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Evolution of the Rural Economy in Post-War Mozambique: Insights from a Rapid Appraisal in Monapo District of Nampula Province

By

MOA/MSU Research Team

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Working Paper Series

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LIST OF ACRONYMS

CAE	Cultivated land per adult equivalent
ERP	Economic Rehabilitation Program
FSP	Food Security Project
GOM	Government of Mozambique
ha	hectare
JVC	Joint Venture Company
MOA	Ministry of Agriculture
MOC	Ministry of Commerce
MSU	Michigan State University
Mt	Meticais
NDAE	National Directorate of Agricultural Economics
SIMA	Sistema de Informação de Mercado Agrícola (Agricultural Market Information System)
SSA	Sub-Saharan African
UA	University of Arizona

EXECUTIVE SUMMARY

A research team from the MOA/MSU Food Security Project (FSP) conducted a rapid appraisal in Nampula Province during August and September 1993. The mission was designed to gain insights into the evolution of the post-war economy in northern Mozambique, a region where the FSP had conducted a socioeconomic survey of smallholders two years earlier. FSP researchers plan to use the 1993 findings to help guide future research designed to inform policy makers about alternative strategies to improve smallholder well-being and regional economic performance.

To define the focus and methodology of the rapid appraisal, the team made extensive use of what has been learned from an analysis of the Nampula Province farm level socioeconomic survey conducted by the FSP in 1991. Findings from the 1991 survey have been disseminated through the National Directorate of Agricultural Economics Working Paper Series. For the interested reader, a synopsis of key 1991 results is included at the end of the Executive Summary.

The 1993 rapid appraisal visited selected households in the two villages of Monapo District where cotton played the most and least important roles in smallholder cropping patterns among all villages surveyed in the district two years earlier. Key insights from the rapid appraisal include:

1. At least three types of evidence gathered during the current mission strongly suggest to the research team that peace has meant a welcome improvement in the outlook of most rural families interviewed in 1993:

   a. Families no longer sleep overnight in the bush, as they had during the war, to avoid the possibility of attack; others have moved their residence away from the village center to be closer to their family fields;
   b. Several households were observed re-thatching and making other key improvements to their family homes; and
   c. Some households reported plans to begin regenerating their small animal herds decimated by banditry during the war.

With hopes high for successful implementation of the terms of the peace treaty, significant steps toward this pre-condition to improved regional economic performance are being achieved.

2. Smallholder food security strategies continued to be oriented around food self-sufficiency. Because detailed production, consumption, and expenditure data were not collected in the rapid appraisal, no firm conclusions can be made concerning the degree to which the role of food purchases changed for surveyed households. On the other hand, two insights gathered in the rapid appraisal suggest that the low proportion of calories attributable to food purchases from 1991 may have increased modestly, particularly for those households with relatively high cash cropping activity. First, the majority of households interviewed reported that more food and non-food goods are now available for purchase. Second, interviews with selected petty traders (*ambulantes*) suggested an expansion in informal sector

commercial activity in rural areas, particularly in the relatively cotton-intensive village visited. Nevertheless, we expect any increase in smallholder reliance on food markets to be modest, given the very low cash incomes found in 1991 and the general devastation of the rural marketing system during the war.

3. Land cultivated per household increased in both villages studied; changes in land cultivated per adult equivalent were mixed.

In Mecutine, the cotton-intensive village, the modal area devoted to cotton doubled while area planted to food crops either increased or remained constant for most interviewed households. Land cultivated per adult equivalent also increased as household size remained stable. More family labor in Mecutine was employed in smallholder agriculture in 1993 than two years prior. As a result, for the typical Mecutine household, cotton production increased significantly while food crop production also tended to increase, though not as dramatically.

In Muelege, the non-cotton intensive village, overall farm size showed more modest increases for interviewed households. When considered on an adult equivalent basis, however, farm size was little changed from 1991, largely due to the number of births among surveyed households between the two survey periods. Most of the additional area under cultivation was planted to food crops, as cotton continued to play a relatively modest role for the typical family farm in this village.

4. The degree of intra-village land inequality among households surveyed in both years decreased in Mecutine while little change occurred in Muelege.

In Mecutine, the increase in cotton area was evenly distributed across households. Thus, there is some evidence that land-poor households from 1991 are less land-poor now relative to their neighbors than in the earlier survey period.

In Muelege, there is little evidence to indicate that the most land-constrained households significantly improved their land access relative to their neighbors. Thus, a key suggestion from the 1991 survey, that factors beyond the war are creating unequal access to land and compromising the welfare of many smallholders, continues to hold in this village.

5. Serious land conflicts were documented between family farmers and large landholders.

A number of interviewees reported that parcels had been taken away from them and allocated to large agro-industrial firms operating in the area between the two survey periods. A few expect that this will occur in the near future. Compensation to these smallholders is typically perceived by the affected households as inadequate. Most who have lost land rights in this manner are reacting by seeking more land from the local land access system--land which tends to be further away from the village center and family residences. Official land registration and titling has apparently never affected secured use rights of smallholders. Almost all land titled in the province is in large parcels under the control of large agro-industrial firms and urban-based individuals. The exact nature of and reasons for these apparent conflicts and their implications for smallholder food security and regional economic performance need to be better understood.

6. Conflicts between the local and official land administration systems were documented in both villages.

The role of a household's family relationship with local leaders may be one of the key factors in determining land access in the smallholder sector. Understanding the role of these relationships in determining land access and the interface between the local and official systems is necessary to inform the ongoing food security and land policy debates.

7. Increased activity has improved the available supply of goods available for purchase for selected rural households.

In the cotton-intensive village of Mecutine, *ambulantes* were observed selling various consumer products including used clothing and fabric. Increased food availability (from 1991) was documented at the Mecutine store operated by the cotton company and to a more limited extent among *ambulantes* selling dried fish--an important protein source. By contrast, most households in Muelege reported that more food and non-food products are now available, but that they must travel to Monapo City often to make such purchases. The reasons for this apparent divergence between communities with differing degrees of cash-cropping activity represents an important research topic.

As a result of insights gathered from both the 1991 and 1993 phases of FSP research in Nampula Province, the team believes that the areas which should be accorded highest research priority in the next phase of the project are:

1. Evaluating the effects on smallholder welfare and the local and national economy of alternate institutional arrangements between smallholders and cotton joint venture companies (JVCs). Other cash crops, including cashew nut, tobacco, and sisal should also be considered.

2. Identification of key public sector actions to promote food and fiber system development consistent with household and regional food security, and increased returns to both on-farm and off-farm labor. Central to this theme and the Economic Rehabilitation Program (ERP) are policies designed to reduce the degree of general and household-specific market failure found in 1991.

3. Description of changes in land distribution since 1991; if significant inequalities are still found and if farm size continues to be closely associated with key measures of household welfare, then identifying the mechanisms that have caused this inequality becomes an additional research priority.

SYNOPSIS OF KEY FINDINGS:

1991 NAMPULA PROVINCE FARM LEVEL SURVEY

1. Few rural households relied to any significant degree on food markets to meet consumption needs; meanwhile, calorie availability for selected households was found to be low, with at least 25 percent of surveyed households in each district not achieving 80 percent of recommended caloric intake.

2. Farm size was found to be closely correlated with two key measures of household well-being, calorie availability and income. A surprising number of households appeared constrained in their access to land. Many families that appeared to be labor-abundant did not cultivate as much land as expected under the conventional wisdom of land-abundance in rural Mozambique.

3. Off-farm earnings for most households were, on average, less than 15 percent of total family income. Opportunities for off-farm employment and remittances from non-resident family members were limited by Sub-Saharan African standards, as labor markets were weak or missing for many households. As a consequence, those households with low land to labor ratios were most likely to exhibit caloric availability and income levels well below those of their neighbors.

4. Cotton sales constituted the bulk of smallholder income for those who cultivated this region's historically most important cash crop. Significantly, an econometric model of the determinants of household well-being showed that cotton-growers did not, on average, have higher incomes or caloric availability than non-growers. There was some evidence, however, that higher cotton production would benefit growers through increased income and the regional economy through downstream production linkages. The promise of cotton and other cash cropping opportunities were cited as priority areas for researchers and policy makers concerned with improving regional economic performance.

5. The organization of agricultural markets prior to the initiation of the ERP in 1987 had been dominated by a system of legal monopolies, controlled prices, and restrictions on the transport of products across district boundaries. With the official liberalization of markets at the national level under the ERP, small-scale informal sector traders (*ambulantes*) have accounted for an ever increasing volume of products at prices much more closely related to scarcity values than to official prices. However, rural stores (lojas) tied to the former system of district domination by a single firm continued to be the most important commercial agents in the study zone. The 1991 study found "preliminary support to the hypothesis that *ambulantes* are introducing some measure of price competition to the marketing system."

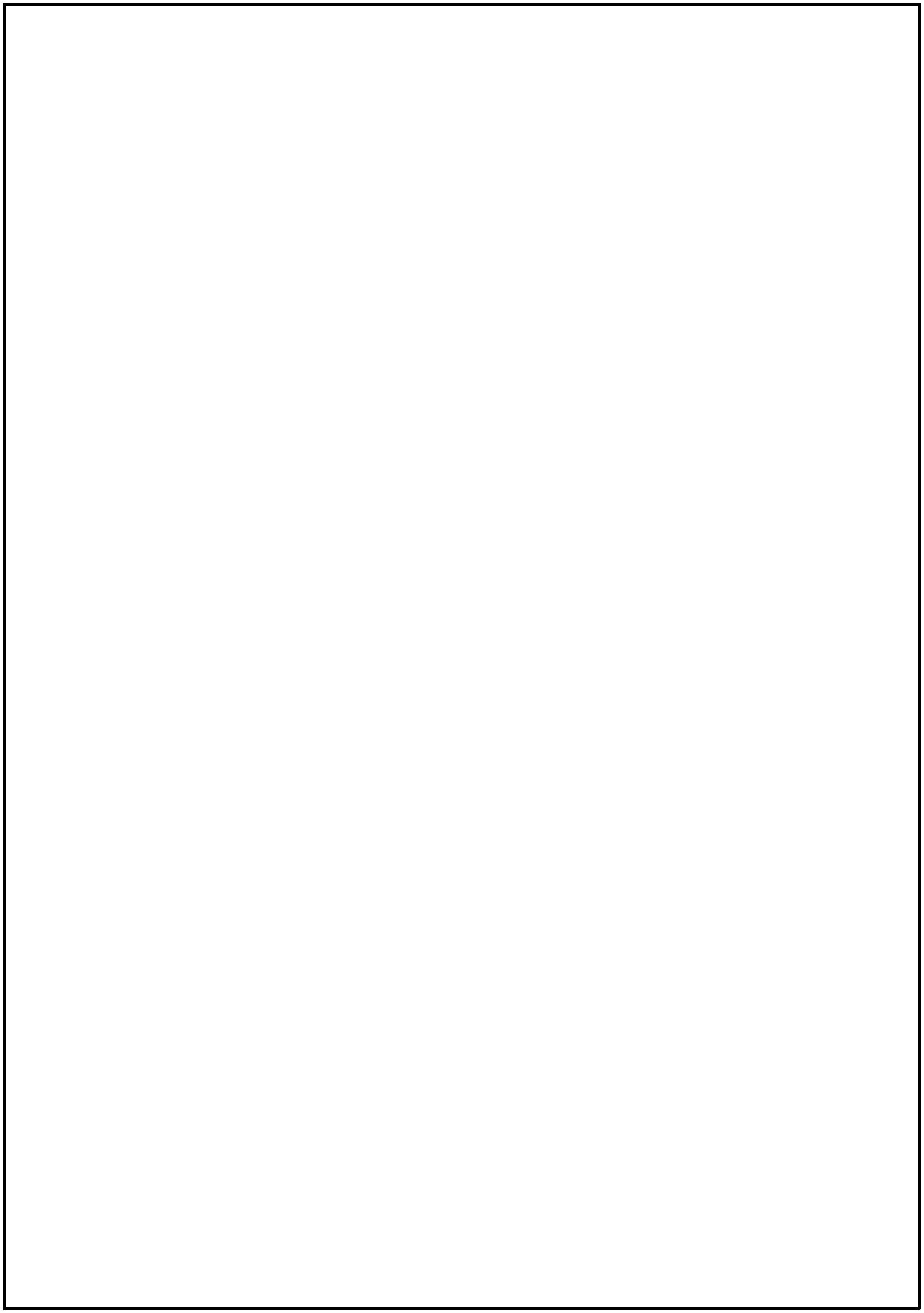
CHAPTER ONE

INTRODUCTION AND METHODS

The signing of the peace accord in October 1992 and scheduling of elections for October 1994 have ushered in a new era in Mozambique. For the first time in nearly 20 years, the country is at peace, and now faces the challenge of reconstructing its society and economy. Nowhere will this challenge be greater than in the smallholder sector of rural areas, where 80 percent of Mozambicans live and are involved in agriculture. The success of Mozambique's transition toward a self-reliant development path will rest on increased productivity in this sector and greater integration of the sector with local, provincial, and national urban centers.

In 1991, the MOA/MSU/UA Food Security Project (FSP) conducted a farm level socioeconomic survey of 343 smallholders in three districts of Nampula Province (see Figure 1

Figure 1.Map of Mozambique



for a map of Mozambique).[1] Also in 1991, the FSP began the Agricultural Market Information System (SIMA). The SIMA has gathered weekly data since that time on agricultural market prices and supply conditions in five markets in the province in addition to 14 other markets in eight of Mozambique's ten provinces. This information has been disseminated via selected radio reports and monthly bulletins.[2]

As a logical extension of its work to date, the project is now poised to renew its research effort in rural areas of the country. This research will be used to contribute to the policy dialogue on strategies for rebuilding the rural production and marketing network and linking it with urban centers. As a first step in planning this research, and as a means of building upon insights gained in the two earlier phases of FSP, a team from the MOA/MSU project conducted a rapid appraisal in Nampula Province during August and September 1993. The team gathered data by conducting interviews at two levels: farm households and agricultural commodity traders. Complementary data collection was done through interviews with key officials of the Ministry of Agriculture (MOA) and Ministry of Commerce (MOC) in the province and village leaders in two rural communities.

The specific objectives of the rapid appraisal were to inform the policy dialogue about the evolution of the agricultural economy in northern Mozambique, especially since the end of rural violence in October 1992, and to help focus a future research agenda in the region. To this end, the present report serves two functions:

[1] For a detailed description of the research methodology from the 1991 farm level study, see MOA/MSU/UA (1992a).

[2] For a more detailed description of the SIMA, see MOA/MSU/UA (1990). Monthly SIMA bulletins, Situaçao do Mercado: Preços e Ofertas de Produtos published by MOA/MSU are also available from May 1991 to the present.

1. To outline more fully the rapid appraisal's goals and objectives, relating the mission to insights gathered over the life of the FSP; and

2. To describe and analyze data obtained in the mission, with an emphasis on how these initial insights may be used to guide future FSP research activities in northern Mozambique over the next two years.

I. Objectives and Previous Findings

The 1991 Nampula farm level survey was conducted under difficult conditions. Renewed rural violence at the time restricted project researchers from travelling to rural areas to supervise survey enumerators and to conduct in-depth interviews with local leaders. To ensure acceptable data quality, a team of project researchers located in Nampula City conducted an intensive two week training session with enumerators and field supervisors. This team then reviewed each questionnaire within a day of its completion, and when necessary sent the questionnaire back for clarification. As a result, the data set has proven valuable in helping FSP analysts describe and analyze key issues related to the region's rural economy (MOA/MSU/UA 1992b, 1992c and 1992d; Dengo, 1992).

The 1991 research raised many policy-relevant questions that could not be fully addressed with the existing data set. A major component of the 1993 rapid appraisal was to revisit a purposively (not randomly) selected group of the 1991 sample and increase the team's understanding of the Nampula economy in key areas outlined below.

1. *To understand the evolution of smallholder food availability under peacetime.*

Key 1991 results had shown that few households relied to any significant degree on food markets to meet consumption needs; meanwhile, calorie consumption was found to be low, with at least 25 percent of surveyed households in each district not achieving 80 percent of recommended caloric intake (MOA/MSU 1992d).

2. *To determine the extent of improvement in smallholder land access under peacetime.*

Previous findings had shown that calorie availability and income were both strongly correlated with farm size. Available evidence also suggested that many households were constrained in their access to land. Many households that appeared to be labor-abundant did not cultivate as much land as expected under the conventional wisdom of land-abundance in rural Mozambique. Further, family fields were often located far from family homes, suggesting the lack of available high-quality land for the smallholder sector. Finally, labor markets were found to fail for many households. Off-farm income[3] represented, on average, only 15 percent of total household income across the three districts, and remittances from non-resident members were low for most households (MOA/MSU 1992d). As a result, those households

[3] The term "off-farm income" as used in this paper refers to all smallholder income derived from any labor employed outside a family's land holdings. This includes agricultural income earned on JVC land, other agricultural income, and non-agricultural income.

with low land to labor ratios were most likely to exhibit caloric availability and income levels well below their neighbors.

3. *To learn about rural population mobility in the post-war environment.*

Since the October 1992 peace treaty, a great many Mozambicans displaced by the war and recent drought have been leaving refugee camps in neighboring countries. The degree to which these refugee populations, or other internally displaced people have been returning to their "places of origin" is unclear.[4] The rapid appraisal was designed to inform researchers and policy makers about the relative importance of these issues within the area studied and their relationship to regional and household food security concerns.

4. *To increase understanding of the evolving marketing system in the province.*

The system of agricultural markets prior to the initiation of the Economic Rehabilitation Program (ERP) in 1987 was dominated by a system of legal monopolies, controlled prices, and restrictions on the transport of products across district and provincial boundaries. With the official liberalization of markets at the national level under the ERP, private traders in Maputo and southern Mozambique have accounted for an ever increasing volume of products at prices much more closely related to scarcity values than to official prices (MOA/MSU 1993a).

Figure 2 shows a simplified diagram of the agricultural marketing system which previous research in Nampula Province had documented. An important result from 1991 seen in this diagram is that rural stores, many of them owned by trading firms based in Nampula City and other urban areas in the province dominated the commercial sector in the districts studied. Further, the 1991 study found that traders and producers continued to believe that official minimum prices represented fixed (legally mandated) prices, in spite of policy reform declarations to the contrary from the national government. New and small scale informal sector entrants, known as *ambulantes*, were found to be active in the trade of several important commodities. The 1991 study found "preliminary support for the hypothesis that *ambulantes* are introducing some measure of price competition to the marketing system." (MOA/MSU/UA 1992b, p.16) The rapid appraisal was designed to intensify an investigation into the effects of policy reforms on the agricultural marketing system in the north.

[4] A note of caution is in order concerning the term "place of origin." In the context of several dramatic phenomena affecting settlement patterns in rural Mozambique over the past three decades (pre-independence Portuguese policy, Frelimo "villagization" policy, the rural violence from 1978-92, and the 1991-92 drought), determining the "place of origin" of particular families is often difficult.

Figure 2.Agricultural Marketing in Northern Mozambique

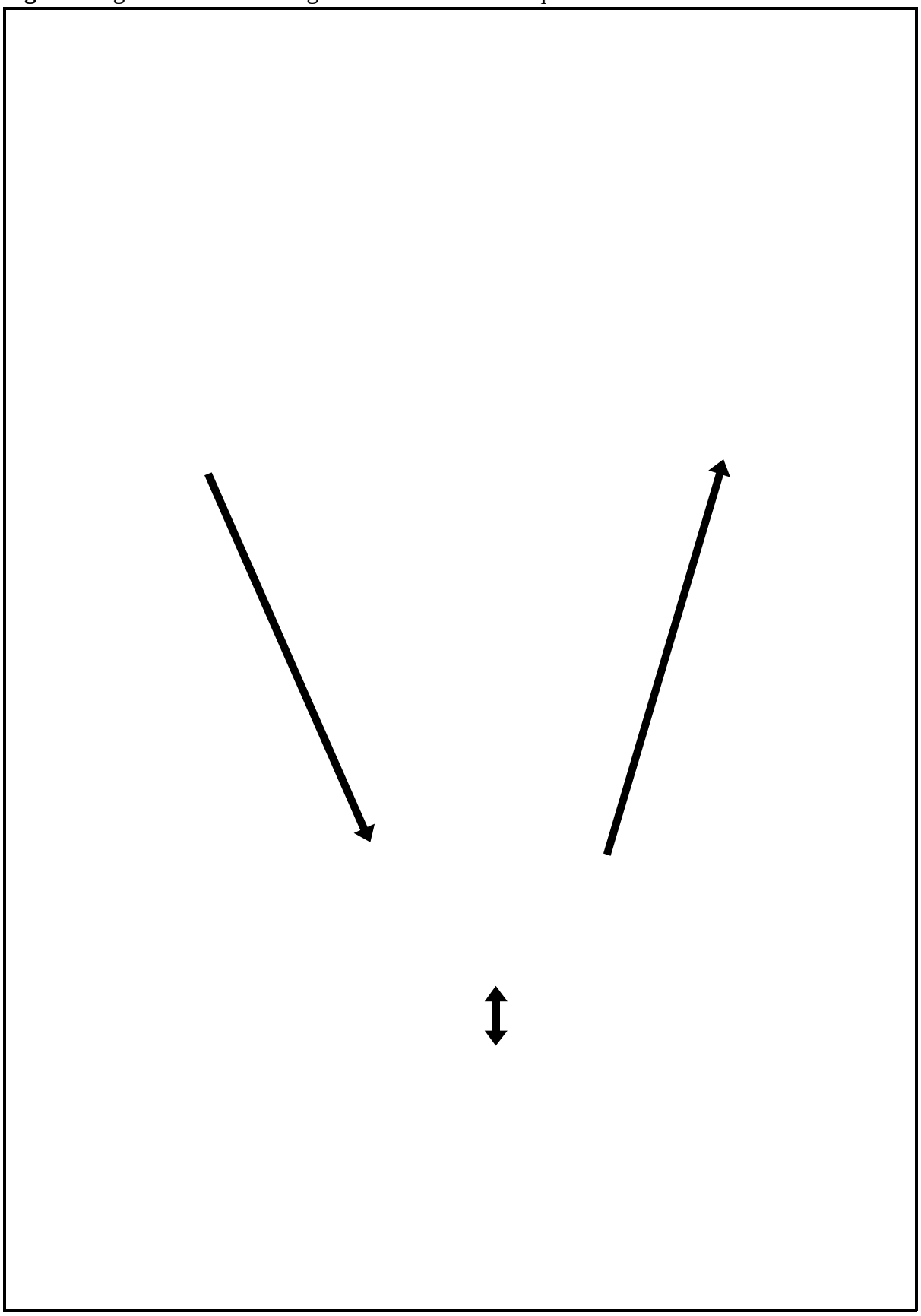


Figure 3.The Organization of Cotton Production and Marketing in Northern Mozambique

Organizational forms of production:

- Smallholder land
  - Receive inputs from JVC (primarily seed and pesticide)
  - Little fertilizer or mechanization
  - Must sell output to JVC at pan-territorial fixed price
- JVC land
  - JVC hires labor
  - More intensive input use (seed, pesticide, and fertilizer)
  - Tractorization

Key JVC subsector activities:

- Importation of inputs
- Production management
- Assembly of raw cotton and transport to local mill
- Processing/transformation
- Marketing for domestic consumption and export

Key cotton policy questions:

- Macroeconomic/trade
- Effect on incomes of smallholders and wages of JVC employees
- Effect on smallholder agriculture investment and capital
- Smallholder/JVC institutional and marketing arrangements

5. *To learn further about cotton sector and its effect on smallholder well-being.*

Previous FSP research identified three key policy issues related to the cotton subsector in Mozambique. First, this question turns on macroeconomic variables in Mozambique and trends in world cotton markets. To what extent does cotton represent a viable method to ease the country's persistent current account deficit? The second issue concerns the appropriate place of cotton in a national strategy for agricultural development. Given the GOM objective that the country increase its food production and approach food self-sufficiency over the medium term, an important research topic is whether increased area planted to cotton can help the country achieve this objective. From the perspective of the smallholder, is cotton a substitute or complement in production with respect to food crops? The final issue is the role of cotton companies in promoting and organizing cotton production. The present national policy maintains the historic local monopoly of the cotton companies. In this system, production takes place either on smallholder land or on large concessions granted by the GOM with the use of hired labor and improved technology. Use of imported inputs was significantly more intensive on company than smallholder fields; smallholders sought increased availability of these inputs, most notably fertilizer to improve the profitability from their perspective. Concerning cotton marketing, all smallholder producers in a given region are legally required to sell their production to the cotton company at a fixed price (MOA/MSU/UA 1992c). Figure 3 provides an illustration of the alternative organizational modes of cotton production found in 1991.

In two of the districts studied in 1991 - Monapo and Ribaue - the sample included villages with a longer history of cotton production as well as villages with less cotton experience. Two cotton joint venture companies (JVCs) operated in Monapo and one parastatal (Secretaria do Estado do Algodao) operated in Ribaue. Among the 228 households surveyed in these two districts, 89 grew cotton in 1990-91 (MOA/MSU/UA 1992c). With the end of war and the continued expansion of JVC activity, the team hoped to learn how these factors have affected and will continue to affect the smallholder sector and its relationship to the JVCs.

6. *To assist in developing a conceptual framework and priorities for future FSP research in the region over the next two years.*

II. Farm and Market Level Sampling Designs[5]

The rapid appraisal mission was intended to achieve the objectives outlined in the previous section with rather limited resources. It was possible to re-interview only a small proportion of the entire sample from 1991; as such, a purposive selection strategy was developed to revisit households based on key characteristics to allow useful comparisons over the two year period.

A. District Selection

The 1991 farm level survey conducted interviews in three districts across Nampula Province which captured much of the region's variation in agro-ecological conditions. Within each district, a sample of five villages deemed "safe" by provincial officials was selected. Due to the wide geographic dispersion of the 1991 study sites and difficult travel conditions in rural Mozambique, researchers limited the 1993 rapid appraisal to cover one district. Monapo was chosen for three reasons:

1. It had the greatest proportion of smallholders who cultivated cotton in 1990-91 (MOA/MSU/UA 1992c), thus providing an opportunity to investigate institutional arrangements between cotton JVCs and smallholders; and

2. Monapo was the district hypothesized to have an agricultural marketing system emerging under ERP at least as rapidly as in the other two districts surveyed in 1991.

3. Monapo exhibited a relatively skewed smallholder land distribution (MOA/MSU/UA 1992d); more recent research has suggested that the district has relatively high population densities and a significant level of land conflicts (Myers, 1993).

These features were expected to allow researchers the best chance to observe the evolution of smallholder integration into the broader regional and national economies.

[5] For a complete description of the rapid appraisal methodology, see MOA/MSU, 1993c.

B. Village Selection

Research from other Sub-Saharan African (SSA) countries suggests that cotton may spark income growth and improved food security among rural smallholders (Lele et al., 1989). Yet results from the 1991 survey in Nampula show that cotton growers' income and food consumption were not significantly higher than non-growers (MOA/MSU/UA 1992c). Thus, increasing the team's understanding of the cotton subsector at this time was a high priority toward the design of a future research agenda in the region. Two villages were selected within Monapo which offered the widest diversity in terms of smallholder cotton production:

1. Mecutine, the village where cotton plays the most important role among the five villages sampled (with 100 percent of interviewed households growing cotton in 1990-91); and
2. Muelege, with the lowest proportion (40 percent) of cotton growers (MOA/MSU 1992c).[6]

displays selected statistics from 1991 data about the 1993 study sites. Aside from the difference in cotton cultivation noted above, there were other key differences between these two villages. For example, more Muelege households grew maize and rice than did the Mecutine sample. Beans were slightly more important in Mecutine, while all farmers surveyed grew manioc. Though household farm size was larger in Muelege than

[6] Note that in Mutauranteme, another of the Monapo villages surveyed in 1991, 21 percent of interviewed smallholders grew cotton. Because of its small sample size, however, it was excluded from consideration here.

Table 1.Selected Statistics from Monapo District, 1991

	Muelege	Mecutine	Monapo District Overall[a]
# Households interviewed in 1991	25	22	109
Mean household size (number of persons)	4.5	4.6	4.1
Mean farm size (ha)	2.23	1.46	1.59
Mean farm size per adult equivalent (ha)	0.73	0.43	0.57
Mean household income[b] (000s Mt)	361	384	369
Share of income off-farm (percent)	18	11	16
CROP PRODUCTION[c]			
% growing maize	88	59	50
% growing beans	72	86	88
% growing manioc	100	100	98
% growing cotton	40	100	57
% growing rice	16	0	13
% w/cashew trees	80	32	62

[a] All district-level statistics are weighted to reflect 1991 sample sizes and populations in the five Monapo villages surveyed

[b] Income includes imputed value of household production consumed within the household

[c] Production statistics are based on the period from September 1990 to August 1991, corresponding to the annual cropping calendar

Mecutine, this is likely due to the relative labor-intensive nature of cotton cultivation in northern Mozambique and the dominant role of cotton in Mecutine.

Table 2.Food Market Position, by Village, 1991

	Muelege	Mecutine	Monapo District Overall[a]
FOOD MARKET PARTICIPATION[b]		-- percent --	
Buy only	0	18	7
Buy and sell	16	18	14
Sell only	80	36	53
Neither buy nor sell	4	27	26

[a] All district-level statistics are weighted to reflect 1991 sample sizes and populations in the five Monapo villages surveyed

[b] Statistics are based on the period from September 1990 to August 1991, corresponding to the annual cropping calendar; percentages may not sum to 100 due to rounding

Table 2 presents information on the food market position of surveyed households from 1991, showing the small role food markets played in meeting household consumption requirements as described in the previous section. Note, however, that food purchases were relatively more

Table 3 Household Market Sales and Purchases, by Village (1991)

	Muelege		Mecutine		Monapo District Overall[a]	
	% Sell/Buy	Mean value for those selling/buying	% Sell/Buy	Mean value for those selling/buying	% Sell/Buy	Mean value for those selling/buying
SALES						
Cotton	40	108	100	153	57	122
Cashew	64	46	18	93	46	80
Other	96	63	64	73	69	83
Total	100	133	100	216	95	165
PURCHASES						
Food[b]	16	64	41	21	29	55
All other	100	101	100	110	98	100
Total	100	111	100	118	100	114

[a] All district-level statistics are weighted to reflect 1991 sample sizes and populations in the five Monapo villages surveyed.

[b] Includes major staples (maize, manioc, beans, rice, peanuts, and sorghum)

important in Mecutine. Table 3 then provides a disaggregated description of household market activity, showing agricultural sales were considerably higher, on average, in Mecutine than in Muelege (largely due to greater cotton sales in the former). Yet, Table 1 showed smallholders in Mecutine and Muelege to have roughly equivalent income levels in 1991.[7] This can partially be explained by higher mean off-farm earnings in Muelege than in Mecutine (Table 1). Lower off-farm earnings in the cotton-intensive village suggest that smallholder cotton production competes with off-farm labor opportunities for surveyed households. While Muelege smallholders had less cotton income, it is noteworthy that a higher proportion of farmers in this village had cashew trees (Table 1) and cashew sales (Table 3) than in Mecutine, though such sales, on average, were significantly lower than those from cotton in either village. These findings point to two key research questions raised above:

[7] A t-test shows no statistically significant difference in this variable between these two villages. Though not presented here, previous FSP econometric analysis showed that cotton-growers did not, on average, have higher income levels or calorie availability than non-growers (MOA/MSU/UA 1992a and 1992c).

1. How can the institutional arrangements between cotton companies and smallholders and the broader policy environment be shaped such that smallholder cotton cultivation can become more attractive and contribute to increased absolute incomes?

2. What other crops (e.g. cashew, sisal, tobacco, and more traditional food crops) have the potential to increase agricultural sales and profitability for smallholders in the region?

Figure 4.Map of Nampula Province

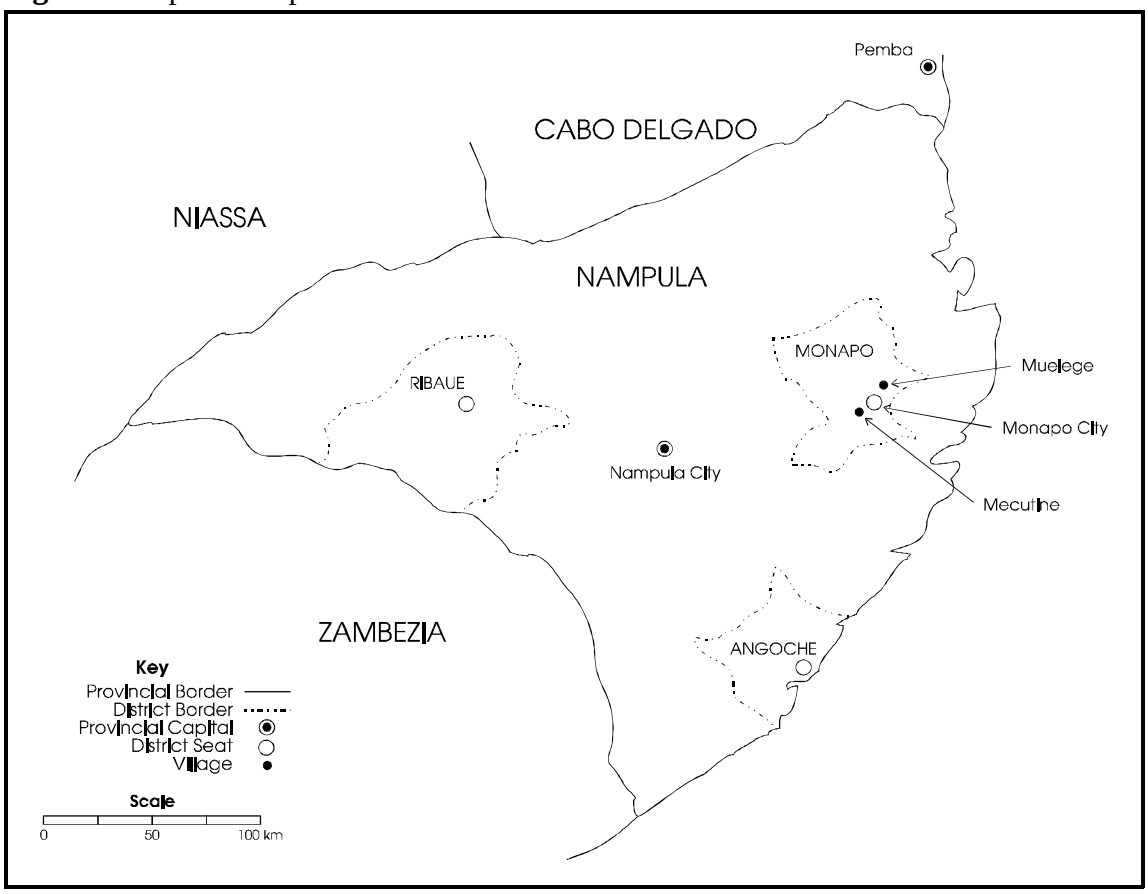


Figure 4 provides a map showing the locations of the three districts surveyed in 1991, and the sites revisited in the 1993 rapid appraisal.

C. Household Selection

In 1991, 22 and 25 households were interviewed in Mecutine and Muelege, respectively. Because of the rapid appraisal constraints outlined earlier, it was necessary to select purposively within these two villages which families would be revisited. Due to the strong association between cultivated land per adult equivalent (CAE) and key measures of household welfare (e.g. income and calorie availability per adult equivalent), selection was based on each household's intra-village ranking with respect to CAE.[8] Specifically, in each village, six households at each extreme of CAE ranking were selected for a total of 12 to be

[8] Adult equivalent definitions are the same as those in MOA/MSU 1992c.

Table 4.1993 Interview Status of Heads of Households Interviewed in 1991

Muelege		Mecutine	
1991 Cultivated Land per AE ranking[a]	1993 Interview Status	1991 Cultivated Land per AE ranking[a]	1993 Interview Status
1	Deceased	**1**	X
2	Deceased	**2**	X
3	Interviewed	**3**	Interviewed
4	Interviewed	**4**	Deceased
5	Deceased	**5**	Interviewed
6	Interviewed	**6**	Interviewed
7	Interviewed	7	Interviewed
8	Interviewed	8	Interviewed
9	Interviewed	9	Interviewed
- - -	- - -	- - -	- - -
15	Interviewed	14	Interviewed
16	Unknown	15	X
17	Interviewed	16	X
18	X	**17**	Interviewed
19	Interviewed	**18**	Deceased
20	X	**19**	Deceased
21	Moved Away	**20**	X
22	Interviewed	**21**	X
23	Interviewed	**22**	Interviewed
24	Interviewed		
25	Interviewed		

[a] Household rank by cultivated land/adult equivalent in ascending order
Bold Indicates those households initially selected to be interviewed in 1993
X Still lives in village, but unable to be interviewed

revisited. A replacement strategy was developed prior to fieldwork such that if a selected head of household was not available to be interviewed, the household next in order would be used as a replacement.[9] Table 4 provides a detailed list of the residency and interview status

[9] Because this was the second time specific households would be interviewed, researchers attempted to take advantage of past household specific data in the current mission. Thus,
(continued...)

of households ranked by CAE. In total, 13 successful re-interviews were conducted in Muelege and nine in Mecutine.

D. Selection of Agricultural Marketing Agents

Increasing investment and competition in the country's rural agricultural commodity markets are fundamental to achieving the goals of ERP. Recall Mozambique's legacy of district-level monopolies dominating such trade throughout the country prior to liberalization. Too, the war destroyed much of the rural marketing infrastructure.

Table 5 Market Share of Household Sales, by Buyer Type and Village (1991)

Type of Buyer	Muelege	Mecutine	Monapo District Overall[a]
	-- percent of total household sales[b]--		
Loja	33	9	29
Ambulante	18	1	8
Cotton Company[c]	41	70	41
Other	7	20	22

[a] All district level percentages are weighted to reflect 1991 sample sizes and populations in the five Monapo villages surveyed

[b] Includes all households sampled in 1991

[c] Includes cotton and all other agricultural purchases by cotton companies

The 1991 Nampula farm level survey gathered data to describe the evolution of the officially liberalized marketing system in the zones studied. Key findings presented in Table 5 showed that market participants associated with the former district monopolies continued to dominate purchases of agricultural products, with the exception of cotton. All cotton was purchased by the cotton companies and rural stores tied to urban wholesalers comprised the bulk of all non-cotton purchases from smallholders surveyed. However, such commercial domination by official sector participants was not complete, as informal sector *ambulante* activity was significant in some villages. Table 5 shows an important contrast concerning the two villages in the 1993 rapid appraisal. For example, in Muelege, *ambulante* purchases of smallholder production were considerably more important than in Mecutine where cotton and the cotton company were dominant.

(...continued)
though one general household level questionnaire was used for all interviews, the instrument was specifically adapted for each household based on 1991 responses.

With this background, the rapid appraisal was intended to increase the team's knowledge of the commercial sector in the region and its relationship to smallholders. The team planned to conduct interviews with key market participants in Nampula City and Monapo District. Nampula City was selected because past research indicated that this was the most important location for wholesaling and urban retailing within the province. During the rapid appraisal, the team was able to conduct detailed interviews with several major wholesalers operating in Nampula City.

It proved more difficult, however, to gather information about the formal commercial sector in Monapo District. The team visited rural stores located in Monapo City and the district's two administrative posts, Itoculo and Netia. Typically, the individuals present in these stores were employed by a non-resident owner; these employees generally were unwilling to participate in detailed interviews concerning firm behavior. They often suggested that the team interview one of the firm's principles, located elsewhere in the province. The team was able to gather limited information about the formal sector in the district from MOA and MOC officials in Monapo City. Finally, the team conducted a small number of interviews with *ambulantes* while in Muelege and Mecutine.

CHAPTER TWO

HOUSEHOLD LEVEL FINDINGS

I. Population Mobility

From Table 4, note that several households in both villages were listed in the "unavailable but still living in the village" category. This was largely the result of two factors. First, many households had moved their residences within the village to be closer to their family fields and therefore away from the village center; because of poor communications to these outlying areas and the team's time constraint, several such households were not interviewed in 1993. Second, in Mecutine, the research team happened to schedule visits on two peak cotton marketing days. As a result, it was difficult to locate and re-interview some smallholders.

Notwithstanding these difficulties, two tentative conclusions may be drawn concerning population mobility among those households living in these two communities in 1991. First, there appears to have been little out-migration by households from these two villages in the intervening period.[10] Second, the within-village mobility cited above demonstrates an improvement in villagers' perceptions of physical security in areas further away from the village center. This suggests that the supply of "safe" and arable land available to the smallholder sector in these communities may have increased since 1991. The extent to which

[10] While all available evidence suggests a low level of population mobility in the surveyed areas, note that no systematic data were gathered during the 1993 rapid appraisal concerning the importance of households migrating to the surveyed villages from elsewhere.

Table 6.Mean Consumption Adult Equivalents per Household, by Village

Village	1991[a]	1991[b]	1993
	-- consumption adult equivalents per households --		
Muelege	3.5	3.9	4.7
Mecutine	3.6	4.1	4.6

[a] entire sample
[b] only those revisited in 1993

this increase in total land availability has helped ease the apparent land-constraint affecting many households in 1991 will be investigated below.

Table 6 shows changes in household size between the two periods. Comparing only households interviewed in both years, the results indicate that the average household size has increased slightly in both villages. Most of the net increase in this variable in Muelege is due to births, while the remainder of household composition changes were due to individuals who either arrived into or departed from the two villages, typically due to marriage or divorce. Significantly, the available evidence suggests few individuals leaving their home to seek improved economic opportunities elsewhere.

To sum up, the evidence presented suggests very little mobility of the population resident in the surveyed villages in 1991. In only one instance did an entire family move away from their village. Further, few if any household members moved to seek employment outside the village in which they resided in 1991. Finally, those households who moved within the two villages between 1991 and 1993 tended to move further away from the village centers, reflecting improvement in the security situation and in some cases an increase in land available to smallholders.

II. Land

This section presents results concerning characteristics of smallholder land access in the two sites studied, making selected comparisons between 1991 and 1993. Recall that a major goal of the rapid appraisal was to investigate the sources of an unexpectedly high degree of land inequality found in 1991, particularly given the important correlation observed between this variable and measures of household well-being. An additional point raised in earlier analysis was the likelihood that factors other than the war were important in explaining the inequality in land-holdings. In light of these earlier findings, insights from the 1993 data may be used to inform two important questions:

1. Has smallholder land access improved, particularly for those most severely land constrained during the war?

2. Has the intra-village ranking of households in terms of land access remained constant over the two year interval, meaning that those most land poor relative to their neighbors have remained so?

A. Farm Size

Table 7.Mean Cultivated Land per Household, by Village (ha)

Village	1991[a]	1991[b]	1993
	-- cultivated land per household (ha) --		
Muelege	2.2	2.5	3.1
Mecutine	1.5	1.4	2.2

[a] entire sample
[b] only those revisited in 1993

As a first step toward identifying changes in household land access in Muelege and Mecutine, consider the results in Tables 7 and 8. Based on Table 7, the amount of land cultivated per household increased significantly in both villages. In Muelege, the mean farm size increased from 2.5 to 3.1 hectares (ha), while in Mecutine the mean increased from 1.4 to 2.2 ha.. Complicating this apparent farm size increase are data presented in Table 8, which show that when farm size is analyzed on an adult equivalent basis, land access actually decreased slightly in Muelege from 0.90 to 0.87 ha, while in Mecutine, mean farm size increased from 0.40 to 0.54 ha. Note that the relative labor intensity of cotton precludes cotton-growing households from cultivating as much land as non-cotton growing households of similar size.

Table 8.Mean Cultivated Land per Adult Equivalent (ha), by Village

Village	1991[a]	1991[b]	1993
	-- cultivated land per adult equivalent (ha) --		
Muelege	0.73	0.90	0.87
Mecutine	0.43	0.40	0.54

[a] entire sample
[b] only those revisited in 1993

Before trying to interpret these results and their implications for smallholder well-being, it is important to shed some light on the source of the changes in the mean values of CAE in the two villages. Note that a change in CAE for a particular household between the two years could be due to changes in cultivated area, household size, or both. Further, recall the results presented in Table 6 concerning changes in household size. In Muelege, a significant number of babies were born to households interviewed in 1993, while there was a smaller net increase in labor availability. As such, family size grew more rapidly than land cultivated for the typical household, thus explaining how mean farm size could increase while land cultivated per adult equivalent decreased slightly. In Mecutine, by comparison, area cultivated increased significantly while household size was relatively more stable, consistent with the increase in land cultivated per adult equivalent in Table 8.

B. Inequality of Smallholder Land Access

The 1991 study revealed an unexpectedly uneven distribution of land among smallholders when adjusted for the number of household adult equivalents. The extent to which the war's end would lessen the degree of inequality was impossible to know with any certainty with existing data. Analysis did suggest, however, that factors in addition to the war were contributing to the considerable inequality observed.[11] Tables 9 and 10 present intra-village CAE rankings of interviewed households for both study periods in Muelege and Mecutine. A relatively stable intra-village ranking is apparent in Muelege. Thus, Muelege families that were land-poor in 1991 were likely to be still land-poor relative to their neighbors in 1993, providing yet another indication that the war's end may not eliminate the land constraint for many households.

Table 10 shows that in Mecutine, intra-village rankings did change modestly. CAE ratios tended to equalize in Mecutine, with farm-size on both an absolute and per adult equivalent basis increasing for most surveyed households. With such a small sample size and such mixed results, it is not possible to make any definitive statement concerning the degree to which access to land is constrained for selected Mecutine households in the post-war period.

[11] See MOA/MSU 1992d, p.31, for a detailed discussion of why factors in addition to the war are likely to be significant in explaining the degree of CAE inequality observed in 1991.

Table 9.Intra-Village Comparison of Cultivated Land per Adult Equivalent (CAE) in Muelege, 1991-93

1991		1993		Change in Intra-Village Rank[c], 1991-93
Rank[ab]	CAE Value	Rank[a]	CAE Value	
		-- intra-village rank and CAE value --		
1	0.26	4	0.43	+3
2	0.29	1	0.25	-1
3	0.37	2	0.28	-1
4	0.37	5	0.57	+1
5	0.38	3	0.40	-2
6	0.55	7	0.59	+1
7	0.56	8	0.68	+1
8	0.66	9	0.70	+1
9	0.72	6	0.58	-3
10	1.45	10	1.02	0
11	2.00	12	2.00	+1
12	2.33	11	1.20	-1
13	2.57	13	2.63	0

[a] Ranking is in ascending order

[b] 1991 ranking only among those interviewed in both years

[c] A positive (negative) change in rank means the household is relatively better (worse) off in 1993, compared to 1991

Table 10.Intra-Village Comparison of Cultivated Land per Adult Equivalent (CAE) in Mecutine, 1991-93

1991		1993		Change in Intra-Village Rank[c], 1991-93
Rank[ab]	CAE Value	Rank[a]	CAE Value	
	-- intra-village rank and CAE value --			
1	0.23	4	0.50	+3
2	0.25	2	0.41	0
3	0.30	6	0.53	+3
4	0.31	3	0.42	-1
5	0.34	5	0.52	0
6	0.34	7	0.54	+1
7	0.35	1	0.35	-6
8	0.59	9	0.85	+1
9	0.82	8	0.73	-1

[a] Ranking is in ascending order

[b] 1991 ranking only among those interviewed in both years

[c] A positive (negative) change in rank means the household is relatively better (worse) off in 1993, compared to 1991

The results presented in the preceding paragraph, while suggestive of a persistent land constraint, even in peacetime, should be interpreted with caution for two reasons. First, the 1993 sample was purposively drawn and small, making tests of statistical significance impossible. Second, because detailed production, consumption, and expenditure data were not gathered during the rapid appraisal, it is difficult to assess whether the most land-constrained households continued to be relatively worse off in terms of key welfare measures such as income and calorie availability. If land-constrained families were able to find attractive off-farm employment, their income could be higher than if they had cultivated additional increments of their own land. Yet, the serious labor market failures which characterized the province in 1991 are unlikely to have seen dramatic improvements within the two year interval. Results below further clarify this issue.

C. Distance from Family Residences to Fields

As highlighted in Chapter 1, a surprising result about smallholder land access from the 1991 study was the long distances many households had to walk between their homes and family fields. For example, the mean walking time between home and family fields in 1991 was 29 minutes in Monapo District, with 30 percent of all family fields 45 or more minutes away. If one assumes the conventional wisdom of land abundance within this vast country, it is difficult to explain why so many surveyed smallholders walked such long distances to their fields. The 1993 rapid appraisal was designed to investigate this issue.

Table 11.Distances to All Cultivated Fields, by Village, in 1991 and 1993

Village	Mean Distance to Fields		Maximum Distance to Fields	
	1991	1993	1991	1993
	-- distance from home to field (minutes)[a] --			
Muelege	30	34	37	50
Mecutine	30	30	38	50

[a] Estimates for both years are made from the same subsample of households

Consider Table 11, which shows that the mean distance between home and field for the typical household has remained fairly constant, even in the context of probable increases in "safe" land supply brought about by the war's end. Further, note that the mean distance of the furthest away field for each household increased from under 40 minutes to 50 minutes in both sites. These results show that for the small sample of households studied, peace has not, to date, significantly reduced the distance they must travel to find fields to cultivate. With greater security, they appear to be going further away to obtain fields. This suggests that some land may be available in the smallholder sector in these villages, but that it is relatively far from family homes.[12] Note also that significant pieces of land relatively near the two villages have been granted by the GOM to large private concessions; this tends to reduce the available land within reasonable walking distance for Muelege and Mecutine families who depend on the local land tenure system.

[12] Recall from above that several households in both villages were listed in the "unavailable but still living in this village" category. One reason behind this was that some households had moved their residences within the village to be closer to their family fields and therefore away from the village center. While this may have biased the results concerning changes in smallholder home to field distance statistics, the team believes that this bias is not large and does not influence the substantive implications in this section.

D. Conflict Over Land

Administration and allocation of land in Mozambique is carried out on at least two levels - "local" and official. These systems overlap in practice, but show important differences as well. The local system is managed primarily at the village level, but is distinct from what is commonly referred to as the "traditional" land tenure system. This local system has emerged from a complex mix of influences, including traditional ethnic and tribal arrangements, the colonial *aldeiamento* (villagization) policy, post-independence Frelimo communal village schemes which strongly affected the surveyed area, and the war and associated movement of rural families away from their places of origin. In light of the far-reaching legal and economic changes now sweeping the country, this system is likely to be in a state of considerable flux at the present time. The official system refers to land whose use rights are governed by legal title recognized by the state. This system is managed at the national and provincial levels, by government authorities.[13] Land cultivated by smallholders surveyed in 1991 was administered largely within the local system. Large concessions granted to national and foreign enterprises and individuals fell under the official system.

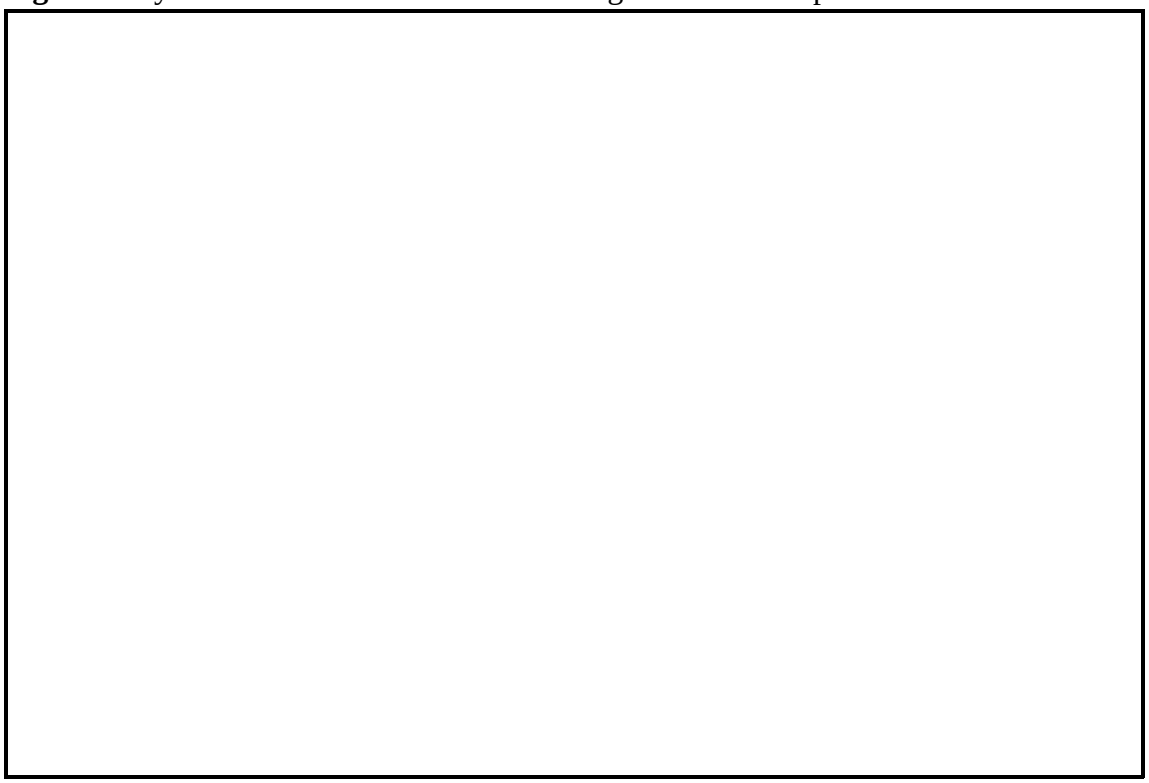
Smallholder conflict over land can take place within the local system, or at the interface between the local and official systems. Results from the 1991 Nampula survey highlighted surprisingly unequal land distribution among smallholders within the local system. Researchers suggested that some of this inequality was likely a result of the way in which land access was governed at the local level. Myers (1993) argues that land conflicts between the local and official systems are significant, and suggests that this type of conflict may intensify if current GOM policy continues to grant large concessions to JVCs and others. Both types of conflict are potentially very serious, and merit research attention.

i. The local land tenure system

Investigation of the local land tenure system is made difficult by its complex origins and current state of flux. Nonetheless, FSP researchers during the rapid appraisal were able to identify some of the key actors in the system and elements of the relationships among them. These results help clarify some of the questions that must be answered if one is to understand fully the nature of conflict over land in Mozambique. Figure 5

[13] For a more detailed analysis of these issues, see Myers (1993) and West and Myers (1992).

Figure 5.Stylized Model of Land Tenure Arrangements in Nampula Province



presents a stylized model of land holding patterns over four villages. The model is meant to capture key aspects of general land holding patterns in the survey area. It does **not** represent actual patterns in any of the villages studied.

Key actors in this model include a local JVC, a *Regulo*, four *Mwénes*, and villagers. The JVC obtained land touching on two villages through the official system, with title being granted at the provincial level (see below). The *Regulo* is a traditional chief who came, during the colonial and FRELIMO regimes, to act as an interface between the traditional and official systems.[14] As a local chief, the *Regulo* is the maximum authority within the local system on issues of land distribution within a given geographical area. This area typically includes several villages. Finally, the *Regulo* has the right to reserve certain lands for the personal use of himself and his family. The areas marked "R" in each village of Figure 5 represent this land reserved for personal use by the *Regulo*.

Under the *Regulo* operates the *Mwéne*. The *Mwéne* typically, though not always, manages issues of land access at the level of the village, and he and his family are given preferential access to land at this level. The boxes marked M1, M2, M3, and M4 in Figure 5 represent personal *Mwéne* land in each of the villages. *Mwénes* at times operate through a *Mecapitão* as the first point of contact with villagers.

[14] See Isaacman (1985) for a discussion of the use of *Regulos* by colonial authorities to manage cotton production.

Any person desiring to open new lands through the local tenure system must operate within this hierarchy. The first point of contact will typically be the *Mwene* or *Mecapitão*, though the final right of determination lies with the *Regulo*. The existence of this hierarchy, and the fact that members of the hierarchy have preferential access to land, raises a number of important questions. First, what proportion of land in any given village is reserved for the personal use of *Regulos, Mwenes, Mecapitãos*, and their families? How rigid is this allocation? If some of these lands are left outside the cropping/fallow system, do villagers have access to this "unused" land? If so, what rules govern this access? Second, what rules govern access by villagers to land not for the hierarchy's personal use? To what extent does relation to the hierarchy improve one's access to this land? Finally, what role, if any, does the local hierarchy play in the granting of official title to land to an outside firm or individual? Is the local hierarchy consulted? If so, what influence do they have over amount, location, and quality of the land in question? These are some of the key questions that must be answered if one is understand to what extent local land tenure systems will guarantee all smallholders access to sufficient land in post-war Mozambique. Other questions which must be addressed relate to conflicts between the local and official systems, to which we turn now.

ii. Conflicts between local and official systems

Myers (1993) argues that land conflicts between local and official structures are a growing and serious problem in Mozambique. He notes that legal title to 83,000 ha of land in Nampula has been granted to date under the official system. More than 90% of this has been done by provincial authorities. Two types of evidence gathered during the rapid appraisal lend support to Myer's contention. First, several interviewees reported that they had already lost or anticipated losing their usufruct rights to a significant amount of land which they had cultivated in 1991. These farmers stated that they had been notified of the immediate plans of JVCs to cultivate commercial crops, most often cotton, on these parcels. They explained that they had received payments for the land that they had previously cultivated, though there was a general sentiment among smallholders that these payments had been insufficient and that the terms of exchange had been imposed by outside forces. To replace their lost land, farmers typically sought land through the local system. These fields were often at considerable distance from their homes and had to be cleared for cultivation.

It is important to remember the limited amount of data researchers have collected on this key issue. Reported statements by smallholders about JVC behavior should be interpreted with caution. Because of the rapid appraisal's time constraints, team members were unable to conduct any interviews with JVC representatives or GOM officials knowledgeable about these issues.

Second, researchers obtained from MOA officials in Nampula a detailed list of all land titled in the three districts surveyed in 1991. After conducting a careful review of these lists, analysts determined that nearly all titled parcels were significantly larger than the typical smallholder farm in the province. As such, it is clear that the official land registration process, as implemented to this point, has secured land use rights of large commercial interests. It does not appear that this process is bringing any such assurances to smallholders.

The role of land tenure security in helping Mozambique achieve agricultural growth with equity is potentially quite important at this point in the country's development. Feder and Noronha (1987) suggest that the lack of tenure security for smallholders in several SSA countries may compromise their investments in land improvement and thus represent a constraint on improved agricultural productivity; if this observation were applicable in the Mozambican context, it could threaten national goals for the agricultural sector under ERP. We suggest that understanding all relevant points of view concerning this issue is of key importance to the broader debate over land policy. This theme represents a priority topic for future research.

III. Cropping Patterns: Food Crops and Cash Crops[15]

Recall that Muelege and Mecutine were selected as study sites within Monapo district because they had the lowest and highest proportions, respectively, of smallholders who grew cotton in 1991. Table 2 presented information concerning interviewed households in these villages with respect to their food crop production and their participation in food markets. Recall that the most important food crops in both villages were manioc, maize, and beans, with rice playing a

Table 12.Food and Cash Crop Cultivation, by Village (percent of sample growing)

Crop	Muelege			Mecutine		
	1991[a]	1991[b]	1993	1991[a]	1991[b]	1993
	-- percent of sample cultivating --					
Manioc	100	100	92	100	100	78
Maize	88	85	85	59	89	89
Beans	72	54	38	100	100	78
Rice	16	23	31	0	0	0
Cotton	40	38	38	100	100	100

[a] entire sample
[b] only those revisited in 1993

[15] With the term "food crop," we refer to the region's basic staples listed above. "Cash crop" refers to any crop whose production is intended for commercialization. Thus, cash crops may include both traditional "export" crops such as cotton, cashew, tobacco, and sisal, as well as food crops.

minor role only in Muelege.[16]

Table 12 presents a comparison of cropping statistics in both study sites by percent of those growing a particular crop in 1991 and 1993. In Muelege, where cotton played a relatively weak role in 1991, the proportion of smallholders growing this cash crop remained constant. Table 13 shows that area planted to cotton remained constant in Muelege, with a mode of 0.5 ha among those growing. Likewise, there was little change in the types of crops grown by this sample from 1991 to 1993. Combining this result with those earlier showing farm size increases among sample households (Tables 7 and 8), it is likely that mean food production for these households increased between 1991 and 1993, while cotton production was little changed. Because of the increase in family size described in Muelege and data limitations noted above, it is not possible to make any firm statement regarding changes in food production per adult equivalent.

Table 13.Smallholder Cotton Statistics, 1991-93, by Village

Village	1991[a]	1993
	-- modal area of those growing (ha)[b]--	
Muelege	0.5	0.5
Mecutine	0.5	1.0

[a] Only those revisited in 1993

[b] Modes represent the best measure of central tendency in this data, particularly due to one outlier in Muelege. The 1991[a] and 1993 means in Muelege (among those growing) were 0.7 and 1.2 ha, while in Mecutine the corresponding values were 0.52 and 0.95.

[16] Note that data were not gathered in the rapid appraisal to allow comparisons of area planted by crop due to the complex issues related to intercropping. One important exception, however, concerns area planted to cotton which is typically monocropped.

The relative importance of cotton increased significantly in Mecutine among surveyed households between the two survey periods, while the food crop mix was little changed. It is striking that most farmers who had been cultivating one-half hectare in 1991 doubled their area planted to this crop in 1993. Too, while land area in cotton on average doubled, total area planted to food crops per household in Mecutine either increased or remained constant with only one exception. This suggests that Mecutine farmers may have experienced an increase in cash income from cotton while also increasing food production since 1991.

Results in Tables 12 and 13, combined with those in Tables 7 and 8, point to increased agricultural production for most households in the sites studied. Smallholders in the cotton-intensive village of Mecutine increased dramatically their cotton production, while those surveyed in Muelege probably witnessed a modest increase in food crop production between the two survey periods. While these increases are encouraging, firm conclusions concerning the degree to which smallholder well-being has improved in the post-war environment require more detailed information on agricultural sales, off-farm labor, and food purchases. Such information could provide key insights concerning income distribution and the extent to which all smallholders have participated in any improvement in the regional economy. Assuming macroeconomic and international trade conditions affecting cotton do not change adversely, it appears that this crop may have the potential to play a key role in sparking regional economic growth and improving smallholder well-being. In short, all traditional export crops grown in the region (including cashew nut, sisal, and tobacco) and their relation to food crops merit further research.

IV. Off-Farm Income

Recall that in 1991, off-farm labor, on average, represented less than 15 percent of total household income. While these figures were low by Sub-Saharan Africa standards (Haggblade, et al., 1989) they were not unexpected in light of the rural violence and insecurity affecting the province. Given the central role of land holdings vis-a-vis household food security in 1991, the failure of labor markets probably affected land-poor households more severely than their neighbors with larger areas under cultivation.

Table 14.Off-Farm Labor Participation, 1991-93, by Village

Village	1991[a]	1991[b]	1993
	-- percentage of households with off-farm income --		
Muelege	44	31	31
Mecutine	82	67	56

[a] entire sample
[b] only those revisited in 1993

Because detailed earnings data were not gathered in 1993, it is not possible to compare total household off-farm income between the two study periods. Results in Table 14 suggest that resident members continued to participate in labor markets at rates similar to those found in 1991. In both villages, most off-farm labor was tied to large scale agriculture; due to seasonality associated with agriculture and competition for labor from smallholder plots, most employment episodes were short in duration. In Muelege, 31 percent of interviewed households reported some income earned off-farm by household members. Smallholders in Mecutine appear to have slightly higher levels of successful labor market participation than those in Muelege, with 56 percent of households surveyed deriving some income from off-farm labor in 1991. Note however, that on an absolute level, mean off-farm earnings in Muelege (65,000 Mt) were higher than in Mecutine (42,000 Mt), but still represented relatively small proportions of total household income (18 percent vs. 11 percent) in both villages.

The majority of households interviewed in 1993 indicated that they would prefer to have more off-farm income earning opportunities in the future. In fact, over one-half of all respondents reported that when their children complete their education, they would like them to seek employment outside the village. The desire to increase the role of non-cropping income in rural SSA household food security strategies has been recently documented by Reardon, Delgado, and Matlon (1992). The most relevant causes of diversification from household-level data in this study include lack of irrigation, credit/capital market failure, land constraints, migration opportunities in cities, and local non-farm opportunities in backward or forward linkages with agriculture.

In sum, while no firm conclusions are possible about off-farm income changes among Nampula smallholders between the two study periods, it is important to consider the three types of effects which the JVCs are having on the local economy. First, JVCs have a direct effect on wages and employment as they hire labor to work in production activities. Because of the common seasonality of JVC and smallholder production, this type of JVC labor demand may compete directly with own-farm labor by smallholders. Second, and perhaps more important, are the indirect effects of JVC economic activity. Assembly, transport, processing, and distribution of cotton may have a significant multiplier effect on local economic activity. Finally, increased cash earnings from agriculture may generate consumer demand for goods and services with strong linkages to the local economy. This may represent a significant source of growth potential for the regional economy. A detailed study is critical of the JVC-smallholder relationship, the scale and technology of cotton processing in the region, the seasonality of labor demand between agricultural and non-agricultural employment, and the investments necessary to promote an expansion of cotton and food production in this region consistent with concerns for smallholder income growth and enhanced food security.

CHAPTER THREE

AGRICULTURAL MARKET LEVEL FINDINGS

Reforms under ERP had been predicated on the belief that markets would emerge and replace the previous government managed system of production and distribution. Since its inception, the FSP project has sought to inform policy makers about agricultural market performance under ERP. Central to this purpose has been the development of the Agricultural Market Information System (SIMA). The SIMA has provided timely information to private sector marketing agents, producers, and policy makers about the agricultural price and supply situation around the country since the FSP's inception in 1990. More broadly, the NDAE Working Paper Series and the SIMA have contributed toward an understanding of agricultural market performance as the GOM has implemented major macroeconomic and commercial policy reforms under ERP.

From the 1991 Nampula farm level survey, data were gathered which allowed FSP researchers to develop an initial description of the rural marketing system in the three districts studied. This permitted the project to inform policy makers about some of the effects of reforms on smallholders in the region. Recall that a key objective of ERP had been the elimination of barriers to trade which had characterized the agricultural marketing system previously. The most significant conclusions about the agricultural marketing system and its relationship to smallholders in Nampula Province from 1991 were:[17]

1. The great majority of producers participated in the food market[18], though significantly more often as sellers than as buyers. Still, with little exception, smallholder food security strategies were oriented around assuring food supplies from family production before relying on food markets to meet subsistence needs. The market was found to succeed in moving food out of rural areas for urban consumption, "but to date plays little role in bringing it in or even redistributing it in these (rural) areas." (MOA/MSU/UA 1992b, p.16)

2. In those villages with closer ties to cotton JVCs, cotton represented the majority of the value of agricultural sales for most smallholders. Cashew nut sales were an important source of smallholder income in Monapo and Angoche Districts, while maize sales provided the largest share of cash income of any single commodity to the typical Ribaue household.

3. There was indication that ERP reforms designed to decrease the degree of geographic monopolies were taking hold. Informal sector *ambulantes* were emerging in rural areas and apparently providing some degree of price competition with rural stores for smallholder marketed surplus.

4. Notwithstanding the informal trader activity noted, official wholesalers with historic ties to the region were still found to be the most important actors in the province's commercial

[17] For a more detailed description of the 1991 findings in this area, see MOA/MSU/UA 1992a.
[18] Note that the definition of food markets is limited to the region's basic staples: maize, rice, beans, manioc, peanuts, and sorghum.

sector (See Figure 2). District-level stores, many of them tied to wholesalers in Nampula City, continued to dominate marketing of most food products. In contrast to the prices offered by *ambulantes* to smallholders often above the official minimum, rural stores were found to pay prices close to the minimum for key commodities such as maize and beans (MOA/MSU/UA 1992b).

Given this background concerning the agricultural marketing system, the rapid appraisal was designed to investigate two interrelated questions regarding the system's evolution and its relationship to smallholders.

1. What role do food markets play in meeting food security and income needs for rural households?

2. Have the policy reforms under ERP designed to liberalize market entry resulted in a more competitive environment in which smallholders purchase and sell agricultural commodities?[19]

I. Smallholder Behavior and Attitudes about Food Markets

Smallholder food security strategies continued to be oriented around food self-sufficiency in 1993. All surveyed households with food sales in 1993 said that they decide how much food to sell only after meeting perceived household consumption needs for the year. On the other hand, two insights gathered in the rapid appraisal suggest that the low proportion of calories attributable to food purchases from 1991 may have increased modestly, particularly for those households with relatively high cash cropping activity.

Consider first the case of Mecutine. In this village, most interviewees said it was easier to purchase food (and non-food items) in the village in 1993 than two years earlier. They attributed this to the expanded supply of goods available from two sources: a store operated in the village by the cotton company and the increased presence of informal sector *ambulantes*. Another sign pointing toward increased competition in rural markets is the increased role of *ambulantes* cited by interviewed households. Recall from Table 5 that *ambulante* purchases represented only one percent of all smallholder sales in Mecutine in 1991. While the change in *ambulante* activity in 1993 cannot be quantified due to insufficient data, two additional observations gathered during the rapid appraisal point to significant *ambulante* activity in this village in 1993. First, on each of the three days when the team visited Mecutine, various *ambulantes* were selling food and non-food items (including used clothing and fabric).[20] Second, selected interviews with *ambulantes* conducted by team members in Mecutine

[19] The rapid appraisal did not gather detailed consumption, production, and expenditure data among smallholders. Thus, insights here are drawn from trader and smallholder interviews of a more general nature.

[20] Note that food items being sold by ambulantes did not include major staples. Rather, the most frequently observed food product sold by ambulantes was dried fish.

revealed significant increases in their reported activity since the end of rural violence and the improved security situation.[21]

Muelege represents a contrasting picture. While there was general agreement among surveyed smallholders that the ability to buy and sell goods in the village had increased some, several reported that it was necessary to travel to Monapo City to conduct such economic activity. The availability of goods from *ambulantes* in the village improved from 1991 levels according to most interviewees; however, this was still considered irregular by most smallholders. Note that the cotton JVC operating in the district does not operate a store in Muelege, though it does so in Mecutine.

The reasons behind the apparent divergent market performance between the two villages merit research attention.

II. Commercial Sector Development

Team members conducted interviews with a number of commercial sector participants in both the formal and informal sectors and among MOA and Ministry of Commerce (MOC) officials in Monapo City to learn more about how liberalization under ERP and peace time had affected regional market structure.

A. The Official Sector

As shown in Figure 2, rural stores have historically been owned and managed by firms based in Nampula City or other urban areas in the province. A list of officially licensed firms operating in Monapo District obtained during the rapid appraisal highlights the continuance of this rural-urban trading network. This document showed 73 rural stores and one wholesaler with official licenses in the district. Reflecting the devastation of the rural marketing system brought about by the war, an MOC official reported that 30 of the rural stores on this list had been either destroyed or closed in recent years.

As stated in Chapter One, it was more difficult to gather detailed information about the formal commercial sector in Monapo District. Employees present in the stores visited were often reluctant to take part in detailed interviews concerning their store's activities. In Nampula City, team members interviewed several major wholesalers with ties to rural areas of the province. Key insights learned in these interviews include:

1. Interviewees reported that their firms do not purchase agricultural products from most parts of the province, instead focusing their activity on sales of goods imported through the

[21] Note that the team coincidentally visited Mecutine during the peak period of cotton purchases by the cotton company. With smallholders receiving payment on these days, this undoubtedly attracted more ambulantes to Mecutine than would normally have been operating there.

provincial port of Nacala. The most often cited reason why they choose not to participate in these markets relates to the high cost of capital.[22]

2. Price volatility and poor information concerning price changes deter other large wholesalers from purchasing smallholder production. Several traders in Nampula City and Monapo City explained that instability brought about by unstable yellow maize food aid deliveries caused them to avoid purchase of domestic production.

3. One wholesaler stated that his firm had made significant purchases of provincial white maize production during the current season, but that he had refrained from doing so in Monapo District because "the farmers do not know how to dry and store their production." To the extent that this perception of Monapo farmers is representative of regional traders, the issues of types of post-harvest technology merit further attention by researchers and extension specialists.

4. One rural store reported that he was building increased storage capacity in urban centers of the province for storage. Such investments show that some firms are investing in rural marketing infrastructure and are confident about potential commercial opportunities in the region under peace time.

B. The Informal Sector

The term "informal sector" has been used in this paper, though it has not been defined. To clarify, this term refers to those firms which operate without an official business license from the Ministry of Commerce (MOC). Likewise, any firm with such a license is considered part of the "official sector." Such informal traders, known as *ambulantes*, are in a legally unclear state. As noted in a previous NDAE Working Paper on agricultural markets in the south, "...though (informal sector traders) may enjoy *de facto* legality, mere tolerance from authorities can change quickly in Mozambique's volatile setting. Recent heated public debate regarding the desirability of the continued existence of this sector underscores this point." (MOA/MSU 1993a, p.40)

To understand why *ambulantes* continue to operate in the informal sector, consider the requirements to become officially licensed. According to documents provided by an MOC official in Monapo City, to receive a commercial license requires documentation of the following: 1) 5,000,000 Mt on deposit in a bank account, 2) no criminal record, 3) fourth grade educational achievement, 4) a certificate of good health issued by a medical official, and 5) a certificate that the proposed licensee is not prohibited from engaging in commerce.[23] The MOC official who provided this information said that it normally takes a minimum of 90 days to accomplish all these steps because of bureaucratic rigidities and problems in documentation. Onerous licensing requirements often have unfavorable economic effects in SSA settings.

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[22] Wholesalers reported that the nominal interest rate on bank loans was 45 percent in August 1993.

[23] A preliminary review of Mozambican commercial law suggests that employees of the state may be prohibited from engaging in commerce.

While these costs of formalization tend not to deter entry into commercial activity on the part of small firms in Mozambique and elsewhere who may disregard them, evidence from Swaziland and Niger suggests that such rules tend to act as a barrier to growth and formalization as they achieve a minimum threshold level of activity (Mead, 1993). Based on these insights, we suggest more information is needed in Mozambique on licensing procedures to determine to what extent these requirements are preventing traders from entering and becoming established in the commercial sector.

C. Inter-provincial Trade

Considerable attention has been paid in recent policy debates to the role of food aid in post-war Mozambique. A particular focus of that debate has been the degree to which large imported shipments of yellow maize at concessional terms serve to dampen demand for domestically produced white maize.[24] This issue is of particular importance to northern Mozambique, given its potential for being a large maize exporter to the rest of the country.

Information gathered during the rapid appraisal suggests donor policy vis-a-vis food aid imports and purchase of domestic production has played a significant role in the performance of Nampula maize markets. For example, several individuals contacted in Monapo City explained that most of the district's marketed surplus had been sold to a Nacala firm with a large contract to purchase production for emergency food aid distribution in neighboring provinces. A Nampula wholesaler reported that he had recently shipped 2,000 metric tons of domestically produced maize to his firm's Maputo warehouse for sale there. He warned, however, that expansion of such activity by his firm was limited by the great degree of price uncertainty brought about by poor information concerning food aid deliveries and the impact that those deliveries have on price. The extent to which food aid oversupply and uncertainty limit producer incentives and dampen a regional maize supply response to improved security and economic reform represents a priority area for research.

[24] For more detailed discussion, see MOA/MSU 1993b and Dorosh, et.al., 1993.

CHAPTER FOUR

PRIORITIES FOR FUTURE RESEARCH

In 1987, the GOM began a series of reform measures under the ERP. These reforms were predicated on the belief that markets would emerge and replace the previous statist system of production and distribution. Reduced to its core, the goal of these policies was to provide an enabling environment that would energize a largely undeveloped private sector, increase aggregate output and investment, and improve the living standards of the country's population (MOA/MSU/UA 1990).

Countries throughout Sub-Saharan Africa liberalized their economies during the past decade. In their analysis of SSA economic performance under these policy regimes, Carter and Barrett (1993) argue that getting the state out of price determination, privatization of state enterprises, and a number of other reforms common to these programs are necessary but insufficient to promote sustainable economic growth and transformation. Mozambique has achieved considerable progress under ERP since 1987, even during the wartime conditions that characterized the country through late 1992. Some of the past macroeconomic distortions have been corrected (Kyle 1991) and markets have begun to develop throughout the country. Yet, for Mozambique to realize its growth potential and improve the living conditions of its population, macroeconomic balance and private markets are not sufficient. The country needs investment on a massive scale, along with effective coordination of economic activity. For this to happen, the role of the state in the economy must be redefined, and "market-friendly" policies must be identified and implemented[25]. FSP farm and market level research and the SIMA have played a role in this effort since 1990, developing the empirical information so crucial to effective policy reform (Weber, et al., 1988).

As 1994 begins, there is widespread optimism that Mozambique is poised to make progress toward the goals of ERP. The 1992 peace treaty and the presence of United Nations peacekeeping forces have resulted in the end of rural violence and have set the stage for the first national election in the country's history. The early 1990s have also brought about increased investment in agriculture by domestic firms and several JVCs. This report has highlighted JVC activity in Nampula Province and the dominant role that these firms play in the cotton subsector. It is generally believed that such partnerships between the GOM and international agribusiness firms have the potential to benefit the country in two ways. First, cotton and its derivative products may once again become an important source of foreign exchange. In the face of Mozambique's large current account deficit and severe dependence on concessionary aid, any method to promote increasing exports deserves considerable attention by researchers and policy makers. Second, earnings by smallholders from cotton may bring about investment in smallholder agriculture financed by domestic savings, with the prospect of increased cash and food crop output over the medium term.

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[25] Carter and Barret propose a more active developmental state than has been common among development policy specialists during the past decade. They speak of "market-friendly" policies as policies that actively encourage and complement market activity while not lapsing into some of the statist mistakes of the past.

I. Lessons from the Rapid Appraisal

The MOA/MSU research team undertook the 1993 rapid appraisal with the goal of achieving six objectives detailed in Chapter One. To review, the objectives were to:

1. Understand the evolution of smallholder food availability under peacetime.
2. Determine the extent of improvement in smallholder land access under peacetime.
3. Learn about rural population mobility in the post-war environment.
4. Increase understanding of the evolving marketing system in the province.
5. Learn further about the cotton sector and its effect on Nampula smallholders; and
6. Assist in developing a conceptual framework and priorities for future FSP research in the region over the next two years.

The conceptual framework, outlined in Chapter One, used insights from the 1991 Nampula farm level survey to guide the current research methodology. Since the beginning of the 1991 study, the team has sought to describe and analyze the agricultural economy in the province, with the goal of helping policy makers find ways to promote national economic goals under ERP while improving smallholder food security and incomes.

The 1991 study found that farm size per adult equivalent was strongly associated with two measures of household well-being: calorie availability and income. The reasons behind the inequality in land access in an apparently land-abundant country were not clear. Some suggested that the war could explain most of the inequality; proponents of this view believed that the war's end would bring about an end to the land constraint to increased agricultural production for rural smallholders. The FSP research team argued that it was "implausible to ascribe all the observed inequality to the war." (MOA/MSU/UA 1992d, p.38)

The 1993 farm level data has helped inform the issues surrounding the land debate. In Mecutine, the cotton-intensive village, farm size on a household and adult equivalent basis showed modest increases for surveyed households from 1991 levels. The degree of land inequality lessened as well in this village. Yet land conflicts discussed by Myers (1993) were also evident in Mecutine. Several interviewees reported that they had already lost or anticipated losing usufruct rights to parcels they cultivated in 1991.

Surveyed smallholders in Muelege expanded area under cultivation, though on an adult equivalent basis little change was observed. Food crops accounted for most of the increase in area cultivated, while area planted to cotton remained constant. There was little change in land inequality in Muelege form 1991 to 1993. Smallholders in this village also reported losing the rights to some parcels cultivated in 1991.

Results presented in Chapter Two suggest that smallholder food security strategies continued to be oriented around self-sufficiency. All surveyed households said that decisions about commercialization of household food production were dependent first on meeting anticipated family consumption requirements. Surprising to many, the 1991 survey showed no significant distinction in the earnings or calorie availability among smallholders growing cotton and those who did not. Modal area of cotton doubled between the two survey periods in Mecutine with all surveyed households growing this cash crop; little change in cotton production was

apparent in Muelege from 1991, where less than one-half of 1993 respondents grew this crop in the past year. An unanswered question is whether cotton-growers are now systematically enjoying higher incomes than non-growers. Additionally, there is some reason to believe that Mecutine smallholders, all of whom grow cotton, have higher income because they live in a village with an apparently stronger presence of the cotton JVC.

Agricultural and non-agricultural product market performance apparently improved in parts of the region. From the smallholder perspective, in Mecutine where cash income from cotton was highest, smallholders reported increasing availability of many products for purchase in the village (with the exception of basic cereals). In Muelege, surveyed households reported improvements in product availability, but opportunities for purchase were primarily in Monapo City and not regularly in the village.

The role of income from off-farm labor was relatively small in 1991 throughout the province. Results from 1993, while not conclusive, suggest little change in off-farm labor participation rates in the two villages studied. Most off-farm labor opportunities for smallholders in both villages continued to be related to JVC agricultural production. There was little or no apparent increase in the role of non-agricultural labor earnings in the region, though many households expressed a strong interest in diversifying away from agriculture if such opportunities were to become available.

II. Implications to Guide Future Research

With the signing of the peace accord in October 1992 and the expected elections in October 1994, the prospects for rapid and broad-based growth in Mozambique are more promising than they have been in recent memory. The potential for agricultural-led growth in the rural economy of northern provinces is great. Agroclimatic conditions are excellent, smallholders have a history of cash crop production, and traders are beginning to respond to the improved policy and security environment. As a result, market performance is beginning to improve. Foreign agribusiness firms are increasingly investing in production and processing enterprises in rural areas. These enterprises hold the potential to be engines of growth in these areas. Yet this desirable outcome cannot be considered certain. The effects of cash crop production on smallholder farm income depend in large measure on how input supply, production, and marketing are organized (Lele, et al., 1989). The employment generated by processing facilities and other related activities depends on the technology utilized, the policy environment, and the availability of capital among potential entrepreneurs. Finally, previous findings regarding land distribution in the area signal concern about the distribution of benefits from cotton production.

With these concerns in mind, the team believes that the research areas which should be accorded the highest priority in the next phase of the project are:

1. Evaluating the effects on smallholder welfare and the local and national economy of alternative institutional arrangements between smallholders and cotton JVCs. Other cash crops, including cashew nut, tobacco, and sisal should also be considered.

2. Identification of key public sector actions to promote food and fiber system development consistent with household and regional food security, and increased returns to both on-farm and off-farm labor. Central to this theme and the ERP are policies designed to reduce the degree of general and household-specific market failure found in 1991.

3. Description of changes in land distribution since 1991; if significant inequalities are still found and if farm size continues to be closely associated with key measures of household welfare, then identifying the mechanisms that have caused this inequality becomes an additional research priority.

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