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A Socio-Economic Survey of the Smallholder
Sector in the Province of Nampula: Research
Methods

By
MOA/MSU/UA Research Team

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INDEX

I. INTRODUCTION	1
Objectives	1
Chronology of Survey Activities	2
II. THE INFORMAL SURVEY	2
III. THE FORMAL SURVEY	3
The Sampling Strategy	3
Selection of the Participating Families	5
Contacts with Local Authorities	5
Selection and Training of the Enumerators	6
Fieldwork	7
Preparation in the Communities	7
Supervision	8
The Questionnaire	8
Questionnaire Content and the Period of Reference	9
Data Entry and Analysis	13
IV. THE QUALITATIVE METHODOLOGY	13
 ANNEX A: Survey of the Smallholder Sector in Nampula (Questionnaire)	
 ANNEX B: Village Level Survey Instrument	
 ANNEX C: Inventory of Local Infrastructure	
 ANNEX D: Summary: Documentation of Data Management and	

LIST OF TABLES

Table 1.	Characteristics of the Household Sample	4
Table 2.	Dryland (Sequeiro) Crop Calendar, Northern Mozambique . . .	10
Table 3.	Wetland (Regadio) Crop Calendar, Northern Mozambique . . .	11

**A SOCIO-ECONOMIC SURVEY OF THE SMALLHOLDER FARMING SECTOR IN
THE PROVINCE OF NAMPULA: RESEARCH METHODS**

I. INTRODUCTION

The need for applied research to inform the process of market system reforms in Mozambique inspired the establishment of the MOA/MSU/UA Food Security project. As a part of this activity, and after a series of visits with market participants in several districts of Nampula, it was concluded that an evaluation of the impacts of market reforms required additional information on the actual socio-economic environment within which smallholder farmers operate and make their decisions. (Smallholder farmers are defined as "sector familiar" in Mozambique) A major challenge was to effectively reach these farmers, given the human and material resource constraints and the on-going climate of war. Moreover, the government and the funding agency desired quick results.

The decision was made to conduct a survey among smallholder households, which would be as comprehensive as possible, given the limitations of personnel, timing and funding. Preparations for the survey began in mid-October 1990, and it was carried out during the summer of 1991, ending on August 17. This paper discusses the research design and survey methods that were employed, as well as the rather unique circumstances in which the study was implemented.

Objectives

This survey was a major component of a Food Security in Mozambique project, funded by the Ministry of Agriculture and USAID, and it sought to achieve three main objectives:

- to describe the domestic economy of smallholder farming families ("sector familiar"), with a focus on access to basic resources (i.e. land, labor, and technical knowledge);
- to identify the level of integration of these households into the market, with due attention to the impact of economic reforms resulting from the Economic Recovery Program (ERP);
- to investigate the impact of producing cotton and other cash crops on smallholder sector agriculture in the province.

With the research problem defined along these general lines, the methodology for the study was developed to follow accepted scientific standards while also taking into consideration the logistical constraints imposed by the reality of war.

The research strategy adopted multiple methods that integrated quantitative and qualitative approaches to information gathering. The principal data gathering method was the formal survey, in which a detailed questionnaire was administered to a selected sample of families. To obtain qualitative data, the study employed informal techniques, such as group interviews with individuals judged to be knowledgeable of the socio-economic characteristics of the region, district, and villages where the survey took place. Both the quantitative and qualitative methods focused on smallholder sector households as the principal unit of inquiry.

Chronology of Survey Activities

The chronology of activities that led to the preparation and implementation of the survey can be summarized as follows:

1. Rapid Assessment Visits: (1).....Oct-Nov 1990
(2).....Jan-Feb 1990
(3).....Mar-Apr 1991
2. Questionnaire Development.....May-Jun 1991

3. Sample Selection.....May-Jun 1991
4. Training of Interviewers.....July 1991
5. Pre-test and Final Revision.....July 1991
6. Formal Survey Fieldwork.....July-Aug 1991
7. Informal Interviews with Farmers.....August 1991
8. Computer Data Entry.....August 1991
9. Data Cleaning (in Progress).....Sept 1991
10. Preliminary Analyses.....Sept 1991
11. Debriefing with MOA and USAID Sept 1991
12. Study Presentation in Victoria Falls.....Oct 1991
13. Briefing of Working Group.....Oct 1991
14. Definition of Future Activities.....Nov 1991

II. THE INFORMAL SURVEY

Three rapid appraisal missions to the Province of Nampula provided the necessary information and background to design the formal survey. These visits were carried out with the purpose of selecting a region and sub-region of the country, and as preparation for the rural survey. The main goals of the visits were to define the general issues to be covered in the survey and to make contacts with the local authorities.

October/November 1990 - The first mission lasted four weeks, and established institutional ties with the Provincial Directorate of Agriculture in Nampula (PDA), which assisted in the fieldwork activities. During this visit, an informal market survey was carried out with the purpose of understanding patterns of marketing behavior at the level of retailers, wholesalers, and producers in the districts of Ribaúe, Monapo, and Angoche. At the same time, several farmers were informally interviewed to obtain initial information on the degree of implementation of policy reforms at the local level. Beyond this, the research team solicited the viewpoints of farmers and merchants in order to identify their marketing constraints as well as their views about policy changes and other measures needed to encourage growth in production and market activities.

January/February 1991 - During the four weeks of the second visit, another informal survey was carried out to gather additional information needed to complete the work initiated in October/November. This information was essential to finalize the research design on a proposed market information system and to provide the knowledge base for the preliminary preparations of the rural household survey.

March/April 1991 - The three weeks of the third visit included an informal survey of the city of Nampula and the districts of Ribaúe, Monapo, and Angoche designed to prepare for the survey. The research team interviewed local authorities and farmers informally in each district. The objective was to better understand agricultural production in general, market activities, and consumption patterns, and local terms and customs so that this information could be incorporated into the development of the formal survey instrument and to assist in sampling strategy.

III. THE FORMAL SURVEY

The Sampling Strategy

The design of any socio-economic research is a function of the objectives it intends to achieve. In this case, the survey attempted to describe household level variations in smallholder sector farming across Nampula Province in northern Mozambique. Visits to the districts and conversations with different authorities made clear the importance of relating geo-climatic variations within the province to relevant socio-economic characteristics of the rural sector. Nampula reveals marked ecological differences from east to west, which in turn are reflected in changing agricultural patterns from the coast to the interior. A transitional zone between the coast and the interior can also be distinguished by its soil characteristics and rainfall pattern. In the coastal zone, the predominant cash crops are coconut, cashew, rice, and peanuts, while the basic

subsistence crops are beans and manioc. Cereal crops, particularly corn and beans, are most prevalent in the interior zone, which is commonly considered as the granary of the nation's northern provinces. The transitional zone offers rich soils and flat expanses suitable for mechanization, and is known for cotton production.

The ecological differences and related cropping patterns influence the local access to resources as well as their survival strategies farmers pursue in the respective zones. The sample survey was therefore constructed to reflect this ecological variation within the province, and one district was selected in each of the three zones. The district of Angoche represents the coastal zone. The district of Monapo, a major area of cotton production and known for the important presence the two cotton companies (SAMO and SODAM), represents the transitional zone. Ribaúe is located in the middle of the interior grain-producing zone.

The sample was designed to capture the range of variation among smallholder sector farms in each of the three districts, but not to extrapolate results to the level of the province. Thus, the relative sample sizes from the three districts are not necessarily proportional to the district's population. Rather, the sample size was chosen to be adequate for the application of quantitative analyses to study district level differences. The initial goal was set at a sample size of three hundred families, with each of the three districts represented in approximately equal proportions.

The reality of fieldwork imposed limits on the sample design; nonetheless, it proved possible to exceed the desired sample size, and a total of 343 families were interviewed. Table 1 presents the distribution of the sample by district and by village.

Table 1. Characteristics of the Household Sample

District/Village	Sample Size: Households (N)	Population: Families per Village (N)	Age of Household Head (years)	Size of Household (No. of persons)	Farm Sales		Cotton Sales	
					(% N) b/	Sales as Share of Total Production (%) c/	(% N) d/	(mt) e/
MONAPO a/	109	--	42	4.1	95.4	48.1	56.9	109,302
f/ Netia	22	366	46	3.8	95.5	45.9	63.6	90,623
f/ Muelege	25	119	50	4.4	100	40.4	40.0	107,966
Mpatha	26	258	37	3.8	88.5	36.7	50.0	44,450
f/ Mecutine	22	374	36	4.6	100	72.6	100	158,841
f/ Mutarauatane	14	272	42	3.6	92.9	48.7	21.4	162,667
RIBAÚE a/	119	--	40	5.1	70.6	27.2	21.0	27,724
f/ Moçambique Novo	23	309	42	5.0	65.2	12.3	4.3	0
Mucu	25	209	38	4.9	60.0	17.4	0	0
Natere	26	249	41	4.7	57.7	22.5	11.5	25,800
f/ Tanheia	21	152	44	5.2	95.2	24.4	61.9	33,692
f/ Mape	24	322	37	5.5	79.2	59.3	33.3	22,215
ANGOCHE a/	115	--	43	4.2	97.4	50.7	1.7	0
f/ Napruma	24	504	35	3.9	100	54.5	4.2	0
f/ Namapuiza	20	216	41	4.3	95.0	37.5	0	0
f/ Namitória	22	535	46	4.6	100	57.1	0	0
f/ Macogone	25	262	45	4.6	100	56.1	4,0	0
Monari	24	347	47	3.5	91.7	46.6	0	0

Source: Socio-Economic Survey of the Smallholder Sector in Nampula Province

- a/ Unweighted averages
- b/ Percentage of families that sold farm production in 1990-91
- c/ Percentage of quantity sold as share of total production
- d/ Percentage of families that sold cotton in 1990-91
- e/ Average weight of cotton sold for families that grew cotton
- f/ Village classified as "more commercial"

Selection of the Participating Families

Once a sample size was determined, the central question focused on the selection of participating families. From a strictly technical perspective, the indicated strategy would be to obtain a list of families from all the villages in each district, then to draw randomly from these combined lists until the desired number of families was chosen. From a logistical perspective, however, such a strategy was not viable, since it would result in a drawing a large number of villages while the number of families selected in each village would be relatively small. Given this reality, a two-stage sampling process was designed. With this strategy, five villages in each district were chosen and in each village, 25-30 families were selected.

Theory demands that to avoid sampling bias, randomness of selection be carefully observed. In the case of this survey, the first stage sample selection, that of the villages, was influenced by the reality of war as well as the research objectives. To consider the war, each district administrator provided a list of villages which appeared to offer acceptable levels of security (although "security" proved a fleeting term). Prior to the final selection, local authorities and the survey enumerator candidates provided an update of the security situation, which eliminated other villages from the original lists.

The villages which finally met the initial security criterion were then stratified according to their level of marketing intensity, due to the study's interest in the smallholder sector's participation in commercial activities. To operationalize the market intensity criterion, the enumerators for each district indicated which of the secure villages were regarded locally as more or less important points of commercial activity. For the district of Monapo, the degree of commercialization was determined by reference to cotton marketing. In the other districts, the villages with less commercial activity were frequently those with the most precarious conditions of security, and were therefore excluded by the first criterion. Column 1 in Table 1 identifies the sample of commercial and non-commercial villages selected randomly by district.

Contacts with Local Authorities

After the selection of the villages, supervisors accompanied the enumerators to the districts with the objective of carrying out the following tasks:

- A. Meet with authorities again to inform them of which villages were chosen, and to request assistance in contacting the village leadership. The group carried a letter from the Provincial Directorate of Agriculture to the district-level authorities, which reiterated an earlier request for cooperation.
- B. Contact the village leaders, particularly the administrative secretaries, to explain the objectives of the survey to notify them that their villages had been selected. Their assistance in obtaining complete lists of all households in the village was also requested.
- C. Finally, obtain the list of the families in each of the selected villages.

Fortunately, local authorities routinely maintain resident lists, which are more or less up-to-date. Also, each name on these household lists represents a family unit of production. Thus, each woman (and offspring) of polygynous unions in the village is listed as an independent family. The enumerators brought these lists to Nampula, where the selection of families was completed, employing a randomized interval technique. For each village, 25 families were selected as survey targets. Given the possibility of unforeseeable circumstances, five more families were chosen as alternates. A partial set of the demographic and commercial characteristics of this sample are presented in Table 1.

Selection and Training of the Enumerators

The selection and training of enumerators proved a most challenging component of this survey. Assumptions about the availability of district-level people with formal education or professional experience were over-estimated. The original request for enumerators, submitted to the PDA, requested a list of six potential candidates from each district who met certain basic requirements: a minimum of a sixth grade education, survey experience, knowledge of the area, command of Macua dialect, and sensitivity to social problems. Two rather distinct interviewing strategies were considered:

- a. Select a group of individuals, regardless of their residence, and use an "invasion approach," in which a large group of enumerators would move from village to village, administering the survey instrument to households in one village at a time;
- b. Alternatively, recruit capable individuals in each district to administer surveys simultaneously.

The second option was determined to be preferable, given that locally recruited enumerators offered certain advantages:

- a. better acceptance in the communities, and therefore greater ease of communication
- b. absence of socio-cultural barriers
- c. minimization of linguistic problems (the survey was designed to be implemented in Macua, and dialectical differences exist between the coast and interior)
- d. fewer logistical problems and lower cost
- e. greater possibility of finding female enumerators, which was crucial to obtaining access to village women, and not clashing with community taboos

Finally, a group of 23 individuals, including seven women, was recruited for training in Nampula. The training session was scheduled to last seven days, but it was prolonged for another week. The majority of the group were young, underemployed farmers. The average age was 25 years old and an average of seven years of formal schooling. A few had some very limited survey experience, and nearly all were somewhat intimidated by the complex questionnaire instrument they were asked to master. On the positive side, as residents of the districts and as farmers, they understood the realities of rural life and were able to avoid potentially dangerous situations. Because of this minimum level of formal education and little exposure to survey work, the training period was extended from one to two weeks in order to provide better preparation. During the training, the participants were closely observed in their individual and group work, particularly in terms of their ability to communicate and interpret the questionnaire. The sessions of work in Macua and a trial run of the survey constituted the definitive tests for the selection of enumerators. The final phase of training reduced the number of supervisors and enumerators to 18 people, who ended up as the working team throughout the fieldwork. In the final accounting the training and fieldwork provided a unique opportunity for professional development of the enumerators, thus increasing individual horizons for future employment.

Fieldwork

Prior to the onset of the fieldwork, a resurgence in bandit activity required several modifications to the research strategy. First, foreign researchers that formed part of the study team (from the Food Security Project) failed to receive security authorization to visit the villages.

Since the enumerators lived in their own districts, they could carry out their work, but the problem of supervision became paramount. To guarantee the quality of the data, a group of Mozambican supervisors (team researchers plus others from Nampula city) was formed to oversee the on-site progress of the fieldwork. These collaborators travelled by air charter to the districts on a daily basis and served as a communication link between the enumerators and the overall research team, based in Nampula city.

Preparation in the Communities

Adequate and comprehensive communication with the selected communities prior to fieldwork is a critical determinant of the success of a survey. By way of preparation local authorities were informed of the proposed survey during early visits to Nampula, and they were apprized of the objectives of the research. Before beginning the fieldwork, the supervisors again contacted the district administrators to announce that the survey was ready to begin. The supervisors, accompanied by the enumerators, also made contact with local village leadership. While obtaining household lists, the supervisors and enumerators conducted open and public meetings in each of the selected villages to explain the nature of the survey and its objectives. After the sampling was completed, supervisors returned to each village to notify the selected families, reiterate the survey objectives, and to schedule the enumerator visits. These steps constituted the routine procedure as work was to begin in each village. The team made clear that farmer participation in the survey was entirely voluntary, and there was no formal or informal pressure to participate. Moreover, most interviews were conducted only in the presence of the family, usually in the home, and confidentiality was strictly guaranteed. In general, the interview teams were well-received and the objectives of the survey were clear to the participants.

Supervision

Under the revised supervision strategy occasioned by the violence, a team of two supervisors was appointed for each district. These teams travelled to the districts every day to assist in the fieldwork, supervise and orient the enumerators, and to retrieve the completed surveys from the previous day. In the provincial capital, the base team of researchers rigorously reviewed the completed surveys every day, marking any inconsistent or unclear responses. These unsatisfactory surveys were returned to the enumerators for clarification and correction whenever necessary. Using this system, the quality of the surveys was maintained despite the difficulties imposed by the war situation.

The fieldwork lasted approximately three weeks. The enumerators and supervisors worked seven days a week without rest, under an exhausting schedule. During the first week of work, nearly all the surveys needed to be returned to the enumerators for corrections. To improve the quality of the surveys and to resolve systematic misinterpretations, each team of enumerators was rotated into Nampula to exchange information, to solve problems, and to provide qualitative information on key issues. In some cases, enumerators travelled to Nampula of their own volition to reassure themselves concerning the quality of their work. During the second week, the performance of the enumerators improved dramatically, and this tendency continued until the end of the fieldwork. The enumerators transformed themselves into a highly efficient and professional group, and the supervisors equally achieved a high level of professional competence from the experience. Without doubt, this was a direct result of the close and consistent interaction among the three groups (researchers, supervisors, and enumerators).

The Questionnaire

The objectives of the research are clearly reflected in the design of the survey form. An example of the questionnaire instrument can be found in Annex A. The questionnaire concentrated on six categories of information, delineated below:

1. demographic characteristics of the smallholder sector to determine the primary source of labor available to the family farmer; this category also identified the patterns of distribution of the family labor within and outside of agriculture;
2. land use characteristics (for each plot of agricultural land) to discover typical crop rotations, the average size of cultivated fields, and forms of access to land; this category also provided an estimate of the abundance or scarcity of agricultural land in the selected villages;
3. characteristics of production to compare the degree of food security in each area and to gain information on the types of technology used in production;
4. marketing of agricultural products to document the participation of family farmers in the market and to identify the typical selling (and buying) patterns; in addition, this category procured information concerning the impacts of economic reforms and market liberalization;
5. purchasing behavior to understand the buying power of the smallholder sector and at the same time to estimate the monetary needs of these families;
6. patterns of consumption, to determine the typical diet during the two distinct periods in the agricultural cycle--the harvest period and the hungry period; this also helped to identify the survival strategies adopted by these families.

In the design of the questionnaire, two types of information were solicited. Questions which sought factual information (such as quantities, areas, ages, etc.) were organized in tabular form. Diagnostic questions inquired about opinions, attitudes, or possible responses to certain hypothetical conditions (for example: "If the price of corn were to rise, what would you do?"). The researchers attempted as much as possible to pre-code possible responses to the diagnostic questions to facilitate computer data entry.

The questionnaire was developed so as to facilitate communication between enumerators and farmers. The format attempted to reduce difficulties in the interview process and to assist the respondent's recall capacity. Due to resource constraints, the survey provided but one opportunity to meet with each farming family (with, in some cases, the necessity for brief interviews to correct information). For this reason, it was necessary to take maximum advantage of the interview and the questionnaire to stimulate as much as possible the farmer's ability to remember specific events and activities. For example, in dealing with land use, the questionnaire requested information on a field by field basis, since this is a relevant category and terminology which the individual farmer recognizes and utilizes.

Questionnaire Content and the Period of Reference

In general, the rural survey covers the official marketing year of April 1991 to May 1992. For most crops the harvest takes place at the start of this period and is marketed or consumed during the post-harvest months. There are two important exceptions. Cashew and manioc are harvested between September and January; commercial sales of the crops begin in October and can continue into the following calendar year. Figure 1 summarizes the cropping calendar for the principal products covered in the survey.

The fact that each family in the survey could only be visited during one time of the year meant that the fieldwork period for the survey be carefully chosen. It was considered preferable to contact the farm families shortly after most of the 1991 harvest had been completed and the bulk of the sales had been transacted. The survey was thus scheduled at the most opportune time to address these concerns, with the expectation that the farmers would be better able to remember recent production and marketing behavior. A number of informal interviews revealed that agriculturalists sell most of their produce soon after the harvest, rather than storing it to sell over a longer period.

Table 2. Dryland (Sequeiro) Crop Calendar, Northern Mozambique

Table 3. Wetland (Regadio) Crop Calendar, Northern Mozambique]

The research strategy was to obtain information on the crop quantities produced, sold, and/or stored in the 5 - 6 months preceding the survey. Since the fieldwork was carried out from July 20 through August 15, 1991, the timing offered the dual advantages of occurring near the harvest and after most of the rural families' anticipated agricultural sales. Nonetheless, certain limitations need to be considered and recognized in the process of data analysis. Among these considerations are the following:

1. A direct estimate of the availability of food for the families over a period of 12 months (April 1991 through March 1992) would have to be calculated combining the current harvest information with the retrospective estimate of typical marketing behavior during the previous year. This estimate would be compiled from two sources of data on the questionnaire: (a) the farmer's recall of production, sales, and stocks from the time directly following the 1991 harvest until the time of the survey and (b) additional information about patterns and quantities of food and non-food purchases to be required which serve as a basis for extrapolating to the food needs of these families from the time of the survey until the end of the current marketing season and the beginning of the new agricultural campaign (August 91 to March 92). This estimate would be based on the pattern of expenditures exhibited by the families during the same period of the previous marketing year, 1990-1991. Since the harvests of 1989-90 and 1990-91 present a certain degree of similarity, it is possible to assume little variation in consumption behavior without running great risks of distortion.
2. The data on household marketing activities in the period from the recent harvest to the time of the interview appears quite accurate. The sales occurring between August 1991 and April 1992 cannot, of course, be directly recorded. As an alternative, the questionnaire asked the farmers about their commercial activity at the same time during the 1990-91 marketing year. The results of this information led to the conclusion that, with the exception of cashew and manioc, the vast majority of agricultural products are sold within a few months after the harvest, between April and June. The harvest of manioc and cashew occurs between September and January, and the majority is sold shortly thereafter. As a consequence, the information gathered in the survey concerning these two crops refers to the agricultural campaign 1989-90 and the commercial activity of 1990-91.

The rural survey also gathered information on patterns of expenditures and household cash outflows for the acquisition of food and non-food items. To obtain this data, the household head (or spouse) was asked to recall normal expenditure patterns during the present harvest period, and this information served as an indicator of typical behavior during this time of the year. Then the respondents were asked the same questions about the past hungry period, to serve as an indicator of family behavior during the coming hungry period of 1991-92. As in the case of production and marketing estimates, these two types of information provided the basis for extrapolation to annual expenditures.

To obtain data on selected consumption patterns, a similar strategy was followed. The household was asked to recall with certain detail the typical meals--by component ingredients--during the harvest and hungry periods. The harvest period meals are accepted with a greater degree of confidence, since the data are based on the meals of the day before the survey (making sure to control that the previous day's meals were typical). The hungry season information was based on a "typical" day's consumption and thus demanded a greater recall span; hence the conclusions concerning the hungry period need to be regarded with greater caution. Nonetheless, it is important to note that these recall techniques are used in many food security projects in the SADCC regions. The method has led to valid results about differences in the pattern of consumption and food sources between the sample families at different times of the year.

Data Entry and Analysis

The questionnaire was structured to facilitate computer manipulation. As can be seen in Annex A, for example, most sections in the questionnaire were pre-coded. The study utilized the statistical program SPSS (Statistical Package for the Social Sciences) and its Data Entry sub-program to enter and analyze the data. A program for data entry was prepared in the field, and the entry process began in Nampula, then was completed in the United States. In accordance with the original research plan, a group of Mozambican professionals came to the United States (University of Arizona) to take part in the data analysis and to participate in a workshop on research methodology and the applications of SPSS in the rural surveys. The data bank is currently in possession of the three institutions involved (the Ministry of Agriculture, Michigan State, and the University of Arizona). The data analysis continues to move forward in Mozambique and in the United States, and a series of working papers based on the analysis has begun to appear. Presently available or near completion are papers on four themes central to the research objectives--food security in the smallholder sector, integration in the market network, land use, and the impact of the cotton companies on smallholder sector farmers). The results will also be disseminated in various seminars.

As previously stated, the survey sample is not proportional in the sense that the number of families selected in each village was not determined by the relative proportions of the different populations. In this preliminary stage, the samples from each village have not been weighted to reflect the proportional size of the village populations. Therefore, the totals and averages given for the districts do not reflect weighting, and these results will be subject to modification once weighting has been applied. Future analysis and publications of these data will reflect these changes.

IV. THE QUALITATIVE METHODOLOGY

The original research design included a qualitative component to be carried out during the formal survey. The plan initially held that interview teams would visit each village for approximately three days, and that an enumerator and a researcher would dedicate themselves to informal interviews during the second or third days. The participants in these informal interviews were to be families which had shown particular interest during the formal survey, and individuals known as sources of special information (for example, a head of production, a merchant, a muéné, a female head of household, etc.). Researchers prepared topic outlines to serve as interview guides (copies can be found in Annexes B and C).

As previously explained, this village level survey could not be implemented because of restricted travel to the districts. If, however, Mohammed can't go to the mountain, the mountain must come to Mohammed. As a rather unique innovation, arrangements were made so that groups of farmers, including production chiefs, villages secretaries, and muenes, could share the realities of their villages with the researchers in Nampula. Thus, supervisors identified during the survey in each village certain dynamic individuals, who then travelled to Nampula for one day long meeting with the project researchers. Representatives from two villages in Angoche, three villages in Ribaúe, and two villages in Monapo were interviewed on three different occasions (one day for each district).

The information obtained through the group interviews and the informal interviews complemented and clarified data from the questionnaires. For example, researchers delved into issues concerning the role of traditional sharing institutions (ovahewa, in Macua), work exchanges (okhalihana, in Macua), inheritance, access to new fields, patterns of polygamy, marketing strategies, on-farm storage practices, and other elements of immediate interest to the study. This innovative modification of the research plan was very successful and would have benefitted from more time, since the informal interviews required a great deal of personal contact. These groups who so openly and generously shared their knowledge of rural life

with the researchers must be acknowledged for their willing assistance. They provided important insights on social institutions and the daily routine that comprise their adaptive survival strategies. Their initial formality in the interview session rapidly dissipated and by lunchtime everyone felt mutual respect and trust, which helped enhance the understanding of rural society.

ANNEX A:

Survey of the Smallholder Sector in Nampula (Questionnaire)

ANNEX B:

Village Level Survey Instrument

VILLAGE LEVEL SURVEY INSTRUMENT

Village _____

I. Labor

A. Agricultural Employment

Description of non-family labor. How important is non-family work in agricultural activities? How do the different forms of non-family labor (ex. mukume) function in terms of remuneration (money, kind, beverages, etc.) and in terms of task definition and specification (area measured in paces, etc.)? What are the specific tasks associated with these forms of non-family labor? For example, for what particular activities is mukume used (e.g., clearing and land preparation)?

To what degree are these institutions utilized in the village? What are the characteristics of families who participate in these institutions?

B. Non-agricultural Activities

Activity	Monthly Salary or Income	N° of Persons in this Activity
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		

C. Population movement in the village (during recent years)

	Heavy	Light	None
Moving into the area			
Leaving the area			

II. Land

What are the local institutions for people to obtain land in the villages?
What roles do the muene, chefe de produção, etc., play?

Do families in the village have title to their land?

What are the conditions of land availability in the village? Is there enough land for all the families to cultivate as much as they want, or is land scarce in proportion to the population (due to population growth in the region, or inaccessibility due to the war)?

Are there cases of disputes between families over access to land? If so, how are these conflicts resolved?

Have agricultural practices changed during recent years? Are fields cultivated more frequently now than in the past? Are fields cultivated for more consecutive years now than before? Does the village possess less land than in the past?

IV. Domestic Characteristics of Families

A. Describe the typical meals, average serving size (for adults and children), annual variation, number of meals per day, etc.

B. Which family members are usually responsible for domestic activities -- meal preparation, child care, fetching water and gathering firewood, etc? How much time every day does each activity require?

III. Marketing

A. General Aspects

What factors influence the marketing of agricultural products in this area? (the war, transportation, number of lojas in the area, etc.)

B. Brigada de Comercialização

If there is a brigada de comercialização, how does it operate? (who organizes it, how many merchants, which products, the frequency, taxes, local licensing).

If there is no brigada de comercialização, how are local products marketed?

C. Variation in the availability of basic consumer goods during the past year:

J F M A M J A S O N D

Maize :

Beans :

Manioc:

Sugar :

Oil:

_____:

_____:

_____:

_____:

_____:

(Mark periods of scarcity for each product with an "X")

D. Distance and cost of transportation:

ANNEX C:

Inventory of Local Infrastructure

ANNEX D:

**Summary: Documentation of Data Management and
Analysis Procedures**

NDEA Working Papers

1. Informing The Process of Agricultural Market Reform in Mozambique: A Progress Report.
2. A Pilot Agricultural Market Information and Analysis System in Mozambique: Concepts and Methods.
3. Inquérito ao Sector Familiar da Província de Nampula: Obseravacoes Metodológicas
- 3E. A Socio-Economic Survey of the Smallholder Sector in The Province of Nampula: Research Methods (**translated from Portuguese**)
4. Inquérito ao Sector Familiar da Província de Nampula: Comercialização Agrícola
- 4E. A Socio-Economic Survey in The Province of Nampula: Agricultural Marketing in the Smallholder Sector (**translated from Portuguese**)
5. Inquérito ao Sector Familiar da Província de Nampula: O Algodão na Economia Camponesa
- 5E. A Socio-Economic Survey in The Province of Nampula: Cotton in the Smallholder Economy (**translated from Portuguese**)
6. A Socio-Economic Survey In The Province of Nampula: Determinants of Smallholder Household Income and Food Availability (In Preparation)
7. A Socio-Economic Survey In The Province of Nampula: Smallholder Land Access and Utilization (In Preparation)