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USAID/Dakar
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Dakar, Senegal

SOUTHERN ZONE WATER MANAGEMENT PROJECT

(685-0295)

PROJECT PAPER SUPPLEMENT

July 8, 1994

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I. EXECUTIVE SUMMARY

The purpose of this PP Supplement is to: (1) extend the PACD by one year from 6/30/96 to 6/30/97; (2) revise the project goal and purpose; and (3) increase the project budget by \$100,000 to enable attainment of the revised objectives. This Supplement will also permit the extension of technical assistance contract with Louis Berger International, Inc (LBII) by one year from June 14, 1995 to June 14, 1996.

Project Goal: The original project goal of "increasing cereal production by 50% by 1999 on 15,000 hectares" will be changed to "increasing rice production in the southern zone of Senegal." This revision is necessary because there is not enough baseline data available for the Mission to assess whether a 50% increase in cereal production is realistic. Furthermore, there is still considerable uncertainty about the percentage of farmers that will utilize agricultural inputs needed to achieve significant increases in agricultural production.

Project Purpose: The original project purpose of improving farmer recovery of land and water utilization for agricultural production purposes will remain, but to it will be added the objective of testing new agricultural packages, providing extension through NGOs, and the identification of credit alternatives for the purchase of farm inputs.

Project Background: The Southern Zone Water Management Project (SZWMP) was authorized by USAID/Dakar on August 19, 1988. The Grant Agreement with the Government of Senegal (GOS) was signed on August 22, 1988 for an initial obligation of \$6 million. This Grant Agreement was last amended on February 23, 1993 to increase the total amount obligated to \$15,700,000.

The decline in average annual rainfall over the past 20 years and salinization have resulted in significant losses of productive farmland in the valleys of Casamance. The Project responds to the urgent need to assist farmers to reclaim/improve productive valley lands, and improve the utilization of water and crop productivity.

The SZWMP supports the Country Program Strategic Plan for Senegal developed by USAID/Dakar for the 1992-97 period. Specifically, it contributes to the achievement of the strategic objective of increasing crop productivity in zones of reliable rainfall.

There have been several substantial delays in project implementation beyond the normal lag phase. Due to problems of political security in the project zone, the Project has suffered numerous disruptions and delays beyond its control. Between 11/92 - 11/93, the project office was forced to move three times.

In October 1992, the Mission commissioned a mid-term evaluation.

However, because of civil unrest in the Casamance, the evaluation was not undertaken until late November 1993. The evaluation concluded that, as currently structured, the Project would not be able to achieve its goals. In order to recover 15,000 hectares and achieve the other project targets, the Evaluation Team recommended that: (1) the Technical Assistance Contract and PACD be extended by one year; (2) additional TA in the form of a local sociologist, and data collection and monitoring specialist be added to the TA team, (3) a credit component be added to the project, (4) an agricultural component be added to the current project or included in a follow-on project.

USAID and GOS staff jointly reviewed these findings and agreed upon the following which form the basis of this PP Supplement:

- (1) the TA Contract will be extended by 12 months from June 14, 1995 to June 14, 1996 and the PACD extended from June 1996 to June 1997.
- (2) a full-time local monitoring specialist will be added to the TA Team;
- (3) additional monitoring activities will be undertaken; and
- (4) the GOS' role in project implementation will be increased, especially that of the regional offices of Agriculture and Hydraulics.

To accomplish all of the above, the Project LOP Budget will have to be increased from \$18 million to \$18.1 million.

II. PROJECT BACKGROUND AND ACCOMPLISHMENTS

A. Project Background

The major government agencies implementing the Project have been the "Direction du Genie Rural et de l'Hydraulique" (DGRH) and the "Direction de l'Agriculture". Louis Berger International, Inc. (LBII) is the primary contractor to the Project, with Louisiana State University (LSU) and Tech International as sub-contractors. The LBII contract was signed in June 1990 and will expire in June 1995. The Project's PACD is June 30, 1996.

The main components of the Project are: (1) Water Control and Management; (2) Institutional Strengthening; (3) Operational and Applied Research; and (4) Environment and Project Monitoring.

The Project's financial situation as of 4/8/94 was

- Obligation: \$15,700,000
- Earmarking: \$14,236,468
- Expenditures: \$9,609,597
- Pipeline \$6,090,403

B. Project Accomplishments

As of December 1993, the Project had developed plans for 14 valleys. 2,217 hectares are currently protected by the Project. 24 dikes have either been constructed or are in the process of construction. During the 1994 Construction Program (Program III), 9 additional valleys will be developed. The project originally projected that a total of 60 valleys would be developed under the project. The mid-term evaluation concluded that this target was unrealistic given the complexity of the construction programs, the resources required, and progress to date. Thus, it is proposed that this target be reduced to 25 valleys. This will mean reducing the original target of protecting 15,000 hectares to approximately 11,000 hectares.

In terms of institutional strengthening and training, two persons have been sent for M.S. degrees in soil science and agriculture extension. Two additional persons will be sent for M.S. degrees in engineering over the next two months.

In the area of Operational and Applied Research, ISRA and LBII signed a contract for operational and applied research that took effect in December 1993. This activity was begun much later than originally intended because LBII preferred to complete the environmental assessment and terms of reference for the environmental monitoring program before signing a cooperative agreement.

Because the Project recognized the importance of involving the local population in all aspects of implementation, it organized Village Water Management Committees (VWMCs) and Inter-Village Water Management Committees (IVWMCs) to provide the necessary labor and maintenance for dike structures and pilot parcels; and to manage revolving funds. To date, 47 VWMCs and 6 IVWMCs have been created for Programs I and II valleys. For Program III, 33 VWMCs have been formed in 6 valleys. Unfortunately, because of limited staff on the LBII team and regional inspectorates, the Project has not been able to provide the desired level of training to IVWMCs and VWMCs. In order to address this problem, LBII proposed that a Village Support Unit (VSU) be hired to provide training to the VWMCs and IVWMCs. The LBII contract was amended in June 1994 to incorporate this component.

II. JUSTIFICATION

A. Justification for Extending the TA Contract and PACD

The first two years of project implementation were very slow due to two changes in the Chief of Party, and a change in the National Project Director. When the Project finally began to pick up speed in the Fall of 1992, the security situation in the Casamance worsened and the TA team was evacuated to Banjul and then to Kolda. They were not able to work and travel freely in the region of Ziguinchor until February 1994. As a result of these constraints, project implementation fell behind schedule.

The evaluation recommended that the TA Contract be extended by one year so that a fifth program of construction could be undertaken. Although this would permit the construction of dikes in 10 additional valleys, it would not provide enough time for LBII to train the VWMCs in the use of agricultural inputs and maintenance of dike structures in those valleys. Furthermore, LBII would not be present to monitor the contracts it would sign with local contractors to provide maintenance services for Program V dikes for a period of one year after construction is completed.

Therefore, the Project Redesign Team has recommended that a fifth program of construction not be undertaken. The LBII contract will be extended for one year through June 14, 1996, however, the purpose of the extension will be to implement post-Program IV construction activities (including training provided to VWMCs by VSUs, pilot parcels, etc.) and to complete monitoring activities. All major construction will be completed by June 14, 1995. The long-term TA level-of-effort will be reduced during the extension period. The services of the Agronomist will not be required after November 1995. The services of the Engineer will not be required after July 1995. ||

B. Construction

Program III construction, involving a total of 9 valleys, will be completed in June 1994. Program IV construction will involve a total of 10 valleys. A 3-meter wide anti-salt dike will be built in each valley. LBII will be encouraged to use smaller dike structures (less than 1 meter) as retention dikes behind the anti-salt dikes when appropriate. When it is necessary to build more than one 3-meter retention dike in a given valley, LBII will consult with USAID to obtain its authorization.

The costs of the construction programs are as follows (\$000):

	Construction <u>Costs</u>	Funds Available <u>in Contract</u>
Prog I, II	1,802	1,944
Prog III	835	1,640
→ Prog IV	1,200	
<u>Studies</u>	<u>75</u>	<u> </u>
Total	3,912	3,584

A total of \$3.584 million has already been made available for construction under the LBII Contract. An additional \$328,000 will be required to complete Program IV construction.

C. Agricultural Research Component

This component of the Project is currently being implemented through a cooperative agreement which LBII signed with ISRA. The cooperative agreement includes both an environmental monitoring program data collection component and a research component. The primary objective of the research component is to help identify locally adapted water, soil and crop management practices which could ensure maximum project benefits and increase farmers' ability to reclaim salinized land and to increase crop production

The evaluation questioned whether ISRA had sufficient staff to undertake the work required by the Agreement. On April 5, 1994, staff from the USAID/ANR office met with ISRA to discuss implementation of this component. The issue of staffing was discussed with ISRA, and ISRA stated that the required staff to carry out the applied research program in five valleys was available and operational.

To enable ISRA to complete its research and data collection from the 1995 Growing Season, the ISRA contract will be extended to March 31, 1996. There are currently enough funds in the cooperative agreement to cover these activities. The ISRA contract will be amended to include instructions for ISRA to train two Technical Service NGOs and VSUs in the use of appropriate agricultural packages.

D. Monitoring and Evaluation

i. Original Monitoring Plan

The PP envisioned that impact monitoring and evaluation data would come from three sources:

- Project water management plans;
- Information from the Project's operational research and environmental monitoring plan; and
- Crop area, yield and production data from the annual agricultural production surveys undertaken by the Regional Inspectorates of Agriculture (IRA).

For various reasons, these programs have not provided the Project with the information it requires to monitor project activities. The water management plans were to include data on population, labor mobilization, land tenure, land use, water control structure designs, estimated economic benefits, construction program and scheduling, and estimates of land recovery. While the Project undertook a series of preliminary engineering, soils and land-use studies, the inclusive water management plans envisioned in the PP were never undertaken. Although the Project Sociologist collected demographic data for all valley villages, baseline data was not collected on land tenure, estimated economic benefits, and other socio-economic factors. At the time of the mid-term evaluation, the total area and cultivable area in Project valleys was often a subject of debate because data on the total area of land under cultivation had not been collected.

Information on research and environmental impact were to come from the operational research and environmental monitoring program. This program was to provide comparative data to measure the impact of the execution of the watershed plans on soil and water characteristics, flora, and fauna. However, the security situation in the Casamance prevented LBII from developing terms of reference for the monitoring contract. LBII signed a contract with ISRA in late 1993 to implement this activity which is in the very early stages of implementation.

The production statistics obtained by the Inspection Régionale de l'Agriculture as part of its annual survey were expected to track crop production impact. However, the sample size of the IRA annual production surveys is quite small and makes extrapolations of area, yield and production down to the Communauté Rurale (C.R.) level difficult. The IRA sample is thus too small to capture production impacts at the level of individual valleys.

ii. Present State of the Monitoring Program

As a result of the problems noted above, at present, baseline and monitoring data are lacking. Indeed, most of the data needed to evaluate the impact of the Project does not exist. For example, the project lacks basic information regarding the area planted in rice before dike construction, the additional area planted after construction, and the extent to which other production has been reduced due to farmers reallocating resources to return to aquatic rice production. While the Project has recently initiated the collection of baseline and impact monitoring data (ISRA, SENECEI, IRA), the efforts are scattered and diverse, with different institutions or firms responsible for data collection and analysis. Each survey utilizes a different sampling method (some are even using different sample frames), which brings into question the homogeneity and comparability of the data.

The actual Project monitoring situation is quite diverse. The consulting firm, SENECEI, recently completed a socio-economic survey of three Program II valleys; the IRPA/Ziguinchor has just completed an agricultural production survey of the Program II valleys for the 1993 agricultural season; and ISRA will be undertaking baseline (ex post facto) and impact monitoring in four Program I and II valleys.

The results of these surveys are mixed. IRA has done a good job of gathering basic area planted data, (the yield and production data were not ready when the evaluation team was in Ziguinchor). SENECEI, however, proved to be inexperienced and not qualified for the job. It was fortuitous that the LBII consultant agricultural economist was in Ziguinchor at the time, and was able to design the sampling scheme, redesign the questionnaires and train the enumerators. The survey was well-executed by experienced enumerators, but problems remain at the tabulation and analysis level.

iii. Proposed Monitoring Program

Over the next six months, the project must establish a uniform system of baseline and impact monitoring that will gather socio-economic, agronomic, engineering, and environmental data. This information will be used to assess project performance, feed into the Mission's annual assessment of program impact (API), and guide the Mission in the design of a possible follow-on project.

The monitoring system will integrate the multiple levels and types of data needed to monitor project impact. The monitoring system will provide detailed information on: areas protected and/or recovered through the construction of dams, crop production in terms of increase of crop areas, yield and quantities produced; marketed production, income, village involvement, number of farmer contacts with research institutions and valley support units, and the results of field research and environmental impact. The monitoring program should start no later than May 1994.

At present there is no one qualified among LBII personnel to manage this kind of activity. A full-time monitoring and evaluation specialist should be hired under the existing technical assistance contract with LBII to design and implement the project monitoring program. The position requires an experienced person with a background in rural surveys and methodology (including sampling); and must be someone with the stature to interface with the agricultural researchers at ISRA and with the traditional agricultural services. He will work in close collaboration with the ISRA survey team, the project's technical units and consultants, the GOS regional agriculture services, and the Technical Service NGOs and Valley Support Units (VSUs). Once hired, this person will remain with the project through June 1996. The monitoring specialist will also need support for data entry. He should be provided with the adequate equipment for field measurement and data management. The detailed scope of work of the evaluation and monitoring specialist is attached as Attachment IV of this paper.

a. Impact Monitoring and Operational and Applied Research Programs

The baseline data collection and annual production surveys will be carried out over a two year period from 1994 to 1996 and will cover two sites: Kolda and Ziguinchor. The baseline data collection program covers three (five?) major activities: (1) valley surveys, (2) KAP surveys, and (3) household monitoring ??? ag production and environmental monitoring. The data monitoring specialist will utilize NGO and project staff whenever possible and practicable to collect data.

Valley Surveys: In order to collect socio-economic and agronomic information at the valley-level, surveys will be undertaken before the project intervenes in a given valley. Follow-up data collection will be done on a regular basis after dikes have been built. The surveys will include exhaustive parcel measurements, tenure rights, input use, identity of farmers, yields, etc. A uniform methodology based on the ISRA model will be used for all surveys. LBII will be responsible for contracting for these studies. The valley surveys will collect data regarding increased rice productivity (kg/ha.) on upland and rainfed swamp areas. This information will feed directly into the Mission's Assessment of Annual Impact (API) 11

Note: ISRA's current contract calls for it to undertake detailed surveys in five valleys in which construction has already taken place. Unfortunately, since no data was collected before construction, the data being collected by ISRA is a limited use. Thus, the Project will discuss with ISRA the possibility of it replacing three of the current valleys with three valleys in which construction has not yet taken place. 7

KAPS Surveys: The Mission and local firms have proven experience in carrying out Knowledge, Attitudes and Practices (KAPS) surveys required by the project. The objective of these KAP surveys are to gather information -- generally qualitative -- on changes in behaviour induced by the project intervention. These farm household surveys will be undertaken every other year to provide demographic, agricultural, social and attitudinal data in a given watershed. The first survey will be undertaken using appropriate Mission staff. It should be completed before the 1994 growing season begins. The second follow-up survey will be undertaken two years later in 1996 by LBII. To enable the Mission to do performance impact reporting, the KAP Surveys will collect information on the use of the following adapted technologies: water management, fertilizer, improved seed, erosion control, manure, and land recovery.

The samples must be fully representative of the types of plots, farmers, farming techniques, etc. present in a given watershed. The sample for this survey will include households farming in the target valleys, as well as households engaged in farming in valleys not targeted by the Project, and households not involved in rice farming. Some of the households to be included in the sample survey have to be located in the two valleys participating in the valley surveys. In addition, information will be collected regarding other agricultural activities (millet, peanut, etc.) and non agricultural activities (forestry, commerce, etc.).

Household Monitoring

In addition to valley and KAP surveys, the project will set in place a farm-household monitoring system in order to collect comprehensive socio-economic data on farm-households in the project's zone of intervention on a regular basis. The information to be collected includes all production systems (all crops, and other income-generating activities).

Environmental Monitoring

The environmental monitoring program will include primarily two activities:

(a) An environmental monitoring program that will be developed based on the already approved Programmatic Environmental Review submitted by LBII. LBII is in the process of developing a detailed plan for implementing this component which will permit GOS counterparts to collect data and monitor the environmental impact

¹. Under the ISRA Cooperative Agreement, ISRA will be conducting research on changes in soil, salinity, etc. resulting from the dikes. However, this is not considered part of the environmental monitoring program.

of the dikes. The activity will cover all existing valleys and future sites.

(b) The Project will enter into a PASA with the US Geological Survey's EROS Data Center to establish a monitoring framework that will assess and map the natural resources at project sites. This approach will provide information based on (1) repetitive aerial photographic monitoring using video technology; and (2) high-resolution satellite remote sensing for mapping and measuring areas of change and human interaction with resources.

E. Technical Support NGOs/Valley Support Units (VSUs) Activities

USAID has amended the LBII contract to provide LBII with funding to undertake activities with TSNGOs and VSUs for a period of one year. Under this program, two Technical Service Non-governmental organizations (TSNGOs) will be contracted with to assist PROGES with the final qualification of valleys, supervision of village participation in construction, and facilitation of the transfer of dike maintenance, agricultural extension and input supply to the Village Water Management Committees (VWMCs) and the Inter-Village Water Management Committees (IVWMCs). In order to ensure that the TSNGOs have the capacity to effectively undertake these tasks, only those having substantial experience in agriculture extension and the construction of dikes in the Casamance will be considered.

The TSNGO will coordinate activities at the departmental level and will provide technical support to approximately 25 village level support units (VSUs). The VSU refers to an individual that in many cases may already be working as an animator in the valley (this is preferred). In most cases, the VSU will be associated with a small NGO that is currently working in a given valley. In other instances, LBII may take someone who has already worked on the project in one valley, and transfer him to work in another valley the following year. Ideally, any new VSUs that are hired, should be a resident in the valley in which he/she will be working.

The VSU will receive training (in village organization activities, pilot parcel techniques, construction of contour berms) from PROGES, ISRA and one of the TSNGOs. To the extent possible, agents working for the Regional Inspectorate of Agriculture will be encouraged to provide extension training to the VSUs. However, since the Inspectorates are not always available, the VSUs will rely primarily on the TSNGO for technical advice and training. Once trained, the VSU will begin working with VWMCs. This amendment will provide funding for a second year of TSNGO/VSU activities.

i. VWMCs and IVWMCs

The members of the VWMC are elected from holders of rice fields

concerned with the development of the valley. The VWMC is composed of an animator principal, a secretary, a treasurer, and a councillor. The candidates may propose themselves, may be proposed by others, or put forward by influential members of the village. The participation of women on the VWMC is strongly supported, although in some areas the women have preferred to elect a committee of their own. The IVWMC is composed of two members from each VWMC in the valley. The main positions on the IVWMC are that of President, Vice President, Secretary, Vice-Secretary, Treasurer and Vice-Treasurer.

The VSU and TSNGOs' first responsibility will be to ensure that the VWMCs fully understand their role in the project. Once this is accomplished, the VSU will work with the IVWMCs and the VWMCs to:

- (1) mobilize farmers for project construction activities,
- (2) assure ongoing operation and maintenance of water control structures
- (3) supervise demonstration parcels near each major intervention site
- (4) extend the results to other farmers in the valley; and
- (5) obtain inputs collectively needed by farmers.

ii. Agricultural Extension

One farmer will be identified among the VWMC members to assist the VSU in agricultural extension activities since the VSU will have other activities to focus on in addition to agriculture extension. The mid-term evaluation recommended that the project provide additional agriculture extension services to local farmers regarding the use of agricultural packages. This recommendation was made prior to the implementation of the TSNGO/VSU activities outlined above. It is the Mission's opinion that implementation of the TSNGO/VSU activities will be able to address the need for extension services. The extension of the TSNGO/VSU activity by one year, will enable the project to test this mechanism on a pilot basis. In order to ensure that the appropriate technical packages are applied, ISRA's cooperative agreement will be amended to specify that ISRA will provide extension training to the two TSNGOs.

iii. Credit

In addition to highlighting the need for agricultural extension services, the mid-term evaluation also identified the lack of access to credit as a major constraint to increasing agricultural productivity in project valleys. Access to credit is required by farmers to purchase improved seeds and fertilizer. The project has

had some limited experience over the past year in mobilizing credit for farmers. It relied primarily on IVWMC revolving funds that were created with proceeds from pilot parcel rice sales and from the rental of project tractors.

The Project Management Unit has proposed that VWMCs and IVWMCs continue to organize revolving credit funds. Villagers will provide the labor and land for these pilot parcels. The rice that is harvested will be retained by the IVWMC. These seeds will be lent out to VWMCs who will assume responsibility for repayment.

The evaluation identified two credit projects currently operating in the Casamance : PRIMOCA in the Sedhiou Department and DERBAC in the Ziguinchor Region. Both of these projects made arrangements with the CNCA in order to create attractive credit conditions for farmers. For example, PRIMOCA provided the initial deposit (15%) required by the bank. Villages in one of the valleys in Program I formed a GIE, and were able to obtain a loan from PRIMOCA/CNCA.

Unfortunately, both the PRIMOCA and DERBAC projects will terminate their activities in 1994. Given the financial difficulties which CNCA is experiencing, credit to farmers is likely to become tight. While the Mission recognizes the importance of credit in terms of providing farmers with access to agricultural inputs, it is not prepared, under this project, to finance a credit component because there is not enough time remaining in the Project to adequately develop such an activity.

Instead, the Project will rely primarily on the TSNGOs and VSUs to train VWMCs in one or several of the following: to manage their own revolving funds, to form GIEs, to establish a valley level credit union, or to access other credit sources as appropriate. To enable the TSNGOs and VSUs to perform in this capacity, the Project will undertake a study of credit options/mechanisms in the Casamance. LBII will work with the TSNGOs and VSUs in developing the terms of reference for this study. The results of this study will be provided to the TSNGOs and VSUs to enable them to better focus their training program. 11

F. GOS Role

The Direction of Hydraulics currently provides two full-time irrigation engineer and two full-time surveyors to work on project activities. The Ministry of Agriculture has made available two full-time agronomists. These six persons have been working hand-in-hand with the technical assistance team to design and implement project activities. When the original two agronomist left for long-term training in October, 1993, they were immediately replaced by two other agronomists. When the two engineers depart for long-term training, they will also be replaced by the GOS. — Not yet!

In addition to providing these personnel, representatives from the

GOS participate on two interdisciplinary regional teams (one in Ziguinchor and one in Kolda) referred to as the Regional Technical Committee (RTC). The GOS Project Director chairs these committees which are comprised of the Head of the Regional Inspectorate of Agriculture, the Head of the Regional Inspectorate of Hydraulics, and the Chief of Party from the TA team. According to the Project Paper, the RTCs were to be closely involved in the planning and execution of the project. At the end of the project, they are expected to assume responsibility for the continuation of water management and extension activities.

Unfortunately, in practice the RTCs have not been as active as desired. They usually meet only when a National Project Committee meeting is held. As a result, they are not currently in a position to assume responsibility for follow-on activities at the end of the project. In order to address this problem, the Project Director and COP will ensure that RTC meetings take place on a monthly basis for the remainder of the project.

The mid-term evaluation recommends that GOS personnel from the regional offices of Agriculture and Hydrology become more involved in project activities, particularly in terms of providing extension training services to NGOs and VWMCs. The GOS has expressed a willingness to do this, however, the agents working for the regional offices are also engaged in activities not related to the Project. In order to coordinate both sets of activities, the GOS has requested that the Project Management Unit develop detailed plans/descriptions of the activities in which the regional bureau's participation is required. The Regional Inspectorates will use this listing of planned activities to program their agents' schedules, making them available to work on SZWM activities whenever possible.

The Project Paper implies that after the project, the GOS will continue to undertake construction programs similar to those being done under the SZWM Project. The issue of the source of financing for future programs is never addressed. However, given the current budget crisis, the GOS is unlikely to finance projects such as the SZWM Project on its own. While the GOS may be able to obtain funding for dike construction from other donors, there is no guarantee.

In light of this reality, the end of project status, in terms of the institutionalization of the GOS's role, needs to be rethought. There appear to be three major roles for the GOS to assume: (1) providing guidance to the VWMCs and IVWMCs regarding the maintenance of the dikes; (2) providing extension expertise to VWMCs and farmers; (3) developing proposals for activities; and (4) once funded, selecting valleys, designing and producing construction plans, monitoring construction contracts, and providing extension services. (1)

The Regional Inspectorates should begin assuming these roles at least one year before the end of the LBII contract. To facilitate this process, LBII will need to transfer some project vehicles and equipment to the COS in June 1995. A concerted effort should be made by the Ministry of Agriculture to ensure that GOS counterpart funds are made available to cover operating costs of the vehicles. If counterpart funds are not made available, LBII will assume responsibility for covering vehicle operating costs.

III. REVISED PROJECT OUTPUTS AND INPUTS

The PP envisaged recovering a total of 15,000 hectares in approximately 60 valleys. However, because of delays in project implementation, these targets will be reduced to 11,000 hectares in approximately 25 valleys. The PP also stated that rice production would increase by 50% in the project area. Based on the findings of the mid-term evaluation, the Mission has concluded that this target is unrealistic. An absence of baseline data and uncertainty about farmers' future use of agricultural inputs make it difficult to estimate the magnitude of likely increases in rice production resulting from project activities. Thus the PP goal has been modified to avoid quantifying the expected increases in rice production. These changes are reflected in the revised logical framework (Attachment II). The other outputs contained in the original PP remain unchanged.

IV. FINANCIAL ANALYSIS

Expenditures under the project as of 4/8/94 stand at approximately \$9.6 million and total commitments are at \$14.2 million. The original authorized amount is \$18 million. The Mission has thus far obligated \$15.7 million of this amount. This PP Supplement will increase the LOP by \$100,000. The Mission plans, subject to availability of funds, to obligate \$1,975,000 in FY94 and \$325,000 in FY95.

Attachment I contains a revised project budget for the project components as presented in this PP Supplement.

A. 121(d) Certification

No funds have been made available to implementing ministries. All project funds have been handled by the U.S. prime contractor (LBII) or USAID, and no change will be made in the revised project. The negative 121(d) certification granted to the original project paper remains valid and applies to the new funds requested.

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B. Methods of Implementation and Financing

<u>Category</u>	<u>Method of Implementation</u>	<u>Method of Financing</u>	<u>Total Amount</u>
1. Tech. Asst. (includes training and procurement)	AID Direct Contract	Direct Payment	
2. AID procurement (includes commodities, local services, evaluations, audits, logistical support)	AID Direct Contract	Direct Payment	

C. Commodity Procurement Plan

Remaining commodity procurement under the project is summarized below:

<u>Description</u>	<u>Quantity</u>	<u>Cost</u>	<u>Source/Origin</u>
1. Vehicles	9	\$225,000	935
2. Spare Parts		\$30,000	935
3. Office Equipment		\$35,000	935

D. Audit Coverage

The Project Paper provided funding for three (3) external audit to be performed in FY 1991, 1993 and 1995. With the delays in project implementation, the Technical Assistance Contract was not awarded until June 1990. Therefore, the first audit could not be performed before FY 1992. Then due to security problems in the Ziguinchor region, the audit could not be performed in FY 1993.

In addition, due to the single audit concept requesting that US Grantees and Contractors be audited by AID/W every year, both USAID/Senegal and RIG/Dakar agreed to perform external financial reviews in lieu of an audit for 1994, 1995 and 1996. The financial reviews will be supervised by USAID/Senegal through its Office of Financial Management. The first financial review will start no later than the end of July 1994.

USAID/Senegal has recently amended the Technical Assistance contract to include an NGO component. Although it is not required that the Technical Assistance Contract be audited locally (unless the Mission has very strong reasons), the contracts or grants awarded by the Contractor under the NGO component will be audited, as deemed necessary by USAID/Senegal. The Contractor will make sure

that audit provisions are included in contracts and/or grants it awards to NGOs. The audits will be arranged by the Contractor. The costs of these audits will not be included in the Contractor's budget nor in the NGOs contracts and/or grants budgets. Funds will be made available in the Project budget to fund such activities.

V. IMPLEMENTATION

A. Responsibilities

USAID's Office of Agriculture and Natural Resources (ANR), and the Ministry of Agriculture will be responsible for implementation of the remainder of the Project. Within USAID, the Project had been managed by the Project Development Office. However, that office was dissolved in February 1994, and responsibility was transferred to ANR.

B. Implementation Procedures

For the remaining LOP, the Mission will continue to use Project Implementation Orders for Technical Services (PIO/Ts) as internal documents and contracts to earmark and/or commit funds. Project Implementation Letters will be utilized to delineate specific implementation roles and responsibilities of various parties. Non-funded Project Implementation Orders for Participant Training (PIO/Ps) will be prepared by the TA contract and approved by the Mission in accordance with Handbook 10 to procure participant training services.

C. Waivers

The Mission will be processing a waiver requesting the Mission Director to authorize the amendment of the contract with Louis Berger International Inc. on a non-competitive basis for an approximate value of \$3.7 million. A copy of this waiver is found in Attachment III of this PP Supplement.

D. Sociological, Economic, Technical, Environmental Considerations

i. Engineering Analysis: The Engineering Analysis in the original PP stated that the maximum width of anti-salt dikes and water retention dikes should be two meters and one meter respectively. However, during the first program of construction, it became apparent that anti-salt dikes had to be 3 meters wide in order to permit the use of construction equipment necessary to meet compacting standards. As a result, all anti-salt dikes are three meters wide. The same has proven true for most water retention dikes. In order to ensure their durability, they have been constructed with a width of three meters. The TA contractor is currently exploring possibilities for reducing this width.

Because of the increased size of dike structures, construction costs have increased. In addition, villagers have not been able to undertake the compacting tasks as originally intended which has contributed to increased construction costs. The mid-term evaluation determined that the advantages of the larger structures merited the increased cost.

ii. Agonomic Analysis: The PP states that the project will not provide extension services in input supply and that it will rely on improvements in water supply and land availability to increase the use of inputs obtained from other sources. However, the mid-term evaluation determined that significant increases in rice production will not occur unless the project is more proactive in providing both extension services and credit to purchase inputs. Although the Mission accepts this argument, it is not prepared to implement a comprehensive extension and credit component at this stage of project implementation. Instead, the Project will address the need for extension services by providing training in agricultural methods to a member of the Inter-Village Water Management Committee. This person will be paid a minimum allowance by the project to provide agricultural training to farmers in a given valley.

iii. Economic Analysis: The mid-term evaluation determined that the economic analysis undertaken during the design phase of the Project had some highly erroneous assumptions which significantly overestimated benefits and underestimated costs. The internal rate of return estimated in the PP was 22%. The revised economic analysis contained in the mid-term evaluation considered several scenarios. The first scenario suggests that with a 12-month extension of the project and an agricultural component, the IRR will be 15%. The second scenario states that simply extending the project by 12 months without including an agricultural component will result in an IRR of 5%. The strategy proposed in this PP Supplement falls somewhere in between those two scenarios. The Project will not include a comprehensive agriculture component, however, some extension services will be provided through the NGO component. Therefore, the IRR for the revised project is likely to be between 5% - 15%.

iv. Social Soundness Analysis: The project sociology staff has worked with villages to establish VWMCs and IVWMCs which serve as the main liaison between the Project and populations. Interviews with these committees suggests that the concept of what membership entails is unclear at the level of the village. The LBII contract has been amended to include funding for TSNGO and Village Support Unit (VSU) activities. This amendment will also include funding to hire a full-time person on the LBII staff to focus on village participation and manage the TSNGO/VSU activity. One of the responsibilities of the VSUs will be to work closely with the VWMCs and IVWMCs to ensure that they understand the purpose of the committees and they are actively participating in

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the acquisition and/or leasing process.

One of the original objectives of the VWMCs and IVWMCs was to provide dike maintenance after construction was completed. It now appears that funds for dike maintenance will not be required until 4 or 5 years after the dike is constructed. To prepare for this eventuality, the IVWMCs should be encouraged to set aside a share of the revolving fund to fund dike repair costs in later years.

According to the PI's social soundness analysis, labor availability was not expected to be a constraint to exploiting reclaimed and improved valley land. However, statistics from the Ziguinchor Inspectorate of Agriculture's study of Program I and II rice lands found that, on average, farmers are planting only 75% of all land available for rice cultivation. This may indicate a labor shortage. Other explanations may be a lack of inputs, or a lack of confidence in water control capabilities of the newly constructed dikes. These questions will be further explored as part of the data collection and monitoring component.

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