Global Bureau, Office of Agriculture and Food Security

U.S. Agency for International Development

POLICY SYNTHESIS

for Cooperating USAID Offices and Country Missions

Number 19 April 1996

Office of Sustainable Development

USAID/Mozambique

Mozambique Food Security Success Story

by

David L. Tschirley and Michael T. Weber*

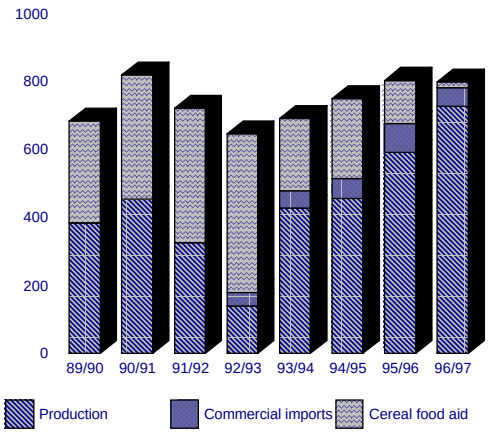
Food Security II Cooperative Agreement between U.S. Agency for International Development, Global Bureau, Economic Growth Center, Office of Agriculture and Food Security and Department of Agricultural Economics, Michigan State University

BACKGROUND: Nearly a decade after the beginning of economic liberalization, and nearly four years after the ending of the country's devastating civil war, Mozambique remains among the very poorest countries in the world. Hunger remains a stark fact of life for large numbers of households. Yet this panorama hides dramatic progress in recent years towards sustainable food security.

DIRECTIONS OF PROGRESS[1]: Progress toward improved and more sustainable food security in recent years in Mozambique is evident in three dimensions: 1) increasing per capita calorie availability in the face of dramatic reductions in food aid, 2) lower and more stable prices for the principal domestically produced staple, white maize[2], and 3) a food system which now provides consumers with a broader range of low-cost staples from which to choose.

Total cereal production and per capita calorie availability from cereals in Mozambique have increased substantially in recent years, and the contribution of food aid to availability has fallen dramatically (Table 1, Figure 1). Forecasted production in 1996/97 is more than double that in 1989/ 90, and 25% higher than 1995/96. Per capita calorie availability from all cereals in 1996/97 is projected to be equal to or higher than any year since at least 1989/90. Food aid's contribution is projected to fall to only 2% during 1996/97, down from 72% during the 1992 Southern Africa drought and from an average of 49% for the three years prior to the drought.

Figure 1. Per capita daily calorie availability from cereals in Mozambique, by source, 1989/90 to 1996/97, in thousands of metric tons of cereals



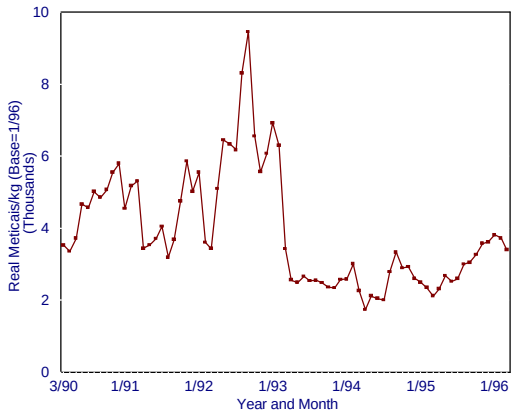
This increased availability has been accompanied by lower and more stable staple food prices in key urban centers. White maize in the capital city of Maputo demonstrates this trend most dramatically (Figure 2). Comparing pre- and post-drought periods (March 1990 to March 1992, and March 1993 to January 1996, respectively), mean prices during the

[1] This paper will focus on calorie availability from key cereals since 1989/90. Data limitations preclude reliable analysis prior to this time and with a broader range of food items.

[2] All prices in this paper are deflated using the Maputo-based Consumer Price Index, adjusted to a base of January 1996.

latter fell by 40% and their standard deviation fell by 44%. With excellent cereals production anticipated throughout the Southern African region this year, Maputo white maize prices are likely to fall

Figure 2. Real Prices of white maize grain in Maputo, Mozambique, March 1990-March 1996 (Base = January 1996)



near or below historical lows. Data for the pre-drought period are not available outside of Maputo.

Lower and more stable white maize grain prices for urban consumers have been complemented by continued availability of low-cost food staples such as whole ("99%") yellow and white maize meals (Figure 3). Research in Mozambique and throughout Southern and Eastern Africa has shown that low income consumers, when given the choice, readily switch from expensive refined meals to cheaper whole meals, and from expensive white meals to cheaper yellow meals, with important implications for real purchasing power (Tschirley and Santos, 1995; Jayne, et. al., 1995).

DETERMINANTS: The ending of the war was the *sine qua non* for improvements in food security. Yet the rapid progress the country has made in the past three to four years is based on more than the ending of the war; policy choices made prior to the peace accords created the conditions for rapid recovery once hostilities ceased. The key policy changes related to general food marketing policy, and to specific policies on the monetization of yellow maize food aid.

Starting in 1987, the country embarked on a program of donor-financed economic reform under the Economic Rehabilitation Program (ERP). By late 1990, national policy makers had removed restrictions on product movement across district and provincial boundaries, and had eliminated the system, in place since colonial times, of official geographical monopolies for registered private traders. Some response to these changes could be seen by late 1990, but risk of attack and restrictive practices by local authorities made progress slow (MAP/MSU 1990). By the 1991 harvest, evidence was emerging in the north of the country that informal traders in rural areas had begun to compete with some of the previous monopolists, paying higher average prices to farmers (MAP/MSU 1991). By at least 1992, it was clear that new entrants dominated the food marketing system in the capital city of Maputo, despite the government's continued policy that basic foods should be sold through the *Novo Sistema de Abastecimento* at official prices. These traders, nearly all of them unlicensed, handled most of the domestic production which was able to reach the city, and also regularly brought maize meal, wheat flour, sugar, vegetable oil, and other food products to the city from Swaziland and South Africa (MAP/MSU 1993a; Sahn an Desai 1992).

Concurrent with the disintegration of the ration shop and the emergence of the informal trading sector, donors were looking for more market-oriented means of distributing monetized food aid. Beginning with shipments in mid-1991, donors negotiated with the Government of Mozambique for the grain to be sold directly to registered private wholesalers (called "consignees") at fixed prices in the port cities. Many consignees were included, ensuring a competitive system at this level (Tschirley, et. al. 1996). These consignees then sold into the highly competitive informal market, which, in combination with the economic reforms under ERP, fueled the growth of this trading sector and of the small-scale maize milling sector.

These two sectors were flourishing by the time the peace accords were signed in October 1992, and have provided the foundation for Mozambique's

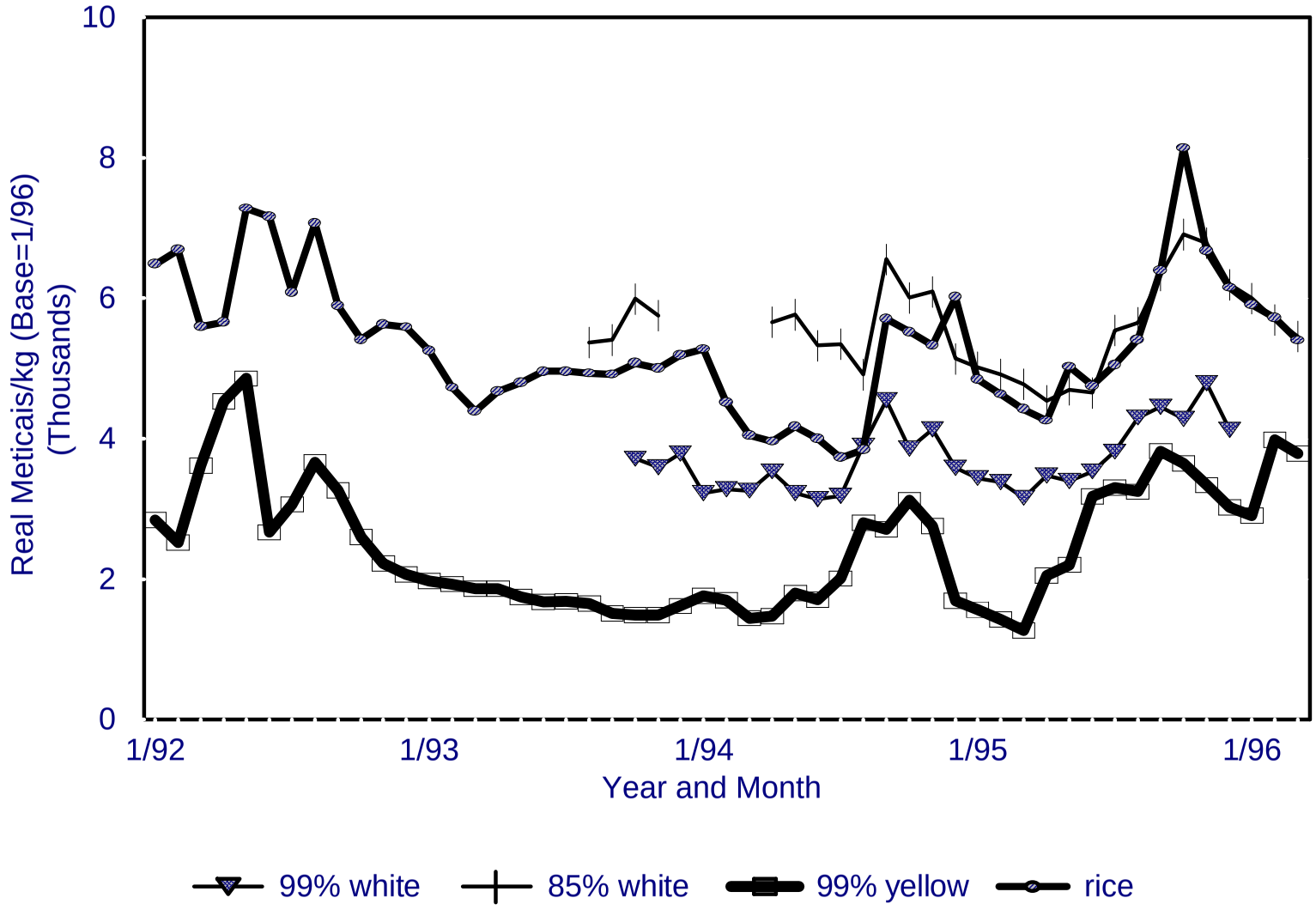
Table 1. Grain availability in Mozambique, by source, 1989/90 to 1996/97

	Production				Food Aid										
Year[1]	White Maize	Rice	Sorghum/ Millet	Total	Yellow Maize Comm.[1]	Yellow Maize Emerg.	Yellow Maize Total	White Maize Emerg.	Rice	Wheat	Total Cereals Food Aid	Comm. Cereal Imports[3]	Total Cereals Avail.	Food Aid Cereals as % of Total Cereals	Pop.[4]
1989/90	330,000	95,000	177,000	602,000	83,000	145,000	228,000	61,000	72,000	109,000	470,000	0	1,072,000	44%	15,000,000
1990/91	452,900	96,400	181,000	730,300	126,000	221,200	347,200	76,500	47,600	116,400	587,700	0	1,318,000	45%	15,405,000
1991/92	327,100	56,300	154,900	538,300	124,900	248,800	373,700	98,300	58,500	123,000	653,500	0	1,191,800	55%	15,820,935
1992/93	133,000	33,000	71,000	237,000	271,700	389,200	660,900	18,700	61,600	47,700	788,900	70,000	1,095,900	72%	16,248,100
1993/94	533,100	49,000	165,000	747,100	77,000	208,100	285,100	0	28,517	57,000	370,617	86,700	1,204,417	31%	16,686,799
1994/95	527,000	97,000	193,000	817,000	70,200	123,900	194,100	70,900	50,000	103,100	418,100	105,000	1,340,100	31%	17,137,343
1995/96	733,800	76,000	278,700	1,088,500	56,000	40,000	96,000	40,000	24,200	73,600	233,800	153,700	1,476,000	16%	17,600,051
1996/97[5]	1,000,000	n/a	n/a	1,375,000	0	0	0	17,500	14,600		32,100	100,000	1,507,100	2%	18,075,252

[1] Marketing year: April - March; Production refers to the relevant production for that marketing year.
[2] Food aid maize sold in commercial channels
[3] Primarily rice and wheat flour, though white and yellow maize and flours have entered (both formally and informally) in recent years. Informal imports are unrecorded and so not included here.
[4] Based on estimated 1989 population of 15,000,000 and 2.7% annual growth rate
[5] 1996/97 data is projected for full marketing year.

Sources: Ministry of Commerce, Department of Food Security, **Boletim de Segurança Alimentar** (issues: Bol 4, 1991/92; Bol. 3, 1992/93; Bol. 3, 1993/94); Ministry of Commerce, Department of Food Security, **Food Aid Pledges and Shipments,** 1990/91 to 1994/95 (November 1994); FAO **Production Yearbook,** 1989/90 - 1991/92 issues; World Food Programme Interfais database; Famine Early Warning Unit, Ministry of Agriculture production database; and MOA/MSU Food aid arrivals database (See MOA/MSU 1993 WP#13 for further information).

Figure 3. Real prices of maize meals and rice in Maputo, Mozambique, December 1992 to March 1996 (Base = January 1996)



progress in food security since that time.[3] They have done so by 1) linking rural and urban areas through trade flows, 2) channelling maize through the small-scale milling sector, and 3) engaging in active cross-border trade (nearly all imports) in food products. The following paragraphs will explain each of these three points.

Within the informal trading sector, a class of entrepreneurial inter-regional wholesalers emerged to link production and consumption zones with active trade flows. Beginning strongly in 1994, and with even greater coverage in 1995, these traders scoured central and northern Mozambique for maize, beans, and peanuts to be sold in urban centers (see MAP/ MSU 1995a for more information on this sector). Meaures of integration between southern, central, and northern maize markets improved dramatically during these years, attesting to the effects of this trade (see Donovan 1996 for evidence on southern-central integration). By tying urban and rural markets together through trade, the informal sector also provided increased incentives to producers: during the 1995/96 cropping season, maize area in the country is estimated to have increased by 15%, partly in response to seasonal price increases in rural areas during the previous season on the order of 120% to 250%.

In urban areas, the growth of the informal trade made it possible for the small-scale milling sector to flourish. These small hammer mills, which number over one thousand spread throughout the country (MAP/ MSU 1995b), ensure access by poor urban (and, increasingly, rural) consumers to cheap white and yellow whole meals, stretching their limited purchasing power. Ninety-three percent of these mills operating in Maputo as of early 1994 had been purchased since 1987, when the ERP was initiated and when yellow maize food aid quantities began to increase (Jayne, et. al., 1995).

Active cross-border trade in foodstuffs was evident in Maputo well before the end of the war, and was instrumental during that time in increasing food availability for poor consumers (MAP/MSU 1993a). This trade has continued to develop since the peace accords, with South Africa becoming the primary source of supply. This trade played a key role in containing price increases in southern Mozambique during the 1995/96 hungry season. Informal traders brought white **and yellow** maize meals from South Africa during January and February 1996, when maize prices surged on news of reduced food aid shipments. The ease of changing money in the informal foreign exchange market has been an important factor facilitating this trade. Formal imports of rice from the world market have also contributed to food security by maintaining a steady availability of this product, very little of which is produced in the country.

FUTURE CHALLENGES: Despite this impressive progress, significant challenges remain. Continued progress towards sustainable food security will depend on 1) consolidating reforms in the trading sector, 2) investing in cost-reducing marketing infrastructure, 3) investing in the country's ability to identify and disseminate improved production technologies, and 4) continuing investment to improve the information base (and Mozambican analytical capacity to use it) on food production, marketing, prices and consumption, as well as on socio-economic characteristics of smallholder households.

Geographical and agro-climatic conditions in Mozambique mean that food security in drought-prone southern areas, and production incentives in the more productive northern areas, will both depend on trade. This trade will be primarily regional when regional (Southern African) production is good, and north-south within Mozambique when regional production is poor (Coulter 1996)[4]. Simplifying international trade policy and clarifying the murky national regulatory environment are both important steps for ensuring and strengthening regional and internal trade links.

[3] It is important to note that Mozambique had no history of free private markets prior to the late 1980s. Private trade under both the colonial and FRELIMO regimes was highly controlled, including fixed prices at all levels of the system.

[4] Production in northern Mozambique is much less risky than in other areas of the country, and is not strongly correlated with production in the rest of Southern Africa. For example, production in this area was better than average during 1992, when the rest of Southern Africa suffered its devastating drought.

Continued rehabilitation of the road network, especially rural feeder roads, is necessary to reduce the costs of marketing maize and other products out of productive but isolated rural areas. Consolidating reform in the trading sector is also necessary if traders are to make the investments necessary to increase their scale of operation and reduce operating costs.

In the medium- and long-runs, food security in Mozambique will increasingly depend on improvements in agricultural productivivity. This improved productivity will require substantial investment in its research and extension systems, and in a private sector input distribution system able to facilitate farmer use of yield-increasing inputs on food and cash crops. After years of war and neglect, the country's agricultural research and extension system is exceptionally weak. Use by smallholders (85% of the population) of inputs beyond hand tools is nearly non-existent outside of certain cotton outgrower schemes in northern provinces.[5] Technology development and input delivery systems must be developed in tandem if the country is attain the necessary improvements in its productive base.

The Mozambican Government has been very pragmatic to undertake empirically based dialogue on food and agricultural policy. With the long-run commitment of various donors, selected Government organizations have begun to develop improved data bases on markets, and on participants and problems in the rural sector. This information was especially important in delibertions on how to use imported food aid to achieve food security objectives for consumers without generating major disincentives for local farmers (MAP/MSU 1993b). Such information will also be critical to avoid negative consequences for consumers as donors turn increasingly to local purchases to procure maize for emergency food aid programs.

[5] Some farmers in these schemes use these inputs in maize as well as cotton, achieving maize yields 3-4 time above mean yields without inputs. These still nascent practices demonstrate the potential in Mozambique for complementarities between cash crops and food crops, as have been found in many other countries of Sub-Saharan Africa (MAP/MSU 1996).

* Much of the data and analytical insights to document this success story are available because of the hard work and dedication of Mozambican and Michigan State University research staff working for the past 5 years on the Ministry of Agriculture and Fisheries/Michigan State University Food Security II Project financed by the Government of Mozambique and USAID, Maputo, Global and Africa Bureau Offices. Special thanks to John Staatz for helpful comments on an earlier version. Notwithstanding these contributions, the authors* alone are responsible for errors of fact and omission in this paper.

REFERENCES

Coulter, Jonathon (1996). "Maize Marketing and Pricing Policy in Mozambique". Final consulting report for the World Bank mission in Mozambique. Maputo.

Donovan, Cynthia (1996). "Effects of Monetized Food Aid on Local Maize Prices in Mozambique". Ph.D. Dissertation. Michigan State University, Department of Agricultural Economics. East Lansing.

Jayne, T.S., L. Rubey, D. Tschirley, M. Mukumbu, M. Chisvo, A. Santos, M. Weber and P. Diskin (1995). "Effects of Market Reform on Access to Food by Low-Income Households: Evidence from Four Countries of Eastern and Southern Africa". International Development Paper No. 19. Department of Agricultural Economics, Michigan State University. East Lansing.

MAP/MSU Research Team Working Papers, published by the National Directorate of Agrarian Economy, Ministry of Agriculture and Fisheries. Maputo.

WP 1. (1990). "Informing the Process of Agricultural Market Reform in Mozambique: A Progress Report".

WP 4E. (1991). "A Socio-Economic Survey in the Province of Nampula: Agricultural Marketing in the Smallholder Sector".

WP 10. (1993a). "The Organization, Behavior, and Performance of the Informal Food Market System in Maputo".

WP 12. (1993b). "The Pricing and Distribution of Yellow Maize Food Aid in Mozambique: An Analysis of Alternatives".

WP 19. (1995a). "Diagnóstico da Estrutura, Comportamento e Desempenho dos Mercados Alimentares de Moçambique".

WP 20. (1995b). "Inquérito ao Sector Moageiro de Pequena Escala em Moçambique: Observações Metodológicas".

WP 22. (1996). "Smallholder Cash Cropping, Food Cropping, and Food Security in Northern Mozambique: Research Methods".

Sahn, David and Jaikishan Desai (1992). "Food Rationing in Maputo: An Analysis of the NSA". Cornell University Food and Nutrition Policy Program.

Tschirley, David, Cynthia Donovan and Michael T. Weber (1996). "Food Aid and Food Markets: Lessons from Mozambique". *Food Policy*, vol. 21, no. 10.

Tschirley, David and Ana Paula Santos (1995). "Who Eats Yellow Maize: Preliminary Results of a Survey of Consumer Maize Preferences inMaputo, Mozambique". International Development Working Paper No. 53. Department of Agricultural Economics, Michigan State University. East Lansing.