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Research results from SIMA-Department of Statistics and Department of Policy Analysis  
MADER-Directorate of Economics

## ***Maize Exportation: Threat to Rural Food Security?*** ***Results of a Survey of Rural Households in Northern Mozambique***<sup>1</sup>

***By: SIMA Research Team***

### **INTRODUCTION:**

The question of how family sector producers in Mozambique ensure their food security in the face of a reduction in availability of cereals has become a subject of important discussions among politicians, researchers, and decision makers in the Ministry of Agriculture (MADER) and elsewhere throughout the country. A key element in the discussions has been the export of food crops, especially maize, to neighboring countries, and the effects that exportation can have on local prices and food security in rural areas. This discussion was particularly intense during the marketing year 2001/2002 because there were maize exports to Malawi during a year of reduced production and prices for maize in the north rose dramatically. In addition to the concerns for food security in the zone, some maize millers complained of the difficulty in obtaining sufficient quantities of maize for milling.

There are various arguments both for and against taking steps to prevent exportation in years such as 2001/2002. To inform the debate based on empirical evidence from family sector producers, the Department of Policy Analysis of MADER, with the Agricultural Market Information System (known by its Portuguese acronym, SIMA), designed and implemented a survey of producers in northern Mozambique. The survey was designed to obtain producers' perceptions on the crop year as well as their assessment of strategies to ensure their own food security, comparing strategies from good years (such as 2000/01) to years of scarcity (such as 2001/02). This *Flash* presents the results of that survey.

### **METHODOLOGY:**

The Survey on Food Security (FS) was carried out during the second week of November 2001. A special focus was placed on the role of exports during a year of scarcity

(poor production) in the food security of households. The target group of the survey was smallholder producers of food crops residing in zones from which maize grain was exported. These zones include the provinces of Niassa, Nampula, and Zambezia; the districts covered are a combination of districts along the Malawian border with Mozambique and other districts with high total production of maize. These districts were the following: Cuamba, Mandimba and Mecanhelas in Niassa Province; Malema and Lalaua in Nampula Province, and Alto Molócue, Mocuba, Milange and Gurue in Zambezia Province. In sum, nine districts in three provinces were included in the survey.

In each district, three villages were selected, based on information from the district directors on production and marketing of agricultural commodities. Within each village, five to seven households were randomly selected. Interviews were conducted individually with the heads of households of each household, regardless of their age or marital status, as long as the household grows food crops. A total of 167 households was interviewed.

The survey was conducted in two parts. The first part was designed to cover the household strategies to ensure food security in 2001/02 (a year of reduced harvest, high exports, and high prices) compared with strategies in 2000/01 (a year of relatively normal production levels, low exports, and lower prices). The second part of the survey covered various aspects related to market activities, comparing the marketing years of 2001/02 and 2000/01.

### **RESULTS:**

#### **Food Security Situation Last Year and This Year**

Table 1 portrays the food security situation for the households interviewed, for both the year before the

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<sup>1</sup> The opinions expressed here are entirely the responsibility of the author, and do not reflect in any way the official opinions of the Ministry of Agriculture and Rural development (MADER).

interviews (2000/2001) and the current year (2001/02). In the three provinces where interviews were conducted, more than 50% of the households indicated that their food security was good or very good in 2000/01. Zambezia Province had the lowest level with 53% of households indicating that food security was good/very good in 2000/01, compared to Nampula with 77% of households. These numbers suggest that the harvest may have been better in Nampula Province that year.

Comparing the two years, more than 80% of households in each province stated that their food security was worse in 2001/02 than in 2000/01, with no great difference in percentage across the three provinces.

**Table 1.** Food Security Situation of Interviewed Households (HH), 2000/01 and 2001/02

Own assessment of HH food security	Response Type	Zambézia	Nampula	Niassa
		% that responded "yes"		
Last year (2000/01)	Good/Very good	53	77	60
	Regular	45	21	27
	Bad	2	3	13
This year (2001/02) compared with last year	Better	1	3	4
	Same	15	8	4
	Worse	84	90	89

When asked about the causes for worse food security in 2001/2002, the majority of households indicated excessive rains as a principal factor, with other factors including pests particularly wild animals (monkeys, wild pigs, and even elephants). The few households who indicated that they were in the same situation each year (i.e., good in both years) attributed this to good cassava harvests.

### Most Common Strategy to Ensure Food Security

Table 2 provides a summary of household strategies used to ensure food security in the two marketing years of 2000/01 and 2001/02. Cassava consumption was very important for households in Zambezia Province (more than maize), in 2000/01 as well as in 2001/2002, such that 45% of interviewed households stated to ensure food security during the hungry season.

The importance of cassava as a strategic food security crop increased in Nampula, such that while only 33% of households had used cassava as a principal strategy last year, this year 54% of households used it. Although in Nampula and Zambezia, cassava consumption is important, the same is not true in Niassa, where the consumption of this crop is relatively less important, never being the principal strategy of the majority of households.

Last year, maize consumption was the most common strategy used by households in Nampula (62%) and on Niassa (67%). However, this year, maize consumption was stated as the principal strategy by only 13% of households in Nampula and only 38% in Niassa.

**Table 2.** Principal Strategies used by Households to Guarantee Food Security, 2000/01 and 2001/02 (in percentages)

Most Used Strategy	Zambézia		Nampula		Niassa	
	Last year	This year	Last Year	This year	Last year	This year
Own maize	31	5	62	13	67	38
Own cassava	57	44	33	54	18	18
Other crop (own)	6	5	3	3	7	2
Purchased Food/In Kind labor payment	6	46	3	31	9	42

Also in Table2, purchases of food and food or funds received for work in others' fields (known as "ganyu-ganyu") became more important in 2001/2002 compared to 2000/01. Last year, no more than 10% of households used it as the principal strategy for food security in any of the three provinces. Regarding "ganyu-ganyu" in years of high prices, such as 2001/02, many households offer labor because they need food, such that the supply of labor increases, while the demand for labor remains stable or even less. Households that contract labor under "ganyu-ganyu" paying with food crops (such as maize) are likely to give less maize for the work in years of reduced production compared to the maize that they give in better production years. This means that "ganyu-ganyu" is not reliable as a strategy for food security exactly when it is most needed. Even if the work is paid in cash rather than food, the same logic applies: it is expected that lower amounts would be paid when labor is abundant. Therefore, the effectiveness of "ganyu-ganyu" as a strategy for food security needs to be assessed for years of low production and high prices.

## What Should the Government Do in Years of Low Production and High Prices?

In the first section at the top of Table 3, it is evident that farm households do not sell all of their maize in years of high demand for maize, regardless of whether the high demand is due to low production or increased demand from foreign traders. Across the three provinces, the majority of households responded that they “never sell the entire crop.” Zambezia is an interesting case in that 84% of households “never sell all of the crop” yet this province has the highest influx of foreign traders (using ground transport), compared to Nampula and Niassa.

With respect to marketing in 2001/02 compared to 2000/01, the middle section of Table 3 indicates that about 95% of households interviewed in the three provinces did not sell maize in 2001/02 or sold less than they sold the previous year, confirming the statements from the earlier question on sales and retention from cropping.

Households who indicated that they sold no maize in either year (about 32% of all households) were affected by crop failures. Meanwhile those households who sold maize in both years (21% of the total) said that their sales were lower in 2001/02 than the year before.

The bottom section of Table 3 indicates that more HH (76%) in Zambezia Province tend to be “pro-exports,” whether that is done by domestic traders or foreign traders, whereas Niassa Province has fewer households (29) who support exports. Yet, in Niassa, 69% of households interviewed that exports should not be prohibited (40%+29%). In general, the results show that households would rather not have exports prohibited even in years of low production with resulting high prices.

Households interviewed preferred traders buying for export for they felt that such purchases would guarantee a higher profitability for them. When traders are only buying for local sales, the households indicated that the monetary rewards were not as high and there was a chance of not being able to sell due to a lack of traders. In addition, the Malawian traders in particular often bring goods for barter, trading clothe for maize, for example.

For those households who indicated their desire for government to prohibit exports of maize in years of scarcity, both by local traders and foreign traders, they indicate that exports tend to increase hunger and that often they end up having to buy commodities that they previously sold, and the purchasing prices are two to three times the prices that they were paid.

**Table 3:** Behavior of Households and their Opinion on what the Government Should Do During Years of Low Production/High Prices

Strategy	Type of response	Zambézia	Nampula	Niassa
		% of HH that responded “Yes”		
What does the hh do when there is low production/high price	Resort to other crops	8	10	14
	Never sell all of crop production	84	74	75
	Buy food	1	0	5
	other actions	6	11	7
What did the HH do with their maize this year (2001/02)?	Did not sell maize this year or last year	30	28	40
	Did not sell maize this year, but did last year	35	59	42
	Sold less maize this year than last year	31	8	13
	Sold more maize this year than last year	4	5	4
What should the government do in years of low production/high prices?	Prohibit exports	18	18	27
	Permit exports but only by domestic traders	4	18	40
	Permit exports by both foreign and domestic traders	76	47	29
	Other actions	2	3	0

## Prices Received for Maize in 2000/01 and 2001/02

Regarding Table 4, average prices for maize (in Mt/kg) rose this year in all three provinces. In particular, prices were higher in Milange (a border zone) than in other districts in Zambezia, in both years. This is a reflection of the trade with Malawi.

At the time of this survey (November 2001), the majority of households had already marketed their maize, between July and October. The lack of sales in May and June suggests that the majority of households have the capacity to wait until prices begin to rise, thus benefitting from higher prices.

**Table 4:** Prices Received for Maize in 2000 and 2001 in Each District (Mt/kg)

District	Most common price in 2000 (Mt/kg)	Most common price in 2001 (Mt/kg)
<b>Zambézia</b>	<b>1162</b>	<b>1600</b>
Mocuba	1012	1230
Alto Molócuè	802	1599
Gurue	913	1333
Milange	1688	2323
<b>Niassa</b>	<b>1440</b>	<b>2846</b>
Cuamba	1266	3069
Mandimba	1714	1429
Mecanhelas	1471	3000
<b>Nampula</b>	<b>1239</b>	<b>1728</b>
Lalaua	1631	1134
Malema	1137	2119
<b>Average in the Zone</b>	<b>1252</b>	<b>1874</b>

### Plans for Agricultural Year 2001/2002

Table 5 provides a summary of planting for the current cropping year. Of note is the increase in area planted to maize in Niassa (84% of households) without reducing the area of other crops, compared to 82% in Nampula and 61% in Zambezia. This increase may be motivated by the higher prices this year (2846 Mt / Kg, in Table 4) in Niassa compared to the other two provinces.

**Table 5:** Plans for Planting for the Next Season

Planting Strategy for Next Year	Zambézia	Nampula	Niassa
	% of households who responded "Yes"		
Increase the area under maize without reducing area to other crops	61	82	84
Reduce the area under other crops to increase maize area	1	0	2
No change in maize area	28	18	11
Other options	10	0	2

Regarding household stocks of maize to sell this year, 98% of the households no longer have any maize to sell because they did not produce sufficient quantities. Perhaps this is the reason that the interviewed households will be increasing the area planted to maize, without reducing the area to other crops, suggesting that the higher maize prices benefit the nation as a whole.

### CONCLUSIONS:

This study examined the food security strategies adopted by rural households in both years of good harvest and years of bad harvest. Marketing year 2001/2002 ( a poor harvest year) and year 2000/2001 (a better harvest year) were used to exemplify the alternative strategies adopted by households in different years. The study focused on the case of northern Mozambique because of the importance of food crop production in the zone and the active food grain markets for domestic and foreign trade particularly in times of low domestic and regional production.

Among the most important findings are that: 1) rural households in northern Mozambique use maize as a main food security crop, yet cassava plays a more important role, particularly in years of poor crop production; 2) families also grow other cereal crops, and turn to labor activities paid in kind or in cash, to guarantee food security; 3) the food security strategies of the rural families vary from year to year depending upon the crop harvest but they do not sell all of their production even when producer prices are very high; 4) the majority of households believe that the government should never prohibit exports even when production is poor; and 5) rural households use market signals to make decisions on future plantings.

These findings are particularly important for policy determination, and are valuable when thinking about the agrarian economy fo Mozambique, where the costs of selling surplus northern production to southern consumption zones are very high. Several studies (Coulter 1996; and Santos and Tschirley 1999) have determined that it is more advantageous to export to other country in the region (Malawi for example) than to sell products to the south. Similarly it is more advantageous for the south to import products from neighboring countries (South Africa for example) than to bring maize from the north.

Secondly, with current transport links between northern and southern Mozambique, and between those and neighboring countries, measures to prohibit the export of maize from Mozambique do not necessarily benefit

consumers in the center and south. Research (Santos and Tschirley 1999) indicates that maize exports from the north do not have significant statistical effects on the prices in central and southern Mozambique. It is important to note that high maize prices in the south result from a *regional* deficit of maize this year, notably in South Africa, and a reduction in South African exports, rather than reduced national production.

Finally, reducing exports from northern Mozambique particularly in years of low production and high prices, could have negative effects on the agricultural sector as a whole, through lowering the motivation of rural producers to grow maize. These effects could have long term repercussions for the maize sub-sector, including the large-scale milling industry, undermining the recent investments made in northern Mozambique. The government can support this industry, as well as the maize sub-sector as a whole, without resorting to restricting exports. The government can provide support through investments in timely diffusion of crop forecasts in the country and the region. This would allow industry to prepare its strategies to guarantee sufficient stocks of raw material for full operations. Other “pro-market” actions are valuable, including improvement of roads, reduction of bureaucratic blocks to the formation of farmer associations, and, in collaboration with the private sector, promotion of improved system of grades and standards. These actions would contribute to the development of the sub-sector as well as the reduction of poverty and increase in overall economic growth in the north.

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