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PROJECT MONITORING

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LIST OF ACRONYMS USED IN THIS TEXT

DDC	Directorate for Development and Coordination of the OMVS
EPU	Evaluation and Planning Unit of the OMVS
OMVS	Organization for the Senegal River Basin Development
OVSTM	Opération Vallée Fleuve Sénégal Térékolé et Magui
PIO	Project Implementation Order
PMF	Project Monitoring Form
PMU	Project Management Unit of the OMVS
RDA	Regional Development Agency
SAED	Société d'Aménagement et d'Exploitation des Terres du Delta
SONADER	Société Nationale de Développement Rural
UNDP	United Nations Development Program
MIS	Management Information System

B

3.9. PROJECT MONITORING

3.9.1. Introduction

In line with its mandate for "the promotion and coordination of planning and development of Senegal River Basin resources on the national territories of the Member States of the Organization", the OMVS High Commission has undertaken several socio-economic studies. Most recently, the OMVS has strengthened its monitoring and evaluation capabilities by establishing an Evaluation and Planning Unit (EPU) within the Directorate for Development and Coordination (DDC). This Unit is receiving technical and financial support from the UNDP and the German Government, and is establishing a long-term evaluation and planning system that includes: an inventory of existing perimeters, an evaluation of the results of each agricultural season, and a data bank for irrigated cultivation in the Basin.

The IDP will strengthen and expand the capabilities of the EPU by the design and introduction of a two-dimensional project monitoring system. The system is intended at the onset to serve the needs of the IDP but to be later expanded to include monitoring of all development actions in the river basin. The system includes (a) a sub-system to monitor project implementation and measure performance in relation to preestablished programmatic and financial targets, and (b) a sub-system to monitor the impact of project interventions on the agriculture, economics, sociology and health in the project zones.

Implementation monitoring is a new function for the EPU, while the monitoring of project impact is well within the scope of the Unit's traditional responsibility. The IDP's Management Information System --which integrates the two monitoring functions-- will be the basis for the Unit's expanded data collection, retrieval and reporting system.

The Project Management Information System will be established under the supervision of the Project Management Unit (PMU) in the OMVS Directorate of Development and Coordination. The project implementation monitoring component will be set up under the jurisdiction of the PMU to report on project implementation in the five project zones. The impact monitoring component has already been established within the Unit for Permanent Evaluation and Planning. This component will be complemented to refine it slightly so that it fits project impact monitoring needs in the five project zones. In addition, a health surveillance monitoring component will be included as part of the IDP monitoring activities.

In order to complete the MIS design and oversee its implementation, a management information specialist will be funded by

IDP. This specialist will work in the Project Management Unit of DDC to design the project monitoring system along the model described below, and to assist in adapting current impact monitoring activities of the EPU.

In order to improve the efficiency of data storage and processing, the OMVS is progressively computerizing the impact monitoring functions of the EPU. While the IDP will eventually adopt a computerized MIS system, a decision on the exact computer configuration will not be made until the MIS is designed, tested, refined, and until reporting relationships are established. The management information specialist assigned to the OMVS will evaluate the needs for computerized data handling for the MIS and for monitoring and evaluation activities of the OMVS. This specialist will establish the specifications for a MIS computer system, that will be purchased by USAID under the IDP. No computers will be purchased for the OMVS by IDP until data needs have been fully evaluated by the management information specialist and approved by AID.

3.9.2. The MIS -- Implementation Monitoring

This section presents the preliminary design and major elements of a Management Information System (MIS) which will gather information on actual implementation and short-term effects of the Senegal River Basin Integrated Development Project. The information will be gathered by RDA headquarters, field agents, and project implementation team members, and it will be delivered in a useable and concise form to each government and USAID project managers. The establishment and use of this information system by USAID missions is of great importance in a project such as the IDP. The information generated by the system will allow the USAIDs to monitor actual project implementation and selected indicators of short-term project effects, especially project output use and acceptance by the target groups. This information will allow the USAIDs to identify problem areas as well as successful elements so that individual project components can be modified or rescheduled as necessary. The MIS should provide all of the information the USAIDs will require for their own monitoring, and a substantial part of that required for evaluation of the project. The information provided by the system can be made available periodically to the appropriate levels of the RDA's, national agencies, and the OMVS, all of whom are involved in the project.

3.9.2.1. Project Management -- Its relationship to the MIS Design

The operational structure of the MIS is largely defined by the management structure of the project. The IDP is a project which has diverse components in three countries, Senegal, Mali, and Mauritania, as

well as a regional component. The overall project will be coordinated and monitored by OMVS. Hence, it is important that OMVS receive periodic summary reports of project implementation and effects. The information should also go to the RDA's and other project implementors on a timely basis. The principal function of the system, however, is to provide the USAIDs with sufficient information to monitor and evaluate the project and amend project strategies when necessary. The project can be thought of as having four major components:

1. A regional component to be implemented through the OMVS and USAID/RBDO throughout the River Basin;

2. A Senegal component to be implemented mainly through SAED and USAID/ Senegal in the areas of Bakel and Podor;

3. A Mali component to be implemented mainly through OVSTM and USAID/ Mali in the Kayes area;

4. A Mauritania component to be implemented mainly through SONADER and USAID/Mauritania in the Kaédi and Gouraye areas.

The implementation of each element of the country and regional components will be planned by the appropriate USAID at the output level, and provision of each output will be monitored.

3.9.2.2. Existing AID Funding Information

AID funding for the four major project components and implementation plans will be arranged through project agreements at each USAID mission. As usual, each mission will have a project manager involved in designating levels of funding for specific project activities through use of conventional AID documents including PIO's, implementation letters, and detailed workplans.

The USAID project managers will receive from the host countries and contractors quarterly financial reports which include a budget for the specific activities, current and cumulative disbursements, and supporting documentation.

This is a standard AID procedure for recording disbursements, and should provide most of the information required for project financial monitoring.

3.9.2.3. Project Planning and Coordination

A major emphasis of this project is to involve the OMVS and

national agencies in the planning and coordination of the development of the Senegal River Basin. Planning for project implementation will be done principally by the USAID project managers and their host government counterparts. A specific mechanism will be developed through which the USAID specifies each project Outputs or portions of Outputs to be implemented through the various host government agencies and non-government contractors within a specified time period. The mechanism suggested here is the preparation of a form titled Project Monitoring System Planning Document, PM-1. The Outputs specified on this form will be consistent with the overall and mission level implementation plans, already formulated. After deciding on each Output or sub-Output to be implemented during a given period, the USAID will prepare a PM-1 form for one or more Outputs and send a copy of it and the PM-2 reporting form to the host country implementing agency.

The PM-1 will include:

-- a description of the project output (or sub-output) to be implemented during the period covered;

-- a preliminary schedule for implementation in the form of specific indicators of implementation status set for each quarter;

-- a deadline for completing and returning the PM-2 reporting form to the mission.

The actual PM-1 form will be a refinement of the draft form attached. Working from this form and the overall project implementation plan, the USAID will negotiate time-framed project outputs with the host country government and implementing agencies The original PM-1 form will be kept in the USAID project manager's file (see Attachment 1, PM-1 form).

3.9.2.4. Implementation Monitoring

Attached to each PM-1 form will be a second sheet, Form PM-2. There will be a carbon sheet between the two forms, so that when the USAID enters the implementation schedule and indicators on the PM-1, the PM-2 will also receive this information. The PM-2 form will be a data collection form covering the actual implementation of the Output or sub-Output specified. The PM-2 form will be forwarded to the implementing agency or contractor through the host country national agency. It is then the responsibility of the implementing agency to see that the PM-2 is completed and submitted to the USAID by the reporting deadline indicated on the form. As they are currently designed, the PM-1 and 2 forms cover a period of a fiscal year or longer. The period to be monitored for each output will be decided by the USAIDs. It may be best, however, to fill out the forms to cover a calendar or fiscal year in most cases. The

implementation status reflected in the completed PM-2 forms should allow the USAIDs to plan each year's output delivery based on actual implementation status of project components.

A great deal of time and thought must go into the testing and refinement of both the PM-1 and PM-2 forms so that:

-- they provide all information on implementation of specific outputs needed by the USAIDs to monitor the project;

-- they contain only key indicators of implementation of specific outputs;

-- the information needed to complete the form is readily available to the contractor/implementor; and

-- the form is easy to understand, simple to fill out, and takes minimum time to complete.

In refining both forms, every effort should be made not only to create forms that do not overwhelm reporters, but also help them to orgamize their own thoughts on implementation status --a form that can indeed be useful to reporters, as well as to the project monitors. This may sound like a formidable task, but experience in similar situations shows that it can be done, if sufficient care is devoted to design, testing, and refinement. Also, a set of procedures must be developed to encourage or enforce reporting, and to keep track within the mission of all forms sent and received.

3.9.2.5. Monitoring of short-term Project Effects (Project Purposes and Goals)

Thus far, the project output implementation monitoring system seems complete. Once it is in operation, all four USAID project managers involved should receive a continuous flow of information on actual project implementation. This flow of information will be used by the project managers as inputs for their respective project monitoring systems. The incoming information on implementation will be analyzed by the USAIDs in collaboration with the OMVS, national agencies, and the RDA's.

There is considerable need in a project of this complexity, however, for project monitors at all levels to have information on the immediate effects of the project in terms of acceptance, benefits, and utilization of project outputs by target groups. The MIS must, therefore,

also gather impact-level information and deliver it to USAID and host country institutions.

A. Identifying Information Needs

Information needs for monitoring project impact can be classified in several ways. It is most useful to organize the kinds of information needed into the following categories (please note that farmer organizations, regional development agencies, and the OMVS as well as area farmers, may be classified in this project as target groups:)

1. indicators of whether project Outputs are functioning properly;

2. indicators of Output use by target groups;

3. indicators of participation in and acceptance of project actions by target groups; and

4. indicators of impact (positive or negative) of outputs on target and non-target groups.

A project monitoring system which is in operation during the initial implementation phase should not be overly concerned with project impacts, which, by definition, may lag well behind its implementation schedule. The MIS is being designed primarily to monitor actual implementation and short-term effects of the project, but selected indicators of project goal and purpose attainment (impacts) will be collected. Once designed, however, the scope of the MIS must be precisely defined and adhered to if the system is to be successful.

The above suggested categories can be examined for each of the major types of outputs which the project will provide. The major output categories are:

1. Irrigated Perimeters Constructed and Rehabilitated;

2. Instruction Provided to Farmers;

3. Producers Associations Organized and Functional;

4. Agents Trained;

5. Agricultural Credit Provided;

6. Roads Constructed;

7. Institutional Capabilities developed.

8. Health Surveillance Programs;

9. Literacy Programs, etc.

The matrix that results from crossing the first group of categories with the major output categories produces specific indicators such as: Number of farmers participating in cooperative groups; Number of farmers attending agricultural demonstrations, etc. Individual USAID project monitors and host country officials may have other specific indicators to add to those generated by this matrix.

The usual level of analysis will be the project zone or individual village, and the time period for information gathering will be defined as the current month, quarter, season, or year.

The USAID has final responsibility for what information is collected. USAID staff should thus devote sufficient resources to clearly specify all indicators of interest for monitoring and evaluation. This can be done more accurately preparing table formats, which list the specific indicator, unit of measure, timing of data collection, and level of aggregation. If this is done, there will be little chance of misunderstanding the exact data needed and when it should be collected. Also, in preparing the tables and conducting this planning exercise, implementors will have an opportunity to gauge the actual use and importance of each indicator. A sample table is presented below.

TABLE 1

TITLE: AVERAGE RICE YIELD, PER HARVESTED HECTARE, BY ZONE AND BY YEAR (AVERAGE MT/HA)

ZONE	YR 1	YR 2	YR 3	YR 4	YR N.
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X
4	X	X	X	X	X
5	X	X	X	X	X

An illustrative list of effect-level indicators suggested by the project design team is appended to this technical analysis.

B. Collecting Impact Data --Use of PM-3 Form

Much of the primary data needed for impact-level monitoring is already being collected by RDA field agents in their current informal surveys. Also, RDA agents and project implementation team members have access to information currently maintained at village, marketer, supplier, and other levels, as well as information from their own observations. So, it is entirely plausible to expect that the PM-3 form prepared by the USAID project monitors could be sent to the RDAs to be completed and returned. The RDA's would have reporting responsibility, but they could rely on the above-mentioned primary data sources to complete each data item on the PM-3 form. Every effort should be made by the RDA to obtain actual quantitative data whenever possible and to obtain it from a representative cross-section of the zone (when applicable) if it is not possible to gather actual data from each village in the zone for the specific period established.

In practice, the zone may be too large an area for which indicators are reported. But the PM-3 form is designed to collect data for any geographic sub-division which would be of use to project monitors. As the MIS is tested and refined, it may be found useful to develop separate report forms for basic categories of indicators, so that ultimately there may be one form covering agricultural indicators such as: number of irrigable hectares, number of hectares planted by type of crop and average yield (MT/HA) by crop. Another form could cover sales of agricultural inputs, seeds (MT), fertilizers (MT), pumps (number), etc. As currently designed, the PM-3 can be used for any type of indicator.

The completed forms would be sent from the RDA through the national coordinating agency, to the USAID. The USAID would monitor the transmission and receipt of forms from each of the Project zones and develop some mechanism for noting delinquent forms, enforcing reporting, and most importantly, storing and analyzing the data received.

It is also anticipated that, in time, and as the operation of the system becomes familiar to all of the agencies involved, the OMVS, the national organizations, and RDA's involved in Project Implementation will become increasingly involved in data analysis, as their capabilities for so doing expand. It is intended that the system continue beyond the life of the Project, and that it be integrated in local planning process. This is further reason to exercise great care in the design and installation of the MIS. It is also critical that the USAIDs have specific plans in mind for editing, storage, and analysis of the incoming information, along with a set of procedures to encourage reporting.

There will be a need to periodically validate incoming information, so that the reliability of the data can be gauged, and careful reporting encouraged. The MIS will incorporate this feature and test it.

Specific reporting instructions and procedures must be developed for both the PM-2 and PM-3 forms. The presence in the field of the implementation teams should encourage the RDA's to follow these instructions and procedures.

It may be deemed necessary by those who will plan the evaluation of the IDP to conduct a sample survey of villages and farms one or more times, to test the validity and reliability of the information which is ultimately delivered to the USAIDs on the PM-3.

3.9.2.6. Mechanization of the MIS

No mention has been made, thus far, of the use of computers in the establishment and operation of this MIS. This is so because it is appropriate to fully address all of the above issues -- definition of data needs, procedures for flow of information, primary respondents, etc., before mechanization of the system can be considered. It is most efficient to decide at the outset whether or not the system will ultimately employ computers for data storage and retrieval, data transfer, and data editing, tabulation and analysis, as this should be kept in mind when data collection forms, data flow procedures, etc., are designed and refined.

However, all of the MIS design decisions (data needs, etc.) must be made, report forms designed, tested, and refined, reporting relationships should also be explored before addressing the use of one or more computers as part of the MIS. It, in fact, greatly simplifies matters if the MIS is designed first (and completely) as a manual system. If the manual system works, computerizing it will be a much smoother operation.

Under IDP, the management information specialist who will be assigned to the OMVS for two years will complete the design and supervise the installation of the MIS. This specialist will also evaluate the needs for computerized data handling for the MIS and for other monitoring and evaluation activities of the OMVS. He will also establish specifications for the MIS computer system to be purchased under IDP. For planning purposes, the IDP budget reflects probable purchase of micro-computers to be installed both at OMVS an in the three member states.

3.9.3. Impact Monitoring -- The OMVS/EPU

The OMVS Evaluation and Planning Unit has performed an important role in the past by providing multidisciplinary expertise to the High Commission, and in undertaking a series of socioeconomic studies of the SRB that have furnished a data base for SRB planning and development. Since then the Unit has embarked on the establishement of a permanent system of evaluation and planning, including a census of existing perimeters, an evaluation of the results of each agricultural season, and a data bank for irrigated agriculture in the Basin.

At present the Unit is staffed by two professionals, an agronomist and an agricultural economist. Additional technical assistance is being financed by UNDP and the German Government and includes an economic planner, a second economist, a second agronomist, a sociologist/human geographer, an irrigation engineer, and a computer programmer. The program of work planned for this Unit includes:

a. monitoring and evaluation of development actions in the Senegal River Basin;

b. analysis of demographic census data;

c. annual updating of a map showing all irrigated perimeters;

d. collection of data on the results of each agricultural season.

e. collection and aggregation of data on principal socioeconomic indicators;

f. entry of irrigated perimeter data into two micro computers to be installed at OMVS;

g. analysis of the effects of inter-annual flood variations;

h. studies of costs of irrigation and irrigated agriculture.

There are several areas, however, in which this study program is still deficient. First, it concentrates heavily on irrigated cultivation and ignores rainfed agriculture, livestock, and fishing. Second, most of the work is at the perimeter rather than the farm level, making it impossible to apply techniques of farm management analysis and farm systems research. Third, the program does not include any disease or nutrition surveillance. Finally, concentration is more on technical and economic considerations at the micro level than on regional problems of marketing and economic policy.

To remedy these deficiencies, especially in the zones where the IDP will be concentrated, a number of additional efforts, financed by AID, will be undertaken. These will include:

a. a series of farm/household surveys that will provide data for farm systems research and an evaluation of the impact of the project on the welfare of farmers;

b. continuous monitoring coordinated with the project management information system;

c. health monitoring through a series of disease and nutrition surveillance surveys;

d. The design of a Long Range Development Plan for the Upper Valley that will provide policy makers with a series of scenarios for development of the region, identify specific constraints in carrying out those scenarios, and develop implementation plans and feasibility studies for specific actions to overcome the constraints applicable to the scenario chosen.

These efforts will reinforce each other to a significant extent since the farm/household surveys will provide important data as input to the Long Range Plan. At the same time, the marketing and other studies associated with the preparation of the plan will be useful in identifying viable farm systems.

3.9.3.1. Farm/Household Surveys and Continuous Monitoring

A major objective of the IDP is to increase and secure farmer income in the SRB by integrating and expanding agriculture within the existing farm system. This is to occur through expanding farm size, increasing yields, diversification of cropping, and improving the security of water supply. An important element in accomplishing this task is the development of an effective system linking agricultural research to farmer needs.

In order to monitor and evaluate the impact of the project on participant farmers, to draw lessons from it for planning and project design, and to use it as a means for making agricultural research more relevant, information must be systematically gathered at the farm level. The program for doing this will consist of several components:

a. Baseline sample survey;

b. Continuous monitoring;

c. Five-year evaluation sample survey.

The first and third of these actions will require hiring and training of 5 enumerators in each of the project areas under the supervision of the zone's social scientist; the second action, that of continuous monitoring, will be carried out by the local extension staff, under the supervision of the social scientist and supplementary part-time personnel, as part of the project monitoring and evaluation system.

Although the surveys will be conducted by personnel attached to the RDA's strong technical support in organizing the surveys, developing questionnaires, training enumerators, choosing samples, proces-

sing and verifying data, as well as results analysis will be provided by the OMVS' agricultural economist, agronomist, anthropologist and statistician/computer programmer. Local agronomists, engineers, and other technical people in the RDA's will also be called upon as necessary, though no additional funding requirements are anticipated for this purpose.

Data will be processed in the field using microcomputers with appropriate software, such as FAO's FARMAP program. This will allow for verification and correction of the data while the surveys are still underway. It will also permit field personnel to participate in the analysis of the data and benefit directly from the results. Equivalent computer capacity will be installed at OMVS headquarters to allow for further analysis, especially on a comparative basis. Computer recommendations and specifications will be developed by the management information specialist at OMVS.

a. Baseline Survey

The baseline sample survey will provide information on farm/household resources and activities before the expansion of irrigation associated with the project. Specifically, the survey will gather data on:

(1) the socio-demographic structure of the households and information on place of birth, education, occupation, and migration (age, sex, location, occupation, date of departure, remittances, etc).

(2) an inventory of land, equipment, and animal resources owned, rented, or otherwise employed by the household;

(3) a definition of on-farm and off-farm activities engaged in by members of the household at specific times of the year;

(4) flows of labor and other inputs into each activity at specific times of the year (where usable data are not available from other sources);

(5) yields and other measures of output, as well as other sources of income, both in the survey year and as the farmer is able to recall how these have varied over time;

(6) major constraints on the expansion of output, such as inability to borrow for the purpose of hiring labor or lack of sufficient irrigated land.

(7) farmers' priorities, their decision criteria for each activity, and their management strategies for the farm as a whole, with

attention to the possibility that priorities may differ and there may be several levels of decision making and management within the household.

The survey will be undertaken in five selected villages (or other sampling units in the case of Podor) in each of the five project zones (Bakel, Podor, Gouraye, Kaedi, and Kayes). One enumerator will live in each village for the duration of the survey, which will average six months over the rainy season. One of the villages in each zone will be situated in the dieri and one on walo land. Where villages are paired on an ethnic or caste basis, the group of villages will be treated as a single unit. Each enumerator will have a bicylce to travel. He will be directly supervised by one of the social scientist's assistants, who will have a mobylette, a programmable calculator, a compass, a measuring tape, a range finder, and a scale.

Each zone headquarters will have appropriate data processing equipment, a typewriter, a mimeograph machine with adequate supplies of ink and paper, and various reference manuals and other documentation, financed under the IDP national programs.

Following a review of the literature, including a study of Lericollais' detailed maps 1/ and discussions with knowledgeable experts, there will be a general reconnaissance of the zone and a series of informal interviews with farmers by the OMVS agricultural economist, agronomist, and anthropologist; the RDA social scientist; and appropriate representatives from the RDA headquarters. Enumerators will be chosen and trained, villages will be mapped and compounds numbered, and, in the absence of any other basis of enumeration, a short questionnaire, full census will be administered in each of the sample villages for purposes of stratification and sample selection. This will be followed by a single-interview (over several visits) survey of farmers in the sample. To the extent that input-output data are not available from other sources, as is generally true of rainfed and flood recession cultivation, a cost route survey will also be administered for a subsample of farmers. Data will be checked and entered into the micro-computer in the field with the assistance of the OMVS statistician. Preliminary analyses will be conducted by the RDA social scientist with assistance from the OMVS agricultural economist, agronomist, anthropologist, and statistician and from agronomists and economists attached to the RDA.

Outputs from the baseline survey will be as follows:

(1) a series of objective indicators of resources, productivity, income, and degree of security associated with the existing mix of on-farm and off-farm activities, which will be used as the reference point for measuring the impact of the project, and in particular its distribution effects;

1/ André Lericollais, "Peuplement et Culture de Saisons Sèches dans la Vallée du Sénégal", ORSTOM and OMVS, Paris 1980.

(2) identification of key bottlenecks to the expansion of output, which will help to focus the actions of the extension service, on-farm adaptive experimentation by agronomists in the project area, and commodity and disciplinary research on agricultural experiment stations in the region;

(3) a clearer recognition of farmer goals and management concerns, within the context of the existing social structure, which will assist project personnel at all levels to more effectively implement the project in cooperation with participating farmers and to assure a more equal distribution of its benefits;

(4) input-output data for farm activities that will be used in the preparation of the Long Range Plan for the Development of the Upper Valley.

b. Continuous Monitoring

During the course of the project, RDA extension personnel, under the supervision of the resident social scientist, will be responsible for continuously recording data on project outputs for the management information system (MIS). These will include:

(1) number of participating farmers;

(2) irrigable land area;

(3) area under irrigated cultivation;

(4) inputs delivered by the RDA;

(5) number of trained oxen.

To the extent that the project succeeds in stimulating greater private sector activity in providing inputs, fewer of these will be distributed by the RDA's. Consequently, it is highly desirable that data be obtained on variables that are not direct project outputs, but are nevertheless important for monitoring the impact of the project, and are not too difficult to collect. This should be done by the local extension agent so that the agent gains a greater appreciation of the improvements being achieved and the problems farmers still face. These additional data will include:

(1) crops cultivated and techniques employed on each irrigated parcel (can be marked with symbols periodically on mimeographed maps of the perimeter, modified as necessary from year to year to reflect changes in the configuration and areas of the parcels);

(2) fertilizer, seeds, and other intermediate inputs purchased by the farmers' associations or cooperatives from all sources;

(3) purchase of fuel, lubricating oil, spare parts, and repair services by the associations or cooperatives;

(4) presence or not on the perimeter of hired or client labor with a notation of the crops and tasks involved;

(5) inventory of pumps, animal traction, and other equipment and any changes therein;

(6) monthly prices received by farmers and paid in the local market for major commodities (measured in traditional quantity units);

(7) description of specific reasons for crop failures for irrigated, flood recession, and rainfed crops (e.g. pump breakdown, inadequate flooding, rains ceased after germination).

Most of these data apply to the farmers' associations or cooperatives and not to the individual farmer. Where on-farm experiments are being conducted, however, the extension agent will record much more detailed data for each of these farms on techniques, dates of specific operations, quantities of inputs including labor, and yields.

Some of these data are already being collected by the OMVS-EPU for its "Bilan de Campagnes". 1/ Recording of data used for continuous monitoring of the IDP should be integrated with this OMVS system so as to avoid duplication.

c. Five-Year Evaluation Survey

This survey will essentially replicate the baseline survey and will as much as possible include the same farmers in the sample. Careful exploratory work, however, should reduce the scope of the survey to cover changes in the farm/household system that have taken place since the baseline survey.

3.9.3.2. Resources Needed for the Farm/Household Surveys and Monitoring

(a) Personnel

Most of the personnel required for the farm/household surveys is already included in implementation plan:

1/ Agricultural Season Assessment Reports prepared by the EPU of the OMVS.

(1) 1 Agricultural Economist, 1 Anthropologist, and 1 Statistician assigned to the OMVS.

(2) 5 Social Scientists and 5 of their assistants attached to the RDAs and assigned to each project zone;

(3) Agronomists, Economists, and other specialists either already attached to the RDA's,or part of the overall technical assistance package.

(4) 65 enumerators for 8 months each: (qualifications are 9 years of schooling):

- 5 in PY 2;
- 20 in PY 3;
- 5 in PY 4;
- 20 in PY 5;
- 15 in PY 7.

These are included in the project support staff budget in each project zone.

(b) Training

All agronomists, social scientists, and social scientist assistants included in the project, plus an agronomist and an agricultural economist from each of the RDA's,will receive six weeks of intensive training at OMVS headquarters in the following areas:

(1) sample survey techniques:

a) survey planning;
b) questionnaire design;
c) training and supervision of enumerators;
d) field measurement, crop cuttings, and other specialized techniques;
e) data checking, entry, and verification.

(2) statistical analytical techniques:

a) frequency distribution and summary statistics;
b) contingency tables and non parametric significance tests;
c) correlation and regression analysis.

(3) microcomputer processing:

a) introduction to the microcomputer and its software;

b) basic programming;

c) FARMAP (or a similar) analytical package;

d) linear programming package;

f) other uses.

The training will be conducted during PY2 by the OMVS agricultural economist and statistician. It will be geared to the level and background of the individual participants and will involve practical applications, often in team situations, along with reading and classroom discussion.

Costs for this training program will be covered under operational training costs or local counterpart funding. Costs will include travel to and from Dakar and six weeks per diem for 18 persons.

(c) Commodities

The following commodities and their estimated costs are additional to those included elsewhere in the project:

1.	Survey equipment and supplies	$ 50,000
2.	Microcomputers and related software	75,000

US AGENCY FOR INTERNATIONAL DEVELOPMENT

INTEGRATED DEVELOPMENT PROJECT
PROJECT MONITORING SYSTEM
Planning Document- Form PM-1
PM-1 No._____

FORM PM-1

Period Covered:
Begins: FY_____ QTR_____
Ends: FY_____ QTR_____

PM-1 Prepared By:_____
USAID/_____

Date Prepared:___/___/___
REPORTING DEADLINE FOR PM-2:
___/___/___

OUTPUTS TO BE IMPLEMENTED DURING THIS PERIOD

Description of Output(s)	Log Frame Ref.No.	Objectively Verifiable Indicators of Actual Output Provision to be used: (such as ,NO. of Persons trained, KM. of Roads Constructed, Ha. of Perimeters const.,etc.)					
		Implementation Schedule-using above measures,by/time period:					
		FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___
		Actual Implementation-(to be reported on PM-2)					

Implementing Agency:_____
Implemnting Contractor: Name:_____

Organization:_____

Address:_____ Tel._____

PROJECT MONITORING SYSTEM
Implementation Reporting Document-Form PM-2
PM-2 NO._____

Period Covered:
Begins: FY_____ QTR_____
Ends: FY_____ QTR_____

PM-1 Prepared By:_____
USAID/_____

Date Prepared:___/___/___
REPORTING DEADLINE FOR PM-2:
___/___/___

OUTPUTS TO BE IMPLEMENTED DURING THIS PERIOD

Description of Output(s)	Log Frame Ref.No.	Objectively Verifiable Indicators of Actual Output Provision to be used: (such as ,NO. of Persons trained, KM. of Roads Constructed, Ha. of Perimeters const.,etc.)					
		Implementation Schedule-using above measures,by/time period:					
		FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___	FY:___ QTR:___
		Actual Implementation-(to be reported on PM-2)					

Implementing Agency:_____
Implemnting Contractor: Name:_____

Organization:_____

Address:_____ Tel._____

PM-2 Form Completed By: Name:_____

Organization:_____

Signature:_____

USE REVERSE SIDE FOR COMMENTS

U.S. AGENCY FOR
INTERNATIONAL DEVELOPMENT

PREPARED BY: USAID/ _____

INTEGRATED DEVELOPMENT PROJECT

PROJECT MONITORING SYSTEM
EFFECT MONITORING FORM - \PM -3

PM-3 No. _____ DATE: / /

FORM PM-3

REPORTING DEADLINE
DATE COMPLETED PM-3
SHOULD BE RETURNED
TO USAID: _____

Effect Indicator	Indic. No.	Area: Zone	Area: Village	Unit of measure (eg.ha,mt/ha,no.)	Data reported	Source of Data (check): RDA agent	Village Record	Ob-serv	Other (explain)	Comments (Enter Title of Obser

REPORTED BY
NAME _____
AGENCY _____
ADDRESS _____

SIGNATURE _____

DATE : / /

TEL : _____

1-1

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U.S. AGENCY FOR
INTERNATIONAL DEVELOPMENT

INTEGRATED DEVELOPMENT PROJECT

PROJECT MONITORING SYSTEM
EFFECT MONITORING FORM - PM -3

FORM PM-3

PREPARED BY: USAID/ _____

PM-3 No. _____

DATE: / /

REPORTING DEADLINE
DATE COMPLETED PM-3
SHOULD BE RETURNED
TO USAID: _____

Effect Indicator	Indic. No.	Area		Unit of measure (eg.ha,mt/ha,no.)	Data reported	Source of Data (check)				Comments (Enter Title of Observer)
		Zone	Village			RDA agent	Village Record	Ob-serv	Other (explain)	

REPORTED BY

NAME _____

AGENCY _____

ADDRESS _____

SIGNATURE _____

DATE : / /

TEL : _____

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ILLUSTRATIVE LIST OF GOAL AND PURPOSE ACHIEVEMENT INDICATORS

This list may not be complete. Selected indicators chosen from it and included in the effect monitoring level of the MIS would probably provide an accurate picture of what is happening in the zones during Project implementation. A few Output level indicators are also included to keep the reader's interest.

Output Indicators

Construction

-- number of perimeters rehabilitated

-- Ha. of rehabilitated perimeters.

-- number of new perimeters constructed

-- Ha. of new perimeters

-- Km. of feeder roads constructed

Health

-- number of surviellance units established

-- number of health labs equipped

-- number of doctors, nurses, technicians trained

Literacy Program

-- number of farmers trained

-- number of courses given

-- number and title of technical packages developed

Effect (Goal + Purpose) Indicators

Agricultural Inputs

-- farm group inventories of:

-- seeds

Agricultural Inputs (continued)

-- fertilizers

-- insecticides

-- animal traction equipment

-- pump spare parts

-- small processing equipment

-- local supplier inventories (as above)

-- prices of agricultural inputs (as above) at supplier level and at town level

-- average yield by crop, manual methods

-- average yield by crop, animal traction

-- average yield by crop, mechanized methods

Agricultural Associations (Co-ops)

-- number of participants, planting

-- number of participants, harvesting

-- number of co-ops

-- number of members

-- yield per planting participant

-- yield per harvesting participant

-- number of co-op members paying full fee

-- number of co-op members paying part fee

-- number of co-op members not paying fee

-- number of new perimeters planned

-- other actions by co-ops

Agricultural Prices

-- Official prices, by crop, by season

-- Shadow prices, by crop, by season

Agricultural Prices (continued)

-- Amount of production sold

-- Amount of agricultural products exported from zone

-- Amount of agricultural products imported into zone

Agricultural Credit

-- Capital levels in town banks

-- lines of credit authorized through IDP

-- number of farm credit applications made

-- amount of farm credit approved

-- number of loans repaid on time

-- number of loans repaid partly on time

-- number of loans not repaid

-- average amount of farmer loans

-- interest rates charged

-- cost of administering average loan

-- amount of taxes on agricultural inputs (as above)

-- transport costs of agricultural inputs (as above)

-- farm group purchases of agricultural inputs (as above)

-- farm group unsatisfied demand for agricultural inputs (as above)

-- unrepaired equipment at farm group, due to shortage of spare parts

-- portion of inputs provided by private sector vs. RDA

Agricultural Extension

-- number of farmers trained in production skills

-- number of pair of oxen trained

-- type of alternative technology tested

-- number of fish ponds, windbreaks, etc.

Agricultural Extension (continued)

-- number of field demonstrations

-- number of farmers attending field demonstrations

Agricultural Technology

-- number of farm groups with access to appropriate inputs

-- number of farm groups using appropriate inputs

-- number of farm groups using inputs properly

-- presence of hired labor on perimeter

-- amount of crop failures, by major reason (category)

-- average size of farms (irrigated, not irrigated)

Agricultural Production

-- total agricultural production, by zone, by crop

-- total agricultural production, by village, by crop

-- average yields per hector, by village, by crop

-- ha. irrigable

-- ha. planted, by crop

-- ha. harvested, by crop

-- ha. cultivated by village families

-- ha. cultivated by hired labor

-- ha. cultivated per family

Health

-- number of medical studies completed

-- number of persons visiting health units

-- level of staff at health units

-- level of supply inventories at health units

-- number of cases of malaria, schesto, oncho, other diseases reported

Institutional Capacity

-- OMVS monitoring system established

-- number of reports issued by OMVS

-- number of regional agricultural projects arranged, coordinated

-- frequency of RDA's reporting through MIS

-- percentage of data items completed--MIS

-- number of RDA's participating in analysis of MIS data