COOPERATIVE AGREEMENT ON HUMAN SETTLEMENTS AND NATURAL RESOURCE SYSTEMS ANALYSIS

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PN-AAT 402
ISN-41358

Monitoring Plan
for Manantali Resettlement Project Paper
(US/AID #625-0955)

by

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August 1983

Cooperative Agreement on Human Settlements and Natural Resources Systems Analysis

Agency for International Development, Institute for Development Anthropology, and Clark University (No. DAN-1135-A-00-1078-00)

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MONITORING PLAN

I. INTRODUCTION

The Monitoring Unit has been designed in light of the goals of the Manantali Resettlement Project. The primary goal of the project is to resettle the population in a way that they can re-establish the quality of life and level of economic activity that is presently theirs.

Although the project does not include economic development objectives per se, an important secondary project goal is to enable the local population to take advantage of regional economic development activities in a least cost manner.

Following is a plan for a project monitoring unit. Since a plan must be formulated in light of its goals and the situation to be monitored, a section on goals (Section II) and an analysis of the problems (Section III) precedes the presentation of the information to be collected (Section IV) and organizational and personnel needs (Section V).

II. GOALS OF THE MONITORING UNIT

The primary goal of the monitoring unit is to aid project management in ensuring that resettled villagers can and do re-establish their economic and social quality of life. A subsidiary goal is to facilitate villagers' ability to take advantage of economic development opportunities.

The means by which the monitoring unit does this is through gathering information on the population in the area and using that information to better plan, implement and when necessary, suggest changes in project activities. The monitoring unit should work in close collaboration with project management to ensure that data gathered by the unit are taken into consideration in project decision making.

In light of these goals and means, 3 major activities of a monitoring unit can be delineated: monitoring, participation in management, and evaluation. While these activities may overlap in the day-to-day functioning of the unit, they are analytically separate.

A. Monitoring

Monitoring involves continued surveillance of project activities to verify that project goals are being met. If project goals are not met, propositions should be made for changes in project organization or activities so that those goals can be better met.

In this project, monitoring should be oriented around the primary question of whether the population is able to re-establish its pre-project quality of life. For reasons to be discussed in more detail below (Section III) the question of "re-establishment" of quality of life is not a simple one since individuals will have a somewhat different mix of resources available to them in the resettlement zones (e.g. quality and quantity of land and water), and since the mere process of resettlement will introduce new stresses into people's lives. Moreover, the presence of a large dam construction site and the changes associated with it will bring major new changes to the region. Thus, monitoring cannot simply address the question of whether village life after resettlement is the <u>same</u> as it was before.

Rather the judgement as to whether or not the quality of life of the population is being maintained as the project progresses is more complex, and the monitoring unit needs to collect several different types of information. First the monitoring component should develop some indicators that "track" in simple and graphic form the characteristics of the population and their changes during the resettlement period. Some of these will be simple and easy to get (e.g. well depths) and others will be more complicated or more difficult to gather (e.g. agricultural production estimates or measures of agricultural diversity). Some suggestions for particular indicators are presented in Section IV B.

Despite the usefulness of specific (usually quantitative) indicators, these must be complemented by in-depth studies which produce more qualitative, contextual information. These studies should enable project management to know not only what is happening, but also how and why it is happening. Two types of in-depth monitoring studies can be foreseen. First, there are a number of areas in which problems are already anticipated; these include questions such as the effects of salaried employment on agricultural production, land allocation to new villages, and the assumption of political leadership in new villages. Suggested topics for in-depth studies are presented below in Section IV B.

Secondly, a number of unanticipated problems are likely to arise in the course of the project. For some of these, solutions may be obvious. For others, it may be necessary to get more information to find an appropriate solution. The Monitoring Unit should have the ability to plan and execute new studies that may become necessary in the course of the project.

Results of monitoring studies (both indicators and in-depth studies) should be readily available to decision makers. This implies that the Monitoring Unit needs to develop procedures for the analysis and dissemination of data which can be done quickly and thoroughly. Moreover, the unit cannot depend only on formal dissemination of results (e.g. written reports) but needs to develop less formal means of communication. For this reason the second major activity of the Monitoring Unit should be participation in management.

B. Participation in Management and Liaison

In order to facilitate the use of monitoring results in project implementation, the director of the Monitoring Unit should have direct input in decision making about project activities. The director should work in close collaboration with the sociological unit more directly charged with implementation (Section Soutien), should have direct access to the director of the Project Management Unit, and should participate in formal meetings of section heads.

In order to facilitate the villagers' ability to take advantage of local economic development opportunity, the Monitoring Unit should also maintain contacts with local development organizations, such as OMVS and ODIPAC. They should communicate villagers' needs and possibilities to these organizations as well as letting villagers know of services offered by these organizations.

C. Evaluation

The final major activity of Monitoring Unit will be to prepare a final evaluation report on the impact of the resettlement project. This will not involve the collection of data different from that collected in the monitoring component, but it will use monitoring data for different purposes. There are two major purposes of the final evaluation of the Manantali Resettlement Project.

The first is to provide an analysis of what happened during the resettlement process, how and why it happened, and how it could be encouraged or discouraged from happening in other resettlement projects. The Manantali Resettlement Project will be a precedent for USAID in the area of low cost resettlement and this analysis should assess the feasibility of low cost resettlement projects in others areas as well as provide recommendations for how it can be done more efficiently and equitably.

The second goal is more directly oriented to the Manantali region. Although there is no plan for project funding of economic development intervention after resettlement, there is an interest in recommendations about how the local population can take advantage of economic development opportunities in the region presented by other projects or organizations, for example OMVS or ODIPAC. Therefore the final evaluation should make specific recommendations about village level development projects through existing economic development organizations.

III. ANTICIPATED PROBLEM AREAS

The most common type of compulsory resettlement in the developing world is due to dam construction and the creation of reservoirs. Since it is so common, resettlement experts have noted some expected patterns in compulsory relocation. For example: the evidence suggests that compulsory relocation is characterized by increased morbidity and mortality especially for children and elderly; increased psychological stress due to loss of homeland and anxiety about the future; and increased sociocultural stress often expressed in a reduction of leadership capacity and simplification of the socio-cultural system (Scudder 1981:93). While stresses are great for any settlers, they are greater in compulsory resettlement, due simply to its compulsory character.

Despite the care taken by project personnel throughout this project to resettle people in areas of their choice, one can nevertheless expect to find that the people will undergo considerable amounts of extra stress. Due to these stresses, it can be expected that extra services will be needed simply to maintain their quality of life throughout the resettlement period. In fact, if the quality of services available to the population remains the same as before resettlement, one can expect that their quality of life will decrease rather than be maintained. This section discusses some of the particular stresses that are likely to be encountered by the Manantali population during and after resettlement, and which should be addressed by monitoring studies.

A. Problems Related to Dam Construction

A certain set of stresses will occur directly due to the dam construction itself. The Manantali region has been one of the most isolated, and least densely populated regions in Mali outside of the Sahara desert.

The process of the dam construction will increase the size and diversity of the local population, as new people arrive to work on the dam, and also as others follow to provide them with goods and services. In the presence of all these new wage earners, the size and value of local marketing will increase enormously in what has been an economy primarily oriented around subsistence. After dam construction however, most of these strangers and their money will leave, and the area will be left more or less as it was before the dam construction, isolated and distant even from many of the simple goods and services available to many other rural Malians in less isolated areas. While the process of dam construction will lead to one set of stresses, the termination of construction will lead to another set of stresses that will follow it in time. The problem areas that can be directly attributed to dam construction fall into 3 basic areas: demography, economy and health.

1. Demography

Due to dam reconstruction, the shape of the local labor market will change and its size will increase dramatically. The dam will employ 150 expatriates and African professionals and 1450 African workers, many of whom will be accompanied by their families. More people will be indirectly employed by a variety of subcontractors and private entrepreneurs have come into the region to offer workers a variety of goods and services.

As the population increases, its composition will change, including such aspects as the proportion of strangers (non-regional, non-Malian and non-African), age-sex pyramids, and patterns of in and out migration. Moreover the changing demographics of the region will directly contribute to the two other problem areas: the economy and health.

2. Economic Changes

Dam construction brings an economy which is commercialized rather than subsistence oriented. The new population earns wages or sells goods and services; this has quickly and directly increased the amount of money available in the region. Moreover, in agreements with OMVS, whereby workers on the dam were to be of all three OMVS nationalities (Malian, Mauritanian, Senegalese), it was also agreed to pay all workers according to Senegalese wage rates, which are approximately twice as high as Malian ones. This increases the influx of money beyond that which would be expected were this a purely Malian project.

The price of many goods and services in the region have already risen from village levels to urban prices. For example, in less than a year quoted village room prices have risen from 2500 MF to 5000 MF and quotes of monthly board prices increased from 10,000 MF to 15,000 MF.

The influx of new wealth into the region will undoubtedly have many effects on the villages. In terms of this project, two are of particular interest. First, the cost of labor will increase. Even though there are already more people looking for jobs than there are jobs available, the example of the dam workers is important and workers are demanding rather high wage rates. Thus, the resettlement project may have problems finding laborers to work at Malian wage rates (e.g. in land clearing) and clearly will have problems finding extra volunteer labor for those tasks to be done primarily by the villagers themselves (e.g. food-for-work for housebuilding).

Due to the increased amounts of salaried work in the region and the participation of locals in it, cash incomes in the resettlement areas will increase but as incomes increase the costs of goods and services is also increasing, especially in those areas where there are limits on the growth of the supply (e.g. land to build housing). It is unclear the extent to which increasing income will be offset by increasing costs. Moreover villagers in resettled areas are likely to lose at least some of their subsistence production during and directly after the move. Thus while an increase in purchasing power for people in the region is likely, it may not be nearly as great as it seems, because of the accompanying increasing costs.

There are also equity issues involved in the question of who will benefit from the increased economic activity. Although resettlement villagers are benefiting from wage labor (350 of the Malian dam workers are from the Bafing), and to some extent from the sale of food to the Manantali population, it is likely that they will benefit relatively less, than the other groups, less even than some neighboring villages. Downstream villages near the dam (e.g. Manantali itself, Bingassi, and Sonfara) rent houses to workers and feed them, and presumably also sell raw agricultural produce. These opportunities are open to a significantly lesser extent to those upstream villagers who need to be resettled because they will be moving in the middle of dam construction. Another set of direct beneficiaries will be those offering goods and services to the Manantali population, e.g. bars, restaurants, prostitutes. The investment required to do this however is greater than that open to the average villager, and impressionistic

evidence suggests that the medium to large scale entrepreneurs who have enough resources to be able to profit from investment in those enterprises tend to be outsiders, either merchants whose base is outside of the area, or civil servants who serve in the area but who have resources available to them beyond those available to the average peasant.

Finally, when the dam is finished, most of these new economic opportunities will contract as quickly as they had expanded as both expatriate and local workers go on to other jobs in other areas. A few will remain to operate the dam and the region will ultimately be less isolated due to the improved road from Mahina to Manantali, but it is highly likely that the region as a whole will return to a primarily subsistence orientation.

One set of monitoring indicators flows directly from these economic changes: e.g. costs of labor, labor availability, costs of basic necessities, mix of subsistence/salaried/self-employed/informal sector workers in the region, the question of who benefits and in what way these benefits will have any long term impact on the resettled population, both during and after dam construction.

3. Health

Another major impact will be on the health of the people in the region. In addition to the stresses of compulsory relocation which will have deleterious health effects, some increase in diseases will come directly from the diseases introduced by new people moving into the region. The Public Health Analysis, for example, notes that venereal diseases will almost surely increase in the region, as many lone male workers come, and prostitutes follow. Another example concerns contact with new germs which had not previously arrived in some of these isolated villages.

The Public Health Analysis notes, for example, that the infection rate of measles (the prime killer of children age 1-8) varies widely from village to village; as villages amalgamate in the resettlement process it is likely that those not exposed to measles previously will now be exposed, and that measles will increase. The reservoir will also bring new opportunities and this may have health implications. For example, another potential disease increase will likely be schistosomiasis, which will enter with Bozo and Somono fishermen who come from elsewhere to exploit the new lake resources, an area where schistosomiasis infection has been rather low (Public Health Analysis: 3).

The psychological and physiological stresses associated with moving, as well as the increased disease potential brought by immigrants and amalgamation make it likely that resettlement will lead to deteriorating health in the resettled population. Supplementary health services will be necessary simply to maintain in the resettlement population the same level of health they now have. Monitoring of health and nutritional indicators is important, so that the project management can deal effectively with health problems.

B. Long-Term Impacts

While the initial set of impacts in the Manantali region are those associated directly with dam construction, the resettled population is likely to face another set of more long-term problems involved with their resettlement in new areas. The technical aspects of these questions are covered elsewhere in this PP; this section will concentrate on some of the non-technical problems.

The first question concerns whether, in the resettlement zones, the conditions will be good enough to re-establish the diversified agricultural systems which the villagers had before resettlement. As Scudder (1981:212) notes, unoccupied lands are often this way for a reason, including such conditions as lack of water, poor drainage or poor soils. Certain diseases (e.g. here - onchocerciasis) may also be present. Despite the fact that the UNDP financed feasibility studies isolated zones of good soil and water availability, it is not completely clear that the resettlement zones will have all the specific environmental features needed to re-establish the diversified production system of the region.

The present production system uses a large variety of different resources, including cultivated, gathered and hunted foods, and livestock. Agriculture includes annuals as well as perennials (e.g. tree crops), and recession as well as rainfed crops. Thus an individual farmer needs a specific mix of different kinds of lands as well as different kinds of water. One sample problem area concerns water availability. While the resettlement project will verify domestic water supply and dig several village wells, it cannot supply dug wells for each of the many individual gardens owned by the villagers. While the villagers can do this themselves, they need a relatively superficial aquifer. It has not been definitely verified that water will be available for this sort of well. This is only one example, but it illustrates the problem. While the project can predict

and plan for the main requirements of production systems, it is not possible to plan for all contingencies and small details. Therefore, the re-establishment of the production system ought to be monitored with special attention paid to the extent to which a diversified, integrated production system is re-established. The section below on indicators will suggest some of the specific possibilities (e.g. number of different kinds of fields and crops).

A related long-term problem has to do with increasing population density. The present production system depends on very low population densities. As soon as a village becomes too large, families create "hameaux de culture" (agricultural hamlets) so that fields are far away from population centers and will not become quickly exhausted. Although the resettlement area has a very low population density at this point, some villages have chosen to amalgamate so they have a better chance to receive certain government services. There is also likely to be a concentration of settlers (both resettlers and migrants from other regions) who will move relatively near the dam to take advantage of wage labor and entrepreneurial activities associated with dam construction. While many of the "strangers" will leave when construction is completed, there is still likely to be a fairly dense population concentration along the route from Bingassi down to the dam site. In fact, Bamafele, the chef-lieu d'arrondissement, plans to relocate in the region of Bingassi adding to this concentration. While this population concentration may have distinct advantages for the purveyors of goods and services it will likely have distinct disadvantages for those who wish to re-establish their agricultural production. The effects of these population concentrations, over as long a term as possible, ought to be monitored to see to what extent they bring benefits vs. negative effects, and to what extent they lead to changes in the previously existing system of production and exchange in the region.

Another set of impacts to be monitored concerns political changes in the region. Although great care is being taken to allocate land through the proper channels of village chiefs and land chiefs, the Malinke are known for their involvement in land disputes. Thus, despite the approval of all concerned, it cannot be assumed that the allocation of land to resettled villages will proceed without problems. The land question should be monitored carefully. Secondly, the move may well provide an arena for the expression of latent conflict over political leadership. This is particularly true when villages will amalgamate to become quarters of one larger

village, but can happen in any village which has rival claimants to formal or informal political leadership. These kinds of questions are difficult to follow with specific indicators, and will require more in-depth studies.

Finally, problems will arise within the context of the move itself. In order to move families and animals in enough time to re-establish new villages before the reservoir is filled, a number of tasks need to be carefully coordinated. Despite efforts to plan and coordinate these separate tasks as carefully as possible, it is likely that events will happen which will upset timing and coordination. The monitoring team should be aware of the planning and scheduling of the move and resettlement and should act in conjunction with the Section Soutien as liaison between villagers and project management.

IV. INFORMATION NEEDS

A. Baseline Information

1. The UNDP Studies

In order to assess what changes have occurred in the Manantali area, it is necessary to have a set of baseline data. The major baseline information comes from the studies financed by UNDP. These include agriculture and soils studies, aerial photography, topography, and hydrogeological studies, but of main interest for the Monitoring Unit are the "agro-socio-economic" studies done by the Institut d'Economie Rurale (IER). Since the results of these studies are not expected until early September the usefulness of these can only be assessed from a study of the questionnaire forms used and in light of the terms of reference for the studies. When planning their own studies the Monitoring Unit should acquaint themselves with the actual results of the IER studies.

According to the terms of reference for the studies, these studies had several major goals. The first was to get an adequate assessment of the number of people and animals, the number of household structures, the number of fruit trees and the presence of village infrastructure. This is necessary information to plan for the move: i.e. how many people and animals will be moved, how much building material will be needed, how much transport will be needed, and how many immovables will need to be indemnified, in particular, fruit trees. A second goal was to understand some of the social context of the region, e.g., land tenure forms, existing farming systems, the presence of sacred woods and other inhabitable sites, patterns of village level decision making, and some appreciation of present revenues and expenditures. Analysis of these results should aid in planning

the details of the way in which villagers would be resettled and allocated new land. Third, the IER report should make suggestions on what new infrastructure would be needed in the resettlement areas, possibilities for regrouping villages, and recommendations for involving village level groups and individuals in decisions about the resettlement.

In addition to the studies done in the villages in order to estimate population density in the resettlement region, and to better understand attitudes about accepting the new population. The final report of IER should also analyze the experiences of the Selingue resettlement, to profit from their previous experience.

To gather this information, IER used a staff of three (an agricultural economist, sociologist and zoo-technician, the agricultural economist being team leader) plus thirty interviewers. Due to their reliance on interviewers rather than senior personnel to do much of the actual study, they developed formal questionnaires to gather most of the information. Despite some problems with this format to be discussed below, it is easy to see from the forms that they have adhered very closely to the terms of reference, developing sets of questions which correspond closely to each of the individual tasks delineated. No systematic informal questionning was done to supplement these forms, although the senior staff spent time working inthe field. The final terms of reference called for minimal time in the field, approximately 6 weeks (of 26 total) which included interviewer recruitment and training as well as the actual study. However IER reports that they actually spent 9-10 weeks in the field.

Tasks were primarily divided along disciplinary lines. The agricultural economist designed forms and collected information on agriculture, including its socio-economic context. The zoo-technician concentrated on the animal census, and the sociologist on the demographic census, land tenure, village infrastructure, and decision making patterns. In addition a census of all physical structures was done.

Samples were of three major types. First there were global censuses: of people in both sending and receiving areas, of fruit trees, physical structures, and animals. These were done for every Unit of Agricultural Production (farm household) in the region in order to get a complete count. Further information was gathered on samples only; approximately 80 families were sampled. Questionnaire forms were particularly developed for agriculture and concerned cropping patterns, harvests, labor use, field sizes, and

commercialization. A supplementary study was prepared for women. A sample of the structures was also evaluated as to their size, the quantity of materials used, and their value. Further information was taken on the demographic patterns of some of the livestock in the region as well as information on livestock disease and feeding patterns.

A third set of information, primarily sociological, was gathered on the village level. This primarily was information about village level infrastructure (schools, dispensaries, wells, livestock pens, religious sites, etc.) as well as historical information on the village, village associations and their role, and land tenure and land use patterns. Villages in both sending and receiving areas were questioned about what they had already heard about the dam project and how they had received this information. Receiving villagers were questioned about their willingness to receive resettling villagers and their present relationships to them. Resettling villagers were questioned about their preferences for resettlement sites, their relationships with villages in receiving areas and their preferences for forms of organization in the resettlement zones.

2. Assessment of the UNDP Studies

Since the report of the results is not yet available it is difficult to assess the utility of this information, but nevertheless a preliminary assessment can be made, on the basis of the questions which were asked.

In terms of baseline information, the most useful information will likely be that contained in the census results. Although it is likely much of this census information is underestimated because of people's perceptions of tax implications, it is nevertheless a set of factual data about the population of the region that will provide some of the basic characteristics of that population. Since it required specific concrete responses on the part of individuals, this kind of information is less open to differing interpretations than are more attitudinal, value-oriented questions. This information is necessary for planning as well as providing baseline information for monitoring.

Despite the utility and value of this information per se, the following recommendations can be made to supplement it. First, each village should be recensused directly before it will actually move. The main reason to do this is to discover any changes that have occurred since the original census was done in spring of 1983, nearly 2 years before some of the villages move. While the number of physical constructions and trees will likely be

similar, significant changes in the demography of both humans and animals is likely. Secondly, as villagers begin to perceive that their indemnities for fruit trees and the amount of construction materials received depend on an accurate census of their goods, they may be more accurate in their responses.

Secondly, if possible, IER should turn over not only a report, but the original questionnaire forms to the Resettlement Project Unit. While it is likely they will do as complete an analysis of information as possible, it would be useful if the monitoring and evaluation unit could return to the initial responses if they need to have further baseline information. This is especially true for census forms, which list the villages' inhabitants.

The more detailed information gathered about agriculture and livestock in the samples of 80 families is more likely to be subject to error. For example, much of the agricultural information asked for (e.g., exact number of fields for different family members, actual income from sale of agricultural produce, actual quantities of inputs used and produce harvested) is known to be difficult to get on a single interview. People are neither used to estimating these specific quantities, nor are they necessarily willing to give this information to an outsider if they do know it. While this data may be useful for giving some very general ideas about the agricultural system, it should not be used to understand specific patterns (or the extent of variation in those patterns) in the region. Numbers of fields, for example, are almost surely underestimated. In general the complexity of the production is likely to be underestimated (e.g. integration of farming and craft activities, variation in men's and women's fields). IER admits that their information on income and commercialization is weak, and there has been no systematic information gathered on off farm activities and income, a known important source of cash in the region. However this information may still be useful for monitoring. Given that we expect results to be biased toward showing less complexity and and lower quantities than actually exist, if monitoring studies show even worse conditions, this would clearly indicate lower standards of living.

The same problems exist concerning the livestock sample. Accurate livestock information is known to be especially difficult to get, and there is no reason to believe that the Manantali situation will be any different.

The village level sociological studies have their own set of problems. The most useful part of this will be the physical inventory information on village infrastructure. The opinion and attitude questions, as well as the general information on land tenure, will likely be less useful. The way in which these questions were posed gave little time for answers in depth, and interviewers often recorded simple yes/no responses. The answers will primarily reflect cultural ideals, and it is not likely that specific problem areas, intra-village tensions or potential areas for conflict, or even inter-village variation will be uncovered. Meanwhile those general ideal patterns of land tenure and inter-village relationships that are likely to be shown by the questionnaires are already known. The attitudes of the receiving villages and the resettling villages toward potential new sites have been discussed for the past two years with both GRM and AID personnel working on the resettlement, and it is unlikely that the IER studies will add much to what is already known by them. Perusal of GRM and AID documents will probably be more useful to Monitoring Unit in establishing baseline information on this subject than will the IER studies.

Despite the problems inherent in the IER studies, it is not recommended to re-do any of these studies, except for the census information which is mentioned above. Many of the problems of these studies stem directly from the single interview nature of the interviewing done, and it is unlikely that any baseline study would be done any differently. Rather the monitoring units should selectively choose from that IER information that seems to be the most accurate and useful; this would concern those kinds of studies that count/describe specific concrete information, in particular, the different kinds of census questionnaires, both at the family and village level.

The one area in which baseline data are clearly lacking is health and nutrition. A short form based on some of the health and nutrition indicators suggested below should be administered in conjunction with the schistosomiasis survey proposed in the Public Health Analysis. This would be the most efficient way of getting baseline health and nutrition information.

3. Other Studies

Although the main baseline information will be contained in the reports of the UNDP studies, there are some other sources of baseline

information available. The most comprehensive is the feasibility study done by the Groupement Manantali for OMVS, "Etude d'Execution du Barrage et de l'Usine Hydroelectrique de Manantali, Mission A.1.14 Recasement des Populations." While many of their suggestions for resettlement have been superseded, the general social/cultural context of the region is well presented, and the study contains some useful comparative demographic information.

An Italian group was in the region in July 1983 to do a feasibility study of 3000 ha. for experimental irrigated perimeters on the Bafing between Manantali and Bafoulabe. This was done in conjunction with IER and the report should appear shortly. In addition to extra information, this may also be a way of creating lines with other development projects in the area.

ODIPAC (Office de Developpement Integre pour la Production Archidiere et Cerealiere) has been doing a study with the aid of IER's Division de Planification et Evaluation throughout the area they serve, including a part of the sub-sector of Bamafele. Results of this study, not yet available, should be obtained through ODIPAC, and will primarily concern agriculture.

General background information can be obtained from writings on the Malinke including the studies on the Kita region done by Purdue Univeristy, available at USAID. Although useful for general background, care should be taken in using these, as they do not concern the Manantali region specifically.

B. Monitoring Needs

Basic monitoring methods should be of two types. First, a number of specific indicators should be developed. They should be valid indicators that reflect those characteristics that they are meant to measure. They must also be simple; this means they must be simply collected, simply tabulated and analyzed, and most importantly simply interpreted to the other resettlement units. A simple method of tabulation analysis and interpretation is important so that the communication of project management and monitoring unit is efficient and without serious delay.

However, indicators are not enough to understand in detail the social processes in the region. Therefore they must be supplemented by in-depth studies of some of the problem areas that are likely to appear in the process of project implementation.

These two different types of monitoring studies will be discussed separately. First the indicators will be discussed, and this will be followed by some proposed in-depth studies.

1. Indicators

The following section presents a list of indicators some of which may be useful in determining whether and to what extent the resettlement population is able to re-establish their existing quality of life. The following list should not be taken as a detailed prescription for the Monitoring Unit; rather it is illustrative. The monitoring team will likely want to delete some and add others. As new problem areas surface or are permanently resolved, indicators may be added or deleted. The list of indicators follows the problem areas presented above.

Indicators associated with the actual process of dam construction include the following:

a) Demographic	population size breakdown by age/sex percentage of in-migrants percentage of out-migrants from among resettled villagers proportion local/non-local population time use/work patterns for men, women and children
b) Economic	proportion salaried/non-salaried workers daily wage rates (non-agricultural, agricultural) income per unit from the sale of basic services, agricultural produce costs for housing, monthly food if a renter, costs of basic food items (grains, peanuts, meat, fish) and other basic consumption items (wood, batteries, soap, etc.) estimates of monthly incomes for settler families
c) Health	weights for height for group most at risk (children from 65-115 cm. in height - approximately 6 mos. to 6 years) simple food consumption survey (stressing diversity and types of food eaten rather than quantities) information on disease rates gained from dispensary records, pharmacy records, or other relevant secondary source information
d) Perceptions of the Population	this must be developed in the field, but should concern villagers' own assessments of the economic/social/health costs and benefits of the dam construction

Indicators more oriented to long-term resettlement processes include the following:

e) Re-establishment of the Production System		
	Agriculture	absolute number of fields per family and per person including fields of women and dependent men diversity of different kinds of crops grown number of rainfed vs. flood recession vs. irrigated fields number of trees re-established quantity of gathered foods inputs and equipment used amount of produce sold, unit price and total income
	Stock Raising	numbers of animals, birth and death rates
	Fishing	amounts fish caught/sold
	Off-Farm Income	new off-farm income associated with dam construction is collected in section b) Economic craft activities (amounts, kinds, and income and amount used for self-consumption or sale) for men and women off-farm income earning activities (e.g. gold mining, seasonal agricultural labor) income earned, for men and women
f) Water Availability		well depth by season no. of wells put in, including dug wells done by villagers quantity of daily household water used, by uses amount of waiting time to get water
g) Increased Population Density		the same indicators suggested under a) Demography would be useful
h) Political, including long-term reallocation of farm lands		number and kind of land disputes number and kind of disputes over political leadership re-establishment/activities of local associations, including both men's and women's associations no. of activities done, kinds of activities done by village associations
i) Infrastructure		re-establishment of schools (no. of classes) accessibility of old, new roads number of, use of industry, services, markets

j) Perceptions of the Population	as on the earlier section, villagers should also develop their own assessments of the long-term consequences of resettlement
k) Scheduling of Project Activities	the Monitoring Unit should be aware of target dates for the completion of specific project activities; they should develop indicators to monitor villagers' ability to meet their project commitments; if villagers cannot, they should work with the Monitoring Unit to develop changes in the implementation plan so tasks can be completed in a timely fashion

2. In-Depth Studies

While a series of indicators can be very useful as a simple and graphic way of charting project progress, they cannot explain how or why these changes are occurring. Indicators need to be complemented by a series of more in-depth studies which are oriented toward understanding how and why some of the more complex changes are occurring, and then, how some of the problems associated with these changes can be solved. The following are some suggestions for long-term studies, which stem from the earlier discussion of likely problems.

a) Production Systems: While this would mainly involve a study of agriculture and land tenure, it should also include an assessment of the changes in the mix of agriculture and other productive activities (livestock, fishing, gathering and hunting), and some discussion of the relationship between on-farm food production activities, craft production within the household and off-farm earning activities. Attention should be paid to how families decide on a certain mix of activities, in light of the resources presented to them.

b) Political Leadership: Land tenure and land disputes should be looked at again here, but from a political rather than a production point of view. During compulsory relocation it can be expected that the internal political alignments and tensions may express themselves and political alignments may change. Also, attention should be paid to group activities and mobilization at a village level, including the possibilities of these groups to undertake (primarily self-help) economic development activities.

c) Increasing Population Density, especially along the access road from Bingassi to Manantali. Special attention ought to be paid to any

effects of perceived increasing density, any difficulties this causes in agriculture, and any other changes which result. Does the increased availability of goods and services compensate for any problems in agricultural production? Does the mix of crops change as people grow more for sale in a small urban center? Does agriculture intensify if the return to it goes up? Or rather will the inhabitants simply disperse again into hamlets when the short term boom of the dam construction is over?

d) Network Study. The Manantali region has been one of the most isolated in all Mali, yet the process of dam construction will have brought in all kinds of outsiders (Malian and non-Malian) and opened new opportunities to people in the region. What kind of long term links will be made to the outside, either through the improved access of better roads, or through the individuals who have entered the region, as workers, government employees, or as private entrepreneurs? What kinds of new links can be made to existing service organizations that can continue in the area, even when the dam is finished? This latter question is especially important, since one goal of the project should be made to make links with outside organizations which can be used during and after the resettlement project to lead to possible development actions.

e) Women. Women often suffer most in the process of resettlement. Information on women should be integrated throughout; e.g., agricultural indicators should include both men's and women's fields; information on craft activities should include men's and women's activities; information on associations should include both men's and women's associations. However, to make sure that the question of the effect on women of the resettlement activity is clearly understood and delineated, it will be worthwhile to devote a separate study to women's roles in resettlement.

f) Cultural History and Archeology: In the filling of the Selingue reservoir, the important and culturally valuable aracheological site called Niani was covered because no archeological survey work was done. Since this was in Guinea, this caused an international dispute. Although international relations are not in play here, an archeological survey ought to be done to avoid losing potentially valuable historical sites. This should include the collection of oral histories relative to these sites, an inventory and mapping of sites, and a sampling of those sites.

V. ORGANIZATION OF THE MONITORING UNIT

A. Data Collection

1. Indicators

The indicators will be chosen and developed by senior personnel of the Monitoring Unit, but the actual data collection should be done by village based interviewers. Indicators should be recorded on a set of forms designed in such a way as to facilitate collection and analysis of data. In general they should be done as simply as possible (while still remaining accurate), so that they are easy for both villagers and interviewers to understand.

There will need to be more than one set of forms however, since indicators will vary along the following parameters: 1) how often the information on the indicator will be collected; 2) what the unit of analysis is (e.g. individual, family, village); 3) whether only a sample or the whole universe is followed.

For example, certain indicators ought to be taken every month, e.g. well depth, market prices, labor prices. Others might be taken each quarter (e.g. information on time use, nutrition studies), while others ought to be done only once or twice a year (e.g. amount of land in fields, yield estimates). Yet others ought simply to be recorded as they occur, following no set timing (e.g. land or political disputes, which will not occur according to any specific calendar).

Variation will also occur in the unit of analysis for each of the indicators, and in the question of whether a sample ought to be taken of each, or an attempt made to cover all. For example, take the question of water use monitoring. For each village, <u>all</u> new wells ought to be counted and well depths for <u>all</u> new forages built by the project ought probably to be monitored. On the other hand, if the villagers begin to build many supplementary hand dug wells, only a percentage ought to be sampled. Also since much water use takes place at an individual household level, water use information should come only from a sample of individual households. Thus, for some indicators, the monitoring unit ought to follow the entire universe, while for most, some type of sampling ought to be done. Some indicators ought to be collected at the village unit, others at the household level, and yet others (for example markets or activities of associations) should be sampled at the unit at which the activity takes place.

2. In-Depth Studies

Except for the archeological study, which will use standard archeological methods, the methodology for these studies should be based on anthropological methods of participant observation. First, the general problems to be covered ought to be discussed so that the goals of research are well understood. Once this is done, however, investigative techniques should emphasize informal interviewing in a number of in-village contexts, with the researcher remaining an extended period of time in the village. Once the situation is understood, researchers may want to develop some questionnaires to check specific points with a larger population, but the main lines of the inquiry should not depend on formal questionnaires.

Most of these studies ought to be spread throughout the whole period, although not necessarily continued without interruption, nor using the same personnel.

Despite the fact that the research will continue over a relatively long period of time, reports should not wait until the research is finished. Interim reports on the long term studies should be presented in the quarterly reports discussed below.

While the monitoring can be done by interviewers with a relatively low level of education (e.g., DEF or equivalent or 9 years schooling, or functionally literate in Malinke), doing participant observation requires some methodological sophistication. This should be done by the more senior level researchers to be proposed below. Certain of these studies may be undertaken by the chef d'equipe and his adjoint; for others, other individuals may be called in for a short term.

B. Data Analysis

Contextual data collected in the in-depth studies ought to be analyzed through standard anthropological methods for analysis of non-quantitative information.

Quantitative data collected (especially on the indicators) will need to be tabulated and presented in a useful format. While simple statistics could be generated using a hand-held calculator, the optimal method for tabulation and statistical analysis would be with a micro-computer. With access to simple statistical and word-processing programs, data could be entered regularly, a set of standardized tabulations and statistics generated, and a standardized report produced. It would take care and time to set this up in the beginning, but once the system was set up, it would enable the

Monitoring Unit to present information in a timely fashion.

C. Data Presentation

There should be two kinds of outputs of the monitoring unit. The first of these should be interim (monitoring) reports on the progressive impacts of resettlement activities. The second of these is a final end-of-term evaluation.

1. Interim Reports

It is important that information move quickly and accurately back to management and decision-making units. Reports should be submitted quarterly They should be based on factual information but the indicators should also be explicitly compared to the preceding report and significant changes noted. Problem areas should be stressed, and suggestions should be made for ways to mitigate problems which occur. These reports should include the following information:

a) A presentation of the data on indicators gathered since the last report. This should be presented in the same format in the same order in every report, and should be in easily readable tabular form, so that it can be easily compared from report to report.

b) A short analysis of the data presented in these tables. Special attention ought to be paid to the changes that have occurred since the preceding report, and the material ought to be evaluated in terms of the overall goal of the re-establishment of peasants' living conditions.

c) A summary presentation of knowledge gained on the subjects of the in-depth field studies since the previous report was submitted, with some analysis of that information.

d) A section on the problems that have come up since the period of the last report.

e) Suggested solutions for these problems. These solutions should be grounded in the knowledge that the monitoring unit has about what are both feasible and desirable socio-cultural solutions in the resettlement area.

f) Discussion of relationships with other local organizations. At the beginning of the project, the focus should be on ways the resettlement project and other local organizations can cooperate in the actual resettlement project. As the actual move is completed, the focus should change to more

emphasis on ways villagers can take advantage of economic development activities offered by those organizations.

Although these quarterly reports are important, the Monitoring Unit must be willing to communicate information through more informal, verbal channels. One way to ensure this is to include the head of the Monitoring Unit in meetings of Section Heads making decisions about project implementation. The Director of the Monitoring Unit should also hold regular meetings with the Director of the Resettlement Project to discuss important findings.

In addition to these regular reports, researchers doing in-depth studies should prepare final reports for the Monitoring Unit when their studies are finished. In addition to descriptive and analytical material, these studies should emphasize actual and potential problem areas and their solutions.

2. Final Report

At the end of the project, project staff should prepare a final report (evaluation) which discusses the impact of the whole dam construction and resettlement on the population of the Manantali region.

This final evaluation/report should have descriptive information and analysis about what happened, how and why it happened. It should be oriented around two basic goals:

a) For USAID, which sees this resettlement project in terms of a pilot way to resettle people in a least-cost manner, the report should summarize what has been learned from this project about whether this least-cost alternative was effective or not. For the ways in which it was not as effective as it could have been, suggestions should be made for the improvement of future projects of this type.

b) For the people of Manantali, the final report should make some recommendations about the ways that people can work through local development agencies, in order to not only re-establish their level of life, but so as to improve it. Since the present project will not fund economic development projects directly, this final report should make some particular recommendations about how people can, in the words of the PID, take advantage of the economic opportunities, arising not only from OMVS activities in the region, but also from other activities. As noted in the interim reports, work on this should not wait for the final report, should other actions be feasible in the meantime, but these alternatives ought to be summarized and detailed in the final report.

The major organization presently active in the region is ODIPAC, which besides agricultural services, also has an active functional literacy program, separate from that of DNAFLA. Although ODIPAC's funding is not at present very great, it is the major rural development organization in the region, and has had programs of one sort or another for at least 10 years. Financial cuts have diminished the scale of the programs, but they have forced ODIPAC to select for continuation only those programs that have been successful, and to base peasant economic development on local participation, self-help and grass roots mobilization. This philosophy is consistent with that of the resettlement project itself, and ODIPAC already has personnel working in the villages which will resettle. Throughout the project, the resettlement should work with ODIPAC as appropriate, but the final report should concentrate on ways in which this can continue in the future. In the event that there is some provision for an "adaptibility fund", which can provide small grants, this can work into ODIPAC's present plans for funding small village level projects (i.e. funding partly from village contributions, and partly from matching funds from some outside organization).

The Italian government is also considering a number of projects in the First Region, including irrigated perimeters on the Bafing. The progress of these projects ought to be followed, and suggestions made as to how the Manantali population could become involved in them, if appropriate.

Another subject that can be looked at is the use of Peace Corps volunteers. For example, the use of fisheries volunteers could be explored. This would not be expensive, but could be useful to help villagers make use of new opportunities.

Other alternatives will surely present themselves as the research commences, and the final evaluation should underline in detail some of these possibilities.

D. Staffing

Staff for the Monitoring Unit should be directly responsible to the Resettlement Project Unit. They may be hired directly or seconded from existing Malian agencies. The full-time staff of the Monitoring Unit will consist of a director, an assistant to the director, 6 interviewers, and support staff (chauffeur, secretary/data processor, gardien/planton). They will be aided in the in-depth studies by short-term field researchers. The Unit will be aided by one technical assistant, who will make several short-term visits through the duration of the project.

1. Director

The responsibilities of the director will include: participation in management of the overall project through interpretation of monitoring results, liaison with economic development organizations in the region, administration and supervision of the Monitoring Unit (design of survey forms and in-depth studies in collaboration with other researchers, supervision of other researchers and interviewers), compilation and presentation of quarterly and final reports. If possible, the director should also pursue research on the in-depth studies.

The director should have an M.A. (or its equivalent) in social anthropology, rural sociology, or applied anthropology. The individual should be recruited within Mali, or among Malian students studying abroad.

2. Assistant to the Director

The assistant should aid the director in all the above tasks. This person would probably be particularly important in regular supervision of field interviewers. The presence of an assistant is most important during the first year when the Monitoring Unit has many organizational tasks, as well as in the final year when the final reports are being prepared.

The assistant should have at least a B.A. (or equivalent) in the social sciences.

The director and assistant will be stationed in Manantali.

3. Interviewers (Full Time, Approximately 6)

The interviewers are responsible for data collection in the villages. They will collect data on the indicators, and will also assist researchers as necessary for the in-depth studies.

Two alternatives exist concerning interviewer qualifications. If literacy in French is necessary, they should have approximately 9 years of education (DEF). The alternative of using persons literate in Malinke ("paysans alphabetises") should also be considered. If ODIPAC has a cadre of literate peasants on the villages, it may be preferable to hire a number of these people, on either a full time or part time basis, to record some of the village level indicators.

In any case, interviewers should be recruited and trained locally and should be stationed in the villages. Since they will have to cover more than one village, they should be provided with transport.

4. Field Researchers for In-Depth Studies

Their duties will be to design and to do the in-depth studies. They will include a mix of short and long-term contract personnel, to be decided on by the Monitoring Unit when it finalizes precise study plans.

In general these should be experienced social scientists from Malian research institutions, although the unit should consider getting final year students from ENSUP in Bamako or from the IPR in Katibougou who would be interested in doing "Memoires de Fin d'Etudes" in conjunction with the project. Given the sexual division of labor in rural Mali, a woman should be recruited for the study on women.

Researchers should be assisted by the project's full-time interviewers, although in special cases (e.g. the archeological study) it may be necessary to recruit other short-term personnel.

5. Technical Assistance

Throughout the period of the project, a short-term technical assistant would be provided to aid the director. Tasks will include: assistance in research design, in the establishment of the role of monitoring unit in project decision making, in the establishment of reporting procedures.

The technical assistant should have a Ph.D. in social anthropology, applied anthropology or rural sociology, significant field experience in rural West Africa, significant experience in applied research design and dissemination of results, and should be fluent in French.

This person could be provided by the Institute for Development Anthropology through IDA/Clark University Areas Development Cooperative Agreement.

VI. BUDGET

Assumptions begin 2nd six months FY84 and terminate FY 1987

	FY 84	FY 85	FY 86	FY 87
Personnel	(6 mos?)			
Director	6 mos	12 mos	12 mos	12 mos
Asst. Director	6 mos	12 mos	(12 mos?)	12 mos
Interviewers (6)	36 p. mos	72 p. mos	72 p. mos	72 p. mos
Archeology:				
Researchers & Technicians (6 @ 3 mos)	18 p. mos			
Laborers (10 @ 3 mos)	30 p. mos			
Other				
Researchers	6 p. mos	18 p. mos	18 p. mos	18 p. mos
Other Assistants				
Technical Assistance	6 weeks (1x)	12 weeks (2x)	5 weeks (1x)	10 weeks (2x)
~~Contract Researchers~~				
Support Staff				
Chauffeur	6 mos	12 mos	12 mos	12 mos
*Secretary/ data processor	6 mos	12 mos	12 mos	12 mos
*Gardien-planton	6 mos	12 mos	12 mos	12 mos
Housing Costs for these (including utilities? furnishings?)				
Major Equipment				
1 4-wheel drive vehicle	?	na	na	na
8 mobylettes (6 interviewers, 2 office use)	?	na	na	na
1 microcomputer with necessary software and electrical equipment (to be shared with Management Unit)	$15,000	na	na	na

*If office is shared with overall unit, these 2 personnel may be shared

	FY 84	FY 85	FY 86	FY 87
Office spare & office furnishings and equipment (including stencil machine)	?	na	na	na
Other				
Gas & Mélonge	?	?	?	?
Other Operating Expenses for Field				
Office Supplies	?	?	?	?
paper				
pens				
stencils				
Misc. Field Supplies				
Expenses (2 camp beds, etc.)				
Data Processing Costs				
Library (ethnographic material, research design materials)	$500	na	na	na
Archeological Study (see original terms of reference)				
Training in Computer Use	?	na	na	na