

## SPECIAL REPORT

### FAO/WFP CROP AND FOOD SUPPLY ASSESSMENT MISSION TO MOZAMBIQUE

20 June 2005

#### Mission Highlights

- Cereal production for 2005 in Mozambique estimated to be about 1.92 million tonnes (with rice in paddy terms) is 3 percent lower than last year's harvest due to 43 percent and 4 percent reductions in the cereal harvest in the southern and central provinces respectively, partially compensated by an estimated increase by 12 percent in the three northern provinces.
- Production from the two main cash crops produced by the peasant sector, cashews and coconuts, is expected to be higher than, and similar to, last year respectively. Tobacco and cotton crops are also expected to improve and sugar cane production is noted to have been sustained at last year's level
- Rains started early or on-time but were irregular and erratic being heavy in December and January and often ended early in February and March.
- Revised cassava yield estimates place the quantities theoretically available for use at a higher level than in previous assessments; therefore, the mission recommends that opportunities for local purchases of dried cassava and cassava flour for food aid requirements be investigated.
- Harvest time maize prices fell and reached in May same level as last year, except in the south where they had begun to rise due to poor harvest. Prices in the north may improve during the year owing to stronger demand from neighbouring Malawi.
- Maize exports, formal and informal, mostly from the surplus provinces in the north and centre are forecast at 190 000 tonnes, mostly to Malawi.
- However, maize imports, in the order of 175 000 tonnes, are still necessary, given the high costs of moving grain from north to south. Of these, about 130 000 tonnes are expected to be through commercial channels, leaving about 45 000 tonnes deficit, which will need to be imported with international assistance.
- As a result of drastically reduced harvests in the southern and central regions of the country combined with the effects of HIV/AIDS, recurrent disasters, low level of savings, weak health services and limited capacity of community based safety net, an estimated 70 000 tonnes of relief food aid (cereals) will be required for 587 500 food insecure people between July 2005 and March 2006. This is in addition to the annual recovery, rehabilitation and development food aid of 44 000 tonnes. The difference of about 69 000 tonnes (114 000 tonnes of total food aid needs minus 45 000 tonnes of national food deficit) will be met through local purchases.

#### 1. OVERVIEW

Following the reports of poor harvests in southern and central provinces due to drought, an FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) visited all the production areas in the country from 25 April to 13 May 2005. The Mission evaluated food crop production in the 2004/05 agricultural season, assessed the overall food supply situation, forecast cereal import requirements and possible exports in marketing year 2005/06 (April/March) and determined the eventual food aid needs.



**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME**



**WORLD FOOD PROGRAMME, ROME**

As on previous occasions, the Mission received support from the Ministry of Agriculture and Rural Development (MADER), which provided preliminary production forecasts for this year's agricultural season and technical staff to accompany the Mission on its field visits. Staff from National Institute of Disaster Management (INGC) and Ministry of Industry and Commerce (MIC), and observers from the European Union (EU), World Vision, SARNET (IITA), and the Italian NGO - CESVI, joined the Mission.

Prior to departure to the field the Mission was briefed by representatives of FAO and WFP and by government officials, who provided information on the current situation in the country. A meeting with donors and NGOs also provided valuable information, particularly on the situation in the districts where they work.

The Mission, divided into seven groups, travelled for about 10 days to all ten provinces covering 45 selected districts in the north, centre and the south. The districts to be visited were carefully selected using a range of criteria including agro-ecological, marketing and vulnerability considerations. In each province and district, the teams met with administrative authorities and with representatives of Agriculture, Health and Commerce Ministries, INGC, as well as NGOs working in the various areas. After these meetings, the sub-teams travelled to selected production areas to conduct interviews with farmers, carry out field inspections and make crop cuttings to estimate yields. The Mission also visited markets and interviewed a wide range of traders.

The preliminary assessment of the season provided by the Early Warning Unit of MADER, and pre-harvest data on area and yield for food crops gathered at MADER provincial and district levels, were analysed by the Mission and cross-checked against qualitative information from farmers, traders, NGOs and international agencies working in the agricultural sector. Information on growing conditions, pest and disease status, rainfall, prices and input supply obtained during the field visits were triangulated with remote sensing data and intelligence reports prepared by FAO. The work of the Mission was complemented with concurrently ongoing survey work of the Vulnerability Assessment Committee (VAC) aimed to determine food relief needs for the 2005/06 marketing year. The CFSAM and the VAC teams worked together to analyze data prior to and after the CFSAM field work in order to ensure the concordance of the two assessments.

National cereal production (maize, sorghum, millet and paddy rice) in 2005 estimated at 1.92 million tonnes, 3 percent below last year's level, is made up of 72 percent maize at an estimated 1.40 million tonnes. While production has increased in the northern provinces by 12 percent, much lower cereal output in the southern provinces and in the drier districts of the central provinces has reduced the overall national harvest this year. The paddy crop is estimated to be 2 percent less than last year from a slightly increased area at 174 000 tonnes. Sorghum/millet output fell by 13 percent to 343 000 tonnes due to falling area estimates in the central and southern provinces.

Last year's exceptional maize harvest in the southern provinces was not repeated this year as the continuous rains from January to April in 2004 that prompted widespread maize planting were not repeated. However, in the north, although the rains were not as well distributed as in 2004, they were heavier and more than adequate to support slightly improved maize production from a slightly increased area. In the central region, where cereal production varied from above to below last year according to location and crop, an earlier start to the rains finished early after a season characterised by heavy rains and dry spells.

The production forecast for cassava is 11.5 million tonnes (fresh weight), substantially higher than in last year's assessment because of the Mission's application of revised yield estimates, more compatible with recent technical study results<sup>1</sup> and with neighbouring countries. During the past year an independent review of cassava production confirmed the 2004 CFSAM proposition that yields per hectare were much more in line with those in neighbouring countries than had been previously indicated. Consequently, cassava production estimates have been revisited and quantities theoretically available for use have been doubled. However, given the uncertainty of areas and yields, the mission recommends a comprehensive study of cassava availability and utilization, and promotion of marketing opportunities including local purchases in the form of dried cassava and cassava flour for food aid.

At the same time, industrial crops, mainly tobacco, cotton, cashew, coconuts, tea, paprika, soybeans, sesame, sunflower and citrus are undergoing an expansion that is contributing substantially to peasant household food security and boosting agricultural exports.

Given the universally low stocking rates, plenty of grazing and browse is available in the tse-tse free pastoral areas. Ruminants, are in good condition with no disease outbreaks noted, however, terms of trade are noted

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<sup>1</sup> "Study on cassava and sweet potato yields in Mozambique" IITA/SARNET, Maputo, Mozambique, 2004.

to be unfavourable to herders in the remote areas of Inhambane and Gaza where the maize harvests have been very poor and cattle prices are falling as more cattle are being sold to fewer buyers.

The marked regional differences in maize production and consumption, coupled with high cost of moving the crop from the surplus northern and central provinces to the deficit south, are reflected in the high price differentials among regions. At the time of the Mission, the price of maize in the southern Maputo market was twice as much as in the central provinces of Manica and Tete.

Maize prices were declining seasonably in central and northern regions since March 2005 owing to this year's satisfactory harvests there. However, in the South and other drought affected market areas of the centre, prices are rising as a result of poor harvest this year. Stronger demand from bordering southern provinces of Malawi, where harvests have been reduced, is expected to improve maize prices in the northern provinces of Mozambique. Already the Mission observed substantial flows of informal exports of maize into Malawi. Total informal maize exports between July 2004 to April 2005 from Mozambique to Malawi, monitored under the FEWS-NET/WFP study, were about 80 000 tonnes, and an additional 40 000 tonnes were exported through formal channels. Formal and informal exports of maize, mainly to Malawi but also to bordering areas of Zambia, and formal exports to other maize deficit countries in the region, are forecast at 190 000 tonnes in 2005/06.

As the country has a structural deficit in rice and wheat, imports of these commodities required to meet the commercial market demand are estimated at 336 000 and 352 000 tonnes, respectively, including small amounts to be received in the form of monetized food aid. Import requirements of maize for southern deficit provinces, owing to the high costs of moving the crop from the north to the south and the proximity of the southern provinces to the competitive South African market, are forecast at 175 000 tonnes. Of these about 130 000 tonnes are expected to be through commercial channels, leaving a deficit of about 45 000 tonnes to be imported with international assistance. In aggregate, total cereal import requirements in 2005/06 (April/March) including maize, rice and wheat, forecast at 863 000 tonnes, are 10 percent higher than the previous year as a result of the reduced production in the South and central provinces and increased utilization.

Food deficits are estimated in the semi-arid areas of the interior of Gaza and Inhambane provinces, semi-arid areas of Manica and Tete provinces, as well as remotely located areas across the southern (including Maputo) and central provinces. Lack of access to adequate food is a major concern, especially for communities and families who have not yet recovered from several years of poor crop production and have fully exhausted their assets and are now engaged in negative coping strategies for their survival. Approximately 587 500 people are most vulnerable and will require some 70 000 tonnes of emergency food assistance to meet the basic dietary intake between July 2005 and March 2006. This is in addition to the ongoing development programs and PRRO requiring 44 000 tonnes during the 2005/06 marketing year. Where it is possible food assistance procured locally or regionally should be used in order to avoid distortion in local markets and to encourage local production. Livelihood recovery for the next year will require immediate actions to ensure necessary seeds and other agricultural inputs for households that do not have the means to purchase them.

The negative impact of HIV/AIDS has led to "compounded vulnerability" in affected households. Although Global Acute Malnutrition (GAM) rates have remained relatively low over the last year, there is a tendency towards deterioration in underweight in children under 5 years old from the mid-1990s onwards. Chronic malnutrition rates are estimated at 36 percent and are particularly high in the northern provinces. An integrated UN response should thus be developed to address the current food insecurity situation.

## **2. ECONOMY AND AGRICULTURE**

### **2.1 Economy<sup>2</sup>**

With a total area of 786 300 km<sup>2</sup> and a population officially projected at 19.42 million at mid-2005, Mozambique has a relatively low population density. It is richly endowed with natural resources, including arable land, forest, grasslands, inland water resources from its network of rivers including the mighty Zambezi, marine fisheries, minerals and hydroelectricity. As a result, the economy is diversified, and agriculture, transport, manufacturing, energy, fisheries, tourism and wage remittances all make important contributions to the economy. Following the rapid growth of the industrial sector in the past few years, the

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<sup>2</sup> The contents of this section are based on a variety of sources, including the Economist Intelligence Unit's Country Profile 2004-Mozambique and Country Report-Mozambique April 2005, UNDP's Human Development Report 2004, and The International Monetary Fund Report - 'Request for new three-year arrangement under the Poverty Reduction and Growth Facility' June 7, 2004.

share of agriculture in national gross domestic product (GDP) has been falling, down from over 27 percent in 1998 to below 20 percent in 2004. The sector, however, still employs around 80 percent of the total labour force and provides major export earnings from commodities such as prawns and fish, cotton, sugar, timber and cashew nuts, although these exports have lagged behind aluminium and electricity in recent years.

Market liberalization policies have been implemented since 1992 in cooperation with the IMF and the World Bank. Under a poverty reduction and growth facility (PRGF), renewed at the end of 2003, Mozambique continues to benefit from debt relief and renewed loans. At the same time, foreign grants continue to cover about one-half of public expenditures. The economic reforms have been remarkably successful in terms of the important macroeconomic achievements (see Table 1 for key economic indicators). Sustained by strong foreign investment, real GDP has been growing at rates in excess of 7 percent for last 4 consecutive years following the severe economic setback caused by devastating floods in 2000. Per capita income in US dollars has increased by nearly 50 percent between 2001 and 2004. Inflation, which fell to 15 percent in 1997 from over 50 percent the previous year, averaged about 13 percent in 2004 and reached little over 11 percent in March 2005. Exports of goods have increased by 3.5 times between 2000 and 2004, resulting in dramatic decline in merchandise trade deficit, while the exchange rate against the US dollar has remained relatively stable after the devaluation in 2000. Export earnings in 2005/06 are expected to be favourable in keeping with the recent trend and with estimated rise in production of cotton, cashew and coconut. Although the future of sugar exports to Europe is uncertain as the current agreement that allows Mozambique and other sugar producers of the ACP (African, Caribbean and Pacific) group to sell sugar on the EU market at a fixed, preferential price, and under a quota system, is under review. This may slash the fixed price by over one-third affecting the value of sugar exports drastically.

Despite all these gains, the impact on employment and incomes has been limited, as economic growth has mainly stemmed from a few large capital-intensive projects, with the support of huge inflows of foreign investment. This includes the Mozal Aluminium Smelter in Maputo, whose production is oriented mainly to the European market; the natural gas pipeline from the coastal port of Beira to South Africa; the rehabilitation of the power lines from the Cahora Bassa hydroelectric dam to South Africa and Zimbabwe; and several projects funded by donors for road construction and other activities.

**Table 1: Mozambique - Key economic indicators, 2000–2004<sup>1</sup>**

	2000	2001	2002	2003	2004 <sup>P</sup>
GDP per capita in US\$	207	187	195	233	276
Real GDP growth (%)	1.5	13	7.7	7.8	7.2
Agricultural GDP growth rate (%)	-6.7	13	8	7	8.9
Consumer price inflation (%)	11.4	21.9	9.1	13.8	12.9
Exchange rate tonnes/US\$ (period average) <sup>a</sup>	15 227	20 704	23 678	23 782	22 581
Trade Deficit in million US\$ <sup>b</sup>	682	271	536	348	165

p = projected.

a. = As of first week of May 2005, the exchange rate was 22 500 Meticaís/US\$.

b. = trade in goods, fob.

1. Source: Economist Intelligence Unit; and Government and International Agency staff estimates.

According to the *2004 Human Development Report* of the United Nations Development Programme (UNDP), Mozambique ranks 171<sup>st</sup> out of 177 countries on the human development index, falling below Ethiopia and only ahead of Guinea-Bissau, Burundi, Mali, Burkina Faso, Niger and Sierra Leone. Although poverty remains high by all standards, some progress in poverty reduction has been achieved in recent years as a result of sustained economic growth coupled with the Government's road construction and rehabilitation programme and investment in social sectors. A recent official study on poverty incidence suggests that the percentage of total population falling below the absolute poverty line has decreased by 15 percent, from 69 percent in 1997 to 54 percent in 2003. Results of the study also show that poverty is higher in the southern provinces, where rates have actually increased somewhat. As part of the Government's poverty reduction strategy for the period 2001–2005 (*Plano de Accao para a reducao da pobreza absoluta, PARPA*), promotion and development is planned in six priority areas with a key impact on poverty: education, health, agriculture and rural development, basic infrastructure, good governance and macro-economic and financial management.

## 2.2 Agriculture

Forty-five percent of Mozambique's total land area is suitable for agriculture, but only 11 percent, around 4 million hectares, is estimated to be cultivated. Farming is conducted by some 3.04 million peasant families, a small number of commercial farmers cultivating a total of less than 60 000 hectares and refurbished agro-industrial units growing 30 000 hectares of sugar-cane. Consequently, agriculture provides food security and is an important source of income for 75 percent of the 20 million inhabitants. Mozambique's diverse soils and climatic conditions, influenced by latitude, variations in altitude, topography and proximity to the coast, offer a wide range of production opportunities. However, as agricultural systems are predominantly rainfed, the temporal and spatial distributions of rainfall are critical to crop performance, resulting in wide-ranging fluctuations in annual crop harvests from year to year.

The main production season extends from September to March in most parts of the country, with a short second season in the south from April to August. The farming system is characterized by aggregations of near-subsistence farm-families holding an average 1.2 hectares each, who practise a manually cultivated bush fallow system, the intensity of which varies with the population pressure.

Tree crops, grown within the peasant farming systems, provide the country with an important source of foreign exchange earnings each year and provide the growers with a valuable contribution to their household food security. Table 2 shows the estimated number of peasant farmers in all provinces with a coastline growing coconuts and cashews. The numbers are particularly significant in the heavily populated littorals of Inhambane and Gaza, where the contribution to the household food economy of such crops is substantial as individual farm families own 100 to 200 trees. The official annual harvest of coconuts and cashews is noted to be usually around 240 000 and 50 000 tonnes respectively.

**Table 2: Estimated percentage of farmers with the main tree crops, coconuts and cashews**

Tree Crop	Cabo Delg.	Niassa	Nampula	Zamb.	Tete	Manica	Sofala	Inhamb.	Gaza	Maputo	Total
Cashews	25.7	1.3	49.7	30.3	1.7	10.7	35.6	72.6	70.4	35.4	34.9
Coconuts	21.7	0	12.0	26.3	0	0	14.3	69.2	28.4	4.4	19.7

Other major cash crops grown within the peasant systems include tobacco, of which the production has expanded from 3 500 tonnes (1997) to 50 000 tonnes (2004); and cotton with harvests fluctuating from 74 000 tonnes (1997) and 35 000 tonnes (1999) to 93 000 tonnes (2004). These cash crops, along with oilseeds, tea, citrus and horticultural crops, particularly tomatoes, offer alternative sources of revenue to the small farmers in the interior districts, where coconuts and cashews are not grown.

On a different scale, 30 000 hectares of industrial plantations of sugar cane are grown at four operational sites surrounding sugar mills in Maputo (2) and Sofala (2) provinces. Sugar cane production has risen from 386 000 tonnes (1998) to 2.22 million tonnes (2004) due to improved organisation and production practices.

Maize and cassava are the major staples; other food crops of significance include sorghum, beans, groundnuts, millet and rice. Cassava is grown mainly in the north and southeast where it is the main staple, and is being introduced, along with sweet potatoes under a government initiative, in drought-prone areas throughout the country. Communities in the interior whose food security was regularly threatened by insufficient or untimely rains are already appreciating the effect of this introduction. The area under sweet potatoes is increasing but the crop does not yet appear in the MADER statistics and so is not incorporated into the Missions analysis. Data collected by the Mission this year suggests that the area is probably in the order of 12 000 ha in the south, 7 000 ha in the centre and 4 000 ha in the north. Yields are estimated locally at 3 tonnes per ha but are likely to be much higher; however the Mission has not conducted any spot checks on the crop.

The use of purchased agricultural inputs, (improved seeds, fertilizers and pesticides) is limited to a small number of modern farm enterprises growing cash crops and vegetables and out growers of tobacco and cotton, producing crops on contract. The yields of cereals in the peasant sector are generally low, and losses in the field and stores are high.

Livestock numbers are low, as herds have yet to recover from the losses incurred during the civil war and, in southern provinces, from the floods of 2000. The livestock census in 2002 identified the presence of 720 000 cattle, 5 million goats, 25 million chickens and 2.3 million pigs. Cattle, goats, sheep are reared in extensive grass-based systems and at such low stocking rates that body condition is generally excellent and numbers are estimated to be increasing at around 8 percent per annum suggesting 907 000 current national head of

cattle and 6.3 million goats . Pigs and poultry are kept mainly under back-yard, scavenger systems and the numbers, unlike the pastoral livestock, are expected by the Mission to be approximately the same as at the time of the census, as the husbandry system limits expansion of holdings. There is, however, a small modern poultry industry, augmenting backyard production and servicing some of the demand for broilers in the main towns although their survival is presently under challenge by an upsurge in cheap imports sold at prices apparently below local production costs.

### **3. FOOD PRODUCTION IN 2004/05**

The Early Warning System Department of the Ministry of Agriculture and Rural Development (MADER) estimates the area planted to crops using a model developed in the 1990s with the support of FAO. In this model, area planted to food crops is estimated by multiplying the number of farming households in each district by the average area cultivated, apportioned to the prevailing crops according to the historical planting patterns. The model projects the number of families from the 1997 census and uses updated farm size and cropping pattern data from annual surveys at planting time conducted by the district agricultural offices with assistance from the provincial agricultural specialists to adjust the calculated figures.

Yields, originally estimated from a water-balance model in the early 1990s, are adjusted yearly by data from crop-cutting surveys undertaken at district level at harvest time. At the time of the Mission, the district surveys had been completed, collation and data cleaning had been completed at provincial level and the final analyses were under review at a national meeting of Senior Provincial Agricultural Officers in Maputo. The finalised preliminary estimates were given to the Mission at departure.

The Mission's own spot-check crop-cuts and field scoring techniques that are used during transects driven throughout the field trips plus in-depth farmer interviews conducted in the different agro-ecological zones in each district visited by the Mission teams, prove useful additions to understanding the sequence and timing of crops grown this year and their subsequent performance. With the exception of cassava the yields of which have been increased following last year's Mission recommendations and an independent survey of tuber production, only slight adjustments to yields have been made to the maize yields provided by MADER. However, given the absence, at district level, of simple assessing tools such as balances, quadrats, tape measures and instructional guidelines on rational sampling and analysis, the Mission feels that it is time to review, in each district, the perceptions of field staff regarding: (i) current cropping patterns, (ii) yields per hectare of maize, sorghum and bulrush (pearl) millet and rice; (iii) to determine the district level technical assistants' understanding of the size of a hectare (as many farmers interviewed by the Mission team visiting Niassa and Nampula, called 50m x 50m plots "half hectare"), and (iv) to see precisely how they are arriving at their figures for crop performance. Even if regularly applied, the standard 7m x 7m plot may not be the correct sampling tool to use when there are wide differences in planting density in the same field, as it causes the assessors to ignore the productive patches to the detriment of the estimate. By the same token, the 67 percent conversion factor (TIA 2002) for determining the weight of grain maize from the weight of a dry cob is too low, and should be changed to 80 percent, or better yet the grain weight taken directly. Furthermore, all attempts to estimate annual production of cereals need to include the proportions eaten before harvest. This is particularly true for maize, which may be harvested green for weeks prior to the final harvest period. Ignoring such production on the basis that it is already eaten increases the inaccuracy of the assessment, the position of such cereals in the cereal balance is justified by assuming that a similar amount of maize will be produced again and consumed again next year.

Regarding cassava production, last year the Mission expressed serious reservations regarding the production estimates used by MADER, included a note on how estimates of annual production might be improved to bring the reported performance in line with neighbouring countries and recommended that a yield survey be conducted before this year's assessment. During the past year an independent survey by the cassava specialists in IITA/SARNET was undertaken in 27 districts and its findings, confirming the Mission's concerns, report yields of 10.6 tonnes per ha in the south, 12 tonnes per ha in the centre and 14 tonnes per ha in the north. This year's cassava yield estimates have, therefore, been adjusted using this data and Mission case studies as guide yields for each cassava-growing province in the three regions. These yields are more in line with cassava yields in neighbouring Malawi.

#### **3.1 Factors affecting production**

For most of the 3.04 million farm families, agricultural production is based on a rainfed, shifting, low input system. Ninety-six percent of field crops come from family farms of 1 to 3 hectares that are mostly hand-cultivated with animal traction making an important contribution in the south and south-central areas. The remaining field crops come from the entrepreneurial sector encompassing both individuals and formal associations of peasants working together.

Given a universal absence of pressure on land, the quality of the rainfall distribution, access to labour or traction and access to hand tools and seeds determine the area planted. Given an absence of inputs in the food crop sub-sector, yield per unit area of cereals, pulses, roots and tubers is determined by the distribution and quantity of rainfall, soil fertility, timing of sowing and planting, quality and sowing rates of seeds and cuttings, cultivation and weeding practices, pest and disease challenges and their control and the general enthusiasm with which the husbandry practices are undertaken. No formal credit institutions exist in the rural areas, therefore, the only farmers using credit are the limited but increasing numbers of farm families working with industrial agricultural companies on fixed price contracts that provide credit-in-kind for growing cotton, tobacco and oilseeds.

### Rainfall

The main growing season usually starts with the first rains beginning in September in the south and in December in the north. There is also a minor growing season that extends from March to July, based on residual ground moisture in the low lying areas (*baixos*) across the country that accounts for approximately 10 percent of total output. In the past few years, the rainfall pattern has been irregular and unpredictable both within and between provinces.

This year, in all the southern provinces a false start at the beginning of September was followed by two different rainfall patterns. In Gaza and Inhambane, rainfall over the 2004/05 season is noted to range from around 350 mm in the drier districts to 600+mm in the wetter areas. The rains restarted in October, dropped away in November returned in December as a series of heavy downpours that continued into January and terminated in February. Last year's good early season in October and November, followed by sustained rain throughout January, February and March that encouraged so much second sowing season maize to be planted and sustained vegetative growth to maturity, was not repeated this year. However, in early April the late rains began and were continuing during the Mission's visits in May, prompting widespread opportunistic planting of maize and beans in the south-central and coastal districts of Gaza and the coastal districts of Inhambane. In Maputo, the early rains were promising and better than last year, only to be followed by dry spells in December. Erratic rains continued, however, throughout January, February and March boosting the accumulated rainfall above last year's levels for the latter part of the season in six of the eight districts.

In the three northern provinces, the rains began early and were heavier than last year in all districts in Cabo Delgado, Niassa and Nampula and ended early in March. The quantity that fell in the shorter period of time was up to 20 percent greater than last year, with variations according to locations following a general increase in rain away from the coast at 350-600mm and towards the north where records of more than 1100mm are noted this year. Distribution was, however, less favourable than last year with some inconvenient disruptions to the planting and weeding practices when the downpours were particularly heavy. The less humid conditions provided by the frequent dry periods between the heavy showers, seem to have been less favourable for the regular pests and diseases.

In the central region, the pattern has been a mixed with generally early starts followed by a better first half to the season than last year. In Zambezia, quantity and distribution was far better than last year, matching the long-term mean until January and but was poorer than last year after January, favouring the earlier planted crops. This pattern was repeated in Manica and in parts of Tete where the rainfall was universally better than the long term mean until February, but again similar to last year from March onwards. In Sofala, the rainfall matched the long term mean until the end of January and, in nine out of twelve districts, remained more favourable than last year for plant growth and development over the period from February until April.

### Area

The average area planted per household is estimated at 1.2 hectares. Two or more plots are normally planted, including a back-yard field and at least one outfield. Intercropping of field crops and tree crops is widely practised in the large fields around the homestead. The Mission notes significant areas of mixed cropping of annual cereals and pulses, with and without cassava and groundnuts, as well as monoculture maize, sorghum, cassava and groundnuts in the outfields in the different provinces. Cotton and tobacco are grown as monocultures, whereas oilseeds including sunflowers and sesame are usually intercropped with the food crops. Given that, with the exception of the heavily populated districts of the southern provinces, bush fallow-farmland is abundant and that as clearing occurs in an outward progression of concentric circles, at farm site maturity, that is before returns on farm labour encourage shifting to a new area, the 1.2 ha average may well be an underestimate and needs to be verified under today's conditions of peace and security. The subsistence-plus nature of most farming enterprises suggests areas planted to the main

staples are unlikely to vary below a calculated minimum. Cultivating activities are often linked to traditional mutual assistance groups located within the villages and hamlets.

In cereal growing districts in the central and northern regions such annual crops are planted to suit the traditional understanding of the household demand for consumption and sale of maize, sorghum, millet, groundnuts and beans. This understanding is reflected in the crop areas given in Table 3, which show estimated harvested areas suggesting a 3 percent increase in effective cropping of food crops in the north reflecting population growth and increases in the number of farming families; a 2 percent reduction in the central region possibly reflecting the growth in cash crops and cassava and a 20 percent reduction of harvested/ harvestable areas in the south.

**Table 3: Mozambique - Area harvested in 2004/05 ('000 ha) and comparison with 2003/04, by region**

Province/ Region	Maize		Sorghum		Millet		Paddy Rice		Total Cereals		Beans		Groundnuts		Cassava	
	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change
C. Delgado	92	2.6	71	2.0	5	2.3	16	2.7	184	2.4	60	2.2	47	2.3	180	2.0
Niassa	147	2.9	41	-0.8	2	3.0	5	7.1	195	2.2	67	3.6	4	6.1	27	3.4
Nampula	125	5.2	133	4.7	7	3.2	38	6.0	303	5.0	78	4.4	65	3.4	463	3.2
<b>NORTH</b>	<b>365</b>	<b>3.6</b>	<b>245</b>	<b>2.9</b>	<b>14</b>	<b>2.9</b>	<b>58</b>	<b>5.2</b>	<b>682</b>	<b>3.5</b>	<b>204</b>	<b>3.5</b>	<b>117</b>	<b>3.1</b>	<b>671</b>	<b>2.9</b>
Zambezia	221	0.2	71	-3.4	8	-49.0	83	0.7	383	-2.2	57	0.9	34	1.3	297	3.4
Tete	176	0.8	58	-5.5	28	-5.3	0	-5.3	262	-1.4	48	2.0	17	0.5	2	3.8
Manica	178	0.6	38	-24.8	10	-40.4	1	31.0	228	-7.5	4	-13.2	4	-20.9	3	79.4
Sofala	68	-1.2	58	-10.0	11	-7.4	29	-6.3	166	-5.7	15	-21.6	8	-2.9	15	13.2
<b>CENTRE</b>	<b>644</b>	<b>0.3</b>	<b>225</b>	<b>-10.0</b>	<b>57</b>	<b>-22.7</b>	<b>114</b>	<b>-1.0</b>	<b>1 040</b>	<b>-3.8</b>	<b>125</b>	<b>-2.6</b>	<b>64</b>	<b>-1.2</b>	<b>316</b>	<b>4.2</b>
Inhambane	87	-3.1	17	-30.4	6	-54.2	3	-21.9	113	-14.0	40	-24.9	63	-18.0	72	4.7
Gaza	78	-45.5	2	-86.8	1	-93.5	4	68.1	84	-50.5	29	-30.3	24	-20.3	39	0.0
Maputo	57	28.0	0	-100.0	0	0.0	2	-2.9	58	23.0	10	3.5	9	5.1	7	30.3
<b>SOUTH</b>	<b>222</b>	<b>-20.0</b>	<b>19</b>	<b>-53.8</b>	<b>7</b>	<b>-70.3</b>	<b>8</b>	<b>9.0</b>	<b>256</b>	<b>-26.8</b>	<b>79</b>	<b>-24.3</b>	<b>96</b>	<b>-16.8</b>	<b>118</b>	<b>4.2</b>
<b>TOTAL</b>	<b>1 230</b>	<b>-3.2</b>	<b>488</b>	<b>-7.6</b>	<b>78</b>	<b>-29.5</b>	<b>180</b>	<b>1.4</b>	<b>1977</b>	<b>-5.3</b>	<b>408</b>	<b>-5.1</b>	<b>277</b>	<b>-5.7</b>	<b>1105</b>	<b>3.4</b>

Note: Calculations computed from unrounded data.

In the southern provinces, where cereals are often a secondary enterprises to tree crops, cassava, or livestock rearing, cereal growing is much more speculative as is confirmed by the remarkable fluctuation in production from the region over the past four years, ranging from 105 000 tonnes (2001) to 342 000 tonnes (2004). This year, the poor early rains in Gaza and Inhambane, which were not followed by the good rains experienced last year, are considered by the Mission to have had a reducing effect on maize area planted and harvested. In May 2004, the fields in both provinces were full of maize at a multitude of stages ranging from senile to just germinating with by far the greatest proportion either tasseling or about to tassel. This year, these second sowing-season fields noted by the Mission team visiting Gaza and Inhambane in May, had only just been planted, therefore, there is no guarantee that all planted fields will produce. The consequent delay in the harvest is noted to have extended the hunger gap. In areas without cassava, like Funhalorou and Chigubu, this has increased the reliance of peasants on other livelihoods in the area and the use of wild foods. In Gaza, the Mission anticipates a 45 percent reduction in overall maize area for harvest from both sowing seasons compared to last year's very extensive cropping. In Inhambane, using MADER figures, a 3 percent reduction in maize area is noted with 30 percent and 54 percent reductions in sorghum and millet areas. Maputo, by contrast, shows a greater maize planted and harvested area at first sowing, as the early rainfall was much more conducive to sowing maize than last year.

Elsewhere throughout the country, regarding maize planting, the rains provided sufficient encouragement for regular sowing patterns to be observed.

Except in the case of the poorest farmers, cereal seed availability was not noted to have been a limiting factor in districts where the main staple is either maize or sorghum. The same local seeds are used for planting and eating and sowing rates are low at 12–25 kg per ha. When the main cereal seeds are genuinely in short supply, lower seed rates are adopted; however, the usual approach is to borrow or work for seed from neighbours. Seed fairs organized during 2003/04, with the assistance of FAO and a wide range of agencies, provided diverse seeds to a limited number of families offering alternative planting material at no cost. In the marginal, semi-arid areas such as Funhalrou, where maize is a questionable crop in all but the best years, provision of maize seeds for sowing seems only to be perpetuating probable disappointment and the growing of alternative crops, as well as cassava and sweet potatoes, need to be investigated.

In the northern provinces stability of sorghum area is reinforced by the fact that a great deal of the plants are ratooned for a second year, consequently, only supplementary sowing is done to replace the second year plants and to fill gaps, usually after the maize has been sown, thereby easing demands on labour.

Given the nature of the Mission, it was not possible to confirm physically the estimated areas reported other than to say that the farm sizes appear to conform to expected patterns and that in all regions the areas were cultivated as usual. Crop proportions noted during major and minor road transects driven by the Mission in the south last year pointing to an increase of cassava in the Inhambane province that were not immediately obvious from the statistics, are reflected in a 5 percent increase in cassava area in the province this year.

## Crop Yields

### *Inputs*

In Mozambique, agricultural practices are predominantly traditional. Land is generally slashed with a cutlass, the trash burnt or buried and the area cultivated using the long-handled or short-handled African hoe. In the south, farmers with ox ploughs provide a contracting service to the others who can afford to pay the hire charge, which was similar to last year at 30 000–50 000 meticais (Mt) for 1 000 square metres. The commercial sector, including small-, medium- and large-scale farms and agricultural companies, uses both ox-drawn ploughs and tractors, hiring the latter at around 800 000 Mt per ha. in the south.

As is the normal practice, most farmers planted their crops with local seeds from the previous season's production either from their own supply or from local informal sources. The potential of such seeds is limited, however, with 100 g of grain per cob commonplace and four filled cobs per square metre frequently noted during the Mission, four-five tonne per hectare crops are regularly produced. In addition, to the peasants such seeds have three advantages: they are readily available locally, their characteristics are well understood, and they are cheap and can produce 3-4 tonnes per ha under the prevailing conditions.

As reported last year, seed companies (including SEMOC, SEEDCO and Pannar) supply some seed to farmers, but adoption rates are low. A few cereal farmers close to the main towns and along the borders with Zimbabwe and Malawi make limited use of improved maize seeds, fertilizers and pesticides. This year, maize seed delivery was delayed to the commercial farmer visited in the central region, causing him to miss

the early planting season. Mostly such inputs are used on cash crops, particularly tobacco, through company credit schemes run by JFS, MLT DIMON and STANCOM providing inputs in kind against guaranteed purchases of the product at negotiated prices. Rates of NPK and CAN used by the farmers varied but appeared to be in the order of 50kg-100kg per household for each type, which connects to an overall use of fertiliser on tobacco of around 16 000 tonnes. However, not all growers use fertiliser and not all the fertiliser supplied to growers is used on tobacco, the Mission noted well established vegetable growers in the north whose main sources of inputs are the tobacco farmers.

### *Pests and diseases*

Pests and diseases noted during the Mission to be of most concern this year were cassava brown streak and mosaic viruses, oidium in cashew, cassava mealy bug, leaf miner and *legata enroladora* affecting groundnuts and aphids affecting beans. Such problems are not unique to this year and various steps have been taken by MADER to deal with them, including the introduction of cassava varieties resistant to the brown streak disease and the introduction of cashew planting material resistant to oidium. In the districts most affected by brown streak, farmers are digging the cassava after 6-7 months to avoid the ravages of the disease. Yields of such cassava crops, noted by the mission this year, were in the order of 6-8 tonnes per ha compared to the much higher yields noted through spot check field sampling in other parts of Nampula and in Niassa. Although other insect pests such as stem-borer and grasshoppers were noted to be ubiquitous, the cases were generally stated to be mild. By contrast, in the northern region and to a lesser extent in the forested areas of the central and southern regions, the most serious pests are wild animals, particularly elephants. Methodologies designed to ameliorate the problem of elephants, while respecting international environmental and wildlife concerns, are presently under consideration/pilot application by MADER. The Mission notes that the current method appears to be to scare them away with a "community shotgun". Regarding wild pigs and monkeys, a 24 hour guard needs to be placed on the fields to protect the crops at all stages of growth. Such actions, along with bird scaring, place an incredible strain on the household labour throughout the season.

In the main maize producing areas, the use of storage chemicals appears is known, however, local methods which involve leaving the crops in the fields for weeks until completely dried out; stacking the unshelled cobs in above-ground stores that can be fumigated with wood smoke are still used by the vast majority of the farm families. Presently the pests of greatest concern are rats and weevils, with losses in the local maize cribs quoted as high as 40 percent per annum. The spread of the large grain borer (LGB) in major maize growing areas in Sofala noted by the Mission last year to have prompted a sanitation programme designed to eliminate stocks and stores where this pest occurs, was still reported as present in the central region and this year the LGB was noted to be in Gaza.

## **3.2 Food production in 2004/05**

### Main crops

Table 4 gives production estimates for the main crops at national, regional and provincial levels for the 2004/05 cropping season based on the May MADER final analyses adjusted by information collected by the Mission from field surveys, crop cuts and on farm case studies. Overall, maize production is slightly (1 percent) lower than last year at 1.403 million tonnes. Despite significant improvements in the estimated performance of maize in the northern provinces, which probably reflects better data collection and analysis, and a similar performance to last year reported in the central provinces, the performance of maize in the three southern provinces throughout both sowing seasons has been much worse than last year resulting in a 46 percent reduction in the estimated regional harvest.

**Table 4: Mozambique - Crop production in 2004/05 ('000 tonnes) and comparison with 2003/04, by region**

Province/	Maize		Sorghum		Millet		Paddy Rice		Total Cereals		Beans		Groundnuts		Cassava1/
Region	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05	% Change	2004/05
C. Delgado	140	3.4	56	13.8	3	8.8	17	-1.8	216	5.5	37	4.7	24	2.3	2 080
Niassa	244	22.4	32	16.0	1	6.9	5	4.1	282	21.2	35	21.4	2	16.5	380
Nampula	148	10.8	92	8.2	5	4.1	37	3.3	282	8.8	37	4.5	41	9.8	4 800
<b>NORTH</b>	<b>532</b>	<b>13.6</b>	<b>180</b>	<b>11.3</b>	<b>9</b>	<b>6.1</b>	<b>59</b>	<b>1.8</b>	<b>780</b>	<b>12.0</b>	<b>109</b>	<b>9.5</b>	<b>67</b>	<b>7.2</b>	<b>7 260</b>
Zambezia	263	3.8	47	-6.1	4	-56.2	81	11.4	395	2.5	36	0.6	21	0.8	2 970
Tete	191	7.6	19	-37.7	10	-28.3	0	-46.8	219	-0.8	23	20.8	7	3.4	15
Manica	221	1.1	27	-14.8	6	-33.9	1	-22.9	255	-2.1	1	-28.9	2	6.7	25
Sofala	82	-2.1	23	-48.7	3	-49.0	21	-38.1	130	-23.6	8	-9.4	4	10.0	178
<b>CENTRE</b>	<b>757</b>	<b>3.2</b>	<b>116</b>	<b>-26.2</b>	<b>23</b>	<b>-40.0</b>	<b>103</b>	<b>-4.6</b>	<b>999</b>	<b>-3.6</b>	<b>69</b>	<b>4.3</b>	<b>34</b>	<b>2.6</b>	<b>3 188</b>
Inhambane	38	-20.7	10	-23.3	3	-18.5	1	-33.5	53	-21.5	11	-17.9	18	-7.7	600
Gaza	49	-61.5	1	-71.8	0	-84.2	8	31.4	58	-58.3	8	-21.6	10	9.7	350
Maputo	28	-22.9	0	-100.0	0	0.0	3	-27.5	31	-24.2	2	-5.1	3	-10.5	60
<b>SOUTH</b>	<b>115</b>	<b>-45.7</b>	<b>11</b>	<b>-36.9</b>	<b>4</b>	<b>-42.0</b>	<b>12</b>	<b>0.7</b>	<b>142</b>	<b>-42.7</b>	<b>21</b>	<b>-18.2</b>	<b>31</b>	<b>-3.3</b>	<b>1 010</b>
<b>TOTAL</b>	<b>1 403</b>	<b>-0.6</b>	<b>307</b>	<b>-8.8</b>	<b>36</b>	<b>-32.8</b>	<b>174</b>	<b>-2.2</b>	<b>1920</b>	<b>-3.0</b>	<b>198</b>	<b>4.0</b>	<b>132</b>	<b>3.4</b>	<b>11 458</b>

1/ Cassava yields have been adjusted upwards to more realistic levels resulting in substantial changes in total production from previous years.

Note: Calculations computed from unrounded data.

In aggregate, cereal production (maize, sorghum, millet and paddy rice) is estimated to be 3 percent lower than last year at 1 920 233 tonnes as both millet and sorghum production have declined severely in the south by 42 percent and 37 percent respectively and by 40 percent and 26 percent in the central provinces. At the time of the Mission, sorghum and millet crops in the north were still in the vegetative stage making reasonable estimates of the probable harvest in July, virtually impossible, therefore estimates are conservative. Notwithstanding the foregoing, sorghum assessing is more difficult than maize and requires more time during field analysis because of the clustering of sorghum and millet plants at fertile sites and the dispersed sowing in other places in the plots. Tillering of the plants and the ratooning practices of many of the farmers further confound the ease in which the number of fruiting heads may be counted. There is also less of an understanding of the weight of sorghum/millet grain produced in the head of the local landraces so unless assessing teams are equipped with quadrats that can work in stover crops and accurate balances, the real yields are likely to remain obscure. Rice production has been sustained at around last year's national estimate due to improved production returns from Zambezia and Gaza. Estimating rice areas and yields is also problematic. Apart from the main rice growing areas in Zambezia and Gaza, the farmers grow rice in *baixos*, being any swampy areas to which they have access. Consequently the rice fields are often tiny and away from the rest of the farm. The plants are sown in nurseries and transplanted, so the number and size of the nurseries may offer the best means of estimating the area planted.

The estimated harvest comprises 72 percent maize, 16 percent sorghum, 10 percent paddy and 2 percent millet. Total maize production is estimated at 1.403 million tonnes, some 1 percent more than last year. Production of sorghum and millet is forecast at 343 000 tonnes, which is 13 percent below last year. Paddy production is forecast at 174 000 tonnes, 2 percent lower than in 2003/04.

Last year the Mission recommended that an independent assessment of cassava production should be carried out. This was done through the good offices of IITA/SARNET and the findings confirm the Mission spot checks with average cassava yields in the northern provinces are around 14 tonnes of fresh material per ha with yields in the central and southern provinces around 12 and 10 tonnes per ha respectively. These estimates have been adjusted for rainfall patterns by province and adopted by the Mission as a more accurate reflection of the annual yields obtained by the farmers who not only use and sell the cassava as freshly dug tubers that are transported by traders to the nearest big towns, but also process the tubers for sale and storage as dry cassava chips and cassava flour.

Total output of beans is estimated at 198 000 tonnes, 4 percent higher than last year due to better crop performance of pulses in the north and central regions. In keeping with the trend already identified, production of beans in the south is 18 percent lower than last year.

Groundnut production, at 132 000 tonnes, is 3 percent higher than last year due to a better production returns in the north and central provinces.

#### Other crops

Industrial crop producers in Mozambique are presently expanding and diversifying. Investment in sugar and tobacco has boosted agricultural exports over the past two years. At the same time, contributions from the traditional export commodities, namely cashews and cotton have fallen; the former due to the declining tree stock and the latter from market-driven production swings.

Notwithstanding the foregoing, cashew production is still contributing substantially to farm incomes and food supply. Peasant holdings of tens of trees produce around 50 000 tonnes of nuts annually for export but this year, the Cashew Institute expect a good crop of some 80 000 tonnes produced by an estimated 34.9 percent of the peasant families. Programmes to combat oidium, the main disease of cashew are subcontracted to private companies who are noted to have sprayed 2 million trees in 2004. The propagation of resistant varieties is expected to produce 1 million seedlings this year for distribution in the most effected areas.

Coconuts play an equally important role in household food economies throughout the littoral for an estimated 19.7 percent of the peasant families. Farm families manage 100–200 trees, each tree producing 100 kg of nuts throughout the year, which may be sold as nuts at Mt 1 000 each or as copra. Timber and local liquor are also important products of the household coconut plantations, offering wide-ranging opportunities to achieve food security for most peasants living in the coastal coconut growing areas. This year copra production is estimated to be similar to the last two years.

Cotton area planted at around 183 000 hectares is planted by some 300 000 farmers. Average production is around 80 000 tonnes and this year the crop is expected to produce more than usual as crop conditions are reported to be favourable for production.

Regarding tobacco, the present season is expected to produce 63 000 tonnes from around 180 000 growers organized through eight companies of which the Tobacos de Mocambique and Mozambique Leaf Tobacco are the most significant. This compares favourably with the 50 000 tonnes from 147 000 growers reported last year.

Sugar-cane production in the four estates is expected to be sustained this year at 2.29 million tonnes from about 30 000 hectares

### **3.3 Livestock**

Livestock numbers fell dramatically during the civil war and have not yet recovered. The Agricultural and Livestock Census 1999-2000, classifies the livestock holdings into three main categories, namely, small holdings, those with less than 10 heads of cattle, less than 50 goats, sheep or pigs or with less than 5 000 chickens; large holdings, those with more than 100 heads of cattle or more than 500 goats or sheep or pigs or more than 20 000 chicken and medium holdings, between the two extremes. It is estimated that 2.4 million farm families, 80 percent of the total number of holdings, are livestock keepers, rearing a variety of domestic animal species. The majority of these fall within the category of smallholders. The principal livestock species reared are cattle, goats, pigs and chickens. The results of the census indicated the presence of 24 million chickens, 5 million goats, 722 000 cattle and 2.4 million pigs with 133 000 (4 percent) holdings keeping cattle, 2.1 million keeping chickens, 850 000 keeping goats and 600 000 keeping pigs.

The geographical distribution of cattle population and number of holdings over the country is not uniform mostly due to health factors. The occurrence of tsetse fly and the associated trypanosomiasis precludes the rearing of cattle in the wetter northern and central areas. Heartwater and other tick borne diseases keep goat numbers down in the south. Therefore cattle production is concentrated in the south and in the western, drier areas of central provinces and most goats are found in the north, north-east. The census data indicate that in 2002, the highest cattle population was recorded in Tete province, with 27 percent of the national herd (196 000 animals) followed by Gaza province with about 25 percent (178 000 animals), Manica with 16 percent (119 000 animals) and Inhambane with 15 percent (105 000 animals).

These numbers graphically demonstrate the current low stocking density of grazing animals in what is, in the interior, essentially a silvo-pastoralist ecology of covering some 789 000 km<sup>2</sup>. This year, grazing is abundant albeit drier earlier than last year in the south. Problems regarding access to water were noted during Mission field visits to the agro-pastoralist districts of Gaza and Inhambane and herders were reported to be moving to winter watering areas earlier than last year. Throughout the country, however, large and small ruminants are noted to be in excellent body condition.

Given the extremely low stocking densities and the dispersed nature of the holdings, animal diseases are not generally a problem, except for Newcastle disease of poultry and swine fever in pigs. As vaccination of rural chickens is not an economic option for either state or private concerns, this endemic disease reappears regularly throughout the backyard units. Swine fever outbreaks have not been reported to the central veterinary authorities for several years. A robust vaccination programme introduced in 2003/4 to combat the threat of FMD from Zimbabwe-reared cattle coming across the border for grazing, appears to have been successful as no current incidents of foot and mouth disease were reported to the Mission.

Regarding animal feeding, production systems are either grass-based for the ruminants, or based on backyard scavenging as is the case with pigs and the majority of the poultry. Organized supplementary feeding of productive stock was not observed. There is, however, an emerging broiler industry: an indefinable number of small units raising day-old chicks to slaughter weight at 1.5 kg in about six weeks have been established in the vicinity of Maputo. The units buy locally produced feedstuffs. As the feed bags have no labels, nutrient content is debatable; however, it is possible that the ration includes home produced cereals. Regarding the back-door poultry that scavenge for food, it is estimated that a large proportion of the 25 million head receive some quantities of grain per day in the months immediately after the harvest.

The fragmented nature of the livestock sector makes realistic production estimates difficult. National census returns suggest that 30 percent of livestock are females of breeding age. In the case of cattle such stock may be breeding every other year; for small ruminants the frequency is expected to be higher, with annual birth rates around 80 percent. Neonatal mortality, however, is estimated to be around 40–50 percent, which is very high, as a result of management practices and of predators. Under these circumstances, flock and herd

replacing, rather than substantial growth in breeding stock, is the most likely result of natural breeding programmes. This suggests that restocking to pre-war levels will take a very long time. The veterinary herd books monitored by MADER connect to an annual increase of around 8 percent for all ruminants. This places the current cattle and goat populations at around 900 000 and 6.9 million respectively.

Except for the remote locations in the western pastoralist districts of Gaza and Inhambane, where cattle prices are noted to have fallen by 50 percent from 6 million tonnes to 3 million tonnes as herders trade stock for grain, livestock prices noted by the Mission are firm and quite standard across the country at around Mt 5-6 million for cows. Goat prices show a far wider variability ranging from Mt 150 000–450 000 for slaughter stock according to the proximity to markets.

The use of forest products is closely allied to peasant utilization of grazing in the silvo-pastoralist ecology of the Mozambique bush. Throughout all regions, peasant income is supported by charcoal-making, the cutting and selling of firewood and the use and sale of wild fruits and to a more limited extent, bush meat. The contribution from these activities varies according to location, household size and structure and access to markets. Mission findings suggest that under the prevailing conditions of unlimited access to most areas of the bush, in Gaza/Inhambane some 20 sacks of charcoal can be produced per week, which may be sold on the highway for 50 000–60 000 Mt per sack, provided access may be arranged. Prices in Niassa for similar bags of charcoal were noted at 25 000 Mt in the rural areas and 50 000 Mt in the towns.

The Mission noted last year that more organized extraction of timber is becoming evident and licences issued by MADER confer rights of extraction on traders equipped with lorries and tractors to move labourers into the forests and to extract the timber. It is not known how far such schemes ensure replanting, however, given that in Funhalorou District (Inhambane) alone 45 000 licences have been issued, guarantees of replanting of quality timber would seem to be a prerequisite for sustainable forest exploitation. No further information regarding the mechanisms of extraction was obtained.

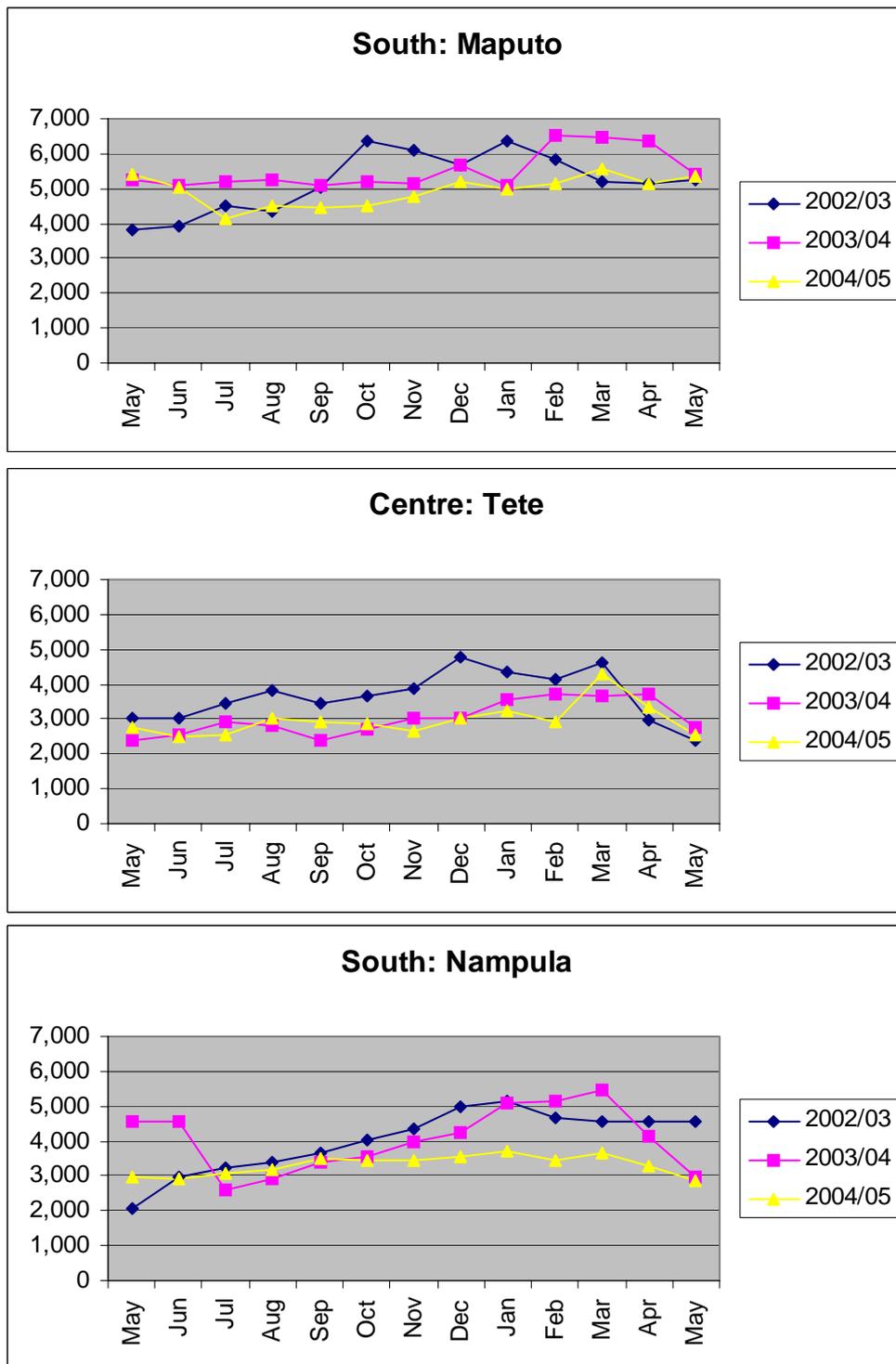
#### **4. FOOD SUPPLY SITUATION**

##### **4.1 Food prices**

Progress in recent years in the on-going Government's programme of road construction and rehabilitation has resulted in improved movement of goods among the different regions of the country, and now more maize from the Centre is found in the structurally deficit South. This notwithstanding, transport costs still remain very high and make it uncompetitive to move maize from surplus areas of the North, and central districts situated above the Zambezi river, to southern provinces, when compared with imported South African maize. At the same time, it is more profitable from these surplus areas to export maize to Malawi or Zambia, which due to its proximity appear as the most natural markets. As a consequence of lack of domestic market integration, there are significant differences in maize prices among regions (see Figure 1). Retail prices of maize in the southern Maputo market by mid-May, at 5 378 meticals (Mt)/kg, were about twice those in the central markets of Manica and Tete, where they ranged from 2 286 to 2 571 Mt/kg. Maize price in the northern market of Nampula at 2 857 Mt/kg was slightly higher, due to strong demand from neighbouring Malawi where a substantial drop in maize production is expected this year.

Maize prices in most markets in Mozambique were fairly stable throughout the year following a relatively well distributed and satisfactory harvest last year. The prices have experienced usual seasonal decline in central and northern regions since March 2005 owing to this year's satisfactory harvests there. However, in the South, prices are either flat or beginning to rise as a result of poor harvest this year. Import demand in the next few months from Malawi would determine the price movement in northern Mozambique. Last year (July 2004 – April 2005) more than 75 000 tonnes of maize was exported through informal trade from Mozambique to Malawi. This year is likely to see this amount increased substantially. Other cross-border points show vibrant market activity along Zambia, Tanzania and Zimbabwe borders but no significant amount of grain is traded.

Figure 1: Monthly retail maize prices in major regional centres (meticaís/kg)



Source: Agricultural Marketing Information System and INFOCOM, MIC, Mozambique.

#### 4.2 Supply/demand balance for 2005/06

The parameters used in the elaboration of the 2005/06 balance sheet in Table 5 are explained in this section.

##### Population

Based on official population projections released by the National Institute of Statistics, a population of 19.537 million people on 1<sup>st</sup> of October, the mid-point of the marketing year April 2005/March 2006 has been used to calculate food consumption. Population has been officially revised downwards, from an earlier growth rate of

2.46 percent per annum to 2.41 percent now, to account for increased mortality due to AIDS epidemic in the country.

### Opening stocks

Carryover stocks of maize from the previous marketing season have been adjusted upwards from the last year's stock levels due to better than usual production from the second season crops harvested in October-November 2004. The Government monitored stocks held by millers and large traders are estimated at about 101 000 tonnes. No firm figures of non-monitored stocks, at the farm level and with small traders, are available. By consensus figure, these are assumed to be about 85 000 tonnes. This number is slightly higher than last year's due to better than normal harvest of last year's secondary season resulting in higher stocks. Stocks of imported wheat and rice held by traders and millers are estimated at 60 000 and 40 000 tonnes respectively. These amounts basically represent one-month inventories held by commercial traders. Small amounts of stocks of sorghum and millets, in the order of 40 000 tonnes, are assumed at the farm level mainly in the main coarse grain producing areas in the central region.

### Food use

The apparent annual per capita cereal consumption for 2005/06 is similar to the levels used in previous year's assessment, at 114 kg including 56 kg of maize, 22 kg of rice, 18 kg of wheat, and 18 kg of sorghum/millet. There is a slight increase in consumption of wheat (by about 1.5 kg) over the previous year reflected in higher imports of this commodity and higher consumption mainly in urban areas. In addition to main cereals, substantial quantities of cassava are produced and consumed in Mozambique. In the absence of reliable survey estimates, the approximate annual per capita apparent consumption is calculated taking into account the revised total production of cassava. DNCI Research Note (May 1998) assumed the national average cassava consumption at 216 kg contributing about 38 percent of daily caloric intake out of the minimum requirement of 2140 k calories. Given the increased importance of the roots and tubers in Mozambican diet, a level of 300 kg of fresh cassava (or about 90 kg in cereal equivalent) is used as a national average per capita consumption level. Based on FAO's estimated calorie content of cassava, this level of consumption would provide about 900 k calories per person daily and would amount to about 40 percent in 2200 k calorie daily intake. Of course this would vary substantially among different regions of the country. Further research is urgently needed on the availability and utilization of roots and tubers in general and cassava in particular.

### Other uses

Other uses include post-harvest losses, and seed and feed uses. As in the previous assessments post-harvest losses have been estimated at 15 percent for maize in the northern and central regions and at 25 percent in the southern region, where storage conditions are poorer. Post harvest losses of 10 percent for paddy rice and 6 percent for sorghum/millet are used in the balance sheet. Losses of cassava, similar to the rate used in neighbouring Malawi, are assumed to be 30 percent. Retention of grains as seeds for the next planting takes into account the need for possible replanting of maize, as has been the case in the past seasons. Seed rates used are 20 kg/ha for maize, 80 kg/ha for paddy rice and 10 kg/ha for sorghum and millet. Over the last few years commercial poultry industry is declining in Mozambique due to large imports of broiler chicken from Brazil. Therefore, feed use of maize this year includes reduced requirements of the feed industry (30 000 tonnes), as well as small amounts to feed animals at household level, mainly in the months immediately after the harvest (20 000 tonnes).

### Exports

Even in years of poor harvests, substantial quantities of maize are exported informally to neighbouring countries, mainly Malawi. This is due to the combination of: i) surpluses in bordering provinces of Mozambique where maize is also a cash crop; ii) a structural deficit of maize in the highly populated southern part of Malawi; iii) a large open border between Mozambique and Malawi and closeness to population centres of Malawi, from Tete and Zambezia provinces; iv) the high transport costs from northern and central areas of Mozambique to southern maize deficit provinces, and v) relatively lower production costs in the bordering provinces of Mozambique.

This year production in Zambezia province has been satisfactory, and at the same time the harvest has been reduced in Malawi. This points to an improved export opportunity into Malawi. The Mission visited several posts on the Malawi, Zambia and Zimbabwe borders. Very active cross-border trade was observed in Milange location, where bicycles are moving substantial volumes of maize into Malawi. The price of maize in early May on the Malawi side (Muloza) was 16.6 kwacha per kilo, against 15 kwacha on the Mozambique

side of the border and much lower just some 50 kilometres from the border. Surplus maize from Angonia district of Tete province this year is moving south to Tete city instead of north to Malawi. The opening of a brand new road linking this remote district to Tete city and other consumer market points further south has changed the direction of maize flow. Also, steady devaluation of Malawi kwacha against Mozambique meticals over last two years is making this trade less attractive. Normally substantial quantities of maize move into Zambia from northern Zumbu and Maravia districts of Tete, which are cut off from southern parts of the province by the Zambezi River and the poor transport/communication infrastructure. However, the mission observed that border points with Zambia were fairly inactive in late April-early May on account of price differential not being conducive for large scale trade. A reduced maize harvest in Zambia this year will probably encourage flows to that country later in the year, but much will depend on the evolution of maize prices in bordering areas. Only limited quantities of maize are expected to move into Zimbabwe because of the lack of purchasing power in that country, the parastatal Grain Marketing Board (GMB) being the exclusive importer and strict border controls.

Since July 2004 all major border crossing points between Mozambique and its neighbours are monitored and informal trade of major grains is recorded by the FEWSNET/WFP project. The total informal maize exports from Mozambique to Malawi have been recorded at 71 000 tonnes between July 2004 to March 2005. This amount should be interpreted as the minimum since the trade during April, May and June 2004 was not recorded. Also given the long and porous border between these two countries, the actual exports to Malawi are likely to be much higher. A DFID study earlier suggested that cross-border exports could vary from 70 000 to 250 000 tonnes in a year, depending on the levels of production and prices on both sides of the border. Considering all these factors, overall, informal maize exports in the marketing year 2005/06 are forecast in the order of 150 000 tonnes and additional 40 000 tonnes as formal exports based on the pattern of past few years. Marginal quantities of rice and wheat flour are also expected to be exported to Malawi, as noted by the Mission at some border posts.

#### Closing stocks

Some drawing down of maize stocks is possible from the initial unusually high level of monitored stocks. No major changes in other commodity stocks are anticipated.

#### Import requirements

Imports of rice and wheat needed to maintain consumption at the apparent consumption levels of the past three years are estimated at 336 000 and 352 000 tonnes, respectively. Most of these are expected to be commercial imports except for the quantities brought in under the monetized food aid of about 60 000 tonnes all together. Despite exports of maize from the northern and central provinces, the food balance shows imports of maize for southern deficit provinces, which reflects the high costs of moving the crop from the north to the south of Mozambique and the proximity of these provinces to the competitive South African market both in terms of quality and price. Import requirement of maize is estimated at 175 000 tonnes, which includes about 34 000 tonnes of maize to make up for the deficit in sorghum/millet in the balance sheet. Given the high stocks and low prices of maize in neighbouring South Africa, and rising per capita incomes in Mozambique, a slight improvement in import capacity of Mozambique is anticipated. These imports, through private and/or public channels, would seem financially feasible given the rising net international reserves of the country<sup>3</sup>. Hence commercial imports of maize are forecast at 130 000 tonnes, leaving about 45 000 tonnes of maize as uncovered food gap to be met by food aid imports for emergency, relief and development programmes. Any food assistance needs in excess of this amount, based on the household food needs analysis, would have to be met through local purchases so as not to create undesirable market distortions.

Overall, total cereal import requirements in 2005/06 are projected at 863 000 tonnes, some 10 percent more than in the previous year, reflecting a slightly reduced cereal production in the southern provinces and slight increase in wheat consumption as reflected through last year's commercial imports. As shown in the balance sheet, if the estimated area under cassava is accurate the potential for surplus harvestable cassava exists. However, even a 10 percent reduction in the area under cassava would make this surplus disappear. Hence a comprehensive study is needed on cassava area, yields, consumption and market potential to draw more concrete conclusions.

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<sup>3</sup> According to the Bank of Mozambique the net international reserves as of 28/02/2005 were US\$ 908 million, up from US\$ 764 in 2004 and US\$ 648 in 2003.

**Table 5: Mozambique - Staple food supply/demand balance 2005/06 April/March ('000 tonnes)**

	<b>Maize</b>	<b>Rice (milled) 1/</b>	<b>Wheat</b>	<b>Sorghum /Millet</b>	<b>Total cereals</b>	<b>Cassava 2/</b>
<b>Domestic availability</b>	<b>1 589</b>	<b>156</b>	<b>60</b>	<b>383</b>	<b>2 188</b>	<b>11 458</b>
Opening stocks	186	40	60	40	326	0
Production	1 403	116	0	343	1 862	11 458
<b>Utilization</b>	<b>1 765</b>	<b>492</b>	<b>412</b>	<b>383</b>	<b>3 051</b>	<b>10 444</b>
Food use	1 094	430	352	352	2 227	5 861
Seed use	29	10	0	5	44	
Feed use	50	0	0	0	50	1 146
Other uses/losses	222	12	0	21	254	3 437
Closing stocks	146	40	60	40	286	
Exports	190	0	0	0	190	
Cross-commodity substitution	34			-34		
<b>Import Requirements</b>	<b>175</b>	<b>336</b>	<b>352</b>	<b>0</b>	<b>863</b>	<b>-1 014</b>
Commercial imports	130	326	302	0	758	
Monetized food aid imports		10	50		60	
Uncovered food deficit 3/	45	0	0	0	45	
Of which food aid in stocks/received/pledged 4/	17	11	0	3	31	

1/ Paddy to rice milling rate of 66.67 percent.

2/ Potentially production defined as in-the-ground availability.

3/ Total WFP Relief/Development/Emergency food aid requirements amount to 114 000 tonnes, but the difference (69 000 tonnes of cereals) will be covered by local purchases. See details in sections below.

4/ Including locally purchased 4318 tonnes of maize and 520 tonnes of rice since 1 April 2005.

Note: Calculations computed from unrounded data.

## **5. EMERGENCY FOOD NEEDS**

This assessment was undertaken in response to crop failure, at the time when no national surveys had been undertaken yet. Because CFSAM team cannot be expected to perform a sample survey under the typical time constraints of the exercise, the objectives of the mission were to confirm 3 main assumptions:

The forecasted cereals crop failures would imply:

- (i) that the consumption of a proportion of the population is likely to fall, unless there is an intervention
- (ii) that the fall in food consumption represents an exceptional event, rather than a stage in seasonal or cyclical process
- (iii) that food assistance, rather than non-food assistance is the appropriate form of intervention.

The team relied on the VAC assessment to provide recommendations on the levels of humanitarian needs and their location.

### **5.1 Methodology**

The conclusions of this report are drawn from FAO/WFP field visits, findings of VAC monitoring 2005 and a number of secondary information sources (VAC 2004, government information, remote sensing data, FEWS Net analysis, etc.). Seven multi-sectoral teams visited 45 districts across the different Food Economy Zones; 150 semi structured interviews with key informants (community leaders, district/provincial authorities, public health officials, market traders, NGOs working in the area visited and households randomly chosen among the key wealth groups). This primary data collection was done to complement the simultaneous monitoring conducted by the VAC.

This information has been analysed, summarised, and shared with the VAC. During the same period, the VAC conducted a countrywide livelihoods-based assessment in selected districts to determine the current status of food security and nutrition, the scale and nature of needs, and to provide recommendations for targeted interventions.

The estimates of food access shortfalls are based on analysis of changes in food production and food and income sources.

## **5.2 Food security background**

The poor food security conditions in parts of southern and central Mozambique are firstly caused by the severe rainfall deficits and the subsequent significant reduction of crop yields since some households find their range of livelihood options curtailed and are forced to depend on risky activities, such as rain fed cropping.

According to DHS 2003, less than 40 percent of Mozambicans have access to health care. Malaria, diarrhoea and acute respiratory infections are responsible for the most deaths of children under 5. Cholera is endemic in many parts of the country. Lack of potable water and sanitary facilities, and long distance to health care exacerbate disease prevalence.

There is little evidence of the impact of HIV/AIDS on the labour force and its subsequent impact on production in Mozambique. A recent study conducted by Save the Children shows the difficulty in coming up with "simple" HIV/AIDS related poverty indicators. The study concludes that, although the over-representation of households with orphans at the lower end of the wealth distributions suggests that HIV/AIDS is impoverishing some households, it cannot be characterized as the main "cause" of poverty.

Finally, social protection schemes are few, and at the same time Mozambique is all too familiar to humanitarian relief efforts (war, drought and flood). The ability to generate income or to source food through community transfers is very important for food security. Coping is also a mechanism of formal provision of social protection by government, such as public works schemes or cash transfers.

In Mozambique, the informal safety net relies on the ties of the extended family ranging from remittances to care by relatives. The hierarchical relationship between poor and better-off households in the rural areas plays an important role, with daily labour in exchange for food or cash as one of the main coping strategies (*ganho-ganho*).

## **5.3 Background on government policies and actions regarding food insecurity and food aid**

### Government policy and actions

In April 2005, the Government of Mozambique released the National Contingency Plan for the 2005 season to donors and humanitarian agencies. The plan estimates that 180 000 families are exposed to the risk of drought in 55 districts of Maputo, Gaza, Inhambane, Sofala, Tete and Zambezia province. Early June, Mozambique Government (via INGC) officially request WFP to provide food through a Food For Work scheme to 550 000 needy people. While the need to monitor the food security situation continues, the government action plan includes multiplication of cassava and sweet potato cuttings, pineapple and different kinds of fruit trees, input trade fairs, local seed production and the rehabilitation and maintenance of irrigation schemes, among others. Currently, some of the immediate needs are being addressed through food aid and provision of cassava and sweet potato cuttings and other agro-inputs.

### WFP in Mozambique

WFP is the only agency providing direct food distributions in Mozambique. It has managed the only large-scale program in the country to provide food during recent emergencies. As part of the Southern Africa Regional Emergency Operations Program (EMOP 2002-2004), WFP responded to the droughts and to floods. Since January 2005, WFP Mozambique is implementing the Regional Protracted Relief and Recovery Operation (PRRO), with the following programmes:

- Community safety net programmes
- Community asset generation
- Vulnerable group feeding
- School feeding

The Consortium for Southern Africa Food Security Emergency (C-SAFE) and WFP have jointly implemented a food and livelihood security monitoring and surveillance system, Community and Household Surveillance system (CHS), in six countries in the Southern Africa region since 2003. To date four rounds of surveys

covering more than 15 000 households have been completed in areas where the agencies are operational. The last round in Mozambique was done in March 2005, on the basis of 881 questionnaires.

The CHS data set presents evidence to suggest that food aid interventions have had a positive impact on the lives of beneficiaries by reducing their dependency on negative coping strategies and by improving their diet diversity and quality. Household-level behavioural changes, such as reducing the quality of the diet, skipping meals, or reducing portion sizes are short-term strategies that enable individuals to endure a shock that impacts food security. If these strategies persist over long time periods they can result in a detrimental decline in nutritional status.

#### **5.4 Vulnerability and coping mechanisms**

The livelihood systems in Mozambique change substantially between different zones. Where agricultural production is limited, livestock, fisheries or other income sources become important, especially in years of poor harvest. In 1998, the Ministry of Health together with the Ministry of Planning and Finance developed a set of district profiles that has been further defined to identify Food Economy Zones under a multi-sectoral process.

In addition, when assessing access to food across the country, two issues are of prime importance: the regionally skewed distribution of production, and the lack of north-south transportation facilities. The overall total food reserves may appear adequate, especially in the north and centre, however, localised deficits, especially in the south, may persist because of a combination of adverse factors (e.g. high transportation costs) and the inability of some households to cover the deficit through purchases.

Food security problems in the north are more related to food utilization and poverty than food availability and access, with the exception of the coastal and remote district of Chinde in Zambezia Province, where the failure of the rice harvest leads to a worrying food situation. The northern part of the country is considered a surplus area, where food is available for most households. Despite good food availability, a recent VAC survey found that in the three northern provinces, nearly half of households interviewed have very poor quality diets. In addition, results reveal that about two thirds of the population in the north use open water sources, while about 15 percent of the population walks more than two hours to fetch water.

The centre of the country consists of a mix of very productive areas and chronically deficit ones. Although chronically poor districts in the centre are also well known for livestock rearing, people will not normally sell goats or any livestock. Therefore, despite a slight increase of cash crops production (cotton, tobacco) in some parts, the majority of drought-affected districts suffer from a lack of alternative sources of income to cover the cereals gap. In these districts crop losses imply food deficit. Access to potable water has been regularly mentioned as one of the main concerns of most of the communities met.

The south is a cereal deficit area. Consecutive years of adverse weather conditions and crop production shortfall at household level, have stretched coping strategies to the breaking point for a significant proportion of the population groups resulting in a long-term negative impact on their resilience. The normal coping strategies of the poorer households (brewing and sale of alcoholic beverages, reliance on wild food, sale of fire wood and charcoal, etc) are not sufficient to meet the cash and food requirements of the households. In addition concerns have been raised on the environmental impact of such coping mechanisms: evidences of worrying level of deforestation have been reported in Inhambane. Where cassava is grown, it is often the main source of food. However the mission team observed early harvesting of cassava, before the tubers were fully mature. At the time of the mission, some households had already reduced the numbers to one meal a day.

For most households, this is the third or fourth agricultural season in the last five years with reduced harvests. Hence, many households have already exhausted their assets and have very little coping capacities to deal with future shocks. This is particularly true for households with chronically ill members, as shown in the CHS surveys.

Through a statistical clustering methodology, the VAC has divided the Mozambican rural households into 7 livelihood groups (see Annex 3). The groups are ranked from the least resilient livelihood group (group 1) to the most resilient (group 7). They are grouped according to their way of life and their capacity to produce or purchase enough food to satisfy their dietary needs. Group 1 is by far the largest, and is characterized by subsistence farming. People in group 1 can at best produce enough maize to cover 6-8 months consumption, which declines to 3-5 months in years with climatic shocks. In all groups households may feel the effects of multi-faceted shocks, although the more resilient groups are better prepared to handle these

shocks. In the rural areas of Mozambique, the less vulnerable households rely less on subsistence farming and have more cash crops and non-farm income sources.

In addition, there are new groups of food insecure. These include former workers from the commercial farms of Zimbabwe, especially from the districts on the Zimbabwe – Mozambique border, and those who have lost jobs in the mines.

Poor household income options are likely to be exhausted as demand for labour declines, limiting their ability to access food. Continuing price increases will affect poor households' purchasing power. In some parts of Gaza and Inhambane, households from groups 1, 2 and 3 are already depending on the markets to access food, although they would normally still be consuming food from their own crop production. Because of the need for cash, households are intensifying their reliance on wild food, petty trade, animal sales, informal employment (*ganho-ganho*) and charcoal sales.

A significant proportion of household income is spent on maize, especially in bad years. As a general rule, the maize prices tend to rise from November to March, fall sharply at harvest time beginning in April, and then rise gradually as the year progresses. However, this year, maize prices rose steeply and earlier, especially in the southern districts of Gaza, indicating a scarcity of maize. In the northern and central markets, maize prices have begun to fall in May in both retail and wholesale markets as a result of the ongoing maize harvest and the start of the new marketing year. In the urban markets of Maputo, Beira and Nampula, retail maize prices have remained stable during the last six months with only insignificant fluctuations.

In addition, livestock prices are already falling in some parts of Gaza and Inhambane. At the time of the assessment, in Mabalane a cow cost less than 500 kg of maize, compared to a ton of grain in normal times. This sharp change in the terms of trade between maize and livestock is an indication of poor production of maize in the southern districts.

## **5.5 Health and nutritional status**

According to 2002 surveillance data HIV/AIDS prevalence in Mozambique has risen from 3.3 percent in 1992 to 13.6 percent in 2002, and is projected to be 15.6 percent in 2005. The incidence rate is estimated at 500/new cases/day in 2004 with 40 percent of these new infections occurring in the central region.<sup>4</sup> The central region is the worst affected with an estimated prevalence of 35.7 percent in urban areas of Sofala province (Beira Corridor). 1 400 000 adults (15-49) are currently living with HIV/AIDS (See Annex 4).

The nutritional status of the Mozambican population is precarious. Preliminary findings from the DHS 2003 indicate that 41 percent of children under five are stunted (see Annex 5). Stunting rates are particularly high among maternal orphans. While overall wasting rates have declined in recent years, wasting is high in areas where HIV/AIDS prevalence is high (such as the Sofala province). HIV/AIDS is another shock that contributes directly to the vulnerability of households, resulting in a breakdown in coping strategies and reducing resilience.

## **5.6 Estimation of population in need and emergency food aid requirements**

The mission confirms the severity of the food situation in a number of central and southern districts. In these affected districts, crop losses imply food deficit because of the scarcity or erosion of alternative source of income and coping mechanisms. The already observed reduction in consumption among affected population is considered to be not normal, especially at harvest time. Hence food or cash assistance is required for the worst affected households in selected districts. Estimates of population in need of food assistance were based on the VAC assessment and methodology.

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<sup>4</sup> National Institute of Statistics and Ministry of Health. Demographic impact of HIV/AIDS in Mozambique. May 2004

**Table 6: Estimates of the populations affected by transitory food insecurity and in need of food aid by province and period<sup>1/</sup>**

Provinces	July – September 2005		October – December 2005		January – March 2006		Total cereal requirement July 05 – March 06
	Population in need	Cereal requirements (tonnes) <sup>2/</sup>	Population in need	Cereal requirements (tonnes)	Population in need	Cereal requirements (tonnes)	
Maputo	20 456	921	27 038	1 217	30 324	1 365	3 503
Inhambane	69 096	3 109	92 499	4 162	104 200	4 689	11 960
Gaza	85 574	3 851	98 709	4 442	105 277	4 737	13 030
Sofala	51 924	2 337	70 202	3 159	79 341	3 570	9 066
Manica	52 400	2 358	60 771	2 735	64 957	2 923	8 016
Tete	130 092	5 854	153 840	6 923	165 714	7 457	20 234
Zambezia	18 684	841	31 352	1 411	37 686	1 696	3 948
<b>TOTAL</b>	<b>428 226</b>	<b>19 270</b>	<b>534 411</b>	<b>24 048</b>	<b>587 499</b>	<b>26 437</b>	<b>69 755</b>

<sup>1/</sup> Detailed figures at districts and administrative posts level are available at WFP-Mozambique.

<sup>2/</sup> Rations used in calculation: 15kg cereals/ per/ month.

## **5.7 Possible strategies for food assistance**

Under both its country program and the PRRO, WFP expects to provide 114 298 metric tons of commodities in Mozambique until March 2006. In addition, a South African NGO, Joint Aid Management (JAM) has been providing a small amount of Corn Soya Blend (CSB) to schools for school feeding. JAM has also received commodities from WFP.

Modalities chosen to address the acute food insecurity situation and the required provision of food should be included in the expansion of the regional PRRO framework. Relief food will be provided through community asset generation programmes and vulnerable group feeding, in addition recovery mechanisms focusing on safety nets which will be temporarily expanded for this purpose. These activities aim to provide opportunities to rehabilitate livelihoods and strengthen coping mechanisms. The creation, maintenance or rehabilitation of sustainable assets will be envisaged simultaneously with a support towards the basic needs of the most vulnerable households and marginalised groups who may not be able to implement the labour intensive activities selected. All agriculture related FFW activities will be in line with the national agriculture production action plan (PROAGRI) and may include intensive seeds multiplication programmes, small-scale irrigation schemes, small reservoirs for livestock and introduction of new crop varieties. WFP will also consider infrastructure development after consultations with communities in order to improve their access to markets, schools and health posts. If the nutritional situation deteriorates sharply, WFP may have to prioritise also the development of supplementary feeding programmes with UNICEF and MISAU.

Food support will be provided as on-site meals or take-home rations through primary education and vocational training. Food is expected to provide an incentive for enrolment and attendance and to reduce short-term hunger. Take-home rations will be supplied to vulnerable children, based on gender disparities or orphans if attendance is dropping.

## **5.8 Non-food needs**

Food aid should be coupled with **non-food assistance and services** to preserve, recover or develop the assets and livelihoods of crisis-affected people. There is a need for supporting affected farmers while simultaneously promoting livelihood diversification and strengthening the non-agricultural economy. In this way, households' livelihoods can become more diversified (for risk-spreading reasons) and less dependent on rain-fed agriculture.

It is thus important to emphasize the need for funding to other agencies responsible for complementary inputs or interventions in order to increase the effectiveness of food-assisted programmes. For example, the lack of support for water supply, sanitation, health and agricultural interventions may significantly reduce the nutritional impact of food aid and impair the livelihoods recovery.

## **5.9 Scope for local purchase/overview of logistics capacity and constraints**

The overall goal of WFP procurement is to ensure that appropriate food commodities are available to WFP beneficiaries (operations) in a timely and cost effective manner.

WFP local purchases to implement food aid in Mozambique and in the sub region started in 2002 with amounts increasing annually. WFP purchases for Mozambique have been 13 183 tonnes in 2002, 16 750 tonnes in 2003, 17 562 tonnes in 2004 and 980 tonnes so far in 2005. WFP buys in the central and northern areas where maize is available, from 2 major traders. Efforts are also being made to purchase from small suppliers.

The north of Mozambique has the greatest agro-ecological potential and the highest rural population densities, but it is separated from the key urban consumption centres (Beira in the centre and Maputo in the south) by long distances and under-developed system of feeder roads, poor north-south road links and a high cost of coastal shipping industry. As a result, southern Mozambique is supplied by the south / centre of the country and by South Africa during normal years, while central and north Mozambique typically feed themselves and export surpluses to their neighbours.

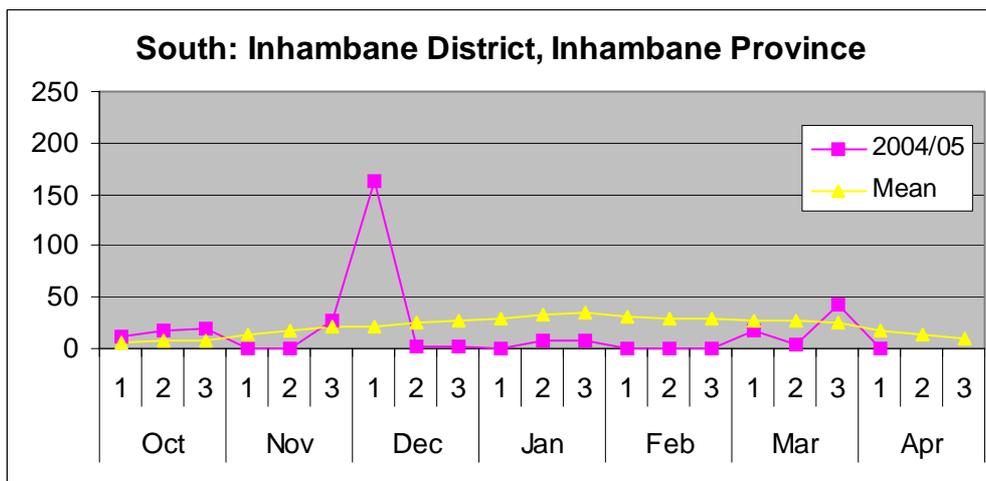
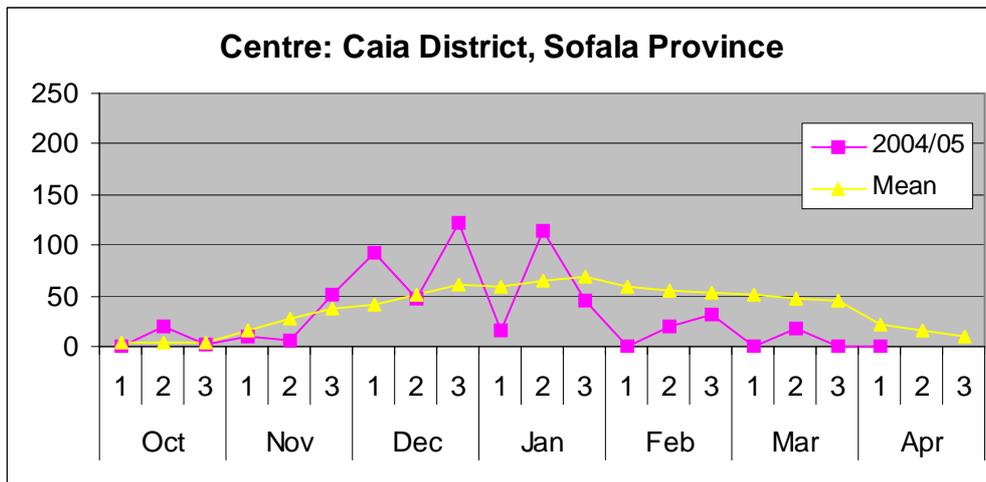
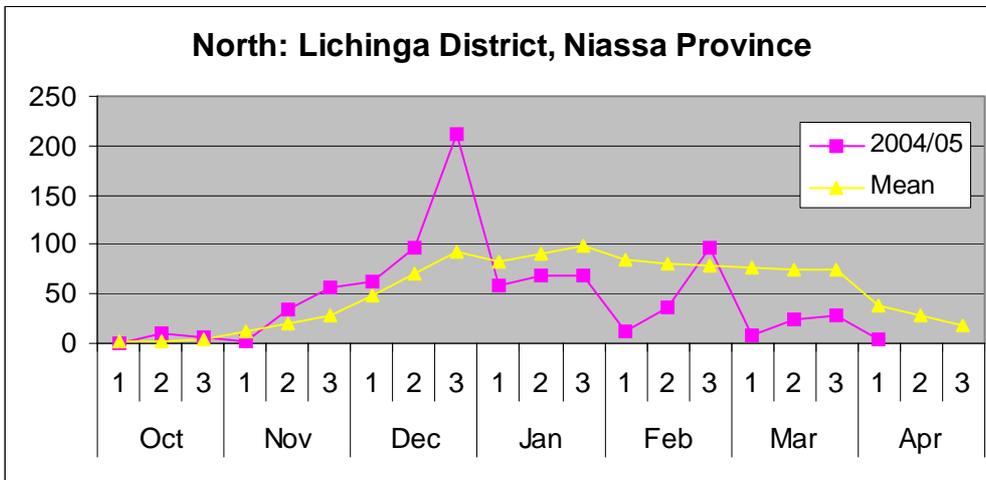
Maize production has increased quite consistently in the last 11 years in Mozambique. Zambezia Province is the largest maize producer and also the largest exporter to Malawi. The bulk of the trade is unrecorded – with most of it carried through the Milanje-Muloza border post on bicycles. However, the devaluation of the Malawian Kwacha and the US dollar impacts the exchange rate between neighbouring currencies. Mozambican markets, with a high internal demand and an unfavourable exchange rate with the Malawian Kwacha, may to a large extent divert the normal flow of maize towards Malawi. It was noted that there has been more movement than before of produce from the north to the south of the country, which may result in lower cross-border export to Malawi.

Generally speaking, the lack of capital hampers local and small traders. They cannot afford to store maize or buy in large quantities as this will impact on their cash flow. Mozambican traders do have difficulties mobilizing seasonal finance for buying produce and capital for transport and infrastructure.

In this specific context, enlarging WFP's supplier base by including smaller traders in WFP's local procurement program for the coming years is recommended, as this contributes to the development of local trade in food commodities, particularly maize. An in depth assessment is needed as a prerequisite to identify potential actors and overall costs and in getting a better picture of stakeholders capacities.

**ANNEX 1: Rainfall Information**

**Figure A.1: Rainfall pattern in Mozambique by region: 2004/05 season compared to long term mean levels (in mm)**



## **ANNEX 2: Agricultural situation by province**

### **Northern region (Cabo Delgado, Niassa, and Nampula)**

#### **Cabo Delgado**

Because of its vast coastal plain and the network of tributaries of the Rovuma and Lugenda rivers that has created fertile valleys in the interior; Cabo Delgado is one of the provinces with the highest agricultural potential in Mozambique. Rainfall is usually well distributed and above the normal requirements for cereal production. Agricultural production is rainfed, subsistence farming on holdings averaging 1.22 ha conducted by some 400 000 farming families. The main crops are cassava, maize, sorghum, millet, rice, beans and groundnuts. The Mission visited the districts of Namuno, Montepuez and Quissanga to provide a cross section of growing conditions experienced this year.

The 2004/5 rainy season started early in the third dekad of November and continued until the first dekad of April in most districts. Except in the southern part of the province, rainfall quantity was normal or above normal, but the distribution was less regular than last year with frequent dry spells interspersed with heavy rain and a general dip in the rainfall pattern was observed in January.

Cultivation is by hand and this year little if any reseeding was necessary. As was the case last year, the rainfall pattern was not conducive to rice sowing early in the year in the Pemba cluster.

As most farmers use their own seed stock and last year's harvest was good, seeds for the main cereals were readily available although farmers in Pemba were supported to a limited extent by NGO credit. Seed fairs do not seem to have been as common as in 2003/4.

Hoes and machetes are available in the local markets at prices said to be comparatively high.

Pests of concern include elephants, monkeys, wild pigs, rats and birds and grasshoppers along the banks of the Lurio River. No outbreaks except for the menacing presence of marauding elephants, were considered serious and no chemicals were distributed this year by the PDA. Brown streak and mosaic remain serious diseases of cassava noted in the districts of Mocimba da Praia and Palma.

Fertilizer was used only on cash crops, supplied as credit-in-kind to cotton and the few tobacco growers. The residual effect of fertilizer on the follow-on cereal crops is likely to increase yields, this for the cotton growers, who planted 29 000 ha in 2002/3 and who may have planted around 40 000 ha last year and even more this year, this year is likely to have a noticeable effect on production.

Livestock numbers are low and their condition is good as might be expected with abundant grazing. The only major animal disease noted is Newcastle disease of poultry.

Maize yields range from 1.0 t/ha in Mocimba da Praia to 1.58 t/ha in about half of the districts. Area and production details are given in Tables (3 and 4). Regarding cash crops preliminary estimates from the commercial sector anticipate better production than last year.

#### **Niassa**

In Niassa agricultural potential is very high, with favourable rainfall and large tracts of fertile soils. Production is predominantly of the rainfed subsistence type, characterized by intercropping and average individual holdings of 1.42 ha. The present farming population of some 220 000 households has increased over the past four years with some 38 000 households returning from other countries after the civil war. The main food crops are maize, beans, sorghum, millet, cassava and groundnuts farmed both as monocultures and complex intercropped combinations in a shifting cultivation system that anticipates moving every 12 years. Cotton and tobacco are the main cash crops. The Mission visited the districts of Mandimba, Lichinga and Marrupa and drove slow transects through the agricultural areas of Majone and Mauaie. Information regarding the other districts was provided by the central government, NGOs and other sources.

The rains in 2003/04 started early in the second dekad of November continued until various dates in February/March depending on location. Rainfall was generally above normal and up to 20 percent greater than last year. The distribution was, however, erratic with repetitive sequences of heavy rains and dry spells.

Farmers use their own seeds so cereal seeds were readily available, sowing dates and rates were normal and no significant replanting was noted. As is usual, cultivation was manual and weeding followed the usual frequencies of 2–3 times per year resulting in clean fields in most areas..

Fertilizers are used only by cash crop growers with contracts with the cotton and tobacco companies. Some 2500 tonnes of NPK and CAN were distributed by STANCOM to the tobacco growers for the 2004/05 season for use on 11 357 ha planted to tobacco. An estimated 19 230 ha was sown to cotton but no information regarding fertiliser use was available.

There were reports of grasshoppers, stalk-borers, termites and birds affecting maize and sorghum, but at levels no higher than those considered to be normal.

Livestock numbers are low and their condition is good as abundant grazing and good water sources are readily accessible. The only major animal disease noted was Newcastle disease of poultry.

The total production of cereals in the province is expected to be 22 percent more than last year due to better reporting. District average maize yields range from 1.2 t/ha in Mauaie to 2.00 t/ha in Cuamba with most districts achieving more than 1.5 t/ha. Yields of maize at 3-4 tonnes per ha were noted throughout the transects driven by the Mission and measured in spot-checks in Lichinga and Mandimba districts. Cassava yields were measured in Mandimba and Marrupa at 16 and 35 tonnes per ha respectively.

Tobacco production is expected to reach 9 883 tonnes from 11 357 ha and cotton production is expected to be higher at some 13 000 from 19 000 hectares.

### Nampula

The main food crop in Nampula province is cassava, grown in all districts in significant quantities and particularly in the sandy soils of the coastal districts. Other food crops are maize, sorghum, millet, rice, beans and groundnuts. Cotton and cashew are important cash crops for smallholder farmers. The average size of holdings is 1.16 ha. The Mission visited the districts of Monapo, Mogovolas, Nampula, Ribaue and Malemma to provide a representative cross-section of conditions experienced this year. Information from seven other districts was provided by in-depth interviews with the District Directors of Agriculture.

The 2003/04 rains started early in the second and third dekad of November and continued irregularly until the end of March. However, in Muecate, Mossuril, Nacala Velha, Malemma and Ribaue the rains were noted to be heavier than last year but the distribution was not as good, however, extreme events were not reported.

In Nampula, virtually all farmers use their own seeds carried over from the previous year; this season, following the good harvest last year, cereal seeds were readily available, sowing dates and rates were normal and no significant replanting was noted. As is usual, cultivation was manual and weeding followed the usual frequencies of 2–3 times per year resulting in clean fields in most areas.

Fertilizers (NPK and urea) were used only on the minor areas of cash crops provided as credit-in-kind to contracted farmers cultivating cotton and tobacco. Cotton area is noted at 93 000 ha and tobacco is noted to have been planted on 6 145 ha.

The main problem regarding pests and diseases is brown streak disease of cassava, which is seriously affecting yields in Memba and to a lesser extent in parts of the neighbouring districts. Farmers are harvesting earlier to beat the rot that sets in and spoils the tubers, consequently yields are reduced to 6 tonnes of fresh material per ha in such areas whereas elsewhere in the province they are noted this year by Mission spot-check sample sites 14-18 tonnes per ha. In the interior, rats, birds and grasshoppers were the greatest causes of concern, but no infestations were considered to be worse than usual.

Livestock numbers are higher than in the two other northern provinces, but are still very low compared with the local potential. Body condition is good, as might be expected with abundant grazing and no current water supply concerns. The only major animal disease noted was Newcastle disease of poultry.

### **Central region (Zambezia, Tete, Manica and Sofala)**

#### Zambezia

Zambezia is situated north of the Zambezi River, which separates it from the rest of the central region. It borders Malawi to the west where markets for surplus production are often found. Zambezia possesses

some of the best agricultural land in the country, while parts of the coastal districts of Pebane, Maganha da Costa and Inhassunge have porous sandy soils, consequently the province has wide-ranging crop performance characteristics. Weather conditions are usually favourable for agriculture, especially in upper Zambezia and the balance between low-lying areas (*baixos*) and the highlands provide alternative locations for different crops and cropping systems, one of which usually suits the prevailing rainfall pattern of the season. Within this context, the average farm holding is 1 hectare; the main food crops are maize and cassava, followed by sorghum, millet, rice, beans and groundnuts. Coconuts, cashews, tobacco and tea are important cash crops the former two crops providing important contributions to the income of 30 percent of the farm families.

This year, the Mission team visited the districts of Mocuba, A. Molocue, Milange and Pebane representing the coastal and the interior districts and both lowland and highland agro-ecologies. Further information was provided by World Vision on crop performance in the districts of Lulega, and Gurue to augment data received at provincial and central levels.

The 2004/05 rainy season started in most districts in early October with good rains in November following a pattern seen in 2003/04. In the second dekad of December the rains were more intense than in the previous two years causing rivers to rise and low-lying areas to be flooded. Less intense rains than in the previous two years are noted in January and February. Therefore, in keeping with the emerging patterns elsewhere in the central region the rains were early, erratic and disrupted planting in the lowland areas during December and early January through localised flooding in the river basins. Thereafter, from February onwards, the rains appear to have been less in the low-lying areas allowing rehabilitation of the fields and nurseries and replanting where required,

Planting began on time in the highlands but was later in the lowlands where the area sown to irrigated rice is expected to be similar to last year. Seed availability was not noted as a problem as all peasants use local planting material, usually from their own stocks, carried over from the previous season. Cultivation and weeding was conducted by hand, as usual. Pests and diseases noted include *cochinilha*, stalk-borers and grasshoppers and brown streak disease on cassava in some coastal locations.

Provincial levels of fertilizer use for general field crops are very low at less than 10 tonnes, however, this does not include the fertilizer supplied by Tobacos de Mocambique and STANCOM to their 13 000 growers who planted an estimated 4 000 ha of tobacco, and that used on cotton planted on some 10 000 hectares.

Given the mixed rainfall pattern, crop yields reported to the Mission were equally mixed. World Vision's returns from 25 farms in three districts, re-analysed by the Mission, suggest yields ranging from 0.4 to 2.8 tonnes per ha with most fields giving 1.0-1.6 tonnes per ha.

Livestock numbers are extraordinarily low; animal condition is good, reflecting adequate pastures, no current water shortages and no noted animal diseases except Newcastle disease, which regularly destroys the backyard poultry units.

Regarding cash crops, 2 000 tonnes of tobacco is anticipated and cashew production is expected to be better than last year.

### Tete

In Tete province the northern districts of Angonia, Tsangano and Macanga are important cereal-producing areas, where a large proportion of farmers use animal traction. These districts normally have good rainfall in contrast to those south of the River Zambezi (Magoé, Cahora-Bassa and Changara), which have low and uncertain rainfall. The main staple crop is maize with important contributions from sorghum and millet, beans and groundnuts; cassava and rice are less important. Tobacco is a very important cash crop in the smallholder sector, especially in the districts bordering Malawi, including Angonia. The average farm size is about 1.17 ha. The Mission visited the districts of Angonia, Bassone, Shifunde, Magoé and Mutarara. Results from other districts were provided by the Provincial Department of Agriculture and NGOs.

With localised exceptions, the rains started early in the first dekad of November in most parts of the province and were plentiful and well distributed until the end of January. Breaks and erratic distribution patterns followed in February and March.

From Mission returns it would seem that almost all farmers use local seeds carried over from the previous season so the majority of farmers had seeds this year. Areas planned were cultivated, mostly by hand, although the Mission observed animal traction in Magoé with hiring charges ranging from 500 000 Mt to 1.3

million Mt per ha; and the use of tractors in Angonia where hiring charges are noted at 1 000 000 Mt per ha. Sowing rates used conformed to the expected levels with no significant reseeding reported. Weeding is conducted by hand with 2-3 passes noted this year, reflecting the good early rains. Unlike other provinces a clear labour rate is discernible at 4-500 000 Mt per ha.

As elsewhere, the only peasants using fertilizers are the contract growers of cotton and tobacco of whom there are around 8 000 and 58 000 respectively, farming a planned 10 000 ha of cotton and 32 381 ha of tobacco. This fertilizer has a residual effect on the follow-on cereals, used in the recommended crop rotations. In addition, some farmers are taking the opportunity to exchange tobacco for fertilizer for other crops and some may be used directly on maize, in favourable rainfall areas. Such effects are outside the scope of the Mission to audit but need to be considered by the Districts Agricultural Directions (DDAs) in future years when assessing maize yields, particularly as the cash crop areas are increasing.

Pest and disease challenges have been mild, with the greatest field crop damage caused by elephants. Meanwhile post-harvest losses caused by grain weevils, reported in Angonia and Chiuta last year, are likely to be a persistent problem. As well as the ubiquitous use of pesticides on cotton throughout the province, significant levels of pesticides are being used on horticultural crops in Angonia, where the main problem this year appears to be aphids on vegetables and beans.

Animals are clustered in Mozambique through agro-ecological pressures, Tete province being comparatively tse-tse free, hosts the largest cattle population of 334 578 head of which 35 percent are estimated to be breeding cows, and a significant goat population of some 900 000 head (110 000 TLUs). Stocking density is reported to be high in the southern sector; however, pastures are noted to be good, water points are accessible, animal body condition is good, prices are firm and there are no significant reports of animal disease except Newcastle disease of poultry.

Tobacco and cotton harvests are expected to be better than last year at 27 000 tonnes and 7 000 tonnes, respectively.

### Manica

Three important topographic features influence agriculture in the province: the western mountain range, the central plateau and a series of valleys along the Pungue and Buzi rivers and the tributaries of the Zambezi and Save Rivers. The province has large tracts of fertile soils in the districts of Gondola, Manica, Sussendenga, Mossurize and Barue. Maize is the main food crop, followed by sorghum, millet, beans and groundnuts; rice and cassava are important minor staples. Tobacco, cotton and sunflower are important cash crops in the province. Many farmers in the province, especially in districts bordering Zimbabwe, use fertilizers, and average farm size is about 1.58 ha. The Mission visited the districts of Mossurize, Barue, Manica and Macossa.

The provincial rainfall pattern recognises a normal start in October, a slightly drier than normal November followed by heavy rains in December and January drying off in February and March resulting in a shorter than average season. Such a pattern was confirmed in the districts visited.

Local seed stocks enabled farmers to sow cereals as required and reseeding on any large scale was not necessary. As catching the early rain was the main factor in a good performance this year, delays in the supply of improved maize affected sowing dates and reduced yields of commercial farmers in the region.

Cultivation in the peasant sector was mostly by hand, larger farmers hiring labour gangs at around 1 million to 800 000 Mt per ha at prices similar to last year. Weeding was performed through family labour 2-3 times during the season, starting for maize soon after emergence. Grasshoppers, birds and termites and elephants were the pests of most concern, but no serious losses were noted. As elsewhere, the only chemicals used are supplied either to the contract farmers producing tobacco and cotton or vegetable farmers. Presently, 5 000 ha of tobacco are being grown on contract for Tobaccos de Mozambique however only some 500 hectares of cotton are cultivated.

Livestock numbers in Manica are increasing but are still low at 134 000 head of cattle and 900 000 (186 000 TLUs) small ruminants. Lowland and highland pastures are in good condition and water points are plentiful. Consequently animal body condition is good. Cattle breeding stock prices are firm at 5 000 000 Mt per head and similar to the prices found throughout the south. Goat prices at 150- 250 000 Mt for slaughter stock are firm.

Tobacco production is expected to be 6 860 tonnes this year from 5 000 ha.

## Sofala

Diverse types of soils characterize Sofala province in a series of strips that run north–south. A variable rainfall pattern (east–west) creates distinct and identifiable agro-ecological zones. Consequently, there are diverse agricultural systems that have led to major variations in production on average holdings of 1.14 ha. The main food crop is maize, followed by sorghum and millet, rice, beans, groundnuts and cassava. Sugar-cane is an important cash crop in the commercial sector. The Mission visited the districts of Gorongonza and Machanga and met with DDAs from other districts.

The rains, which began normally in October, were initially similar to last year at a lower level than expected during November, then picked providing more rain than last year albeit in the form of erratic events during December and January. Unlike last year there were no prolonged rains in February and March therefore Machanga and neighbouring districts have had a worse season than 2003/4.

Reseeding however was not noted as a serious issue this year in most of the provinces the early rains helped establish and nurture the early sown crops.

Cultivation in the peasant sector was mostly by hand, however, the Mission noted that animal traction is increasing. The normal weeding practices were observed. As elsewhere, fertilizers are used only on cash crops and are supplied from company credit-in-kind. Some 3 000 growers planted 1 300 ha of tobacco under such schemes and 3 000 hectares have been recorded as planted to cotton this year.

Pests and disease noted include grasshoppers and leaf miners but the most serious cause for concern, as noted last year, is the appearance of the large grain borer or “scania” (*Prostephanus truncatus*). This devastating pest is still noted as present.

Livestock numbers in Sofala are very low with only 5 000 cattle and 550 000 small ruminants. Animal body condition is good and pasture and water points are in good condition. Prices are similar to those last year.

In addition to cereal production (shown in Table 4), the province is expected to produce 1 700 tonnes of cotton and 785 tonnes of tobacco.

## **Southern region (Inhambane, Gaza and Maputo)**

### Inhambane

Inhambane province has comparatively high humidity along the coastal zone, extending up to 50 km inland. Rainfall decreases progressively from east to west and agricultural production is concentrated within 80 km of the coastline. The main food crops are cassava, maize, beans and groundnuts; millet and rice are also grown. Coconuts, cashew and citrus are important cash crops. Combinations of either one or both of the former two commodities with cassava offer important sources of food security in most districts. The average farm size is 1.35 hectare and family holdings of coconut and cashew may run into hundreds of trees. The Mission visited the districts of Panda, Funhalouro, Morrumbue and Zavala.

The rains started with a flourish in October in both interior and coastal districts but in November the early promise gave way to dry spells and high temperatures in most districts of the province. By December the cumulative rainfall was below normal in most districts. However, during December and January the rains were heavy interspersed with dry spells. From February until early April few rains are recorded leaving the interior forest based provinces drier than last year. Since the beginning of April, rains have encouraged opportunistic planting of maize and beans in the eastern districts.

Mission transects driven throughout the southern coastal districts last year (2003/04), reveal that by far the greatest area is cropped to cassava, which would now seem to be the most important staple grown in the province. The Mission again recommends that the crop patterns be reviewed in each district to find out if the traditional crop area model requires adjusting to reflect the current situation.

Seeds used this year for all field crops were predominantly from local sources carried over from last year or obtained informally through farmer to farmer exchanges and local markets. Such seeds were readily available at the price of food grains. Sowing rates at around 15 to 20kg per hectare resulted in a remarkably consistent plant density of 3–5 plants sown in holes at 1 m intervals in both intercropped and single-stand fields.

Cultivation is mostly by hand, however, animals are for hire at rates noted this year in Funhalouro, for one pass, from 300–600 000 tonnes/hectare. Weeding is conducted primarily as a family occupation with support from friends and neighbours through reciprocal working arrangements and is noted to have been conducted regularly this year on all crops.

The main pests of growing crops, noted by the Mission during the year, were grasshoppers on all crops, and aphids and leaf miner on groundnuts. Cassava mosaic is the main disease. Reports of the presence of large grain borers were confirmed by Mission observations in Govuro. In the southern region, storage losses are noted to be one of the farmers' greatest concerns given the high humidity throughout the year, the use of traditional silos, the non-use of storage chemicals and the presence of weevils, rats and birds in the forestry/agro-forestry environment. The added risk of large grain borer infestation is a serious development requiring immediate attention.

Livestock numbers in Inhambane are increasing and the pasture conditions are good, but water points are scarcer than last year. Prices of large ruminants are noted to be normal in most areas but have dropped by 50 percent from the high 6 million per head recorded last year in the more remote locations of the western districts, as herders sell stock to buy grain and buyers are limited. Poultry units are regularly disrupted by Newcastle disease, which is noted as the most serious cause for concern regarding animal health this year.

The total production of cereals in the province is expected to be 22 percent lower than last season without counting the second season that has just been sown. Average yields of maize provided by the DPA are fairly consistent at 0.42 tonnes per ha, which is poor and masks the range of production from the early sown crops and doesn't reflect planting density or the performance of the early season sown crops. Production of cash crops such as copra and cashew is expected to be better than last year when it was noted at 19 000 and 7 000 tonnes.

### Gaza

Much of the interior of Gaza province is dry, but rainfed agriculture is found in coastal areas and along the Limpopo, Elephant and Changane Rivers and their tributaries. Production is also conducted on land previously irrigated under a major scheme in Chokwe, rehabilitated after the floods in 2000, but which has yet to become operational. The plain covers 30 000 hectares, of which some 8 000 hectares are currently cultivated with maize, vegetables and a few hundred hectares of rice. In the province, maize is the main crop, followed by beans, groundnuts, cassava, rice, sorghum and millet. Cashew, rice and vegetables are important cash crops. The Mission visited the districts of Chigubo, Bilene, Marracuene and Chicualcuala. Massinger, and Guija, and drove slow transects through all the other districts except In-depth discussions were held with Directors of Agriculture from Mandlakaze, Chibuto, Massangena, Xai-Xai and Chokwe drove transects through agricultural areas to assess, with a reasonable degree of confidence, the maize and sorghum cropping patterns and crop quality.

The rainfall pattern was similar to that in Inhambane, where rains started in late September and early October, followed by irregular and heavy rain in December and January. Thereafter the rains were infrequent and low in quantity until late March early April, when the second planting season began encouraging the staggered planting of maize until the time of the Mission in May.

Although the majority of the farmers practice manual cultivation, some 30 percent use their own or hired animals, and an estimated 10 percent have access to tractors. Contracting rates this year are noted to be similar to last year at 450–500 000 Mt per hectare for one pass with animals; most farmers seem to be using two passes. Tractor ploughing and harrowing runs to 2.5 million Mt.

Seed sources are local as farmers rely on their own carry-over seeds, farmer-to-farmer exchanges and local markets. Enough seeds were available this year to meet replanting demands at the median seed rate of 3–5 plants per hole at 1 m spaces, and to allow the staggered planting that is still taking place.

This year's irrigated rice area in Chokwe is larger than last year at 850 ha as more water was available earlier in the season and yields are expected to be better.

Incidents of pests and disease on field crops include normal levels of stalk-borer in maize, leaf miner on groundnuts and aphids on beans and grasshoppers; there were rats on all crops. Although pests of growing crops do not appear to be a serious concern this year, storage pests were noted as a serious problem. Storage chemicals are known, but are not widely available in appropriate quantities or prices low enough for the small peasant farmer. Storage losses this year are therefore expected to be high at around 20 percent for maize.

Livestock numbers in Gaza are higher than in the other two southern provinces. The silvo-pastoralist nature of the interior offers countless hectares of untouched grazing. This year, the pastures are good, water points functioning and the animals are noted to be in good condition. Livestock prices are firm in the main populated areas but falling in the remote locations in the western interior districts. Cattle are consistently quoted at 9 million per head according to quality, whereas goat prices vary according to the distance from Maputo and range from Mt150–650 000 per head. Forest resources are also being tapped for timber, firewood and charcoal. In this regard, the railway provides rapid access to the markets in Maputo.

### Maputo

Possessing the smallest agricultural area of all ten provinces, Maputo is divided into seven districts, of which three Magude, Manhica and Boane account for 50 percent of total area planted to food crops. The main crop is maize, followed by beans, groundnuts and cassava; other crops include sorghum and rice on a limited scale. Cash crops include cashew, rice, vegetables and citrus in irrigated areas. Sugar-cane is an important cash crop in the commercial sector. The Mission visits were limited to discussions with some DDAs.

The pattern of rainfall was dissimilar to that in the other southern provinces. Good rains in September, October and November were followed by erratic rain and increasing dry spell from December onwards. Early planted performed much better than last year, late planted maize was not sown until the rains came in April. No further information is available on husbandry practices or performance.

Rats, birds, stalk-borer and land crabs on swamp rice were considered to be the main pests. The main diseases seem to be mildews and cassava mosaic virus. However, the main pest and disease problems are during storage.

Livestock numbers in the province are increasing, pasture and water availability is good, and animal body condition is excellent. Animal prices are firm and have been consistently high for the past year at 5–6 Mt million for cattle and 450 000 Mt per head for slaughter goats.

### **ANNEX 3 – General characteristics of the livelihood groups**

(**Mozambique Vulnerability Assessment Group**, Analysis of Current Vulnerability in Seven Provinces of South and Central Mozambique, 2004)

The 7 livelihood groups that were identified are in 2004 are the following:

#### **Group 1: Subsistence Farmers facing Shortages**

The production system is limited, with 65 percent producing cereals and 51 percent cassava and sweet potato. Half the households of this group produce beans as well. The group represents the lowest access rate to land, given that its households only have “machambas” on high ground, which produce less in years of drought. Livestock farming is limited.

#### **Group 2: Basic Subsistence Farmers**

The production system focuses on growing cereals. The production of beans is low, with 36 percent of the households involved. The same goes for producing cassava and sweet potato, which is practiced by a mere 26 percent of the households. Households possess “machambas” on high grounds, and some of them own low-lying “machambas”. Livestock farming is limited to swine, chicken and goats/sheep.

#### **Group 3: Farmers Dependent on Cereals**

Subsistence farmer, large cereal producers, but **no cassava or sweet potato**. Households have their “machambas” on the high ground. Some households produce vegetables. Livestock farming is limited to swine, chicken and goats/sheep.

#### **Group 4: Farmers with Diversified Production System and Informal Employment Opportunities**

The production system is diversified, growing of cereals, beans, cassava or sweet potato and also vegetables. Households generally have a “machamba” on high grounds although some also have low lying “machambas”. Most households engage in livestock farming.

Group 4 differs from the foregoing groups in the importance of informal work. Main sources of income are informal work and agriculture, for men as well as for women.

#### **Group 5: Farmers with Diversified Production System and Animals**

The production system is diversified, with 55 percent of the households growing cereals, beans, cassava or sweet potato. This group produces more vegetables than the other groups. Its households cultivate on average 1.1ha “machamba on high grounds and 0.6ha on low grounds. Compared with the other groups, livestock farming is more important. All households own cattle, some swine, chicken and many households have sheep/goats.

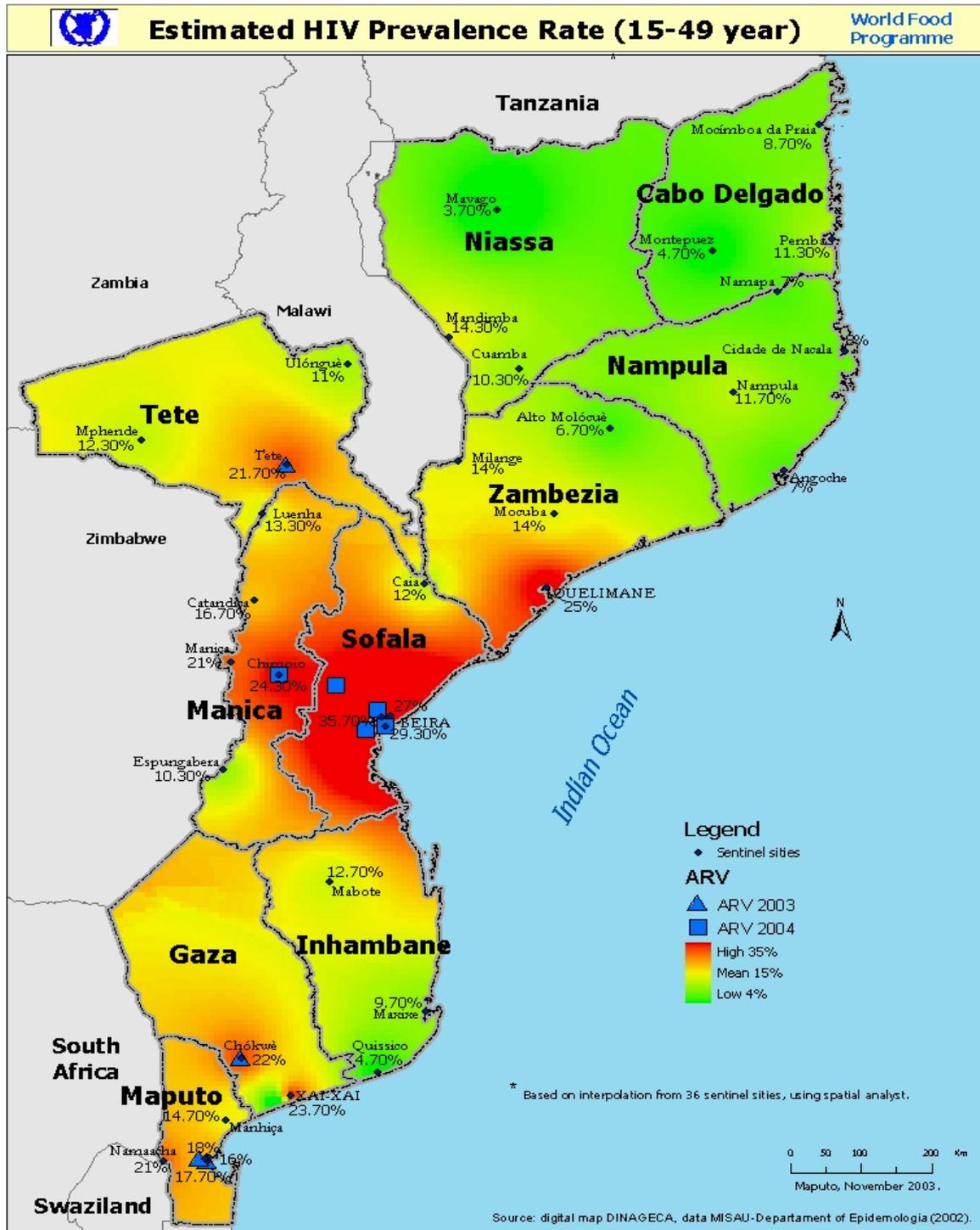
#### **Group 6: Self-Sufficient Farmers with Income from Agriculture**

The production system is diversified, with all households growing large quantities of cereals, beans and cassava or sweet potato. Some 55 percent produce beans and 17 percent vegetables. Households cultivate little more than the average, with one “machamba” on high grounds and some with one on low grounds.

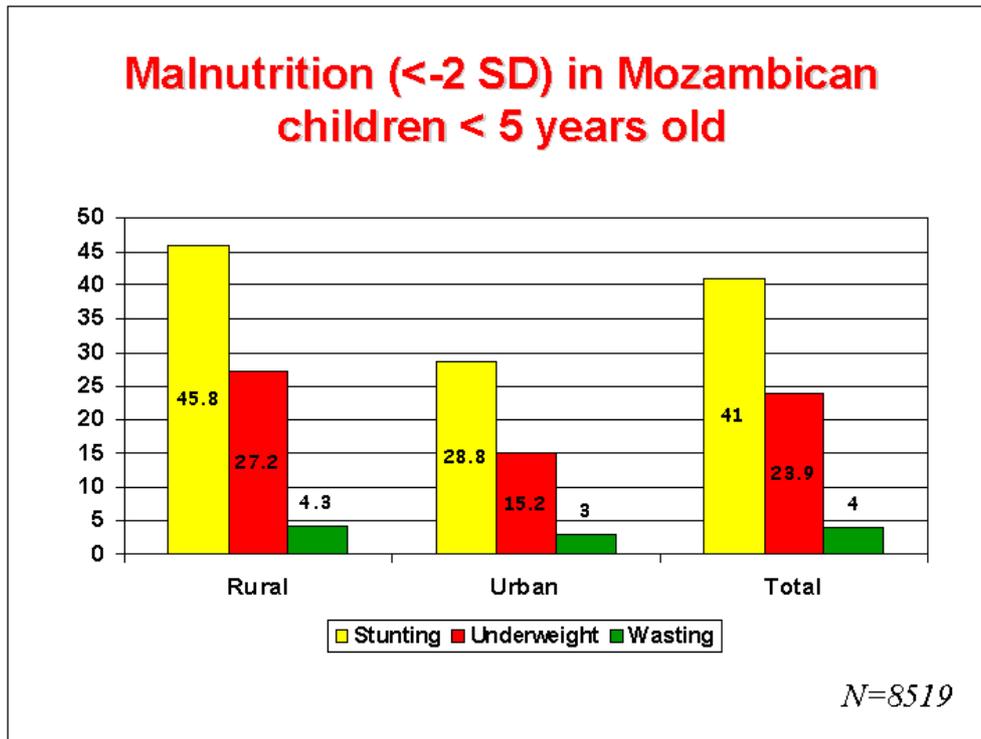
#### **Group 7: Farmers with Diversified Production System, Income from Formal Employment and Remittances**

The production system is diversified, with most households (76 percent) growing cereals, cassava or sweet potato, beans (65 percent) and vegetables (27 percent). On average the number of “machambas” on high grounds equals that of those on low grounds. Livestock farming is diversified. Around 15 percent of the households possess bovine animals and the ownership of other animals is similar to that of other groups. One of the household’s members has formal employment.

**ANNEX 4. Map showing HIV/AIDS Prevalence in Mozambique by region**



**ANNEX 5. Nutritional status of children under five (DHS 2003)**



*This report has been prepared by Kisan Gunjal, William I. Robinson and Sylvie Montembault under the responsibility of the FAO and WFP Secretariats with information from official and other sources. Since conditions may change rapidly, please contact the undersigned for further information if required.*

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