

PN-ABZ-440

**GUIDELINES TO ESTABLISH AND MAINTAIN  
A MONITORING AND EVALUATION SYSTEM FOR  
THE USAID AND DNFC GUINEA NRM PROJECT**

**Contract No. 624-0219-C-00-2094-00  
Guinea Natural Resources Management Project**

**Submitted to:  
United States Agency for  
International Development/Guinea  
Conakry, Guinea**

**Submitted by:  
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## ACRONYMS

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AID	(U.S.) Agency for International Development
BRP	Bassin Représentatif Pilote
CENAFOD	Centre Africain pour la Formation et le Développement
DNFC	Direction Nationale des Forêts et Chasses
ECC	European Community Common Market
FDH	Fouta Djallon Highlands
GID	Gender in Development
GIS	Geographic Information System
GNRM	Guinea Natural Resources Management Project
GRG	Government of the Republic of Guinea
MAPS	Manual for Action in the Private Sector
M&E	Monitoring and Evaluation
NRM	Natural Resources Management
OVI's	Objectively Verifiable Indicators
PMU	Project Management Unit
RUGs	Resource User Groups
SOW	Scope of Work
TA	Technical Assistance
TDY	Temporary Duty
USAID	United States Agency for International Development
WMU	Watershed Management Unit

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**SECTION I**  
**TRIP PURPOSE AND ORGANIZATION**

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**A. Purpose of Trip**

The principal objective of this short-term technical assistance was to assist the Guinea Natural Resources Management (NRM) technical assistance team in designing and maintaining a monitoring and evaluation (M&E) system. The M&E system will continually track the progress and impact of project interventions in the three watershed sites: Koundou, Diafore, and Dissa. The short-term advisor, assisted by the technical assistance team, developed a list of indicators that will be used to monitor project interventions, on a local level, by the project and, on a national level, by the Direction Nationale des Forêts et Chasses (DNFC) and the United States Agency for International Development (USAID).

During the one-month consultancy, the advisor also identified potential subcontractors to collect baseline data and conduct surveys in the three watersheds and wrote their work plan. A complete description of the monitoring and evaluation scope of work is in Annex A.

**B. Persons Contacted**

S.K. Reddy	Project officer, USAID/Conakry
Bill Polidoro	Project manager, USAID/Conakry
Steve Haykin	Economist, USAID/Conakry
K.B. Paul	Chief of party, Chemonics
Robert Chase	Soil conservation specialist, Chemonics
Steve Aversa	Community enterprise specialist, Chemonics
Tom Erdmann	Agroforestry specialist, Chemonics
Mathias Haba	National coordinator, DNFC
Yacine Sow	Regional coordinator, DNFC
Ahmadou Sherif Bah	Division chief, Rural Forestry, DNFC
Tidiane Traory	President, Management Consultants
Mory Siory	Programs coordinator, EUPD
Ibrahima Barry	Programs coordinator, CENAFOD
Mr. Marino	Project coordinator, CCE, Haut Niger Project
Harold Randall	Program coordinator, UNICEF
Jamil Mekawi	Chief of party, MAPS
Mamadou Saliou Diallo	Director, WMU/Kouratongo (Diafore)
Mamadou Coumbassa	Forester, WMU/Kouratongo

Mamadou Sourare	Soil conservationist, WMU/Kouratongo
Mamadou Malal Balde	Community enterprise, WMU/Kouratongo
Alpha Bacar Bah	Director, WMU/Linsan Saran (Koundou)
Abdoulaye Kouye Bah	Soil conservationist, WMU/Linsan Saran
Mamadou Yero Sow	Forester, WMU/Linsan Saran
Bocar Sow	Community enterprise, WMU/Linsan Saran
Mariama Oury Balde	Animatrice, WMU/Linsan Saran
Jean Tounkara	Interim director, WMU/Sougueta (Dissa)

**C. Trip Schedule**

During the month in country, the consultant spent one week in Conakry and nearly three weeks in the project area visiting the three watersheds. Below is a description of activities in each location:

<u>Dates</u>	<u>Location</u>	<u>Activities</u>
Sept 2-9	Conakry	Meetings with: Chemonics chief of party, USAID staff, DNFC, MAPS staff, UNICEF, Haut Niger project coordinator.  Interview potential subcontractors: Management Consultants, EUPD, and CENAFOD.  Review background documents and indicators used by other natural resources management projects.
Sept 9-12	Labé	Discuss work plan with PMU staff. Reorganize list of project interventions by location. Develop a preliminary format and list of indicators. Design and discuss a "question guide" for a household survey with USAID and PMU staff.
Sept 13-15	Kouratongo	Discuss project interventions and objective of an M&E system with WMU staff. Visit all villages in the Diafore watershed. Update project map. Collect baseline data on demographics and climatic conditions.
Sept 16-18	Linsan Saran	Discuss project interventions and objective of an M&E system with WMU staff. Visit all but four villages in watershed where interventions are currently conducted. Review survey question

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		guide with WMU director. Collect 1992 demographic statistics and visit health center to identify types of health data available. Update project map of the watershed.
Sept 19	Labé	Begin to write report and organize tables of project interventions, possible indicators, locations, and frequency of data collection.
Sept 20	Sougueta	Discuss project interventions and the objective of an M&E system with WMU interim director. Visit four villages in watershed where interventions are currently conducted. Review question guide with acting WMU director. Collect 1992 population statistics and update project map of the watershed.
Sept 21-23	Conakry	Discuss potential indicators and baseline data requirements with USAID staff. Meet with MAPS staff to determine how indicators can be incorporated with a GIS. Conduct second interview with Management Consultants.
Sept 24 - 27	Labé	Write report and debrief PMU staff.
Sept 28 - 29	Conakry	Visit DNFC office to discuss work plan. Revise draft report to reflect PMU's comments.
Sept 30	Conakry	Debrief USAID Mission.

#### **D. Report Format**

This report is divided into eight sections. Sections I through III discuss the purpose of the consultancy and the context for establishing and maintaining a monitoring and evaluation system. Sections IV through VI provide details of the types of indicators that should be collected and guidelines for establishing and maintaining a project data bank. Section VII offers suggestions on how project indicators can be incorporated into a national M&E system at DNFC. The final chapter, Section VIII, outlines a work plan for the monitoring and evaluation system.

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## SECTION II

### GENERAL COMMENTS AND OBSERVATIONS

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The Guinea Natural Resources Management (NRM) project will face new challenges in 1994. This year, a significant number of extension activities and project interventions were implemented in the three watersheds of Diafore, Koundou, and Dissa. Many more activities are programmed for next year that will improve agricultural production, increase rural incomes, and strengthen the ability of community groups to manage their natural resources. Installing and maintaining a monitoring and evaluation (M&E) system will help to determine the progress and impact of these interventions during the life of the project.

Measuring the impact of project interventions can be difficult for a number of reasons. First of all, biophysical changes in water and soil quality may take many years to detect. Another difficulty is measuring externalities of project interventions, such as impacts on populations downstream and outside the project watersheds. In light of these problems, the project must devise short-term indicators to determine whether or not project interventions are accomplishing their desired objectives. Baseline data will allow for longer-term impact evaluation at a later date.

The success of the M&E component of the Guinea NRM project depends on the commitment of the project staff, i.e., contractor and DNFC personnel, to install and maintain the system. A successful M&E system, like implementing interventions in the watersheds, requires time and financial resources. The quality of information generated will therefore be directly contingent on resources allocated to the system.

The Guinea NRM project plans to hire a local subcontractor to collect baseline data and to conduct seasonal surveys for evaluating biophysical and socioeconomic impacts on populations in the watersheds. The project must be prudent and objective in selecting the best-qualified organization to perform these tasks. Experience in conducting surveys and computer competence in establishing and maintaining databases are essential for the M&E system. Failure to select a subcontractor with these skills will ultimately result in breakdowns in the system.

During the month in country, the consultant interviewed three potential M&E subcontractors in Conakry who possessed varying degrees of experience in M&E systems. The criteria developed to evaluate the subcontractors is located in Annex H of this report. The same list can be used by the Project Management Unit (PMU) when interviewing other potential candidates before the final selection of a subcontractor in December 1993.

In addition to baseline data collection and surveying, the project will also monitor "progress" indicators. These indicators include extension and training activities, numbers and types of interventions, and adoption rates of project-recommended techniques. Progress indicators will be monitored by personnel stationed in the three watersheds.

The consultant traveled to the three watersheds during September and visited nearly all the project interventions. After touring each watershed, he met with the Watershed Management Unit (WMU) teams to explain the objectives for installing the system and to ask for feedback on the survey question guide he had developed. Although baseline data collection and evaluation were not in the scope of work, the consultant began gathering this information in each of the watersheds. This data, located in annexes of this report, should facilitate the work of the subcontractor.

Due to time constraints, the consultant did not spend as much time as desired with the PMU technical team members in Labé. If any follow-up M&E consultancies occur in 1994, the consultant recommends that PMU technical team members travel with the M&E consultant to the watersheds. This will encourage a more active interchange of ideas for developing and maintaining an M&E system.

If the subcontractor needs assistance installing the M&E system, a follow-up visit could be scheduled in early 1994 to correspond with the timing of the first socioeconomic household survey programmed for January. During this time, the consultant could also assist in setting up the data bank and computer training for DNFC personnel in Labé.

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## SECTION III BACKGROUND AND CONTEXT

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### A. The NRM Analytical Framework

The Natural Resources Management (NRM) Analytical Framework is a five-tiered continuum designed to monitor the stages of development that lead to, and include, project impacts on the environment and local populations. Exhibit 1 on the following page illustrates the five levels, beginning with identifying appropriate interventions (Level I) and leading to the ultimate project goals of improving community management of natural resources and increasing agricultural productivity and incomes of rural households (Level V).

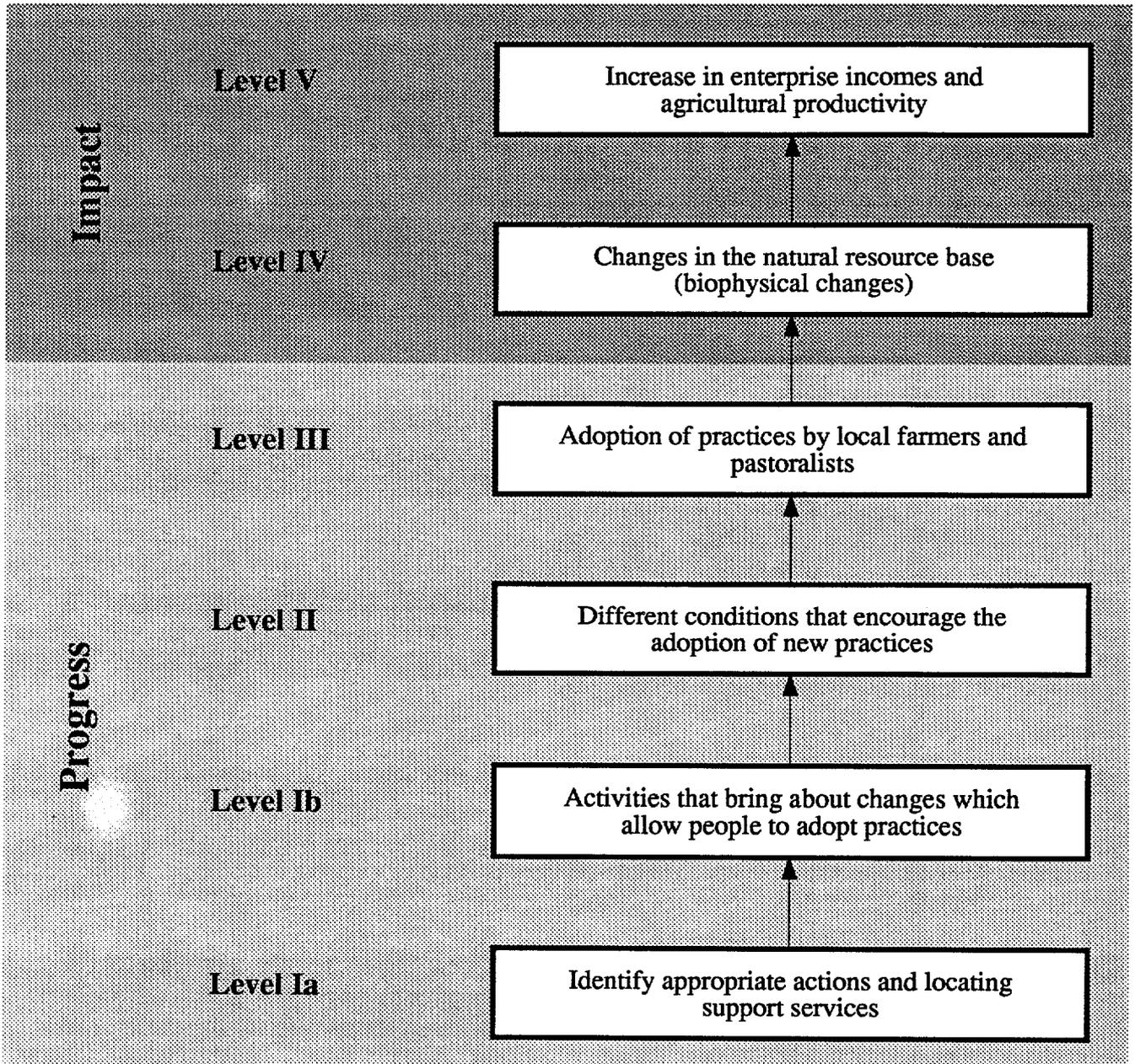
Monitoring these various levels enables NRM projects to determine the effectiveness of interventions during the project's life. For example, an increase in the adoption rate of farmers practicing contour planting on cultivated slopes is an indicator of acceptance of a project-recommended technique. As more farmers adopt contour cultivation, soil fertility is improved and erosion is reduced. Soil amelioration can ultimately lead to increased soil fertility and agricultural productivity. Although it is difficult to measure the long-term impacts of such interventions, secondary indicators such as adoption rates can give early signals as to whether project objectives are on course.

In addition to monitoring the accomplishments of certain interventions, the project must also learn from activities that have not succeeded and learn why more users are not adopting improved techniques. An intervention's failure to be readily adopted or to improve agricultural productivity could be caused by several factors. In case of such failure, the project personnel should first examine whether they effectively identified appropriate actions when the intervention was initiated (Level I). The next step is to analyze whether all the conditions that contribute to adoption are in place (Level II). For example, how effective was the extension message in reaching certain communities? Did the project identify and work with the right target groups? Have underlying constraints to adopting interventions, such as high labor demands, financial risks, or access to land, been overlooked? This internal evaluation process can help the project to reorient less successful interventions to meet project objectives.

### B. Defining Progress and Impact Indicators

The NRM Analytical Framework provides the structure for viewing project interventions at various levels. Indicators, on the other hand, are the tools used in the framework to measure the effectiveness of interventions. There are two different types of indicators discussed in this report: progress and impact. Progress indicators monitor how well the project is accomplishing its short-term objectives. Impact indicators measure the effects of interventions on the environment and people in the watersheds. In relation to the

# Exhibit 1: NRM Analytical Framework



NRM Framework, progress indicators monitor Levels I, II, and III, while impact indicators measure Levels IV and V.

### **C. Classifying Interventions by Final Objectives**

The first step to implementing a monitoring and evaluation system is to organize a concise list of all project activities and their locations. Once this is accomplished, interventions can be classified according to their final objectives. Organizing project activities into categories will later facilitate determining appropriate progress and impact indicators for each type of intervention.

This year, the Guinea NRM project has already implemented several different types of activities. The Project Work Plan for 1993 describes 51 separate interventions, roughly 17 per watershed. It was clear from the list that commonalities existed among many activities. Therefore, the consultant grouped together similar interventions, reducing the total number of distinct interventions from 51 to 26.

The 26 interventions were then categorized according to final objectives. The three common themes emerging from the project activities were: (1) interventions that directly promote community management of natural resources, (2) interventions that promote increased agricultural production, and (3) interventions that encourage income generation. A complete list of these interventions, classified by objectives, is found in Exhibit 2.

Some interventions have multiple objectives. For example, tree nurseries are operated as private enterprises but also provide tree seedlings for community reforestation. In such a case, the impact is measured as an income generating intervention and will also be tracked under reforesting of spring catchment.

**Exhibit 2**  
**Classification of NRM Project Interventions**

<b>I. INTERVENTIONS THAT PROMOTE COMMUNITY MANAGEMENT OF NATURAL RESOURCES</b>	<b>II. INTERVENTIONS THAT PROMOTE INCREASED AGRICULTURAL PRODUCTION</b>	<b>III. INTERVENTIONS THAT ENCOURAGE INCOME GENERATION</b>
1. Establishing and Supporting Resource User Groups (RUGs)	1. Promoting Live Tree Fencing	1. Vegetable Production & Marketing Promotion (and marketing studies)
2. Reforesting Spring Catchment	2. Intercropping with Leguminous Shrubs	2. Promoting Improved Poultry/Egg Production and Marketing
3. Capping Water Sources and Improving Wells	3. Forage/green Manure production	3. Beekeeping Promotion
4. Constructing Flood Control Canals	4. Composting	4. Para-Veterinarian Support
5. Building and Maintaining Fire breaks	5. Contours to Reduce Erosion (structures and hedges)	5. Tree Nursery Enterprise Support
	6. Irrigation Canals and Dam Construction	6. Blacksmith Enterprise Promotion
	7. Animal Traction Programs	7. Program on Responsible Woodcutting
	8. Crop Protection (improved varieties, insect and weed control)	8. Soapmaking Enterprise Promotion
	9. Inorganic Fertilizer Demonstrations	9. Food Processing (Tomato Drying Enterprise)
	10. Post Harvest Protection (Applied Research)	10. Cloth Production and Dyer Support
	11. Fruit Worm Control (Applied Research)	

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## SECTION IV BASELINE DATA REQUIREMENTS

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To measure the progress and impact of project interventions, baseline information must first be collected on characteristics of the watersheds. The Watershed Management Units (WMUs) already initiated this effort in diagnostic surveys conducted last year. During the month in country, the M&E consultant also collected updated demographic data from the watersheds and revised project maps. This information is located in the annexes of this report.

This section provides a complete description of reporting responsibilities and categories of baseline data that will be collected. It concludes with a discussion on establishing a data bank to store pertinent baseline data.

### A. Reporting Responsibilities

Baseline data collection and processing will be managed by a local firm under contract with DNFC. The subcontractor will hire a four-person team to collect, process, and analyze data on project activities. Three of these team members will be field survey technicians, hired to gather baseline data and conduct seasonal, socioeconomic surveys in each watershed. The fourth team member, a data analyst, will be stationed at the regional coordinator's office in Labé to process and analyze data. Annex I of this report gives a detailed description of the subcontractor's Scope of Work and responsibilities.

Although WMU staff are not directly responsible for baseline data collection, they will be instrumental in providing names of contacts and helping the field survey technicians to become integrated into the local community. WMU must also provide the technicians with background information on the project and details on all current and programmed interventions.

Once the field survey technicians have completed their initial baseline study, they will send data to the data analyst in Labé for processing and analysis. The data analyst will write biannual reports on the findings of the household surveys, which will be conducted every six months.

### B. Categories of Baseline Data

The consultant, in collaboration with project staff, identified nine categories of baseline data to collect at the onset of monitoring and evaluation activities. A description of these categories, types of data to collect, and data sources are found in Annex B of this report. Below are the general categories of data to be collected in the baseline and respective data sources:

**Exhibit 3**  
**Baseline Data Categories**

	Baseline Categories	Source(s)
1.	Demographic Data	Secondary Data Sources (Annex C)
2.	Revised Maps of Watersheds	Updated Watershed Maps (Annex D)
3.	Socioeconomic Conditions	Household Survey Question Guide (Annex J)
4.	Project Interventions/Locations	1993 Location of Interventions (Annex F)
5.	Land Use and Land Tenure	Household Survey Question Guide (Annex J)
6.	Enterprises	Household Survey Question Guide (Annex J)
7.	Agricultural Practices	Household Survey Question Guide (Annex J)
8.	Climatic Conditions	Secondary Data Sources
9.	Natural Resource Endowment	Secondary Data Sources

**C. Secondary Data Sources**

Demographic, natural resource endowment, and climatic data will be collected from secondary data sources. Annex B explains where this information can be located. The WMUs have some of this data at their offices, but the field survey technicians will have to gather other information from local government offices.

Precautions should be taken when using secondary data. For example, the accuracy of some of the demographic data at the *sous-préfectures* is questionable. The WMU directors will be able to give some guidance as to whether the reported population statistics in different watershed villages are realistic. The field survey technicians should also contact local chiefs in each of the villages to cross reference census data.

Rainfall, humidity, and temperatures are now being monitored by the WMUs in each of the three watersheds. Historical data, reported monthly over the last three to five years, can be found at the *sous-préfectures*. The consultant detected errors in some of the rainfall statistics from Tougue (i.e. misplaced decimal points for certain months), so the data collectors must be careful when using this data.

To determine changes in vegetative cover of the watersheds, aerial photos should be collected and analyzed. The PMU has access to these photos and may be able to assist in interpreting vegetative cover.

**D. Household Surveys**

Information on socioeconomic conditions, land use, enterprises, and agricultural practices will be collected during household surveys in selected villages of the watersheds. Data from these surveys will be used to evaluate impact of project activities on local populations.

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## D1. Selecting a Sample of Villages and Households for Surveying

For the survey, the consultant had initially envisioned selecting a random sample of villages and households that would be statistically representative of the population in each watershed. The project and USAID opted instead, however, to select villages with the greatest number and most diversified mix of project interventions. Selecting villages in this manner may not be representative of the entire population, but will give some indication of the composition and characteristics of households in the three watersheds. The subcontractor will be responsible for randomly choosing households in the selected villages.

## D2. Sample Size of Household Survey

Below are the sample sizes agreed upon by the consultant, project, and USAID for the household survey:

Villages per watershed = 5  
Households per village = 5  
Sample size per watershed = 25 households.  
Sample size for project = 75 households.

Therefore, using Annex F as a guide, five villages were chosen from each watershed that had a mix of agricultural production, enterprise development, and community natural resource interventions. Below is the final list of villages selected for the surveys:

Exhibit 4  
Villages Selected for the Socioeconomic Survey

KOUNDOU WATERSHED	DISSA WATERSHED	DIAFORE WATERSHED
1. Telibofi	1. Farinta	1. Dow Kouratongo
2. Kokolou	2. Hafia	2. Foreya
3. Donghol	3. Fotongbe	3. Koumbamba
4. Linsan-Foulbhe	4. Khatiya	4. Dow Diafore
5. Gueme	5. Amaraya	5. Koune

## D3. Questionnaire Guidelines

Once the villages were selected, the consultant developed a preliminary "Survey Question Guide" to assist the subcontractor in developing a survey questionnaire. The Survey Question Guide is located in Annex J of this report and includes information that will be used later to measure the impact of project interventions.

The first section of the questionnaire seeks information on the composition of households, such as age, gender, educational level, and occupations of each family member. Changes in family size will be recorded over time to determine migration patterns of people and the cause for leaving and returning to the selected villages. All data will be gender disaggregated to observe how impacts from project interventions have affected men and women differently.

One of the household survey's most important outputs will be to determine marketed agricultural production. This will be a difficult task due to the nature of the questions concerning sensitive subjects. In addition, to gain villagers' confidence and trust, DNFC will have to guarantee that the information collected will not be used to increase taxes. The field survey technicians will need to be skilled in measuring fields sizes and calculating production and yields of tapades, exterior and low-land fields. Surveys must be conducted at or shortly after harvest so that farmers will remember units of each crop that were stored, consumed, or marketed. Questions on agricultural production and marketing are gender disaggregated to determine field sizes and crops that are managed by men and women separately.

According to project personnel, information on income and expenditures is difficult to obtain in the Fouta Djallon Highlands. Therefore, the field survey technicians will need to use proxies. The consultant suggests observing (not asking for) approximate numbers of livestock and taking inventories of household effects. Increases in household inventories and livestock over time are indications of increased incomes and expenditures. Monitoring migration patterns in the household will indicate whether these increases are attributed to exterior or local income generation.

#### **D4. Time Requirements to Conduct the Household Survey**

Assuming that each field survey technician will need to select a sample of five households in each of five villages (25 households per watershed), as well as gather other baseline information, data collection should take three to four weeks. Technicians may also have to return to the watersheds if data gaps or inconsistencies in secondary data are found.

One of the technicians may be asked to remain in Labé after the survey is completed to assist the data analyst with data entry. Household surveys will be repeated every six months to monitor end-of-harvest and planting-season conditions.

#### **E. Establishing a Database**

In Labé, the data analyst will establish a database to store the baseline data. Information can be classified on dBASE by using the categories found in Annex B. The subcontractor who is selected should have a good working knowledge of entering and storing data using this program. The rationale for using dBASE software over other programs is that dBASE is compatible with Geographic Information Systems (GIS) used by DNFC in Conakry.

Once the baseline data is processed on the computer, a diskette with the data will be sent to DNFC headquarters in Conakry.

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## SECTION V PROGRESS INDICATORS

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Progress indicators measure how well the project is establishing initial actions, conducting extension activities, installing trials and demonstrations in villages, and encouraging adoption of interventions. The consultant subdivided progress indicators into primary and secondary levels. Primary indicators refer to training and extension activities. Rural radio programs would also be in this category. Secondary progress indicators monitor adoption rates and examine who is actively participating in project interventions.

### A. Reporting Responsibilities and Frequency

Collecting data for progress indicators is the sole responsibility of PMU and WMU project staff. They must document where and when extension sessions and training seminars are held and record the number of male and female participants at each. Since WMUs work directly with local villagers, they will also know who is adopting project-recommended interventions.

The frequency of data collection and persons responsible for collecting progress indicators are outlined in Annex G. At the end of each month, the following indicators should be completed by project staff:

#### Primary Progress Indicators

- Types of training sessions, number of participants attending, and locations
- Extension activities in villages, number of participants, and locations
- Tables of all monthly interventions by location (See Annex F)

#### Secondary Progress Indicators

- Number (by gender) of people participating in each intervention (Annex G)
- Number of villagers adopting interventions (See Annex G)
- Other progress indicators for each intervention (See Annex G)

The data analyst will process data on these progress indicators, which will be entered into computers in Labé using the dBASE computer program. Each month, the data bank on progress indicators will be updated for the PMU's use.

### B. Primary Progress Indicators

Primary progress indicators monitor the types of extension or training activities conducted in villages and the locations of different project interventions. These indicators measure Level I and II on the NRM Analytical Framework.

## **B1. Training and Extension Activities**

The project already records detailed information on training sessions, including types of training, dates, participants (men and women), and locations. This information can be entered into the database on progress indicators by the data analyst.

Extension activities have not been closely monitored by the project in the past, but such monitoring is essential in measuring project progress. Extension visits by date, theme, location, and number of persons attending give indications of "where" and "how many people" have received information on specific project interventions. Because there are no standardized extension formats, the consultant developed an extension format booklet. Annex E is a suggested format for recording extension activities. These forms, made into booklets with 30 or 40 pages, could be distributed to project technicians and Peace Corps volunteers on a monthly basis. At the end of each month, project personnel can submit these booklets to the WMU directors and receive a new booklet for the next month.

The WMU directors must remember that these extension booklets should not be used as a "policing" tool to monitor the amount of work done by each technician. Rather the booklets will help to monitor the resources deployed in each village and on each extension theme.

## **B2. Villages and Intervention Tables**

Recording current and programmed project interventions in simple tabular form is an additional procedure for monitoring project progress. The consultant developed a table with September 1993 interventions, located in Annex F. This is a useful tool to evaluate how project efforts are allocated each month. The number of interventions and villages is not fixed, so staff can add or subtract columns and rows from the table when necessary.

These tables should be distributed to the different WMUs so that they are aware of the activities in the other watersheds. Of course, this is only a basis for information that the technicians should already collect, such as:

- The date each intervention began in each village
- The number of people who initially participated (men and women)
- The amount of project and local inputs used for each intervention

## **C. Secondary Progress Indicators**

Secondary progress indicators measure the adoption of practices by the local population and analyze the short-term financial status of project-supported enterprises. During the first year of the project, most interventions are still in their pilot stage, so adoption rates are expected to be low. Therefore, the WMUs will continue to monitor lower-level indicators of the number of participants in each intervention (by gender) each month. Annex G gives a list of secondary progress indicators for each project intervention, the frequency of data collection, the person responsible, and the points of data collection.

Natural resource management progress indicators look at how interventions operate after project assistance has been completed. Thus, the technicians will examine the number of Resource User Groups that are still functioning, the numbers of trees still surviving after planting, and the maintenance of water springs and flood control canals.

The enterprise development indicators examine the income generated by the project-supported businesses. These indicators will determine whether enterprise interventions are profitable and will have the capacity to continue after project assistance ends. Indicators will also examine who purchases the goods and where the products are being sold.

The third category of interventions, agricultural and livestock development, examines adoption rates. Since adoption rates at the beginning of a project are expected to be low, the technicians will record the number of participants in each intervention as a secondary indicator for this year and will begin monitoring adoption rates in 1994. All interventions will also track the credit supplied to villagers (where applicable) and the ability of farmers to pay back loans.

#### **E. Maintaining the Database**

The WMUs will supply the data analyst with monthly data on progress indicators. This information will be processed on computers in the Labé regional coordinator's office using dBASE computer software. A printout of progress indicators will be distributed to the PMU staff for their reporting needs.

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## SECTION VI IMPACT INDICATORS

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Impact indicators evaluate how project activities affect, or have affected, the environment and rural households in the three watershed sites. These indicators measure Level IV (biophysical) and Level V (agricultural productivity and incomes) factors in the NRM Analytical Framework. Impact indicators take longer to measure and are more difficult to obtain than progress indicators. Consequently, results will be reported less frequently.

This section of the report describes reporting responsibilities and frequency of collection for impact indicators. It concludes with a discussion on maintaining a data bank for information on project impact.

### A. Reporting Responsibilities and Frequency

Impact indicators will be monitored by the same local firm contracted by DNFC to collect and analyze baseline data (see Section IV). The local firm's four-person team will conduct seasonal household surveys to monitor and evaluate socioeconomic changes in selected households in the three watersheds. Annex I of this report gives a detailed description of the local contractor's Scope of Work and responsibilities.

The WMU and PMU staff are not responsible for conducting the socioeconomic household surveys, but will be instrumental in providing background information on the project and details on current and programmed interventions. WMU staff will be asked to collect some of the biophysical indicators that are mentioned later in this section.

Socioeconomic surveys will be conducted biannually, in January and in July. According to project technicians, these months roughly correspond with the harvest and planting seasons in the watersheds. In general, the surveys will examine impact in each of the three categories of interventions:

- Establishment of Resource User Groups and their ability to manage natural resources (tree planting, water sources, flood and fire control)
- The ability of enterprises to generate income using their own resources (eventually independent of project support)
- Sustainable increases in household agricultural production due to project-recommended interventions that encourage improved land use, soil fertility, and reduction in soil erosion.

As described in Section IV, all this data will be gender disaggregated so that the project can look specifically at changes in the agricultural production and marketing practices of men and women. Changes in land use and tenure among men and women will also be examined.

Most of the information generated on project impact are *indicators* and not exact figures. They are intended to show only *trends* in biophysical and socioeconomic conditions.

## **B. Biophysical Impact Indicators**

Biophysical impacts, Level IV on the NRM Analytical Framework, are more difficult to monitor than socioeconomic impacts. Environmental changes occur gradually over time and are dependent on other independent variables such as rainfall patterns. Therefore, the accuracy of short-term biophysical impacts is limited. Data on certain indicators, however, as shown below, can be collected to indicate improvements in biophysical factors.

### **B1. Changes in Soil Fertility**

The OMVG labs in Labé have already sampled soils in the three watersheds and provided the soil conservation specialist with some results. The samples examine the content of phosphorus, potassium, calcium, and magnesium in selected fields. The pH of these soils is also measured. When the technicians return to the watersheds annually over the life of the project to collect samples in the same fields, results could be analyzed to observe improvements in soil nutrients.

### **B2. Changes in the Water Flow**

The WMUs in both Dissa and Diafore are already measuring water flow on selected springs that have been capped and reforested by the project. They are collecting weekly data on the number of buckets of water flowing per minute. This information may be useful in conjunction with household surveys to determine if water flow has increased. Of course, increased water flow may also be attributed to increased rainfall, so precautions must be used when analyzing the data.

### **B3. Changes in Vegetative Cover**

Another simple indicator of biophysical changes is to measure the area that has been reforested and protected by project interventions. This can be accomplished by determining the surface area and types of trees planted and surviving in each spring site. Aerial photographs of the watersheds are located in Labé and can also be used to determine the long-term "macro-level" changes in vegetative cover over several years.

## **C. Socioeconomic Indicators**

Socioeconomic indicators, Level V on the NRM Analytical Framework, measure the impacts of project interventions on populations living in the watersheds. This information will be collected during household surveys (see Annex J).

Since the survey will begin one year after interventions have been implemented, the survey teams will use a "with and without," instead of a "before and after," project approach. Therefore, households participating in several project interventions can be compared with those not involved in the project. The same households in selected villages will be surveyed by the field survey technicians every six months.

Many categories of questions should be asked during the household interviews, and the Survey Question Guide in Annex J will assist the local contractor in developing a questionnaire. Below is a brief description of the key topics covered in the survey.

### **C1. Changes in Land Use and Tenure**

The project is currently assisting local communities in forming Resource User Groups (RUGs) to manage communal land around water sources. The ability of these groups to maintain communal land is vital to the success of the project. In Annex J, the consultant provides a list of questions that can be asked to see how households perceive this intervention and the ability of Resource User Groups to protect water sources, soils, and forested areas.

Tenure of private lands will also be examined, particularly access and ownership rights to fields cultivated by men and women in households.

### **C2. Changes in Agricultural Productivity and Marketing**

Many project interventions are intended to increase household revenue through sale of agricultural goods. Therefore, the survey will monitor home and marketed production of crops in selected households. Measuring field sizes and crop harvests will allow the field survey technicians to calculate yields. The survey will also provide information on the types and quantities of crops produced by men and women. Annex J details this information.

### **C3. Changes in Household Incomes and Expenditures**

The third main category, household income and expenditure, will assist in evaluating the impact of small enterprise interventions promoted by the project. The socioeconomic household survey will use proxies to obtain this information, as described earlier in Section IV. The survey will look specifically at which family members are participating and benefiting from enterprise interventions.

### **D. Maintaining the Database**

Biophysical and socioeconomic indicators will be processed and stored by the data analyst on computers at the regional coordinator's office in Labé. As mentioned earlier, impact results are long term in nature and will therefore be reported annually or biannually, depending on the type of information. Once data has been entered into the computers and analyzed, a hard copy and computer diskette with the data should be sent to DNFC in Conakry.

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## SECTION VII

### THE USE OF INDICATORS AT THE NATIONAL LEVEL

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The "Cellule de Planification" at the DNFC headquarters in Conakry is a coordinating unit that oversees natural resources management projects throughout the country. The department currently receives information and quarterly reports from 11 projects funded by the government and various donor agencies. Each of these projects has its own list of indicators to measure project performance and impact.

One of the major goals of DNFC is to install an M&E system at the national level to evaluate the progress and impacts of interventions for all these projects. The DNFC does not have the computer capacity or the need to store all the data generated by these projects. It would, however, benefit from having aggregate data on each project to fulfill its monitoring and programming needs.

As at the project level, DNFC must first establish a database for each project's baseline data. Much of this information has already been collected by the projects but has not yet been organized or computerized at the national level. Following the format in Annex B, data on climatic, demographic, natural resource endowment, agricultural production, and land-use patterns could be input into dBASE software in Conakry for analysis.

Several DNFC staff are being trained on Geographical Information Systems (GIS) in Conakry. The consultant worked with the director of this training program (MAPS) to determine ways that the baseline data in Annex B could be incorporated into a GIS. The director is currently writing a proposal on how this might be accomplished.

For progress indicators, monthly intervention and location tables, such as those located in Annex F, would provide DNFC with a quick reference to programs being implemented in each watershed. Secondary progress indicators of adoption rates would also be useful to determine the number of people participating and practicing project-recommended techniques.

Socioeconomic household survey results should not be analyzed at the national level, but should be the responsibility of regional coordination units. These surveys will generate a great deal of data that would be difficult to manage at DNFC headquarters in Conakry. Results from the surveys, however, should be sent from the coordination units to the national office for comments and approval.

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**SECTION VIII**  
**THE M&E CALENDAR OF ACTIVITIES**

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Below is a proposed calendar of activities that will facilitate installation and maintenance of the monitoring and evaluation system at a local and national level. Important tasks are highlighted by month for each group of participants.

**October 1993**

1. USAID: Assist PMU team in interviewing potential subcontractors for M&E system.  
Make plans to train Conakry DNFC staff on GIS.
2. DNFC: Establish office space for the subcontractor in regional coordinator's office in Labé.
3. PMU Staff: Print "Extension Activities" booklets for WMU staff.  
Interview potential subcontractors for M&E system.  
Assist WMU staff with collection and reporting procedures of progress indicators.
4. WMU Staff: Collect primary progress indicators (villages and intervention tables).  
Collect secondary progress indicators.  
Send data to PMU in Labé at the end of the month.  
Explain to Peace Corps volunteers data collection procedures and reporting format.

**November 1993**

1. USAID: Assist PMU team in interviewing potential subcontractors for the M&E system.  
Make final selection of subcontractor by the end of month.
2. DNFC: Establish office space in regional coordinator's office for subcontractor.
3. PMU Staff: Distribute "Extension Activities" booklets for WMU staff.  
Interview potential subcontractors with USAID and make final selection by the end of the month.  
Initiate procurement of computer and dBASE computer software.
4. WMU Staff: Collect primary progress indicators.  
Collect secondary progress indicators.  
Send data to PMU in Labé at the end of the month.

5. Local contractor: Begin designing a socioeconomic questionnaire.

### December 1993

1. USAID: Sign contract with local contractor.  
Review local contractor questionnaire and give comments and written approval.
2. DNFC: Begin training Conakry technical staff on applications of project data on GIS.  
Review subcontractor questionnaire and give comments and written approval.
3. PMU Staff: Distribute "Extension Activities" booklets for WMU staff.  
Review subcontractor questionnaire and give comments and written approval.  
Install computer for M&E system in regional coordinator's office.
4. WMU Staff: Collect primary progress indicators.  
Collect secondary progress indicators.  
Send data to PMU in Labé at the end of the month.
5. Local contractor: Design socioeconomic survey questionnaire and arrange logistics for sending four-person M&E team to project area.  
Submit questionnaire to USAID, PMU, and DNFC for approval.

### January 1994

1. DNFC: In Labé, assist subcontractor data analyst to organize and install M&E system.  
Secretaries assist data analyst with data entry in Labé.
2. PMU Staff: Distribute "Extension Activities" booklets for WMU staff.  
Assist subcontractor team to install M&E system in sites when possible.
3. WMU Staff: Collect primary progress indicators.  
Collect secondary progress indicators.  
Send data to PMU in Labé.
4. Local contractor: Install a team member in each watershed and a fourth in Labé.  
Collect baseline data and process in Labé.  
Select five households in each sample village and interview.  
Process data in Labé and train secretaries on dBASE.

**February 1994**

1. USAID: Review data collection/processing system in Labé.
2. DNFC: Secretaries continue data entry on project interventions in Labé.
3. PMU Staff: Distribute "Extension Activities" booklets for WMU staff.  
Use progress indicators in reports.  
Review data collection/processing system in Labé.
4. WMU Staff: Collect primary progress indicators.  
Collect secondary progress indicators.  
Send data to PMU in Labé.
5. Local contractor: Enter data and analyze results of socioeconomic survey. (End of survey)  
Provide PMU, DNFC, and USAID with a hard copy and computer diskette with baseline data.  
Process data in Labé with assistant.

**March 1994**

1. USAID: Review data collection/processing system in Labé.
2. DNFC: Data entry continues on project interventions in Labé.
3. PMU Staff: Distribute "Extension Activities" booklets for WMU staff.  
Review first report of subcontractor and give comments.
4. WMU Staff: Collect primary progress indicators.  
Collect secondary progress indicators.  
Send data to PMU in Labé.
5. Local contractor: Submit report with baseline information and "end-of-rainy-season" findings from the socioeconomic survey to USAID, PMU, and DNFC. Continue to process data in Labé with assistant. Next report will be submitted on "planting-season" findings (survey conducted during July 1994).

2) 04. 1994  
3) July 1995  
Baselines - Jan. 1995  
Socioeconomic survey →

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**ANNEX A**  
**MONITORING AND EVALUATION SCOPE OF WORK**

---

**A. Background**

The Fouta Djallon Highlands Integrated Rural Development (FDHIRD) project, of which the Guinea NRM project is an integral but free-standing component, does not have an ongoing system to monitor and evaluate the impact of natural resource management interventions and investments. Therefore, according to the contract agreement, it is the responsibility of the Contractor to develop, on a pilot basis, a model system to monitor and evaluate the overall impact of project activities on specific target groups. It will be the principal device for assessing whether project objectives are realized, and for providing qualitative and quantitative information that will allow mid-course corrections on strategy and project management. Once developed and successfully implemented, the DNFC will be able to use this system for monitoring other similar projects.

**B. Objective**

The objective of this short-term technical assistance (TDY) is to assist the Guinea NRM technical assistance team in setting up a monitoring and evaluation system so that changes due to project interventions can be monitored on a continual basis. The system should allow assessment of project impact at a later date.

**C. Scope of Work**

1. Study background documents on NRM and small enterprise-related activities in the Fouta Djallon Highlands; review diagnostic survey data, analysis conducted, and interventions proposed by the Guinea NRM team.
2. In consultation with the technical assistance team and other in-country experts, carefully choose a set of objectively verifiable indicators (OVIs) that will be monitored to determine project process and impact. Assist in the design of a preliminary study, which will be contracted out locally, to provide baseline data on the OVIs.
3. Prepare a specific calendar for assessment of each indicator as well as a thorough and specific list of data collection points.
4. Work with the DNFC "Cellule de Planification" to establish a simple monitoring system where data, collected from different DNFC-affiliated projects, could be entered systematically and analyzed easily.
5. Assist the technical assistance team in writing a Scope of Work for a subcontractor (a local firm or an NGO) that will be contracted to collect and analyze M&E data for the

project. Assist the technical assistance team in assessing the capabilities of potential subcontractors.

**D. Reports**

The consultant will produce a draft report on the activities performed and submit it to the COP/Guinea NRM project and the USAID project officer in Conakry before departure. The report will give recommendations on establishing and maintaining M&E systems at the DNFC national level as well as the project level. Within 30 days of the end of the contract, the consultant will submit a final report, incorporating comments by the technical assistance team and USAID/Conakry. This report will be sent to Chemonics International, 2000 M. Street N.W., Suite 200, Washington, D.C. 20036, for transmittal to the field office.

**E. Period of Contract**

The consultant will spend four weeks in Guinea beginning on or about September 1, 1993. He will need to spend about a week in Conakry, and the remaining time in Labé and the three watersheds.

**F. Logistical Support**

The chief of party will be responsible for providing all logistical support to this person while in country, including accommodation, transportation, and making the initial contacts/ appointments. This person should bring a lap top computer; the printer and photocopy machine at the PMU/Labé will be available to this consultant if needed.

**ANNEX B**  
**BASELINE DATA REQUIREMENTS AND SOURCES**

CATEGORY	TYPE OF DATA	SOURCE(S)
1. Demographic	a. Total population in each watershed -Population in each village -Number of households in each village -Disaggregate by gender -Disaggregate by age -Disaggregate by educational level  b. Seasonal migration of population	(See Annex C) 1992 Census at sous-prefecture  Should ask village chiefs for population estimates  Compare population data in dry/rainy season where possible.
2. Updated maps with villages	a. Maps showing names and distances between <u>all</u> villages in each watershed. Maps should include the total surface area of each BRP watershed and locations of all project interventions.	(See Annex D) 1989 aerial photo maps—several mistakes observed.
3. Socioeconomic	Proxies for household income/expenditures (by gender). (i.e. household inventories, number of livestock and marketed agricultural production).	household survey
4. Current and targeted locations of all project interventions	a. Names of villages and families participating in each type of project activity. b. Number of new adopters and size of fields, enterprises. c. Number of beneficiaries/intervention	(See Annex F) WMU staff  WMU staff. This must be verified in the field.
5. Enterprises	a. Numbers and types of small enterprises and project-supported enterprises per village. b. Types of products sold and prices c. Household-level information on occupations of family members.	village survey  household survey

6. Land use/ tenure	<ul style="list-style-type: none"> <li>a. Woodland vs crop land</li> <li>b. Classified forest locations, size</li> <li>c. Tenant vs land owners (gender rights to land)</li> <li>d. Resource user groups and functions (number of trees planted, where)</li> <li>e. Household use of wood for fire</li> </ul>	<p>aerial photos? DNFC maps? household survey</p> <p>village survey household survey</p>
7. Agricultural practices	<ul style="list-style-type: none"> <li>a. Number of interventions practiced</li> <li>b. Types of fields (tapades, external, low land)</li> <li>c. Types of crops, field size and yields (by gender)</li> <li>d. Marketed production of each crop (by crop and by gender)</li> <li>e. Market price of agricultural goods</li> <li>f. Grain storage facilities</li> <li>g. Period of food shortage</li> </ul>	household survey
8. Climatic	<ul style="list-style-type: none"> <li>a. Monthly rainfall and number of days of precipitation</li> <li>b. Monthly temperature fluctuations</li> <li>c. Humidity</li> </ul>	<p>WMU staff has data from representative sous-préfectures. WMUs have rain gauges to monitor this year.</p>
9. Natural resource endowment	<ul style="list-style-type: none"> <li>a. Soil nutrients(P, K, Ca, Mg, pH)</li> <li>b. Number of springs &amp; when they dry up</li> <li>c. Fallow periods</li> </ul>	<p>OMVG soil labs</p> <p>household level</p>

**ANNEX C1**  
**POPULATION STATISTICS FROM THE DECEMBER 1992 CENSUS**

**BRP KOUNDOU WATERSHED**

NAME OF VILLAGE	FAMILIES	MEN	WOMEN	TOTAL
1. Linsan-Saran	92			1,120
2. Telibofi	22			208
3. Kokolou	30			339
4. Dantari	21			220
5. Donghol	18			174
6. Ley-Fello (Tenkere, Nyankou, Tyankoye)	21			230
7. Kagnegande (Diawbhe and Telire)	25			325
8. Linsan-Foulbhe	33			367
9. Tyewere	30			404
10. Bendougou	10			114
11. Bassan	8			65
12. Sigon	8			85
13. Neterere**	5			57
14. Madina**	7			34
15. Gueme	6			59
16. Goundoupi**	8			85
<b>TOTAL</b>	<b>341</b>			<b>3,853</b>

Source: Linsan-Saran Government Office

\*\* = Villages located inside the watershed, but currently do not have project interventions.

**ANNEX C2**  
**POPULATION STATISTICS FROM THE MARCH 1992 CENSUS**

**BRP DIAFORE WATERSHED**

NAME OF VILLAGE	FAMILIES	MEN	WOMEN	TOTAL
1. Dow Kouratongo		135	160	295
2. Ley Kouratongo		56	64	120
3. Diabere Mere		24	30	54
4. Foreya		72	108	180
5. Koumbamba		124	176	300
6. Dow Diafore		19	21	40
7. Ley Diafore		25	20	45
8. Gatla Diafore		23	27	50
9. Diafore Koune		31	34	65
10. Koune		164	200	364
11. Tyankoun*		32	47	79
12. Gonkou*		115	120	235
<b>TOTAL</b>		<b>820</b>	<b>1,007</b>	<b>1,827</b>

Source: Kouratongo Government Office

\* = Villages located outside the watershed, but currently have or will have project interventions.

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**ANNEX C3**  
**POPULATION STATISTICS FROM WMU PROJECT OFFICE (1993)**

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**BRP DISSA WATERSHED**

NAME OF VILLAGE	FAMILIES	MEN	WOMEN	TOTAL
1. Farinta	20	86	89	166
2. Hafia	57	150	160	310
3. Fotongbe	18	80	73	153
4. Khatiya	8	35	33	68
5. Donta	87	381	370	751
6. Amaraya	33	56	53	109
7. Falloulaye	74	317	333	650
<b>TOTAL</b>	<b>297</b>	<b>1,105</b>	<b>1,102</b>	<b>2,207</b>

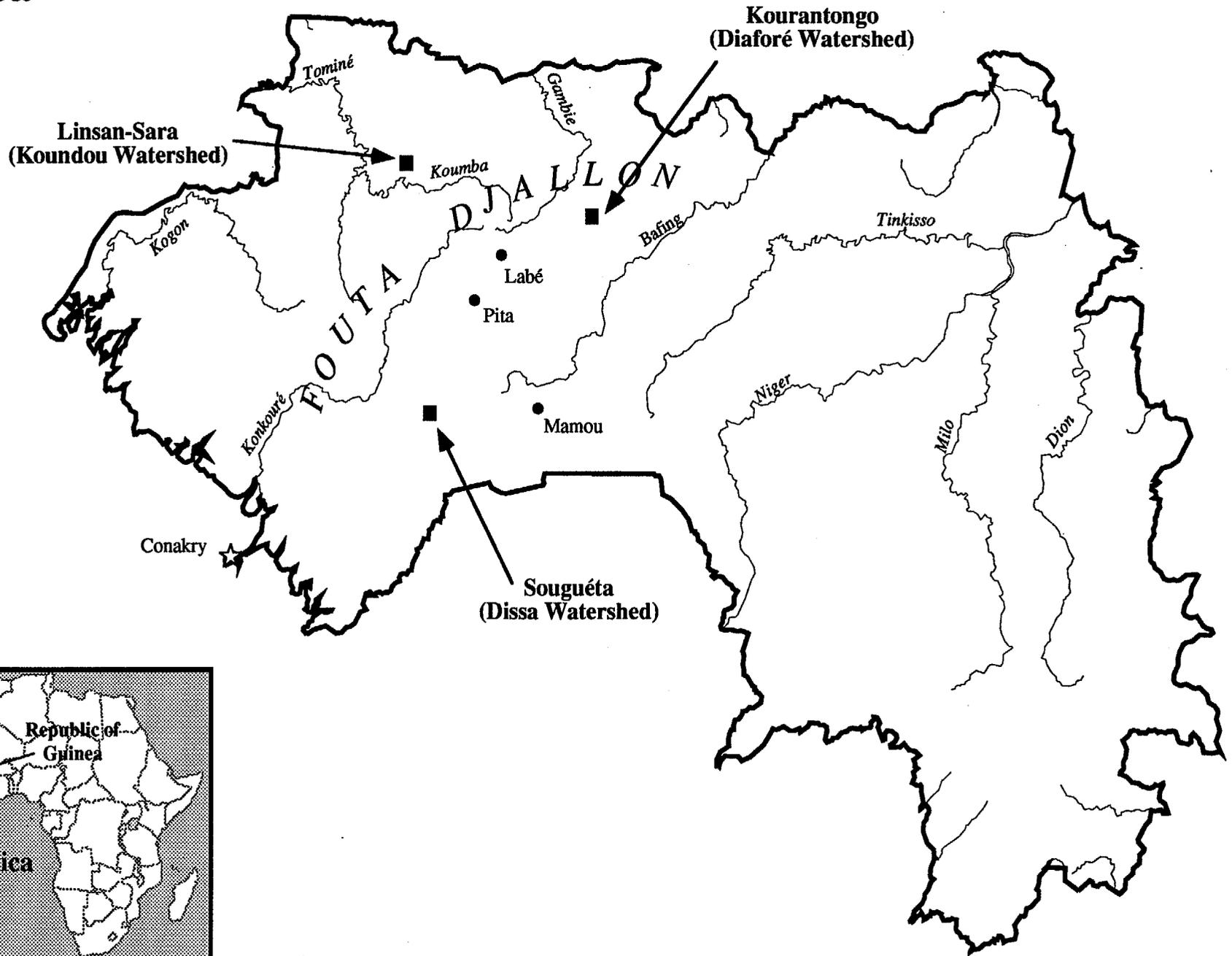
Source: WMU Sougueta Project Office. Statistics collected during a survey conducted in Spring 1993.

**ANNEX D**

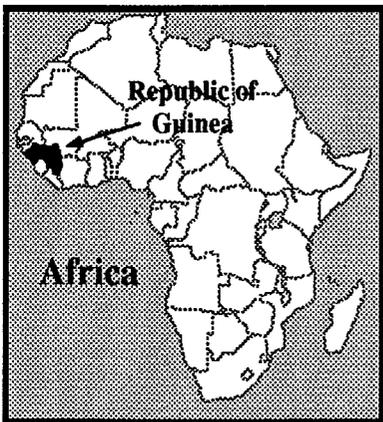
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**UPDATED MAPS OF THREE WATERSHEDS**

# Guinea



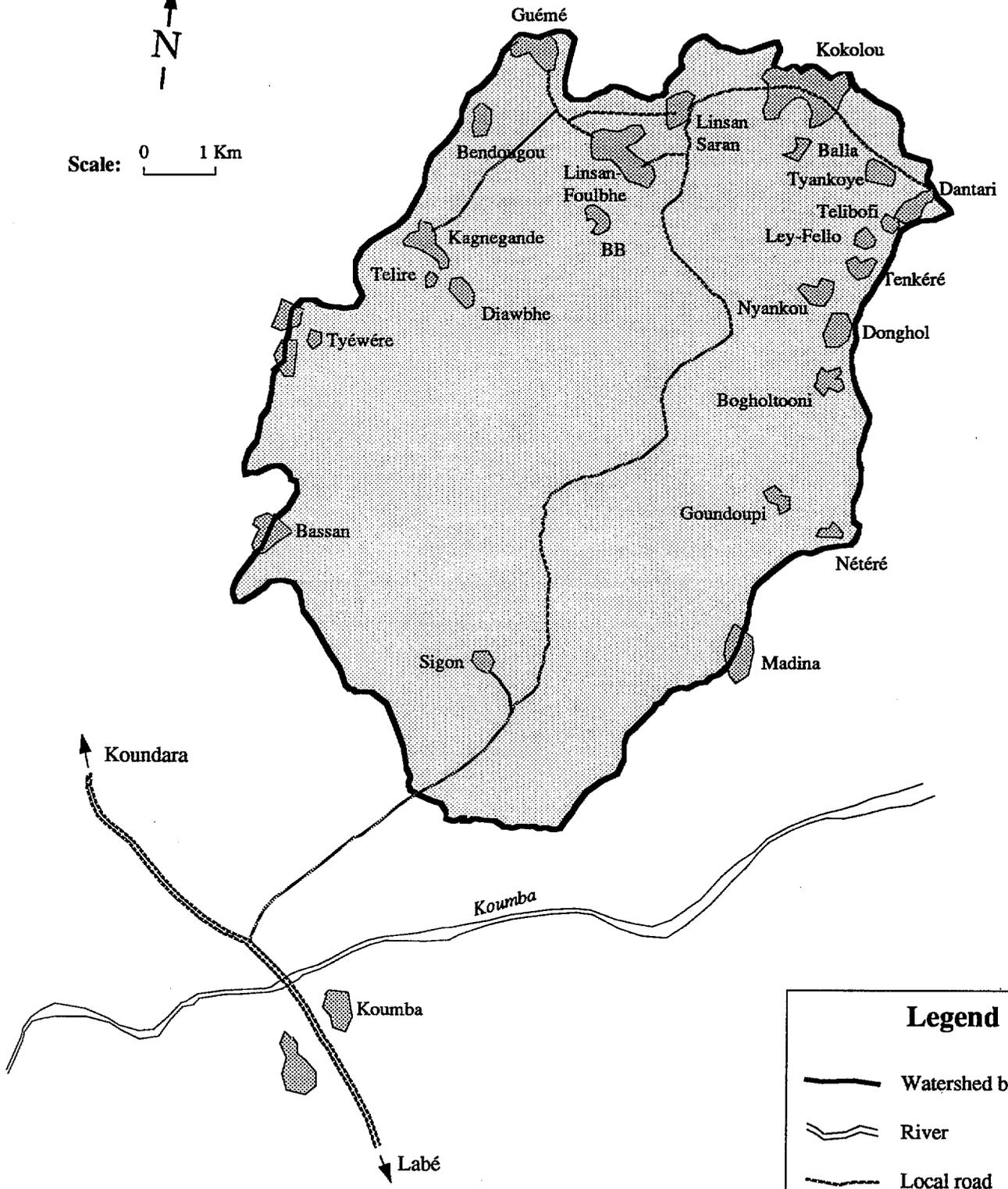
D-1



# Koundou Watershed

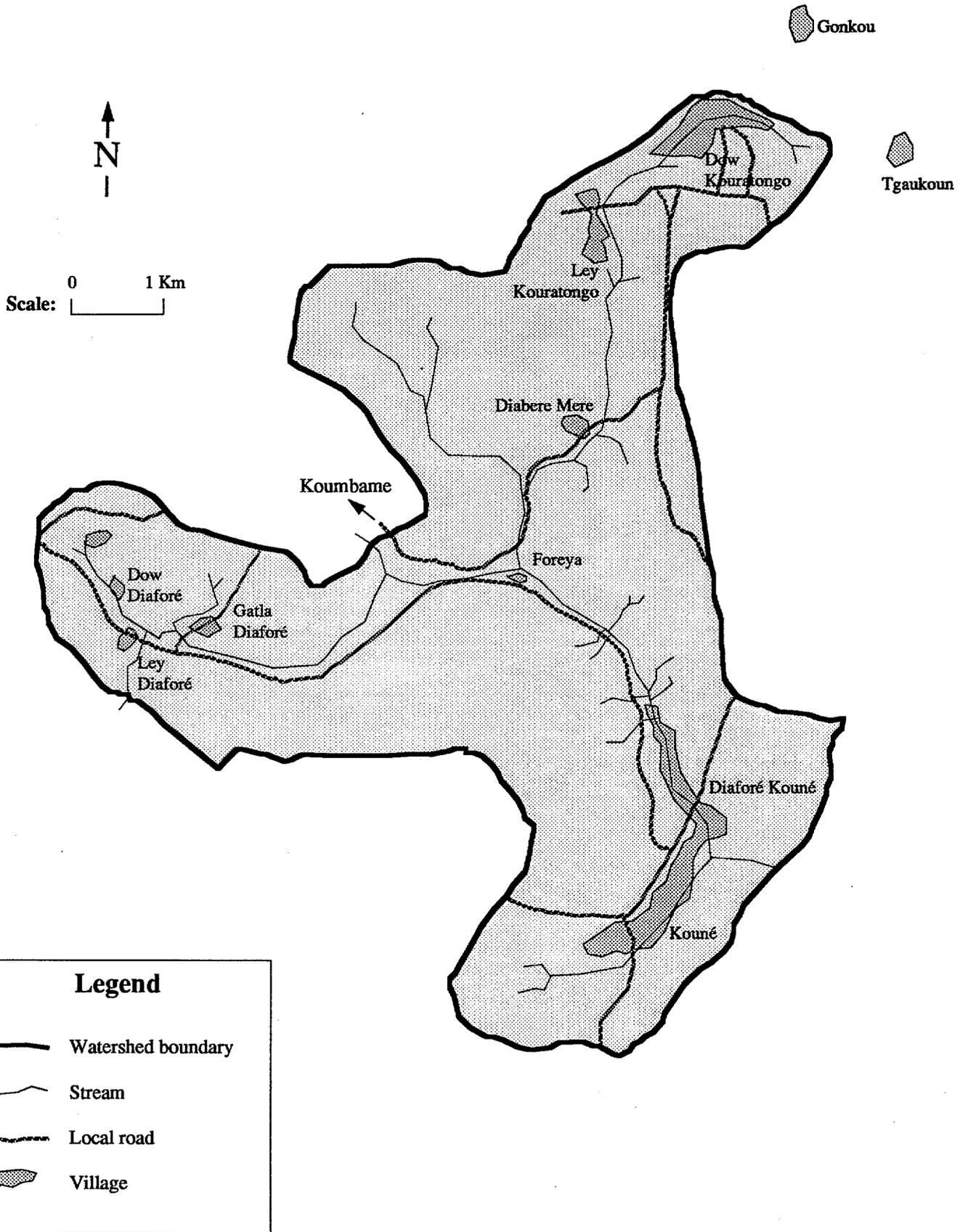


Scale: 0 1 Km



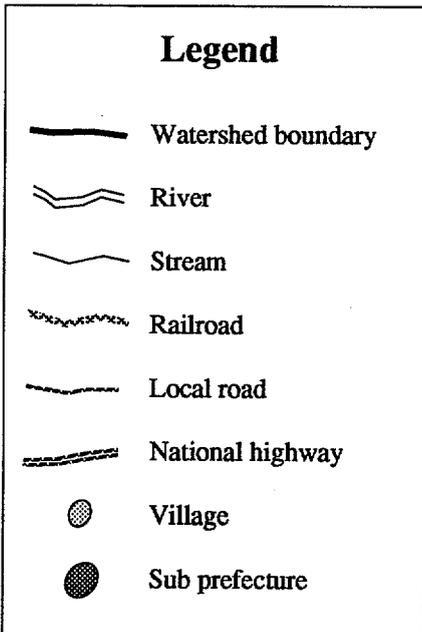
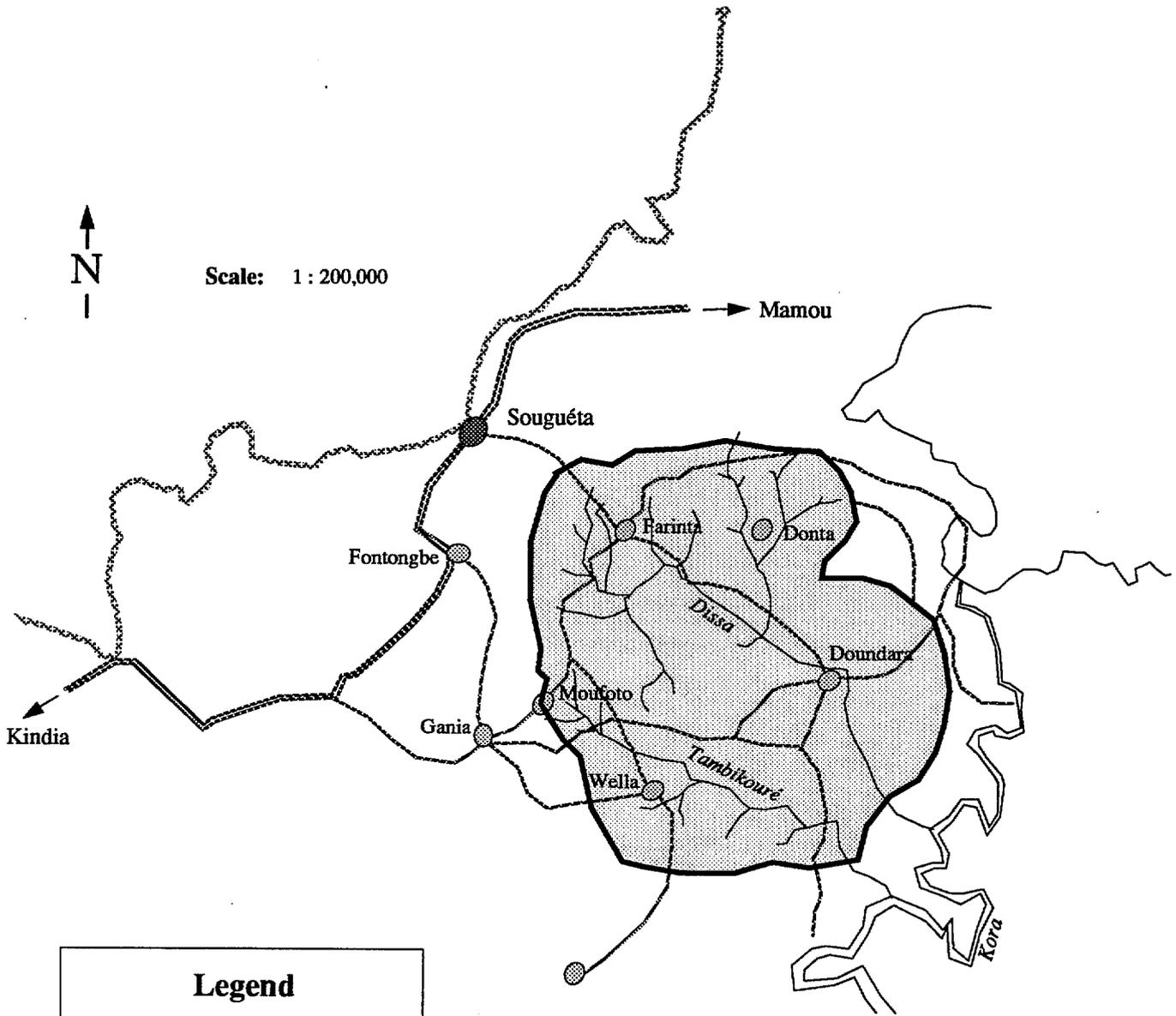
Legend	
	Watershed boundary
	River
	Local road
	National highway
	Village

# Diaforé Watershed



35

# Dissa Watershed



**ANNEX E**  
**MONTHLY ACTIVITIES FORMAT FOR THE USAID/DNFC NRM PROJECT**  
**LABE, GUINEA**

Watershed	
Name of Technician	
Month/Year	

VISIT No. \_\_\_\_\_

Activity Site (Village)						
Date of Extension Activity						
Type of Program(check 1)	NRM		Enterprise		Ag/Livestock	
Activity Theme						
Name of Fiche Technique Distributed (if any)						
Number of Fiche Techniques Distributed						
Number of Participants	Men		Women		TOTAL	

ANNEX F

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**1993 LOCATION OF PROJECT INTERVENTIONS**

**ANNEX F1  
DIAFORE VILLAGES AND INTERVENTIONS (9/93)**

**KEY:**

Number in cell = number of sites in each village

\* = programmed interventions, but not yet installed

Villages ———>	D. K o u r a t o n g o	L. K o u r a t o n g o	D i a b e r e  M e r e	F o r e y a	K o u m b a m b a	D o w D i a f o r e	L e y D i a f o r e	G a t l a D i a f o e	D i a f o r K o u n e	K o u n e	T y a n k o u n *	G o n k o u	T O T A L
<b>Interventions:</b>													
<b>I. NRM</b>													
1. Resource user group sup.													
2. Reforest springs	1				2								3
3. Capping sources/wells					*		2*			4*			7*
4. Flood control canals	1												1
5. Fire breaks													
<b>II. ENTERPRISE</b>													
1. Vegetable production & marketing (and studies)	1			1		1	1		1				5
2. Improved poultry		*		*			*		*				4*
3. Beekeeping	*	*		*						*			4*
4. Para-vets	*									*			2*
5. Tree nurseries		1		1	1					1			4
6. Blacksmiths													
7. Wood cutting													
8. Soapmaking													
9. Food processing													
10. Cloth production & dyer support													
<b>III. AG/LIVESTOCK</b>													
1. Live fencing	1			1	1								3
2. Leg. shrub intercrop	1			1	1				1				4
3. Forage/green manure			1	1		1							3
4. Composting	4	1				1				4			10
5. Contours (struct & hedges)	1			2									3
6. Irrigation dams/canals						*				*			2*
7. Animal traction													
8. Crop protection (varieties, insect, weed)													
9. Inorganic fertilizer					*								*
<b>APPLIED RESEARCH</b>													
10. Post harvest protection													
11. Fruit worm control						1					*	1	3*
<b>TOTAL INTERVENTIONS</b>	<b>10</b>	<b>2</b>	<b>1</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>1*</b>	<b>1</b>	<b>31</b>
<b>TOT PROGRAMMED INT</b>	<b>2*</b>	<b>2*</b>		<b>2*</b>	<b>2*</b>	<b>1*</b>	<b>3*</b>		<b>1*</b>	<b>7*</b>	<b>1*</b>		<b>21*</b>

**ANNEX F2**  
**DISSA VILLAGES AND INTERVENTIONS (9/93)**

**KEY:**

Numbers in cell = number of sites in each village

\* = programmed but not yet installed

Villages ———>	F a r i n t a	H a f i a	F o t o n g b e	K h a t i y a	D o n t a	A m a r a y a	F a l l o u l a y e	S o u g u e t a	T O T A L
<b>Interventions:</b>									
<b>I. ENRM</b>									
1. Resource user group sup.									?
2. Reforest springs	2	1	1	3	1	1			9
3. Capping sources/wells	1	2		1*					4*
4. Flood control canals									
5. Fire breaks						1			1
<b>II. ENTERPRISE</b>									
1. Vegetable production & marketing (and studies)	*	*							2*
2. Improved poultry							*		*
3. Beekeeping	*			*					2*
4. Para-vets							*	*	2*
5. Tree nurseries	1		1						2
6. Blacksmiths							2		2
7. Wood cutting				*					*
8. Soapmaking			1						1
9. Food processing	*	*	*						3*
10. Cloth manufacture									
<b>III. AG/LIVESTOCK</b>									
1. Live fencing						1			1
2. Legum. shrub intercrop			1						1
3. Forage/green manure	1		1		1				3
4. Composting	3*	6*	3*		3*				15*
5. Contours (struc. & hedges)									
6. Irrigation dams/canals		*							*
7. Animal traction	1	1	1	1	1				5
8. Crop protection (varieties, insects, weeds)			1		1	1			3
9. Inorganic fertilizer									
<b>APPLIED RESEARCH</b>									
10. Post harvest protection									
11. Fruit worms protection									
<b>TOTAL INTERVENTIONS</b>	6	4	6	7	4	4	2		33
<b>TOT. PROGRAMMED INT</b>	6*	9*	4*	3*	4*		2*	1*	28*

**ANNEX F3  
KOUNDOU VILLAGES AND INTERVENTIONS (9/93)**

**KEY:**

Numbers in cell = number of sites in each village

\* = programmed interventions, but not yet installed

Villages ———>	L. S a r r a n	T e l i b o f i	K o k o l o u	D a n t a r i	D o n g h o l	L e y F e l l o	K a g n e g a n d i	L. F o u l b h e	T y e w e r e	B e n d o u g o u	B a s s a n	S i g o n	N e t e r e	M a d i n a	G u e m e	G o u n d o u p i	T O T A L
<b>Interventions:</b>																	
<b>I. NRM</b>																	
1. Resource user group sup.																	?
2. Reforest springs		1	1		1	1	2					1					7
3. Capping sources/wells		1			1	1						1			1		5
4. Flood control canals																	
5. Fire breaks																	
<b>II. ENTERPRISE</b>																	
1. Vegetable production & marketing (and studies)		*	*	*	*				*						*		6*
2. Improved poultry	*																*
3. Beekeeping					1				1								2
4. Para-vets	*							*									2*
5. Tree nurseries															1		1
6. Blacksmiths									*	*							2*
7. Wood cutting																	
8. Soapmaking																	
9. Food processing																	
10. Cloth production & dyer support	1	*		*				*									1 3*
<b>III. AG/LIVESTOCK</b>																	
1. Live fencing			1												1		2
2. Legum. shrub intercrop			1														1
3. Forage/green manure			1					1							1		3
4. Composting	2		3	2	1			2		1							11
5. Contours (struc. & hedges)		1	1														2
6. Irrigation dams/canals				*				*									2*
7. Animal traction																	
8. Crop protection (varieties, insect, weed)	1		1					*		1					1		4*
9. Inorganic fertilizer					1				1								2
<b>APPLIED RESEARCH</b>																	
10. Post harvest protection	*																*
11. Fruit worm control																	
TOT. INTERVENTIONS	4	1	9	2	5	2	2	3	2	2	0	2	0	0	5	0	40
TOT. PROGRAMMED INT.	3*	2*	*	1*	*			4*	2*	1*					*		18*

**ANNEX G**  
**SECONDARY PROGRESS INDICATORS**

TYPE	INTERVENTION	PROGRESS INDICATORS	FREQUENCY	RESPONSIBLE	COLLECTION POINTS
NRM	1. Resource user groups support	<u>No. still functioning</u> <u>No. formed(contract)</u>  (explain composition and activities)	Month	WMU Director	All BRP sites
NRM	2. Reforesting spring catchment	<u>No. live trees</u> <u>No. planted</u>  (Take a transect. Species survived vs dead and cause of death)	Quarter	WMU Foresters	19 BRP sites
NRM	3. Capping springs and wells	<u>RUGS maintenance</u> <u>Sites completed</u>  (fencing, no animal feces)	Quarter	WMU Soil Conserv.	10 BRP sites
NRM	4. Flood control canals	<u>RUGS maintenance</u> <u>Sites completed</u>  (gullies cleared)	Quarter	WMU Soil Conserv.	D. Kouratongo
NRM	5. Establishing fire breaks	<u>Total Area Protected</u>	Quarter	WMU Foresters	Amaraya
ENT	1. Vegetable production & marketing	<u>Value Sold/Traded</u> <u>Quantity produced</u>  Specify by gender (Find out prices) Who is buying?	Season	WMU Animatrices	All BRP sites
ENT	2. Improved poultry	<u>No. marketed chickens</u> <u>No. chickens produced</u>  (Later, prices could be linked to determine value)	Quarter	WMU CED	All BRP sites
ENT	3. Beekeeping support	<u>Honey &amp; wax sales</u> <u>Quantity produced</u>  (Quantity x price) Who is buying?	Month	WMU CED	Donghol Tyewere

TYPE	INTERVENTION	PROGRESS INDICATORS	FREQUENCY	RESPONSIBLE	COLLECTION POINTS
ENT	4. Para-vets	<u>No. of animals treated x visit fee</u>  Whose animals treated?	Month	WMU CED	2 in each BRP
ENT	5. Tree nurseries	<u>Value of trees sold</u> <u>No. planted</u>  (Quantity of each species x price) Who is buying?	Season	WMU Forester	Gueme Farinta Fotongbe L. Kouratongo Foreya Koumbamba Koune
ENT	6. Blacksmiths	<u>Number of stoves sold</u> <u>Quantity produced</u>  Who is buying?	Month	WMU CED	2 in each BRP
ENT	7. Wood cutting	<u>Sales of Wood</u> <u>Quantity cut</u>  <u>No. trees surviving</u> <u>No of trees replanted</u>	Month	WMU CED	Khatiya*
ENT	8. Soapmaking support	<u>Sales of Soap</u> <u>Quantity produced</u>	Month	WMU Animatrice	Fotongbe
ENT	9. Food processing (tomato drying)	<u>Tomato Sales (OxP)</u> <u>Quantity produced</u> who they sold to?	Season	WMU Sociologist	(3 target sites in Disa)
ENT	10. Cloth production & dyer support	<u>Cloth sales (as Group)</u> <u>Cloth produced</u>  (Quantity x price) Who is buying?	Month	WMU Animatrice	Linsan-Saran (3 other target sites)
AGR	1. Live fencing	<u>No. participants (this year)</u>  <u>No. adopters (next year)</u>  (men - women)	Quarter	WMU Foresters	Gueme Kokolou Amaraya D. Kouratongo Foreya Koumbamba
AGR	2. Intercropping with leguminous Trees	<u>No. participants (this year)</u>  <u>No. adopters(next year)</u>  (men - women)	Quarter	WMU Foresters	D. Kouratongo Dow Diafore Koumbamba

TYPE	INTERVENTION	PROGRESS INDICATORS	FREQUENCY	RESPONSIBLE	COLLECTION POINTS
AGR	3. Forage/green manure production	<u>No. participants(this year)</u> <u>No. adopters (next year)</u> (men - women)	Quarter	WMU Soil Conserv	3 sites in each BRP
AGR	4. Improved composting	<u>No. participants(this year)</u> <u>No. adopters(next year)</u> (men - women)	Quarter	WMU Soil Conserv	21 sites
AGR	5. Contour structures and hedges	<u>No. participants(this year)</u> <u>No. of adopters(next year)</u> (men - women)	Quarter	WMU Soil Conserv	5 sites
AGR	6. Irrigation canal/ dam construction	<u>Area brought into production</u>	Quarter		*
AGR	7. Animal traction promotion	<u>Total area cultivated by animals (including for hire)</u>	Quarter	WMU Soil Conserv	5 sites in Dissa
AGR	8. Crop protection (improv. var, weed and insect control)	<u>No. participants(this year)</u> <u>No. adopters(next year)</u> (men - women)	Quarter	WMU Soil Conserv	7 sites in Diafore and Koundou

ANNEX H

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**CRITERIA FOR SELECTING POTENTIAL NRM MONITORING  
AND EVALUATION SUBCONTRACTOR**

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**ANNEX H**  
**CRITERIA FOR SELECTING POTENTIAL NRM**  
**MONITORING AND EVALUATION SUBCONTRACTOR**

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POINTS	CRITERIA
(10)	<p>1. ORGANIZATION CAPABILITIES</p> <ul style="list-style-type: none"><li>a. Types of current activities/projects</li><li>b. Size and scope of current/past projects (physical and monetary)</li><li>c. Years of experience in M&amp;E systems for NRM</li><li>d. Past experience with USAID projects</li><li>e. Experience in the Fouta project area</li></ul>
(10)	<p>2. HOME-OFFICE SUPPORT</p> <ul style="list-style-type: none"><li>a. Number and expertise of permanent staff</li><li>b. Communications facilities</li><li>c. Transportation</li><li>d. Computers (experience, types, programs)</li></ul>
(10)	<p>3. CANDIDATE PROFILES</p> <ul style="list-style-type: none"><li>a. Number of potential candidates</li><li>b. Educational background, age, sex of each</li><li>c. Professional experience</li><li>d. Salary range</li><li>e. Language capabilities</li><li>f. Willingness to work in watershed sites</li><li>g. Willingness to travel</li><li>h. Experience in the Fouta area</li></ul>
(10)	<p>4. UNDERSTANDING OF M&amp;E SYSTEMS</p> <ul style="list-style-type: none"><li>a. Sampling techniques</li><li>b. Equipment needed</li><li>c. Data collection frequency</li><li>d. Data processing</li><li>e. Data analysis</li></ul>
(10)	<p>5. TOTAL EXPENSES (BUDGET)</p>
(50)	Total Possible Points

ANNEX I

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**LOCAL CONTRACTOR SCOPE OF WORK**

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**ANNEX I**  
**LOCAL CONTRACTOR SCOPE OF WORK**

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**A. Background**

The Guinea NRM project would like to install a monitoring and evaluation (M&E) system to measure the progress and impact of natural resource management interventions and investments in the three project (BRP) watersheds of Koundou, Diafore, and Dissa.

The project is soliciting the assistance of a local organization or consulting firm with experience in monitoring and evaluation systems that could conduct seasonal surveys in the watersheds and assist project staff in creating and maintaining a data bank for project activities.

**B. Objective**

The objective of this assignment is to design and implement a monitoring and evaluation system in the three watersheds so that the progress of project interventions can be measured on a timely and continual basis. The system will also allow assessment of project impact at a later date.

**C. Personnel Requirements**

The organization should provide three field survey technicians and one data analyst to implement the monitoring and evaluation system. The field survey technicians will work in the three watersheds to collect baseline data and to conduct seasonal surveys in selected villages. They will work closely with the Watershed Management Units (WMU) to integrate into the local communities and to obtain relevant data on project interventions. These three team members must have experience with household surveying, especially in calculating agricultural production estimates. They must also be fluent in Pular (and one must be fluent in both Pular and Sousous).

The fourth team member (data analyst) will work full time in the regional coordinator's office in Labé. His/her tasks will include establishing a data bank on project computers. He/she will also process data from the watersheds and write reports on the findings. The data analyst must possess strong computer, analytical, and writing skills and have several years of experience in interpreting data. He/she should have a good working knowledge of the dBASE computer program and be willing to train local staff in computer applications and data analysis.

## **D. Scope of Work**

### **D1. Data Analyst**

1. In Conakry, design a village and household-level questionnaire based on the suggestions mentioned in the "Survey Question Guide" (see attachment). Submit the preliminary questionnaire design to the project chief of party and USAID project manager for written approval. Once approved, the local contractor will have the questionnaire translated into local language(s).
2. Establish a data bank and filing system in the Labé regional coordinator's office to enter, process, and analyze data on project interventions. The project will provide a computer and dBASE computer package to store data at the regional coordinator's office.
3. Train local staff in using dBASE and manipulating data in the system and develop procedures with the staff on entering and storing incoming data from the watersheds.
4. Enter baseline data from the three field survey technicians into the computers and provide the data to DNFC and PMU on diskette.
5. Enter socioeconomic survey data into the computers, and analyze and write report highlighting major findings.
6. Enter progress indicators into the database.

### **D2. Field Survey Technicians**

1. Field test the questionnaires in each of the three watersheds and make needed revisions.
2. Collect baseline data and fill in data gaps identified in "Guidelines to Establish and Maintain a Monitoring and Evaluation System for the USAID Guinea NRM Project" in each watershed.
3. Conduct socioeconomic surveys in the three watersheds, carefully documenting the location and names of all households participating. This will facilitate locating the same households when they are revisited six months later.
4. One field survey technician will remain in Labé after the survey to assist the data analyst with data entry.

## **E. Deliverables**

The subcontractor will submit a hard copy and diskette to PMU and DNFC with files of all baseline data.

An analytical report with survey findings will be submitted to PMU and DNFC one month after each survey collection period is completed (every six months).

**F. Period of Contract**

This initial contract will be for two years. The data analyst will remain in Labé to maintain the data bank, and the three survey technicians will stay in the watersheds during data collection periods. The contract will be evaluated after two years and renegotiated for possible extension.

**G. Logistical Support**

The local contractor is responsible for its own administrative and transportation needs. The project will provide office equipment, including computers and printers, furniture, and utilities in Labé and each WMU.

ANNEX J

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**SURVEY QUESTION GUIDE**

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**ANNEX J**  
**SURVEY QUESTION GUIDE**

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**INDICATORS**

Baseline

**1. Household Composition:**

- Age, gender, education, literacy, and occupation(s) of each member in the household

- Head of household (gender, age, occupation)

Migration

- Have any family members come or gone since the last survey? How long ago? (Provide list of possible reason...go to school, look for work..., etc).

Proxy for expenditure

**2. Household Inventory:**

- Number of livestock and poultry

- Household effects (cooking materials, stoves, radios, agricultural tools...)

Proxy for expenditure

**3. House Construction/Improvements:**

- Type of construction

Diffusion of Message Adoption

**4. Involvement with Project Activities:**

- Have you ever participated in any project-related activities? Specify what and when. (provide a list to choose from)

- Are you currently using any project-recommended practices?

a. Agriculture

b. Natural Resource Management

c. Enterprise Development

(have a list of all project activities)

Effectiveness of Extension

- What are your impressions of the activities recommended or that you are using?

Tenure  
Gender

**5. Agriculture Production, Marketing, and Storage:**

- Who owns each of the fields you cultivate?

- Types of fields and sizes of each. Do you use chemical fertilizers? Does man or woman cultivate each type of field?

- How much do you produce of each crop? (Be familiar with different measures)

Market Produce

- How much of the total produced is marketed? At what price? Who in the family markets? Has the quantity produced and marketed increased or decreased from last year? Why?

Storage

- What type of grain storage are you using?

Market Access

- How far do farmers travel to reach markets?

- What mode of transportation do you use to get to market?

6. Natural Resource Related:

- How long does it take to reach the nearest water source (time)?
- Have there been any project interventions in water source improvement in your village? Specify.

7. Enterprise Development Related:

- Do you own or work for any small enterprises? Specify. Do you receive credit? From whom?

8. Associations:

- Do you belong to any associations? Specify.  
Community development groups?  
Resource User's Group? How often do you meet? What are your activities?

9. Policy Constraints:

- Access to land (planting rights)

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**ANNEX K  
BIBLIOGRAPHY**

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