Environmental studies			2	3	4	4	13

REPERES ANNUELS ESTIMES / ESTIMATED ANNUAL TARGETS

ACTIVITES / ACTIVITIES	INDICATEURS / INDICATORS	1990	1991	1992	1993	1994	1995	TOTAL
RECHERCHE APPLIQUEE ET SUIVI APPLIED RESEARCH & MONITORING	- Suivi / Monitoring			2	3	4	4	13
	- Etudes / Studies Affiniam	*		1	1	1	1	4
	- Bassins Versants aparallèles/ Parallel Watersheds	*		1	1	1	1	4

* Une étude par site mais un seul contrat par an avec le bureau comme ISRA pour exécuter les études de plusieurs sites annuels.

One study per site but one contract per year with an institution such as ISRA to perform studies of several sites annually.

TABLEAU 3/ TABLE 3

PROGES

REPERES ANNUELS ESTIMES / ESTIMATED ANNUAL TARGETS

TIVITES / TIVITIES	INDICATEURS / INDICATORS	1990	1991	1992	1993	1994	1995	TOTAL
) FORMATION / TRAINING	- Formation Long Terme : N° Degrès MS/ Long Term Training N° MS Degrees					2	2	4
	- Formation Court Terme aux U.S.A ou Pays Tiers : N°		1	4	3	3		11
	N° Partic		2	9	7	3		21
	Short Term Training in US or Third countries							
	- Mission d'observations N°		2	5	5	5	3	20
	N° Partic		6	5	5	5	3	24
	Observation Tours							
	- Ateliers N°		4	10	11	11	4	40
	N° Partic		80	164	186	186	62	678
	Workshops							
	- Séminaires N°		2	2	2	3	1	10
	N° Partic		35	4	4	4	2	49
	Seminars							
	- Démonstrations N°		4	3	3	3	3	16
	N° Partic		69	60	60	60	60	309
	Demonstrations							
	- Voyages Pratiques N°		3	8	13	13	7	44
	N° Partic		49	150	255	255	135	844
	Field Trips							

TABLEAU 3 / TABLE 3

P R O G E S

REPERES ANNUELS ESTIMES / ESTIMATED ANNUAL TARGETS

ACTIVITES / ACTIVITIES	INDICATEURS / INDICATORS	1990	1991	1992	1993	1994	1995	TOTAL
RENFORCEMENT INSTITUTIONNEL INSTITUTIONAL STRENGTHENING	- N° Comités Villageois de Gestion de l'eau / Village Water Mgmt Comm.		2	2	3	4	4	15
	- N° Sous-comités Villageois de Gestion de l'eau / Village Water Mgmt sub committees		7	9	15	23	30	84
	- N° Des contrats de Construction avec les Privées / Private Sector Construct. Contracts		0	2	3	4	4	13
	- N° Des Contrat. [illegible] ureaux d'Etudes Study [illegible]cts		2	2	2	2	2	10
	- N° Les ac[illegible] contrats avec les ONG'S/ Agreements or [illegible]ntracts with NGO'S		0	1	1	1	2	5
	- N° Groupements Feminins Impliqués / Women's Groups Involved		3	4	6	6	8	27

TABLEAU/TABLE 4

DUREE DU PROJET/LIFE OF PROJECT

BUDGET ESTIME/ESTIMATED BUDGET (US$)

ACTIVITE/ACTIVITY	1990*	1991	1992	1993	1994	1995	TOTAL (US$)
1 Construction **	$0	$4,000	$200,000	$500,000	$620,000	$620,000	$1,944,000
2 Recherche Appliquee/Applied Research	$0	$85,000	$150,000	$200,000	$250,000	$250,000	$935,000
3 Formation/Training	$0	$42,800	$193,400	$256,300	$204,600	$72,900	$770,000
4 Equipement/Non-Expendable supplies	$2,443	$99,000	$12,000	$12,000	$12,000	$7,227	$144,670
5 Opertions Bureau/Expend supplies	$9,940	$35,240	$35,240	$35,240	$35,240	$17,620	$168,520
6 Voyages Per Diem/Travel Transportation And Per Diem	$50,270	$169,000	$149,300	$161,500	$153,100	$103,454	$786,624
7 Autres Couts Directs/Other Direct Costs	$26,140	$138,650	$138,650	$130,700	$130,200	$92,092	$656,432
8 Salaires/Salaries	$81,294	$292,300	$292,300	$222,100	$210,400	$70,795	$1,169,189
9 *Frais Sociaux*/Fringe Benefits	$22,877	$74,100	$71,000	$56,300	$53,300	$18,643	$296,220
10 Frais Generaux/Overhead	$76,757	$191,684	$191,684	$191,684	$182,500	$78,472	$912,781
11 Logements,Scolar/Allowances	$42,857	$180,800	$180,800	$144,655	$144,655	$29,509	$723,276
12 Lsu Frais Generaux/Indirect	$3,347	$38,864	$38,864	$19,400	$19,400	$9,673	$129,548
13 Benefices/Fixed Fee	$20,000	$60,000	$60,000	$60,000	$60,000	$40,000	$300,000
TOTAL	$335,925	$1,411,438	$1,713,238	$1,989,879	$2,075,395	$1,410,385	$8,936,260

* Depenses Realisees
Actual Expenditures

** Compris Travaux Topographiques (Sous-traitance)
Includes Topographical Work (subcontract)

2.6 Proposed Supplementary Procurement Plan

The purpose of this procurement plan is to account for purchase by LBII of construction and other equipment which is not included in the USAID-LBII contract. The plan is presented in Table 5. The methodology for procurement is the same as that described in section 2.3.4 above, except for formal procurement.

The fleet of equipment proposed herein is basically the same as indicated in the Project Paper with regard to hauling of dike fill material (tractors and trailers). Some supporting equipment has been added and is cited below.

The proposed selection of construction equipment is based primarily on the objective of having construction operations as labor intensive as practicable. However, this objective must be optimized with levels of acceptable progress in developing or improving agricultural production potential in the watersheds. Accordingly, these considerations form the basis for construction equipment selection.

The primary additions and changes to the equipment indicated in the Project Paper are:

- Tractors changed from 50 to 75 HP for better productivity.
- 3-disc plow attachments to tractors for construction of contour berms.
- Rear leveling plate attachments to tractors for piling dike fill material for hand loading into trailers, and for spreading material on dikes.
- Ripper attachments to tractors for loosening fill material in borrow areas; particularly laterite, which is highly impractical to be done by hand labor.
- Wheel mounted water tank (3 cubic meters on wheel) for dike fill and concrete construction. Hauling of fresh water is necessary, and practical by hand labor for distances expected to be to 10 km from construction sites.
- Wheel mounted fuel tank, 1.5 cubic meters, for mobil fuel supply on site.
- Other small equipment to be farmers.
  * Vibratory plate compactor for dike fill material.
  * Portable water pumps for watering foundations.
  * Canvas lining for water storage in proximity to construction sites.

Procurement of items in this Proposed Supplementary Procurement Plan was not contemplated in the USAID-LBII contract. Therefore, a proposal for performing the corresponding services will be

SUPPLEMENTARY PROCUREMENT PLAN
PLAN D'APPROVISIONNEMNT SUPLEMENTAIRE

TABLE-5/TABLEAU 5

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QT	U.PRICE PRIX UNIT	AMOUNT MONTANT $	SOURCE SOURCE	RESP RESP.	DELIVERY DATE DATE LIVRAISON
	CONSTRUCTION EQUIPMENT EQUIPEMENT DE CONSTRUCTION							
1	FARM TRACTOR TRACTEUR AGRICOLE	75 HP. LARGE FRONT TIRES	5	$20,000.00	$100,000.00	USA	LBI	NOV/1991
2	TRAILER FOR TRACTOR REMORQUE 5 TONNES	FIVE TONS REAR TIP	5	$6,000.00	$30,000.00	USA	LBI	NOV/ 1991
3	SPARE PART FOR TRACTOR PIECES DETACHEES	THIRTY % OR $6000/ TRACTOR	5	$6,000.00	$30,000.00	USA	LBI	NOV/ 1991
4	DISK PLOWS CHARRUE A DISQUE	HEAVY DUTY 3 DISK PLOW	4	$3,500.00	$14,000.00	USA	LBI	NOV/ 1991
5	REAR LEVELING PLATE PLAQUE DE NIVELLEMENT	HEAVY DUTY,REAR MOUNTED ON 3 POINT HITCH	3	$3,500.00	$10,500.00	USA	LBI	NOV/ 1991
6	RIPPER RIPPERE	MOUNT ON 3 POINT HITCH. 4-6 HEAVY DUTY CHISEL	2	$2,000.00	$4,000.00	USA	LBI	NOV/ 1991
7	SPARE TIRES FOR TRACTORS PNEU DE SECOURS	FOR FRONT TIRES FOR REAR TIRES	16	$200.00	$3,200.00	USA	LBI	NOV/ 1991
8	WATER [illegible] ON WHEEL CITERNE [illegible] EAU SUR ROUE	THREE CUBIC METER CAP.HEAVY DUTY SPRING SHOCK ABSORBER,PULLED BY TRACTOR.LOCAL MADE	2	$2,500.00	$5,000.00	SENEGAL	LBI	NOV/ 1991
9	FUEL TANK ON WHEEL CITERNE A CARBURANT SUR ROUE	CAP. 1.5 CU. METER,LEAF SRING SHOCK ABSORBER LOCAL MADE IN SANEGAL	2	$1,000.00	$2,000.00	SENEGAL	LBI	NOV /1991
	VIBRATORY PLATE COMPACTOR COMPACTEUR VIBRATEUR	INGERSOLLRAND MODEL BRX-7. WEIGHT 75 KG. FREQ 5400 VPM(90 HZ)ENGINE WISCOSIN ROBIN 3.6 HP	10	$1,200.00	$12,000.00	USA	LBI	NOV/ 1991
11	PARTABLE WATER PUMP POMPE A EAU PORTATIF	TEEL. 3"ID INLET AND OUTLET.5 HP GAS ENGINE.S SELF PRIMING. 3QT FUEL TANK. CORROSIVE &ABRASIVE	4	$700.00	$2,800.00	USA	LBI	NOV/ 1991
12	WATER SUCTION PIPE TUYAUX ASPIRATION	TEEL.3" ID20 FT LONG 100 PSI. GRAINGER CAT No:3 P 634 PAGE 1299	4	$184.00	$736.00	USA	LBI	NOV/ 1991
13	[illegible] PIPE [illegible] REFOULMEMENT	TEEL. RUBBER HOSE. 3" ID. 25 FT LONG 100 PSI GRAINGER CAT No:3P-584 PAGE 1299	4	$114.70	$458.80	USA	LBI	NOV/1991
14	SUCTION STRAINER CREPINE	TEEL."3"NPT,3/8 " OPENING.GRAINGER CAT No: 1P-812 PAGE 1299	4	$12.11	$48.44	USA	LBI	NOV/ 1991
15	CANVAS FOR LINING TEMP.WATER P10 M X 10 M. WATER TIGHT. WEATHER RESISTANCE		5	$300.00	$1,500.00	SENEGAL	LBI	NOV/ 1991

SUPPLEMENTARY PROCUREMENT PLAN
PLAN D'APPROVISIONNEMNT SUPLEMENTAIRE

TABLE 5/TABLEAU 5

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QT	U.PRICE PRIX UNIT	AMOUNT MONTANT $	SOURCE SOURCE	RESP RESP.	DELIVERY DATE DATE LIVRAISON
	TOILE POUR REVETEMENT STOCKAGE D'EAU							
				SUB TOTAL :	$216,243.24			
	MATERIALS FOR TRAINING MATERIELS DE FORMATION							
1	DOCUMENTATION DOCUMENTATION		1	$5,000.00	$5,000.00	USA	LBI	NOV/1991
2	SLIDE PROJECTOR,CASE,BULB PROJECTEUR DIAPOSITIVE	SOUND/SLIDE PROJECTOR,CARAMATE MODEL 3270 OFFICE PRODT CAT No:06-3270 PAGE233	1	$910.00	$910.00	USA	LBI	NOV/1991
3	REPLACE BULB AMPOULE DE SECOURS	OFFICE PRODT CAT No:06-ELH	10	$27.17	$271.70	USA	LBI	NOV/19991
4	SCREEN ECRAN	ROLL TYPE? DIMENTION 3M X 3M	1	$200.00	$200.00	USA	LBI	NOV/1991
5	OVERHEAD PROJECTOR PROJECTEUR RETROFLECTEUR	PORTABLE 17 LB,OFFICE PRODT CAT NO:06-2000 AG	1	$719.00	$719.00	USA	LBI	NOV/1991
6	REPLACE BULB AMPOULE DE SECOURS	OFFICE PRODT CAT No:06-EVW	4	$24.74	$98.96	USA	LBI	NOV/1991
7	PORTABLE GENERATOR GENERATUER PORTATIF	LIGHT WEIGHT, GASOLINE ENGINE , 2 KW RATING	1	$1,000.00	$1,000.00	USA	LBI	NOV/1991
8	SLIDE TRAYS COFFRET A DIAPOSITIVE	80 SLIDES OFFICE PRODT CAT No:06-3740	10	$12.00	$120.00	USA	LBI	NOV/1991
9	CAMERA SNAPSHOT APPAREIL PHOTOGRAPHIQUE		4	$250.00	$1,000.00	USA	LBI	NOV/1991
1	PROJECTOR STAND SUPPORT PROJECTEUR	HEIGHT ADJUSTABLE, 4'CASTERS , OFFICE PRODT CAT No:SF-A2642	1	$138.00	$138.00	USA	LBI	NOV/1991
11	BATTERY OPERATED MEGAPHONE HAUT PARLEUR	EIGHT C BAT.9 VOLT? RANGE 16 YDS. GRAINGER CA No:5H 645 .PAGE1024	1	$190.00	$190.00	USA	LBI	NOV/1991

SUPPLEMENTARY PROCUREMENT PLAN
PLAN D'APPROVISIONNEMNT SUPPLEMENTAIRE

TABLE 5/TABLEAU 5

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY. QT	U.PRICE PRIX UNIT	AMOUNT MONTANT $	SOURCE SOURCE	RESP RESP.	DELIVERY DATE DATE LIVRAISON
12	FLIP CHART EASEL AND BOARD CHEVALET ET TABLEAU A FEUILLE	TRIPOD EASEL WITH CHALK BOARD,OFFICE PRODT CA No:T5-779-231 PAGE 302	3	$134.00	$402.00	USA	LBI	NOV/1991
13	PLASTIC SLIDE ALBUM POCHETTE EN PLASTIQUE		10	$30.00	$300.00	USA	LBI	NOV/1991
14	SLIDE SORTER TRIEUSE DE DIAPOSITIVE	HEAVY DUTY POLY BOX 50. OFFICE PRODT CAT No:C9-52513	1	$50.00	$50.00	USA	LBI	NOV/1991
15	OVERHEAD TRANSPARENCIES TRANSPAREMT	BOX 100 CLEAR. OFIICE PRODT CAT No:06--614175	4	$45.50	$182.00	USA	LBI	NOV/1991
16	AUDIO CASSETTE PLAYER AUDIO CASSETTE		2	$500.00	$1,000.00	USA	LBI	NOV/1991
17	LAMINATING MACHINE MACHINE A LAMINER		1	$1,000.00	$1,000.00	USA	LBI	NOV/1991
18	SUPPLIES APPROVISIONNEMENTS	MARKERS,CASSETTES,FILMS,SLIDES,LAMINATING FILMS,FLIP CHARTS,PAPER	1	$300.00	$300.00	USA	LBI	NOV/1991
				SUB TOTAL :	$12,881.66			
	HYDROLOGICAL EQUIPEMT EQUIPEMENT HYDROLOGIQUE							
1	LIMNIGRAPH IN A COMPLETE BOX LIMNIGRAPHE DIT X EN COFFRET	AVAILABLE AT BCG SUPPLIER , DAKAR	1	$6,540.00	$6,540.00	USA	LBI	SEPT/1991
	LIMNIGRAPHIC ROD . METER TIGE LIMNIGRAPHIQUE DE DE 1 M	AVAILABLE AT BCG SUPPLIER, DAKAR	1	$120.00	$120.00	USA	LBI	SEPT/1991
	FLOW METER MICRO MOULINET C2 COMPLETET EN COFFFRET	AVAILABLE AT BCG SUPPLIER ,DAKAR	1	$7,800.00	$7,800.00	USA	LBI	SEPT/1991
	GRAPH PAPER RECORDING 24 HR PAQUET DE 10 DIAGRAMMES POUR EVOLUTION DE 24 HEURES	HUNDRED GRAPH/PACKASE. AVAILABLE ATBCG	1	$240.00	$240.00	USA	LBI	SEPT/1991
5	REGISTERED RAIN GAUGE WITH ACC PLUVIOGRAPHE ET ACCESSOIRES	AVAILABLE AT BCG, DAKAR	1	$3,800.00	$3,800.00	USA	LBI	SEPT/1991

SUPPLEMENTARY PROCUREMENT PLAN
PLAN D'APROVISIONNEMNT SUPLEMENTAIRE

TABLE 5/TABLEAU 5

ITEM ARTICLE	DESCRIPTION DESCRIPTION	SPECIFICATION SPECIFICATION	QTY QT	U.PRICE PRIX UNIT	AMOUNT MONTANT $	SOURCE SOURCE	RESP RESP.	DELIVERY DATE DATE LIVRAISON
6	PAPER FOR RAIN FALL REGISTER ROLL PAPIER POUR PLUVIOGRAPHE		1	$148.00	$148.00	USA	LBI	SEPT/1991

SUB_TOTAL $18,648.00

GRAND TOTAL: $247,772.90

forthcoming from LBII. Included in the proposal will be a complete procurement plan methodology.

FICHES D'ACTIVITES / ACTIVITY PROGRAMS - 1991

SECTION SOCIOLOGIE / SOCIOLOGY

SECTION GENIE RURAL / RURAL ENGINEERING

SECTION AGRO-PEDOLOGIQUE / AGRONOMY-SOILS

PROGES

SECTION SOCIOLOGIE

PROGRAMME D'ACTIVITES (MARS 1991 - DECEMBRE 1991)

PERIODE	ACTIVITES	PARTICIPANTS	NBRE JOURS HORS DE ZOHOR	LIEUX/SITES	DISTANCES MOY. A PARCOURIR
18 - 22/3	Enquêtes socio org. et sur questions ordre foncier	B. PATTERSON A. SAGNA	5	Mayor Nguindir	682 KM
25 - 31/3	Rapport, termes de référence pour animateur	B. PATTERSON A. SAGNA	5	-	-
1 - 5/4	Connaissance du milieu	B. PATTERSON A. SAGNA	5	Mayor Nguindir	600 KM
8 - 12/4	Animation Sensibilisation	B. PATTERSON A. SAGNA	2	Mayor,	200 KM
15 - 19/4	Animation Sensibilisation	" " "	4	Nguindir	450 KM
22 - 26/4	Sensibilisation sur philosophie interv. projet. Mise en place CVGE	B. PATTERSON A. SAGNA	2	Mayor	300 KM
29/4-3/5	Sensibilisation sur philosophie interv. projet. Mise en place CVGE . Rapport mensuel	B. PATTERSON A. SAGNA	2	Nguindir	450 à 500 KM
6 - 31/5	Animation et organisation travaux topo et hydrologiques (installations stations) et Visite à à Thiès et Fatick	B. PATTERSON A. SAGNA " " " " " "	8 5	Mayor Nguindir Fatick, Thiès	1.000 KM 1.000 KM

SECTION SOCIOLOGIE PROGRAMME D'ACTIVITES (MARS 1991 - DECEMBRE 1991)

PERIODE	ACTIVITES	PARTICIPANTS	NBRE JOURS HORS DE ZCHOR	LIEUX/SITES	DISTANCES MOY.
- 30/6	Visite sites avec les CVGE repérage emplacements des infrastructures suivant désir CVGE	B. PATTERSON A. SAGNA	5	Mayor Nguindir	680 KM
.31/7	Rencontre CVGE et techniciens sur les plans initiaux d'aménagement	NI VAN NGUYEN B. PATTERSON A.SAGNA, L.COLY A.NIASSE, I.THIAM S.NILSVANG, D. DIOP B. KELLEY	5	Mayor Nguindir	700 KM
1 - 15/8	Réunions : Sensibilisation, CVGE, CER, préparation pour négociation de contrats	B. PATTERSON A. SAGNA	5	Mayor Nguindir	700 KM
/8 - 15/9	Mise en forme définitive des contrats et signature	NI VAN NGUYEN I. THIAM B. PATTERSON A. SAGNA	4	Mayor	682 KM
/9 - 30/11	Formation des CVGE séminaires et ateliers et CER, ONG etc...	Tous les techniciens du	4	Nguindir Mayor	800 KM

APPROUVE PAR LE CHEF D'EQUIPE
D'ASSISTANCE TECHNIQUE AMERICAINE

B. Kelley

Equipe AT/LBII - Le Chef d'Equipe

APPROUVE PAR LE DIRECTEUR
NATIONAL DU PROGES

Le 2 [illegible]

ANS LA ZONE SUD (PROGES)
IGUINCHOR

ACTIVITES " GENIE RURAL " - ANNEE 1991

26 Mars 1991

DATE	ACTIVITES	PARTICIPANTS	BUT
	SELECTION		
18.03/25.03	* Compléter le recueil de données de base pouvant renseigner sur la climatologie, l'hydrologie et la morphologie des B.V concernés	NI, THIAM GASSAMA, BALDE NIASSE	* Actualisation de la chronique hydroclimatologique du doc. de base du Projet
	* Etude de l'évolution de la marée et de la salinité sur le Soungrougrou et la Casamance Source : DRH/Ziguinchor, ISRA SOMIVAC, CRODT, etc...	NI, THIAM, GASSAMA	* Dégager une idée de la hauteur de digue nécessaire pour les sites situés dans les vallées de SEDHIOU et du SOUNGROUGROU
	* Etude statistique de la pluviométrie annuelle de la zone du projet Source : METEO NAT / DKR	NI, THIAM, GASSAMA	* Déterminer les apports en eau douce en tenant compte du pouvo évaporant de l'atmosphère
	* Tournée sur terrain (6 sites)	NI, THIAM, BALDE NIASSE, GASSAMA	* Recueil données pour fiche d'identification
24.03 -	MISSION A DAKAR * Recherche cartes topo et documents sur digue anti-sel	NI, THIAM, NIASSE GASSAMA	* Compléter renseignements fourni par la fiche d'identification d chaque vallée
	* Séance de travail avec Albergel et Dacosta contenus expertise hydrologique Consultation salle documentation ORSTOM	NI, THIAM, GASSAMA	* Dégager par échange de vue les contraintes susceptibles de se poser à nos travaux projetés
	* Consultations et Discussions IGN - DAKAR	NI, THIAM, NIASSE GASSAMA	* Se procurer des côtes repères situées dans la zone du projet

.../...

DATE	ACTIVITES	PARTICIPANTS	BUT
.03.91	* Fournir éléments d'appréciation pour chaque présélectionnée en vue de la sélection	NI, THIAM, GASSAMA NIASSE, BALDE	* Sélection site 1-2
6.04.91	* Approbation choix site 1 et 2	AUTORITES COMPETENTES	* Lancer étude de détails sur site 1 et 2
	PRECONSTRUCTION		
01.04/07.04	* Recherche complémentaire . Visite de terrain sur les 2 sites	NIASSE, BALDE	* Dégager les priorités et les préalables pour la mise en place du chantier de levé topo au niveau de 2 vallées choisies
0.04/30.06	* Travaux topo sur site 1 et 2, Calcul dessin rapport		* Dresser un fond topographique de chacun des 2 sites en vue de l'élaboration d'un plan d'aménagement préliminaire.
0.06/10.10	* Formation d'une brigade topo et bureau d'études dans structure PROGES	NI, THIAM, NIASSE GASSAMA, BALDE	* En vue d'un démarrage des travaux topo préliminaires sur sites 3-4
1.05/31.08	* Sélection site 3 et 4		
1.08/11.12	* Appel d'offre levé topo détaillé sur site 1-2-3-4	NI, THIAM, NIASSE GASSAMA, BALDE	* Pour l'élaboration d'un plan complet pour les sites 1-2-3-4 (prévu en 1992)
0.06/15/09	* Conception des ouvrages type standardisé	NI, THIAM, NIASSE GASSAMA, BALDE	* Disposer d'un plan détaillé de l'ensemble des infrastructures pouvant faire partie de l'aménagement projeté

DATE	ACTIVITES	PARTICIPANTS	BUT
31.07/15.09	* Consultation avec villageois et services techniques		* Recueillir avis des bénéficiaires
15.09/31.12	* Préparation termes de références puis Appel d'offre	NI, THIAM, NIASSE GASSAMA, BALDE	* Pour la réalisation d'un ouvrage type sur site 1 soumission - attribution
10.05/30.11	* Marché ou appel d'offre pour achat matériels de terrassement		
01.12/31.12	* Préparation campagne 1992		* Pour un démarrage des travaux de construction sur site 1 en 1992 (prévu du 28.02/31.05.92
	RECHERCHE ET SUIVI		
01.04/31.05	* Reconnaissance des lieux et installation stations complémentaires (stations projets)	NI, THIAM, NIASSE GASSAMA, BALDE	* Cerner sur le terrain la répartition du réseau hydrographique pour procéder au choix des lieux d'implantation des appareils de mesure
31.05/31.12	* Suivi de l'évolution de la marée et de la salinité sur Soungrougrou et Casamance	NI, THIAM, GASSAMA + AIDES OPERATEURS	* Déterminer les actes max et mini actuelles de la marée (hauteur de digue nécessaire sur site dont aménagement est projeté)
	* Collecte données pluviométriques et hydrométriques	NI, THIAM, GASSAMA + OBSERVATEURS	* Déterminer la pluviométrie moyenne annuelle au niveau de chaque B.V par la méthode de THIESSEN ou des ISOHYETES

DATE	ACTIVITES	PARTICIPANTS	BUT
10.04/15.09	* Elaboration termes de référence pour la recherche et le suivi hydraulique	NI, THIAM, GASSAMA	* En vue de préparer le démarrage du volet Recherche et Suivi par un bureau d'étude

APPROUVE PAR LE CHEF D'EQUIPE
D'ASSISTANCE TECHNIQUE AMERICAINE

Equipe AT/EBII Le Chef d'Equipe
26 Mars 91

APPROUVE PAR LE DIRECTEUR
NATIONAL DU PROGES

Zchr le 26 Mars 1991

M.D.R.H - D.G.R.H - P. - Projet Gestion Eaux dans Zone ... - DIRECTEUR

Doudou Socé DIOP

ACTIVITES AGRO-PEDOLOGIQUES - ANNEE 1991

DATE	ACTIVITES	PARTICIPANTS	BUT
	SELECTION		
15 au 16/3	Etudes et Définition des critères de sélection	Agro-Hydro-Topo-Socio-	- Harmoniser les approches dans la sélection des sites
18/3	Visite de la vallée MAYOR	NILSVANG - SAGNA - COLY	- Réévaluation et Reclassement du site de MAYO
19 au 25/3	Exploitation bibliographique de l'étude BCEOM (vallée de Kindiri-Medina à SOMIVAC	" - " - "	- Collecte de données en vue de l'élaboration de la fiche répertoire de la vallée de KINDIRI-MEDINA
25 au 29/3	Mission à DAKAR	" - " - "	- Recherche et collecte de données bibliographiques pour la confection des fiches répertoires de chaque vallée ; acquisition de l'information de base (cartographie, photos aériennes, études diverses) en vue de la préparation et de la réalisation des études ultérieures de terrain ; contacts et séances de travail avec ORSTOM, ISRA, Bureau Pédologique (DA), le Centre de Suivi Ecologique, INDR, CNRA Bambey, SONED Afrique SENAGROSOL - Echange de Ph mètre et de conductimètres portatifs
0 au 31/3	Choix des sites	" - " - "	- Préparation de la phase de préconstruction

.../...

ACTIVITES AGRO-PEDOLOGIQUES - ANNEE 1991

DATE	ACTIVITES	PARTICIPANTS	BUT
1 au 7/4	PRE CONSTRUCTION		
1 au 7/4	Briefing avec le consultant pédologue	CONSULTANT NILSVANG - SAGNA - COLY	- Informations de base, méthodologie de de travail
7/4 au 5/5	Elaboration de Termes de Références pour une étude cartographique des vallées	CONSULTANT NILSVANG - SAGNA - COLY	- Cartographiés au 1/2000e des vallées, Cartographie factorielle et cartographie d'aptitude culturale des différents sols
"	Elaboration des Termes de Références pour un programme de recherche agricole et de suivi des paramètres physico-chimiques des sols.	" " "	- Maîtrise des techniques de récupération de gestion et de mise en valeur des terres salées
5 au 31/5	Soumission et Discussion des 2 termes de référence avec les autorités (UGP - USAID - GS)	NILSVANG - SAGNA - COLY	- Approbation des dits termes de référence par les autorités
1 au 30/6	Préparation du cahier des charges de prescriptions techniques pour l'étude cartographique et concertation avec ISRA des conditions et des modalités d'exécution du programme de recherche conformément aux termes de référence y afférent	" " "	- Appel d'offre pour les études mentionnées ci-dessus
/7 au 15/8	Attente de la réponse de l'appel d'offre	" " "	- " " " " "

ACTIVITES AGRO-PEDOLOGIQUES - ANNEE 1991

DATE	ACTIVITES	PARTICIPANTS	BUT
1/7 au 15/8	Signature de contrat avec ISRA et Démarrage des travaux de recherche	ISRA + NILSVANG - SAGNA COLY	Possibilité d'installation de parcelles pilotes
15 au 31/8	Dépouillement des offres	Autorités compétentes NILSVANG - SAGNA - COLY	- Sélection du bureau d'exécution de l'étude cartographique
1 au 15/9	Soumission de dépouillements des offres aux autorités pour approbation	UGP - ERGES	- Approbation pour signature de contrat en vue du démarrage de l'étude
15 au 30/9	Préparation du contrat	UGP - ERGES et Bureau d'étude choisi	- Précision des modalités d'étude et définition des tâches et responsabilités des parties impliquées dans l'étude
1/10/1991 au 30/5/1992	Démarrage des études par le bureau choisi	Bureau d'étude choisi UGP - ERGES	- Suivi et Coordination de l'étude
1/5 au 30/11	Enquêtes agro-économiques de base	Sociologie + Agronomie	- Obtention des informations de base sur l système d'exploitation agricole des site d'intervention du PROGES
31/5 au 15/11	Participation à l'élaboration des plans d'aménagement, de contrôle et de gestion des eaux d'exploitation et de maintenance et à la soumission de ces plans aux villageois concernés	UGP + ERGES	- Adoption des plans définitifs de réalisation de travaux par les principaux acteurs

ACTIVITES AGRO-PEDOLOGIQUES - ANNEE 1991

DATE	ACTIVITES	PARTICIPANTS	BUT
?/10 au 20/11	Elaboration du rapport d'activités pour l'année 1991 et Préparation du programme pour l'année 1992	NILSVANG SAGNA COLY	Compte rendu des différentes activités effectuées et Programmation pour l'année 1992

APPROUVE PAR LE CHEF D'EQUIPE
D'ASSISTANCE TECHNIQUE AMERICAINE

Equipe AT/LBIL, Le Chef d'Equipe

APPROUVE PAR LE DIRECTEUR NATIONAL
DU PROGES

Echor ... 05/03/91

M.D.R.H - D.G.R.H - Projet Gestion ... DIRECTEUR

... Socé DIOP

PLAN DE FORMATION, DUREE DU PROJET /

LIFE OF PROJECT TRAINING PLAN

ANNEX B

THE SOUTHERN ZONE WATER MANAGEMENT PROJECT

ZIGUINCHOR, SENEGAL

LIFE OF PROJECT TRAINING PLAN

1990-1995

USAID / DAKAR

PROJECT NO. 685-0295

prepared by

LOUIS BERGER INTERNATIONAL, INC.,

LOUISIANA STATE UNIVERSITY

and

TECH INTERNATIONAL, INC.

APRIL 1991

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ANNEXES

SOUTHERN ZONE WATER MANAGEMENT PROJECT

LIFE OF PROJECT TRAINING PLAN

1990-1995

I. INTRODUCTION

Institutional strengthening is an important component of the SZWM Project, and as part of the institutional building approach, training will play a major role in all project activities. It will be a unifying element in the project. The training plan will, therefore, spring from, and reinforce, all work plan activities.

II. OBJECTIVES

The goal of the project is to increase cereal production, mainly rice, in the Kolda and Ziguinchor regions. The project purposes are to help farmers recover lost productive farmland and to improve their utilization of water to produce crops.

The objective of the training program is to provide the appropriate mix of training activities, both in-country and in other countries, which will meet the needs of three distinct groups of participants. These are:

(1) GOS personnel associated with the project (engineers and agriculturists)
(2) village committees and farmer groups, and
(3) the private sector (local artisans / contractors and nongovernmental organizations).

Figure 1 provides an overview of the activities for the major groups of training participants.

III. RATIONALE FOR TRAINING

The training planned will assist farmers in achieving their overriding priorities:

(1) to reclaim lost ricelands,
(2) to increase rice production, and
(3) to reach self-sufficiency in food production.

It will provide village leaders and farmers with the knowledge and skills needed to guide them in dike construction, operation, and maintenance.

The training will improve the local government services' ability to develop and execute water management plans. GOS personnel involved in the project will learn new knowledge and develop new skills in operation and maintenance, land reclamation, soil and water management, and soil conservation.

The private sector likewise will benefit from the project. Local contractors will participate in constructing watershed structures according to acceptable engineering standards. Non-governmental organizations will also benefit. Their members will learn how to build dikes, and they will learn improved farm practices which will increase their crop production.

IV. TRAINING PROFILES

A. GOS PERSONNEL

Profile. The GOS officials directly associated with the project who are to be trained consist of the members of the regional water management teams (WMTs) and the regional technical committees (RTCs), from the Kolda and Ziguinchor regions, as well as the project director who leads the project management unit (PMU). Most of these officials have participated in various short-term training programs and educational trips. Each has worked in water management or agriculture for several years. All of them have studied English in middle and secondary schools.

Other government personnel indirectly involved with the project who may be considered for training include the regional agricultural inspector and the ingénieurs des travaux du génie rural in the Ziguinchor and Kolda regions. In each department within the two regions, there is an ingénieur des travaux agricoles. Working under them in all arrondissements are agents techniques de l'agriculture. Additional information regarding the counterparts who work with the TA team members is found in Figure 2.

Training Needs. The training needs assessment for GOS personnel indicates a need for further training in the following areas:

(1) development and execution of water management plans,
(2) extension skills and methodologies,
(3) personnel and financial management,
(4) intensification of crop production,
(5) soil reclamation,
(6) soil conservation,
(7) technical knowledge and skills, and
(8) work ethics.

Educational Media Development

Slide sets, posters, flipcharts, transparencies, handouts and models will be developed for use with the in-country educational program. They will be used in the seminars, workshops, on-the-job training, and meetings held with counterparts and village groups. The Training Advisor will assist in the planning and production of this media.

Training Methodologies

Long-term Training. Four participants will be carefully selected for long-term training in the U.S. leading to Master of Science degrees, two in engineering and two in Agriculture. The Engineering degrees will place emphasis on water management and the agricultural degrees will stress agronomy (soil science), soil conservation and extension.

The Selection Procedure. The Project Director will select candidates from the members of his staff serving as TA team counterparts. The Chief of party must concur. Candidates will then be interviewed and their records reviewed by the Training Specialist to determine their qualifications for MS degree training.

Criteria for Selection. The criteria for determining eligibility are as follows:

(1). A complete and accurate chronological outline of all previous college-level education.

(2). An official transcript and record of all degrees received from all universities attended. The transcript should include all courses attended and the grades received. A certified English translation must accompany these documents if they are in another language.

(3). A Bachelor's degree or equivalent with a grade-point average of a "B" or better (3.00 out of a possible 4.00) on all previous graduate and under-graduate work from an accredited college or university.

(4). Satisfactory scores on the GRE (Graduate Record Exam).

(5). Letters of recommendation from superiors. These letters should include previous experiences and importance to the future success of the project.

(6). No personal or family problems that could adversely affect the training program.

(7). Understanding of spoken and written English will be given consideration.

It is planned for the first two participants, one engineering candidate and one agricultural candidate, to arrive in the U.S.A. and begin their intensive English training not later than Jan.1, 1992, commence their academic studies in June 92 and graduate in June 1994. The other two participants would start English training in Jan 93, begin academic studies in June 93, and complete their studies in June 1995.

Two universities are being considered to provide the master degree training: Louisiana State University, and the University of Arizona. These two universities have been training international students for many years, including students from Senegal. Louisiana State University has excellent faculty and facilities for teaching agricultural subjects such as soils, rice production, soil conservation and extension. The University of Arizona is strong in agricultural engineering with emphasis on water management.

In conducting the long-term training program, all regulations in USAID Handbook 10 will be followed.

Short-term Training

Short-term Training. All counterparts will be sent to other countries, including the U.S., for short-term training (1-3 months) in water management and agriculture to update their knowledge and skills in their area of responsibility. Since most of them understand English, they will be sent to the U.S., as well as to Francophone countries. The training centers selected have been successfully training international students for many years. Courses selected include the following:

Management of Natural Resources is offered at the Arizona - Sonora Field School in Tucson. This is a four week course taught in June and covers such topics as:

-plant growth and water requirement,
-soil types, fertility, infiltration rate,
-water holding capacity, salinity management,
-erosion and its control,
-water measurement, quality, availability, uses,
-irrigation and drainage, and
-degradation of natural resources, its symptoms causes and controls.

The project agronomists will attend this course in June 1992. The cost per participant is estimated to be $8,000 for a total cost of $16,000.

Small Scale Irrigation and Water Management is offered at the Arizona - Sonora Field School in Tucson. This is a four week course taught in July and covers such topics as:

-hydraulic principles land practices,
-soil management in the field,
-crop production technology,
-theory and applications of water management,
-social and economic factors in water management,
-irrigation and drainage principles and practices, and
-field testing, surveying and construction technologies.

Two project hydraulics engineers will attend this course in July 1993. The cost of this course is estimated to be $8,500 per participant for a total of $17,000.

Soil Testing and Classification and Fertilizer Recommendations is offered by Auburn University in Alabama. This is an eight week course taught in June - August and covers such topics as:

-soil sampling and analysis for nutrient needs,
-soil fertility research in field experiments,
-soil analysis and field research for use in making fertilizer recommendation for different crops and soil conditions, and
-use of fertilizers and lime for correcting nutrient deficiencies identified by soil tests.

A project agronomist will attend this course June - August 1993. The cost is estimated to be $11,000.

Farming Systems Approach to Research and Extension for Small Farms is offered by the University of Florida in Gainsville. This is a five week course taught in July - August and covers such topics as:

-target and research area selection,
-problem identification and development of a research base,
-planning on-farm research,
-conducting on-farm research and analysis,
-extension of results,
-development and improvement of diagnostic surveying skills,
-gathering analysis of farm generated agronomic and economic data, and
-dissemination and use of the results to try to bring about desired improvement in income and farm family welfare.

Two project extensionists will attend this course in July - August 1992. The cost is estimated to be $8,700 per participant for a total of $17,400.

Water Management at Crop Production Level is offered by the Centre International de l'Irrigation at the Institut Agronomique et Vétéinaire Hassan II in Rabat, Morocco. This is a six week course taught in August - September and covers such topics as:

-planning irrigation systems,
-evaluating different irrigation systems,
-loss of water in the canal system,
-organizing producers for water management,
-evaluating social and cultural constraints,
-use of research and extension to improve production,
-water, soil and plant relationships,
-influence on production of types of crops,
-soil climate, irrigation, pest control, and soil practices, and
-improving water management in developing countries.

Two hydraulics technicians will attend this course in Aug - Sept 1991. The cost per participant is estimated at $6,400. for a total of $12,800.

Soil Management and Erosion Control course is offered by the Centre National d'Etudes Agronomiques des Régions Chaudes in Montpellier. This is a five week course taught Mar - April and covers such topics as:

-causes of erosion,
-quantifying erosion damage,
-relation among erosion causes,
-types of cropping and natural resource management,
-soil management and its implications for the local population,
-design of land management with villagers participating, and
-map making and interpretation.

This course will be attended in Mar-April 1992 by a project hydraulics technician. The cost is estimated to be $6,200.

Modern Rice Production Techniques is offered by Louisiana State University in Baton Rouge. This is a three week course planned for April-May specifically for participants from the SZWM project to introduce them to modern rice production techniques and will cover such topics as:

- Louisiana wetlands, land reclamation, and water management,
- seedbed preparation, fertilization, and irrigation,
- pest control, harvesting, rice drying, and storage,
- milling, grading, quality control, marketing, rice farm equipment, and
- the role of governmental agencies, farm organizations, and the private sector in rice production.

The training will consist of lectures, video presentations, discussions, demonstrations, field trips, and observational tours. This short course will be presented in April - May 1992 for a group of 4 participants and will be repeated in 1993 for four more participants. They will be selected from counterparts and GOS officials from the regional or national level of the Ministry of Rural Development and Hydraulics. The cost for a group of 4 participants including travel, daily maintenance, insurance, transportation in Louisiana and instruction is estimated to be $25,000 or $6,425 per participant.

Study of Water Management for Crop Production in Africa is offered by the Centre National d'Etudes Agronomiques des Régions Chaudes. The course is taught in Montpellier and in Ouagadougou and is a 10 week course which includes such topics as:

-technical and socio-economic surveys in irrigated perimeters,
-interpreting perimeter studies,
-assessment of water needs of soils,
-evaluation and mobilization of water resources,
-design of water systems, and
-managing and maintaining the irrigation system.

This course will be attended by a project hydraulics technician in April-June 1994. The estimated cost is $16,700.

Resource Development of Watershed Lands is offered by the University of Arizona in Tucson. This is a six week course taught in June-July and covers such topics as;

-range assessment and management,
-soil and water conservation techniques,
-natural resource economics and management,
-hydraulics measurements and prediction methods,
-social and economic difficulties in developing watershed lands, and
-effective management of water resources to increase food and fiber production.

This course will be attended by a project engineer during June through July 1994. It is designed to develop an understanding and appreciation of the difficulties of developing watersheds. The cost is estimated to be $9,400.

Problems and Practices of Irrigation Systems is offered by Colorado State University in Fort Collins. This is an eight week course taught in June-August and covers such topics as:

-basic soils identification,
-soil-water-plant relationships,
-land leveling, irrigation methods and practices,
-water quality and salinity problems,

-drainage problems and remedies,
-economics and sociology of irrigation, and
-extension methods.

Participants will learn to plan, design, establish, and maintain irrigation systems in their home countries. This course will be attended by a project engineer in June-Aug 1994. The cost is estimated to be $13,000.

Observational Tours

Trips will be taken by GOS personnel to observe new techniques important to the improvement of Agriculture in general and to the project in particular. Of special interest will be activities providing training experience in land reclamation, water management, soil conservation, rice production and extension.

Observational Tour (USA). An observational trip of two week duration is planned for the project director (Doudou Diop) and an official from the Ministry of Rural Development and Hydraulics in Dakar (Sene or Thiam) to the U.S. in July - Aug 1991. They will visit the contractor's office and the USAID office in Washington, then proceed to Louisiana for a tour of the rice production area of that state. They will observe rice irrigation, harvesting, storage, milling, coastal wetlands and visit the Rice Experiment Station in Crowley. They will also meet with rice producers and processors. In addition, they will go to the Louisiana State University campus in Baton Rough to meet LSU officials and become acquainted with university facilities and programs. This will be followed by a similar visit to the University of Arizona campus in Tucson. Long-term project participants will attend these two universities. The cost for both officials for travel, per diem, insurance, and an escort in Louisiana and Arizona is estimated to be $15,000.

Observational tour (Mali). An observational tour is planned to the Haute Vallée project in Mali for the four counterparts working in agronomy and extension in the SZWM project. USAID/Mali has financed several projects during the past years dedicated to the further development of this fertile valley. These projects have promoted soil improvement and conservation, crop production improvement, including irrigated rice production, cooperatives, rural road construction, alphabetization, farming systems research and extension, etc. Much effort has been expended to improve the extension service rendered farmers and this will be of interest to the SZWM extensionists. The participants are scheduled to be in Mali two days with one day for travel in September 1991. However, this trip may be delayed because of the present political problems in Mali. The estimated cost per participant is $750 for a total of $3,000. Other observational visits will be maybe as the project progresses and places of educational value are selected.

Workshops

(a). **Language Training.** English language training will be provided 2 hours per week and one week of intensive training before departure of counterparts going to the USA for long-term and short-term training. This will be offered as needed during 1991-94.

Training in local languages will be given as needed for individuals working in villages where they do not speak the local languages. Two or 3 days a week in "Manding" will be provided in the beginning. It is estimated that 16 or 20 hours will be necessary. Books and materials will be purchased when available. The estimated cost will be about $1,000 over the life of the project.

(b). **Computer Training.** Computer training will be provided office personnel and counterparts so that they can effectively use the project computers and become more efficient in related aspects of their responsibilities. A local firm providing computer instruction will be employed to provide computer instruction including instruction at the project office as needed.

(c). **Management training** will be provided the project director during the second year of the project. He will attend CESAG in Dakar for a week of intensive training.

Seminars

Seminars will be held for GOS personnel as needed throughout the life of the project.

Seminar for engineers. A seminar for engineers doing water management work in the Casamance will be held in Ziguinchor in October 1991. Participating will be GOS engineers as well as engineers from other projects in the Casamance. Fifteen or twenty engineers are expected to attend this conference. The purpose of the seminar is for an educational exchange of experiences and lessons learned about planning, construction, and maintenance of watershed structures. In addition, it will encourage cooperation and collaboration among the different projects in the Casamance. The cost is estimated to be $2,000.

Seminar for GOS Officials. A seminar is scheduled for GOS Officials and expatriates doing agricultural work in the Ziguinchor and Kolda regions. The purpose of the seminar is to exchange agricultural information, review research being conducted and determine ways for greater cooperation. This will be a two day seminar scheduled for October 1991. Twenty participants are expected to attend. The cost is estimated to be $2,500.

Demonstrations

Demonstrations. Demonstrations will be held when needed to teach GOS personnel skills such as construction of watershed structures, maintenance of dikes, etc.

Field Trips

Field trips will be taken by GOS personnel to experiment stations, demonstration plots, watershed sites, reforestation sites, etc., that will increase their knowledge in subject areas beneficial to the project.

The Gambia Field Trip. A two day trip is planned to the Soil and Water Management Unit (SWMU) in Yundum, The Gambia, in April 1991 for 14 TA team members and counterparts. That AID financed project is similar to the SZWM project and has the same objective. The visiting group will meet with the SWMU director and technical advisor to visit the project site and observe the following conservation practices adapted in that water management project:

1. Anti-salt intrusion dikes,
2. Water retention dikes,
3. Diversions,
4. Waterways,
5. Gully control structures,
6. Contour berms,
7. Strip cropping, and
8. Conservation tillage.

Estimated cost for the trip is $1,400.

Agroforestry Field Trip. A field trip will be taken in October 1991 by TA team members and their counterparts to visit sites and activities of the Reforestation Project in Senegal. The purpose of the trip is to develop an understanding and appreciation of the benefits of reforestation to the environment in Senegal, and how agroforestry fits into the total farming program. This two day trip will cost about $1,500. Other field trips will be taken by the GOS personnel as trips of educational value are identified and become available.

On-the-job Training

On-the-job Training. On-the-job training is most effective in accomplishing such educational objectives as changing attitudes, enhancing appreciation, re-enforcing understanding, increasing knowledge or developing skills. Much of the training needs of GOS personnel will be provided through on-the-job training (OJT). The basic thrust of OJT is the transfer of developmental know-how and setting high standards of professionalism, work ethics, technical and managerial abilities. OJT is based on a friendly, yet

professional working relationship and mutual respect among TA members and their counterparts. OJT will be used with both engineering and agricultural staffs to develop new skills in the following:

-operation and maintenance,
-land reclamation,
-soil and water management, and
-soil conservation.

By working side-by-side with GOS managers, technicians and other officials in the project area, the TA team will work towards the improvement of present methods and systems and thus achieve project goals and objectives. The TA team will set high standards of professionalism, work ethics and developmental approaches that GOS personnel will emulate and continue after the contract has been completed.

Each team member and his counterpart form a team dedicated to developing better ways of getting the job done. The counterpart with his experience in current methods of doing things, and his knowledge of existing governmental agencies and their methods of operation will be a valuable asset in the training program. In addition, his acquaintance with the functions and role of local organizations and the private sector will be beneficial in implementing the program. The counterpart's understanding of his people, their languages, customs and traditions, make him an important member of the team. Likewise, the TA team member, an innovator with more advanced training and broader experience has much to contribute to the success of the team effort.

Together, the TA team members and their counterparts will plan their work, exchange ideas, resolve problems, and try new methods and approaches. They will apply theoretical knowledge to different field settings, and in the end, they will revitalize traditional services. The technical and managerial capacity of the Ministry of Rural Development personnel will be enhanced through these on-the-job training activities.

The role of the Training Specialist and the In-Country Training Advisor will be to work with the Project Director, Chief of Party, and TA members in planning, implementing and evaluating the OJT training activities.

Meetings

Meetings of GOS project personnel and TA team members will be held as needed to keep all members appraised of project progress, review problems and plan solutions, and plan future project activities. Educational information and opportunities will be shared with project personnel as needed.

B. FARMER GROUPS

Profile. The farmers in the two regions are mostly poor and illiterate and live in small villages. They cultivate small plots of peanut, millet, corn, rice, fruits, and vegetables. The middle Casamance is dominated by the Mandings having a prominent sex division in agricultural production. Men work in the upland cash crops (peanut, millet, etc.) while women work in the staple (rice) lowland crop. The village council headed by the village chief and the spiritual leader are the decision makers.

The lower Casamance has a different ethnic groups with Diola being more predominate. In this area, both men and women work on the plateaux as well as in the lowlands. The village council composed of both men and women active community members, and the council of Elders are the village leaders.

Training Needs. Training is needed to organize, motivate, and prepare the village WMTs and farmers for the job of planning, constructing, operating, and maintaining the water-control infrastructures. They lack knowledge and skills necessary for building and operating the more durable water-control dikes, berms, gates, and dams required to protect and recover the valley lands. Training is also needed in improved crop production practices.

Training Methodology

Training Methodology. The regional MWTs will be trained in planning, construction, operation, and maintenance of water-control infrastructures. They in turn will become "trainers" who will then train the village WMTs who will work with the farmer groups. The project will also carry out direct farmer training including on-site training in maintenance, emergency repair procedure and planning operations. The methods to be used in teaching farmer groups include workshops, demonstrations, field trips, and village meetings.

Workshops. Workshops will be used to explain project objectives and win the support, cooperation and participation of farmer groups. They will also be used to teach:

- skills needed in the construction, operation and maintenance of watershed structures, and
- improved practices needed to increase crop production.

Demonstrations. Demonstrations will be utilized in teaching the physical skills of dike construction and maintenance to the village water management teams.

Field trips. Field trips will be taken in-country and in neighboring countries. For example, field trips will be made to

the Soil and Water Management Unit in The Gambia for 15 village water management committee members in Jan 1992. By the end of 1993 the SZWM project should have completed construction of at least four sites. In January of 1993, 1994, and 1995 at least 20 village water management committee members and village leaders will make field trips to these sites each year. Sixty participants will visit the sites over the life of the project. The purpose of the field trips to model sites is to show the village groups (particularly the village water management team members) the type of construction planned, and explain the benefits to be derived by them through increased crop production. The visits to The Gambia will last two days and will cost about $1,500 each. The in-country visits will last one day and cost about $300 each for the noon meal and transportation.

A one day field trip will be made in Dec 1991 in the Casamance area for 20 farm leaders to visit sites and activities of the reforestation project. The purpose of the visit is to gain an understanding and appreciation of the beneficial effects of agroforestry to the local environment. This trip will be repeated (number of trips and participants) in 1992, 1993, 1994, and 1995.

Meetings. Meetings will be held in the villages where sites have been selected by project personnel for dike construction. The purpose of these meetings will be to reach large numbers of villagers to explain the project objectives and motivate the villagers to participate in the activities of the project. Meetings will also be held to present the knowledge and skills needed by farmers in order to apply the improved farm practices that will increase their crop production.
Slide presentations, charts, poster and flipcharts will be used in presenting information.

C. TRAINING FOR PRIVATE SECTOR

Profile. There are private entrepreneurs who construct masonry buildings and masons who do small concrete jobs in the local regions. Several that were contacted expressed interest in doing the concrete work for the project. Some have necessary tools and equipment. There are truckers in the regions available to haul materials.

Regarding non-governmental, or organizational groups in the two regions interested in agriculture, there are the following:

- -animateurs,
- -groupements féminin,
- -Associations des Jeunes Agriculteurs de Casamance,
- -Association Fédérative des Agriculteurs de Département de Sédhiou, and
- -the Fédération des Associations pour le Département Economique du Balanta Counda.

Training Needs. The local construction contractors and masons lack knowledge and skills in:

-planning, design and construction of watershed work,
-specialized services in earth moving, and
-concrete planning and developing simplified contracting procedures.

They need to be taught how to make concrete at acceptable engineering standards. This also applies to all infrastructures.

The non-governmental groups mentioned above are either farmers or otherwise have a direct interest in agriculture. Their members need to develop the skills of dike construction and learn the improved farm practices for increased crop production.

Training Methodologies

Training Methodologies. In the private sectors, project personnel will be working with two distinct groups:

-Contractors, and
-Non-governmental Organizations

(1). Contractors

On-the-job training. Project personnel will be working with individual contractors or with small groups of contractors using on-the-job training in teaching them how to construct water management structures according to the engineering specifications required. Close supervision will be given to the work of contractors and artisans involved in the construction to ensure a quality product.

(2). Non-governmental Organizations

Methodology. The teaching methods to be used in working with members of organizations are:

-workshops,
-field trips, and
-meetings.

Workshops. Workshops will be used to motivate the non-governmental organization groups in accomplishing the objectives of the project and gain their cooperation and participation in project activities. In addition workshops will be used to teach them the knowledge and skills required to construct, operate and maintain watershed structures. They will also be taught farm practics for increased production.

Field trips. Field trips will be conducted to places of interest and educational value in agriculture and water management. For example, field trips will be taken to dike construction sites, agroforestry project sites, demonstration plots, experiment stations, etc.

Meetings. Meeting will be held in the villages where project sites have been selected for large groups of farmers. These meetings will usually last two to four hours and will include lectures, discussions and slide presentations. The purpose will be to create interest in the project objectives, gain their cooperation and participation and teach improved farm practices.

V. TRAINING PROGRAM AND BUDGET

A variety of training activities will be conducted both in-country and in other countries to fulfill the training needs of the project. These training activities have been divided into nine major categories.

The training activities are listed below and defined as they apply to this project.

(1). **Long-term training** is academic training leading to a Masters degree.

(2). **Short-term training** is training that lasts from three weeks to three months, follows an organized curriculum offered at a training center, and provides knowledge and skills in agriculture or water management.

(3). **Observational tours** are visits made to other countries to relevant projects or programs of interest that will provide opportunities for GOS personnel to observe successful agricultural and water management activities. New knowledge and skills are learned that will be beneficial in future project activities.

(4). **Workshops** are organized group activities that may last from one day up to a couple of weeks, depending upon the need. They may be held in-country or in other countries. Workshops will be used in teaching new knowledge and skills needed for project activities. Lectures, discussions, and visuals will be used.

(5). **Seminars** are similar to workshops but may be more formally organized and includes such activities as presentation of scientific reports, results of experiments conducted,

guest lecturers, discussions or new techniques and review of progress made in areas of interest to project personnel.

(6). **Demonstrations** refer to "hands-on" or "learning-by-doing" or watching as task being completed. This method will be used in teaching physical skills such as dike construction.

(7). **Field trips** are visits to programs or places that will provide educational experience in agriculture and water management. These trips will be made in Senegal and other countries to experiment stations, demonstration plots, agroforestry sites, water management sites, etc.

(8). **On-the-job training** refers to the training conducted while working with counterparts. This method of teaching will be effective in working with individual project personnel or small groups to change attitudes, enhance understanding, increase knowledge and develop the new skills for project implementation.

(9). **Meetings** are formal gatherings that will be used to reach large village groups to create interest in the project objectives, present new information about project activities, and develop new skills. Lecture, flipchart, poster and slide presentations will be made.

The Life of Project activities are summarized in Figure 3, and the estimated budget for these activities is presented in Figure 4.

VI. TRAINING ORGANIZATION

The organizational structure directing project training activities under the leadership of the Chief of Party and the Project Manager includes a short-term Training Specialist and a short-term Training Advisor. The Training Specialist is responsible for training conducted in countries other than Senegal. He will make recommendations to the Project Director and Chief-of-Party in regards to such training, help with these activities, assist with training plans and reports, and be responsible for the expenditure of training funds assigned to the sub-contractor for training purposes.

The In-Country Training Advisor provides recommendations, assistance and over-all supervision of the planning and implementing of training activities in Senegal. In-country training will be conducted by TA members and their counterparts, local educators,

and consultants. The in-country Training Advisor will work with the TA members on short-term assignments as appropriate during the ye . The Training Advisor will assist with m dia development for the training program such as:

-flipcharts,
-models,
-slide tape presentations,
-illustrated handouts, and
-posters

Local educators will assist in the training program as needed. The project administrator will provide assistance in administration, logistics and finance as it pertains to the training program.

The TA team Sociologist will serve as the Local Training Coordinator to assist the Training Specialist and the In-Country Training Advisor to assure continuity in all training activities when they are not on the project site. The short-term Training Specialist and the in-country Training Advisor will visit the project as necessary to fulfill their project responsibilities. They will be assisted with training activities by the TA team members, their counterparts, short-term consultants and others as needed. There will be continuous communication among the Training Specialist, the in-country Training Advisor and the Local Training Coordinator.

Figure 5 located in the annex contains an organizational chart for the training program.

VII. TRAINING ACTIVITY PLANS AND REPORTS

Detailed plans will be prepared prior to the start of any training activity except for OJT activities. These plans will include:

-training objectives,
-teaching methodologies,
-teaching aids to be used,
-equipment needed,
-when and where held,
-transportation needs, lodging, meals,
-who will do the training,
-who will participate, and
-cost.

Necessary approval will be obtained before conducting any training activity. After each training activity is completed, a report will be made indicating if the objectives were met, problems encountered and recommendations made which will be beneficial for future activities.

FIGURE 1. OUTLINE OF TRAINING PLAN

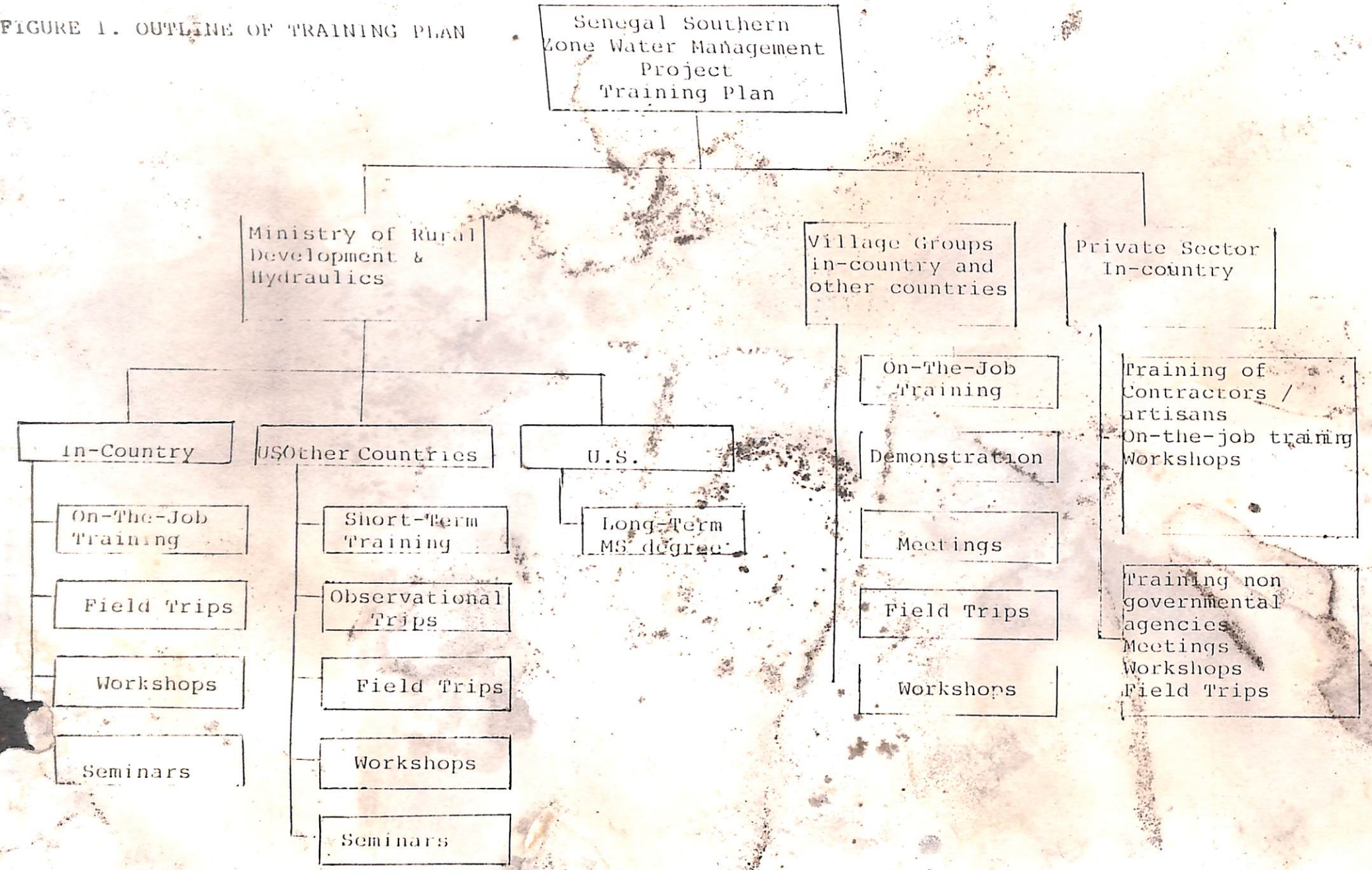


FIGURE 7 BACKGROUND REGARDING PROJECT COUNTERPARTS

NAME	POSITION	EDUCATION	EXPERIENCE
l Badji brahima Thiam	Ingénieur de l'Equipe Régionale de Gestion de l'Eau Kolda	Ingénieur Hydraulicien diplômé AGR MET/OMM-Niamey Niger	Ingénieur Hydraulicien ERGE/K. da Chef Bureau Gestion et Exploitation Réseau Hydrologique National Resp. Projet Gambie
.amine Coly	Ingénieur Agropédologue Equipe Régionale Gestion de l'eau Ziguinchor	Ingénieur Agronome diplômé URSS	Agropédologue ERGE/Ziguinchor Chef Division Régionale action et progamme IRA Ziguinchor. Adjoint Inspecteur, Inspection Agriculture Zchor
Ibrahima Sagna	Ingénieur Agropédologue Equipe Régionale Gestion de l'Eau Kolda	Ingénieur Agropédologue diplômé Roumanie	Agropédologue ERGES/Kolda Agropédologue Projet RAF 82/047 PNUD/FAO/OMVG Chef Bureau pédologique Dir. Agriculture
Cheikhou Gassama	Ingénieur Hydraulicien ERGE/Ziguinchor	Ingénieur Hydrotechnicien diplômé en Chine	Ingénieur Hydraulicien ERGE/Ziguinchor Chef Division Régionale de l'Hydraulique Kolda. Adjoint Chef Division Régionale Zcho
Alphonse Sagna	Ingénieur Agronome Agrovulgarisateur ERGE/Ziguinchor	Ingénieur Agronome diplômé Yougoslavie	Agrovulgarisateur ERGE/Ziguinchor Responsable Projet moto-mécanisation agricole en Casamance SOMIVAC Resp. Ferme Semencière SOMIVAC
mary Niasse	Géomètre et Conducteur des travaux à l'équipe régionale Gestion de l'eau Zchor	Géomètre diplômé de l'école des travaux publics et bâtiments, Dakar Sénégal	Géomètre Conducteur des Travaux ERGE/Zchor Chef Division Régionale Hydraulique Kaolack Ziguinchor, Diourbel
Baldé	Topographe - Surveillant des travaux ERGE/Kolda	Technicien Supérieur du Génie Rural diplômé de l'ENCR Bambey Sénégal	Topographe Conducteur Travaux ERGE/Kolda Chef Division Génie Rural PRS-SOMIVAC Chef Section Etudes, Aménagements PRS
oudou S. Diop	Directeur du Projet Gestion de l'Eau dans la Zone Sud Ziguinchor	Ingénieur du Génie Rural Hydrotechnicien Diplômé Roumanie	Directeur du PROGES Chef Projet Digues antisel DAIH/MH Chef Division Aménagements hydroagricole DAIH/MH

FIGURE 3

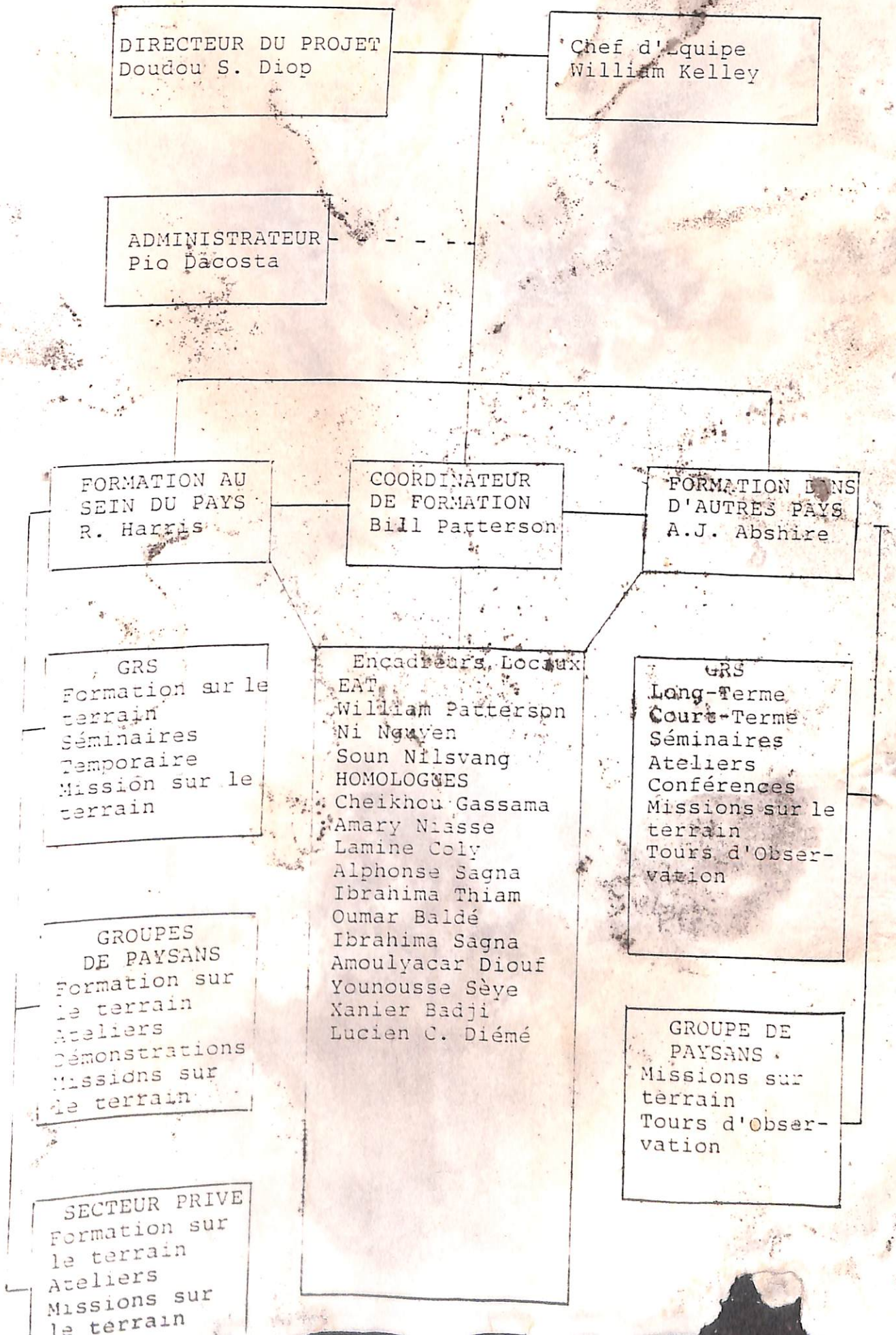
NOMBRE ESTIMATIF D'ACTIVITES DE FORMATION ET DE PARTICIPANTS

ACTIVITES/INDEX	90	91	92	93	94	95	TOTA
Formation à Long-Terme					2	2	
Formation à Court-Terme							
1. Nombre de cours		1	4	3	3		11
2. Nombre de participants		2	9	7	3		21
Tours d'Observation							
1. Nombre de tours		2	5	5	5	3	20
2. Nombre de participants		6	5	5	5	3	24
Ateliers							
A. Personnel GRS							
1. Nombre d'ateliers			2	2	2	1	7
2. Nombre de participants			4	6	6	2	18
B. Groupes de paysans							
1. Nombre d'ateliers		1	5	6	6	3	21
2. Nombre de participants		20	100	120	120	60	420
C. Organisations							
1. Nombre d'ateliers		3	3	3	3		12
2. Nombre de participants		60	60	60	60		240
Instruction temporaire							
1. Anglais GRS							
Nombre de participants		9	5	5	5	4	28
2. Langue Mandingue, GRS - EATA		7					7
Nombre de participants		6					6
Séminaires - GRS							
1. Nombre de Séminaires		2	2	2	3	1	10
2. Nombre de participants		35	4	4	4	2	49
Démonstrations							
A. GRS - ERGE							
1. Nombre de démonstrations							
2. Nombre de participants		9					9
B. Groupes de paysans - CVGE							
1. Nombre de démonstrations		3	3	3	3	3	15
2. Nombre de participants		60	60	60	60	60	300
Voyages Pratiques							
A. Personnel GRS							
1. Nombre de voyages		2	1	1	1	1	6
2. Nombre de participants		29	15	15	15	15	89
B. Groupes de paysans							
1. Nombre de voyages		1	4	9	9	6	29
2. Nombre de particiants		20	75	180	180	120	575
C. Organisations							
1. Nombre de voyages			3	3	3		9
2. Nombre de participants			60	60	60		180
Formation sur-le-tas							
A. Personnel GRS							
Nombre de participants	8	8	9	9	9	9	9
B. Contractants							
Nombre de participants			10	10	10	10	10
Réunions							
A. GRS et EATA							
1. Nombre de réunions	1	24	24	24	24	24	121
2. Nombre de participants	11	13	13	13	13	13	13
B. Groupes de paysans							
1. Nombre de réunions		2	3	4	5	2	16
2. Nombre de participants		50	75	100	125	50	400
C. Organisations							
1. Nombre de réunions		2	4		4	4	18
2. Nombre de participants		50	100		100	100	450

FIGURE 4 BUDGET DE FORMATION POUR LE PROJET

ACTIVITES	An 1 6/90-12/91	An 2 1/92-12/92	An 3 1/93-12/93	An 4 1/94-12/94	An 5 1/95-6/95	TOTAL
Formation à Long-Terme, 4 Maîtrises à $ 88,625 = $ 345,000		70,000	135,000	100,000	40,000	345,000
Formation à Court-Terme 20 à $ 8,610 = $ 172,200	12,800	65,300	55,000	39,100		172,200
Tours d'Observation 20 à $ 2,750 = $ 55,000	18,000	10,000	10,000	10,000	7,000	55,000
Ateliers à $ 7,500 = $ 112,500	4,300	29,600	35,000	33,000	10,600	112,500
Séminaires 10 à $ 4,380 = $ 43,800	4,500	10,000	10,000	10,000	9,300	43,800
Démonstrations 10 à $ 900 = $ 9,000		1,000	3,000	3,000	2,000	9,000
Voyages Pratiques 10 à $ 3,250 = $ 32,500	3,200	8,000	8,300	9,000	4,000	32,500
Formation sur-le-tas						
Réunions						
TOTAL	42,800	193,900	256,300	204,100	72,900	770,000

FIGURE 5. ORGANISATION DU PROJET POUR LE PROGRAMME DE FORMATION



ANNEXE / ANNEX C

LISTE DES ABREVIATIONS /

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LISTE DES ABRÉVIATIONS LIST OF ABBREVIATIONS	
AJAC	Association des Jeunes Agriculteurs de la Casamance
BNA	Budget National d'Equipement
CAF	Coûts Assurance et Frets
CIF	Cost Insurance and Freight
COP	Chief of Party
CRD	Comité Régionale de Développement
CRODT	Centre pour la Recherche Oceanographique de Dakar - Thiaroye
CVGE	Comité Villageois de Gestion de l'Eau
DA	Direction de l'Agriculture
DGRH	Direction Génie Rural et d'Hydraulique
ERGES	Equipe Régionale de Gestion de l'Eau
FOB	Free on Board
GOS	Government of Senegal
IFB	Invitation for Bidders
ISRA	Institut Sénégalais de Recherches Agricoles
LBII	Louis Berger International, Inc.
MDRH	Ministère du Développement Rural et de l'Hydraulique
MEF	Ministère de l'Economie et des Finances
NGO	Non-governmental organizations
O&M	Operations and maintenance
OJT	On the job training
ONG	Organisation Non-Gouvernementale
ORSTOM	Office de la Recherche Scientifique Agricole d'Outre-Mer
PC	Project Committee
PIDAC	Projet pour le Développement Agricole de la Casamance

LISTE DES ABRÉVIATIONS LIST OF ABBREVIATIONS	
PM	Person months
PMU	Project management unit
PP	Project Paper
PRIMOCA	Projet Intégré de la Moyenne Casamance
PROGES	Projet Gestion de l'Eau dans la Zone Sud
RDA	Regional Development Authority
RDC	Regional Development Committee
RTC	Regional Technical Committee
RWMT	Regional Water Management Team
SODAGRI	Société de Développement Agricole et Industriel (RDA in Kolda)
SOMIVAC	Société de Mise en Valeur de la Casamance (RDA for the Casamance)
SZWMP	Southern Zone Water Management Project
TA	Technical assistance
UGP	Unité de Gestion du Projet
USAID	United States Agency for International Development
VWMC	Village Water Management Committee
WMT	Water Mangagement Team

ANNEXE / ANNEX D

ARTICLE DU JOURNAL /

NEWS ARTICLE

Le Soleil 7 Mars 1991

L'Amérique finance un projet

L'excellent régime pluviométrique de la Casamance était jusqu'ici malheureusement anéanti par l'évaporation des eaux. Les infrastructures faisaient défaut pour retenir toutes ces eaux. Il s'y ajoute la salinisation des terres. Cette situation est en passe d'être un mauvais souvenir.

Désormais les eaux de ruissellement d'une bonne partie de la région Sud pourront être retenues grâce à un projet d'un coût de six milliards et demi de dollars financé par l'USAID. Ce projet de gestion de ces eaux, localisé à Djiguinoum, localité située à 15 km de Ziguinchor sur la rive droite du fleuve Casamance, comprendra aussi un barrage anti-sel. Il durera cinq ans.

C'est pour démarrer cet important projet que le ministre du Développement rural et de l'Hydraulique Cheikh Cissokho s'est déplacé hier matin dans la région-Sud en compagnie de son collègue Robert Sagna et de l'ambassadeur des Etats-Unis d'Amérique George Moose.

Après le président de la communauté rurale qui a plaidé le désenclavement du village de Djiguinoum, l'ambassadeur américain a dit l'importance que son pays accorde au développement de la région naturelle du Casamance. En effet, des liens affectifs existent entre les Casamançais et les Américains car,

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«Nous venons aujourd'hui renouveler notre engagement aux côtés de la région car nous savons les difficultés auxquelles vous faites face actuellement. Je ne peux ne pas parler aussi de la salinisation des sols qui hypothèquent la rizicul-ture. C'est l'objet de ce projet qui durera cinq ans et pour la réussite duquel l'appui des populations est nécessaire», devait déclarer l'ambassadeur américain.

Le ministre du Développement rural et de l'Hydraulique s'est d'abord étonné de l'action des rebelles qui veulent délibérément destabiliser cette région aux multiples potentialités afin d'empêcher les populations de les exploiter. Demandant ainsi aux Casamançais de dénoncer ces fauteurs de trouble, M. Cheikh Cissokho a dit que la paix doit régner au Sénégal, parce que c'est un pays de liberté et de droits de l'homme. La paix sera rétablie en Casamance, a prédit M. Cissokho qui s'est d'abord fondé sur la volonté unanime des Casamançais pour la paix, l'union des cœurs et des esprits, mais aussi sur la détermination du président Abdou Diouf à remettre ces populations dans la quiétude.

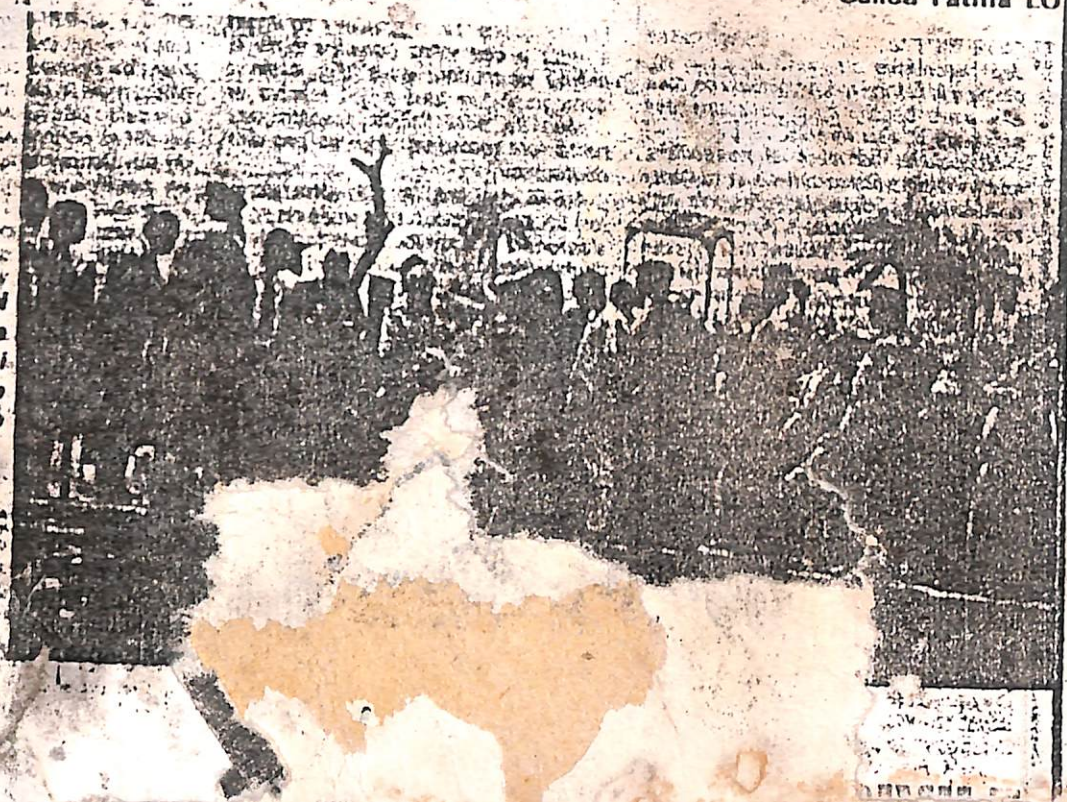
Projet multiforme

Parlant de ce projet, le ministre a dit qu'il a une dimension multiforme, parce que embrassant les domaines agricole, des eaux et forêts et des voies de communication. D'ailleurs, ce projet, selon M. Cheikh Cissokho, est une concrétisation de la promesse faite par le chef de l'Etat lors de sa dernière tournée en Casamance au cours de laquelle il annonçait la construction de barrages anti-sel.

En plus du projet de Djiguinoum, un vaste programme de barrages et de bassins a été élaboré et touchera très prochainement Ziguinchor, Oussouye, Bignona, Sédhiou, Kolda et Marsassoum.

La nouvelle structure complétera aussi l'action du DERBAC à Baila, Guidel et Afignam ainsi que celle du PRIMOCA en Moyenne Casamance. C'est ainsi que le projet aménagera une soixantaine de vallées dont celle de Diouloulou. Répondant à la doléance du chef de village, le ministre a dit que pour les vivres, des dispositions seront prises.

Saliou Fatma LO



Les autorités loi sur la vallée de Diouloulou qui sera réhabilitée grâce à ce projet. Photo Ibrahima DIEDHIOU