Menu

**FAO GLOBAL INFORMATION AND EARLY WARNING SYSTEM ON FOOD AND AGRICULTURE**
**WORLD FOOD PROGRAMME**

# SPECIAL REPORT

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

**31 May 2000**



## Mission Highlights

- Torrential rains and the worst floods in 40 years in February and March resulted in a serious loss of foodcrops area and yields in three southern provinces. Two central provinces were also affected.

- The second season crops being planted in the same provinces will be crucial for the partial recovery of production. The outcome will depend on the timely provision and judicious use of seeds supplied by emergency programmes.
- Elsewhere in the Northern and Central Regions, heavy rains in February and March rescued a main season that had started badly due to late and irregular rains with prolonged dry spells in December.
- Overall, the output of cereals and beans is forecast to decline below last year's good harvest, but maize surpluses will still be available. The sale of carryover stocks and the arrival of the new crop have resulted in low prices of maize in Northern and Central provinces.
- High transport costs and a dysfunctional marketing system prevent the internal North-South movement of grain at economic rates. Prices in southern provinces are at high levels and on the increase reflecting a sharply reduced crop.
- Emergency food aid for flood-affected and food deficit communities, amounting to 60 000 tonnes, is needed for 650 000 people.

# 1. OVERVIEW

Following the worst floods in 40 years which caused extensive damage to housing, infrastructure and agriculture in southern areas, an FAO/WFP Crop and Food Supply Assessment Mission to all the production areas in the country was fielded as soon as water receded, from 17 to 29 April 2000. The Mission assessed crop and livestock losses, estimated the main 1999/2000 production of foodcrops and made an early forecast of the second season. Based on these estimates the Mission assessed the 2000/01 cereal status, including export potential, import requirements and food aid needs.

Observers from the Southern Africa Development Community (SADC) and from the United States Agency for International Development (USAID) joined the Mission. Staff from the Ministry of Agriculture and Fisheries, the Ministry of Industry and Commerce and the National Institute of Management of Disasters (INGC) assisted the Mission on its field visits.

Pre-harvest data on area and yield for all foodcrops was provided to the Mission by the Early Warning Unit of the Ministry of Agriculture, and by Provincial and District officials. This information was analysed by the Mission and cross-checked against qualitative information from NGOs, farmers, traders 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 sensed and field monitored data from FAO and WFP offices in the country.

By dividing into three teams and two sub-teams during the fieldwork, the Mission was able to visit 47 districts in the ten provinces of the country, conducting field surveys and spot-check assessments.

The area lost to this year's severe floods is estimated at 167 000 hectares, accounting for 6 percent of total foodcrop plantings of the first season. However, in the worst flood-affected provinces of Maputo and Gaza this percentage represents 41 percent and 25 percent respectively. In addition, 43 000 hectares were lost to dry weather in northern parts, raising the area lost in the first season to 7 percent of the area planted. After projecting the small second season for maize and beans, the Mission estimates the total area to cereals, cassava and other foodcrops to be harvested in 1999/2000 at 2.9 million hectares. Comparison with last year's area harvested would suggest a sharp decline of 15 percent. However, the Mission considers that a large part of this decline may be attributed to database changes. Roughly accounting for these changes actual plantings are estimated slightly lower than in the previous year[1].

In the South and southern Central provinces, a dry spell early in the season was followed by continuous precipitation from mid-November and unprecedented floods in February and March. This led to total or partial maize and bean failure throughout these areas. A second season for grains and vegetables, based on residual moisture, is expected to allow a partial recovery of production in South and southern-Central provinces. While at national level this season represents only some 10 percent of the annual cereal and bean production, it accounts for 50 percent in Gaza and 10 to 15 in Inhambane and Maputo Provinces. The outcome this year will depend on the timely provision of seeds to affected families. Seeds were distributed at the time of the Mission by emergency programmes supported by NGOs, donor agencies and FAO. Seeds are also required by farmers in non-flooded areas who experienced total or partial crop failure.

Abundant precipitation from January to April in the main Central and Northern growing areas sustained grain and cassava production. Yields in these areas are estimated around last year's level given the absence of pests and diseases.

Including the second season cereals and beans, to be harvested from mid-June, the Mission forecast the total 1999/2000 cereal production at 1.43 million tonnes, of which 994 000 tonnes, or 70 percent, is maize. Bean output is projected at 134 000 tonnes, while cassava is estimated at 4.64 million tonnes. As stated, this year's changes in the database prevent strict comparisons with production estimates for 1998/99. However, roughly accounting for these changes, the Mission estimates that production of cereals is some 6-10 percent below the good crop of the previous year. This mainly reflects area losses to floods and dry weather, and a sharp decline in yields in southern provinces.

Although production declined in Northern and Central provinces, food supply has been boosted by significant on-farm stocks following a succession of good harvests, coupled with reduced marketing opportunities. In the traditionally food deficit South, even with a good second harvest, food difficulties are anticipated in the coming months for large numbers of the population. Their coping mechanisms are few, given very limited employment opportunities outside agriculture and flooding of large farms in low-lying areas.

The skewed distribution of cereal production between the three regions is reflected in very low and declining retail maize prices in the markets in

North and Central regions, while in the South there are no household stocks, supplies to markets are low to non-existent and prices are 2.5 times higher for similar quality maize. Marketing and transport will be critical issues in marketing year 2000/2001.

Overall, and considering that limited quantities of maize will continue to be informally exported to deficit southern Malawi, an exportable surplus of around 39 000 tonnes of maize is forecast. However, deficits of 170 000 tonnes and 140 000 tonnes have been projected for wheat and rice respectively. These deficits are expected to be met largely by private sector imports.

The Mission estimates that 650 000 people will need emergency food assistance amounting to 60 000 tonnes. This is required for flood-affected farmers but also for those not affected by floods but who experienced crop failure. Despite maize surplus in northern areas, which is proving to be uncompetitive due to high transport costs, efforts should still be placed on local purchases in the North for food aid requirements in the South. WFP supports local purchases and has recently bought maize in central provinces for the current flood emergency operation.

# 2. ECONOMY AND AGRICULTURE 2/

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2/ The contents of this section are based on a variety of sources, including, Country Profile 2000 - Mozambique and Country Report - Mozambique, 1st Quarter 2000 (The Economist Intelligence Unit); Annual Report 1998 Banco de Mozambique; Post Emergency Reconstruction Programme May 2000, Government of Mozambique in collaboration with the United Nations.

Mozambique has a total area of 789 800 sq.km. Although 45 percent of the land is considered suitable for agriculture, only 4 percent is presently cultivated. The remainder is under meadows/pastures and forest/woodlands. Results from the national census in August 1997 indicate a population of 16.1 millions, nearly 2.4 millions fewer than initial projections. With a growth rate of about 2.3 percent per annum, the population is projected at 17.2 millions in mid-2000.

Some 81 percent of the labour force is engaged in agriculture, reflecting limited employment opportunities in the non-farm sectors despite the growth of the manufacturing sector in the past decade. Agriculture contributed 27.6 percent of the GDP in 1998 while commerce and services, the largest sector, accounted for 39.1 percent. By contrast, 63 percent of the total export value in 1998 originated from the agriculture sector. After prawns, providing 29 percent of export income, two agricultural commodities, cashew nuts and cotton, account for 16 percent and 9 percent of the total respectively. Agricultural potential is high despite frequent droughts and floods. Water resources are relatively plentiful and the country is traversed by a number of perennial rivers. Historically, Mozambique has been a major producer of cash crops including sugar, copra, cotton, cashew nuts, tea and tobacco. These activities declined during more than 15 years of civil strife that devastated the country's economy, following independence in 1975.

Agriculture has started to recover but its expansion remains constrained by the low level of farming techniques, the current land tenure arrangements and poor north-south transport links. The latter has resulted in the isolation of food-surplus areas of the north and prevents an integrated national market.

The peace accord signed between the opposing groups in October 1992 and the first multiparty elections in 1994, brought an end to the civil war and led to the current period of political stability and economic recovery. Under agreements with the IMF and the World Bank, market-based economic policies, including far-reaching structural reforms, have been implemented since 1994. In addition, the country has benefited from a foreign investment boom. The results have been remarkably successful in terms of macroeconomic indicators. Inflation has declined from 50 percent in 1991-95 to an estimated 4 percent in 1999. The value of exports has almost doubled from 1995 to 1999 reaching a level of US$300 million. The exchange rate has stabilised in the same period. The GDP growth has been impressive, averaging 9.5 percent annually in 1996-1999. Manufacturing, largely in the form of import substitution, is the fastest growing sector. Agriculture growth has been sustained as a result of the improved economic environment, favourable weather conditions and return of refugees. Mozambique has achieved self-sufficiency in the main staple, maize, substantially reducing the overall food deficit. Although the country remains highly indebted with a ratio of total external debt/GDP of 233 percent, the debt-service ratio (as a percentage of earnings from exports of goods and services) has declined from 34.5 percent in 1995 to 18.6 percent in 1999.

Nevertheless, despite all these gains, the country remains one of the poorest in the world with a GDP per head of US$256 in 1999. Compared with other countries of the sub-region, this level is only higher than that of Malawi (US$177), similar to that of Tanzania and more than ten times lower than that of South Africa. After years of painful reforms to stabilize the economy, the Government is moving to adopt a stronger focus on poverty reduction. A new poverty action plan was released in June 1999. This includes continuing increases in spending in the health and education sectors, extension of access to water, and road transport in rural areas.

The floods in February and March, that resulted in 699 deaths and displaced some 500 000 people, severely damaged housing, agricultural infrastructure, public buildings, schools, hospitals, water and energy supply systems, roads networks, railways and telecommunications. According to an assessment by the World Bank, the direct cost of the damage in the public and private sectors amounts to some US$275 million, while the indirect cost is almost US$215 million. The enormous losses are a set back for the national economy which has been growing at high and sustained rates. The total cost of the damage, amounting to US$490 million, is more than the country's export earning in 1999 of US$300 million. It is anticipated that, as a result of the flood damage, economic growth in 2000 will be 2 to 3 percent lower than the 8 to 10 percent initially anticipated. The Government of Mozambique has launched a Reconstruction Programme at a cost of US$428 million and has appealed for international assistance for its implementation. The recovery and reconstruction process is expected to take place without diverting resources from ongoing development activities.

# 3. FOOD PRODUCTION IN 1999/2000

## 3.1 Factors affecting area planted and yields

Agricultural production is based on a rainfed main season, accounting for 90 percent of grains, from September to April and a minor, residual moisture based second season from March to July. The major foodcrops are cassava, maize, sorghum, millet, rice, beans and groundnuts. Minor crops include sweet potatoes, sugar cane and sunflower. In some areas the main season allows for two production cycles and in some years the second season, which is mostly in the Southern provinces, is augmented by extended or unexpected rains in May and June.

Ninety-six percent of cereal production comes from hand-cultivated, family farms of some 1-3 hectares, the remaining 4 percent come from the entrepreneurial sector where the farms are larger and may involve mechanization. Area planted is therefore determined by rainfall distribution and quantity, availability of farm labour, hand tools and access to seeds.

### Rains

This year, the rainfall pattern was highly irregular and precipitation ranged from extremely excessive to inadequate both between and within provinces. Generally, the rains were characterized by a late start in November followed by dry spells in December and then heavy rains in January and extreme rainfall in February and March, as shown in Figure 1.

Consequently, planting was delayed and reseeding was necessary in many areas following germination failure or desiccation of young plants, with concomitant effects on area of maize and beans.

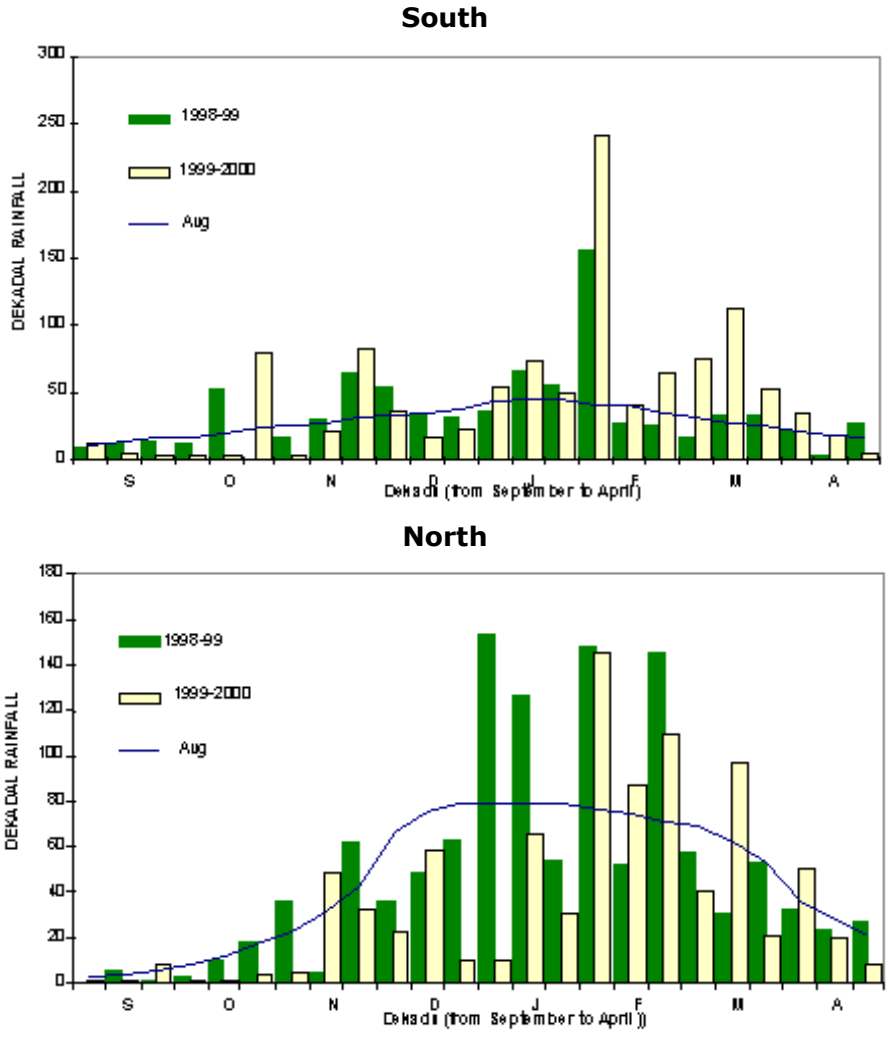
Extreme weather events in the three southern provinces of Maputo, Gaza and Inhambane and in parts of the southern provinces of Central Region and heavy rains elsewhere in the Region, created three waves of floods both curtailing late main season planting opportunities and washing away existing crops, thus reducing area by some 167 000 hectares representing 6 percent of the area planted to foodcrops in the first season. In the worst affected provinces of Maputo and Gaza, however, losses reached 41 percent and 25 percent respectively. A further 43 000 hectares were lost due to dry weather mainly in Cabo Delgado northern province.

The irregular rainfall pattern, dry spells, extreme rains at flowering time and intermittent waterlogging, seriously reduced maize yields throughout the south and southern-central provinces, to the extent that 50 to 100 percent crop failure was noted on a province-wide basis in Gaza, Maputo and in some locations in Inhambane. Similarly, 100 percent maize crop failure was noted in Buzi (Sofala), and Machaze (Manica). Significant maize crop failure was also noted in Chibabava

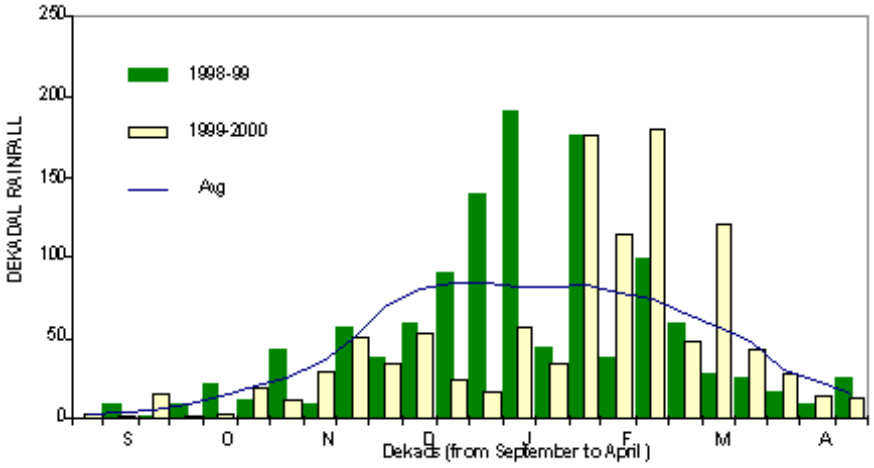
(Sofala), Sussudenga, Mossurize, Macossa and Tambara (Manica). Bean crops have suffered similarly in the same provinces.

Elsewhere, average cereal yields similar to last year are expected in Northern region but those in the Central region are somewhat lower. Bean yields are significantly lower in most provinces. Cassava yields have benefited from the heavy rains in the Central and Northern Zones, but suffered from many weeks of flooding in the more affected areas of the Southern zones. Groundnuts have had mixed fortunes according to location, overall, however, the average yield is estimated to be lower than last year.

## Figure1: Mozambique - Rains distribution in 1999/2000 agricultural season



**Centre**




## Inputs

The fact that 96 percent of the land is hand cultivated by family labour using long- or short-handled African hoes, considerably reduces potential agricultural area. In most districts this is exacerbated by a shortage of tools. All tools in Mozambique are imported and trading networks leave much to be desired in rural areas. Lack of hoes and their high price were noted to be limiting areas planted in Zambezia, Sofala and in Tete. In Maputo, Gaza and Inhambane, the situation is more extreme due to the loss of possessions in the floods. Government and NGO programmes have been mounted rapidly to deal with this crisis in the flood-affected areas.

More positively, the stability that has returned to the country since the end of the civil war is still encouraging returnees from Malawi and Zimbabwe. Unfortunately, such effects are masked in the time series data due to the change this year of the database for deriving area planted with *inter alia* a 15 percent reduction in average farm size used for the estimates.

Area planted to cereals and beans in the second season is usually estimated at 10 percent of the main season. Riverine and low-lying areas offer the opportunity for a second season throughout the country, although the practise is most important to production in the South. While some areas remain flooded, high soil moisture levels this year resulting from floods and continuous heavy rains have provided an opportunity for a possible expansion of second season cropping. Government and NGOs have provided seed packs and tools to flood affected families. Such efforts provide an opportunity for partial recovery and should increase area planted by 62 000 hectares. A further 45 000 hectares are anticipated as second season plantings in provinces where farmers will take advantage of opportunities offered by increased residual moisture in low-lying riverine areas.

The current cereal farming system is based on local seeds, either carried over from last year's harvest or purchased from neighbours at planting time as required. No credit is available, virtually no fertilizers nor other chemical inputs are used in the foodcrops sub-sector. The exceptions to this are several small scale pilot schemes targeting the entrepreneurial

sector through delayed payment credit schemes. These projects follow the FAO-sponsored Government blueprints for maize and rice production in selected provinces. Last year's results in Zambezia suggest that low maize prices do not provide a sufficient incentive for the schemes to expand. Further, in serious maize growing areas where ridges are built and green manuring is practised by digging-in fallow grasses each year, yield advantages may not be high enough to warrant the extra expenditure.

Seeds for the second season, including Matuba maize, beans and vegetable seeds are usually purchased. This year, agencies are providing 1 240 tonnes of such seeds to the flood affected areas, but access is difficult due to the destruction of roads and bridges.

Table 1 below, comparing foodcrops area harvested in the 1998/99 and 1999/2000 seasons would suggest a decline of 15 percent. However, the Mission considers that a large part of this decline may be attributed to database changes. Roughly accounting for these changes actual plantings are estimated slightly lower than in the previous year. Area losses to unfavourable weather, more than offset higher plantings due to the natural increase in population and further return of refugees from neighbouring countries.

## Table 1 :Area Harvested and Production by Crop 1998/99 and 1999/2000 (main and second season)

| | 1999 | | 2000 | | Change 2000/1999 | |
|---|---|---|---|---|---|---|
| | `000 ha | `000 tonnes | `000 ha | `000 tonnes | % ha | % Production |
| Maize | 1 152 | 1 246 | 1 006* | 994* | -13 | -20 |
| Sorghum | 461 | 326 | 388 | 261 | -16 | -20 |
| Millet | 96 | 61 | 74 | 37 | -23 | -39 |
| Rice | 170 | 186 | 136 | 140 | -20 | -25 |
| **Total Cereals** | **1 879** | **1 819** | **1 604*** | **1 432*** | **-15** | **-21** |
| Beans | 370 | 189 | 327* | 134* | -12 | -29 |
| Groundnuts | 257 | 147 | 208 | 113 | -19 | -23 |
| Cassava | 958 | 5 553 | 800 | 4 643 | -17 | -16 |

* Includes second season.

## Pests and diseases

No significant pest and disease outbreaks were noted, although the common non-migratory pests that take their toll of crops every year were reported. In this regard, the most significant pests were rats attacking stored stocks and planted seeds of all crops, stem borer in all stover crops; grasshoppers in the Northern and Central zones, and the

ubiquitous presence of mealy bug in cassava. Monkeys, wild pigs and elephants were reported to be serious pests in Niassa and Tete.

Diseases noted by the Mission teams were streak virus in maize, cassava mosaic virus, pigeon pea mosaic virus and some unspecified rotting of cassava tubers. No pest or disease control campaigns were mounted this year. Concern is noted, however, regarding the possibility of a significant risk to second season vegetable crops due to the more humid conditions and the arrival of seeds from a wide variety of sources being distributed without phytosanitary control.

Overall, most of the yield reductions in cereals and beans are rain-induced, particularly in the South and southern provinces of the Central Region.

## 3.2 Food production

Main season food production estimates are presented in Table 2 by province indicating area, production and expected yield.

A production of 888 000 tonnes of maize is estimated from the first season. Other cereals comprising sorghum, millet and rice are forecast at 438 000 tonnes of which 60 percent is sorghum. Bean production is estimated at 117 000 tonnes. Cassava production suggests that 4.64 million tonnes of fresh material will be available for consumption.

These figures, together with projections of the second season cereal and bean crops, have been included in Table 1 to compare the 1999 and 2000 production data. The figures suggest a dramatic reduction in national production, however a large proportion of the area reduction shown in Table 1 is a result of database changes. There are no grounds to suppose, for instance, that cassava area has decreased; in fact the case is probably quite the contrary. Nor is there any reason to suppose that areas of maize, sorghum and millet, in the major cereal growing areas have decreased by the level indicated. Overall, and taking into account changes in methodology, the Mission estimates that the total cereal and bean production is some 8 percent below the good level of last year. This reflects area losses to unfavourable weather and lower average yields, mainly from total or partial crop failure in southern provinces. Cassava output is estimated only slightly lower than in 1998/99.

### Table 2: Area harvested and production of foodcrops by province - Main season 1999/2000

| Province / Region | Maize | | | Sorghum | | | Millet | | | Rice | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area harvested | Yield | Production | Area harvested | Yield | Production | Area harvested | Yield | Production | Area harvested | Yield | Production |
| | (ha) | (tonnes/ha) | (tonnes) | (ha) | (tonnes/ha) | (tonnes) | (ha) | (tonnes/ha) | (tonnes) | (ha) | (tonnes/ha) | (tonnes) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cabo Delgado | 61 114 | 0.82 | 50 114 | 48 150 | 0.68 | 32 742 | 3 236 | 0.50 | 1 618 | 10 425 | 1.19 | 12 452 |
| Niassa | 90 464 | 1.23 | 111 671 | 25 223 | 0.70 | 17 656 | 1 196 | 0.58 | 694 | 2 862 | 1.01 | 2 882 |
| Nampula | 103 170 | 1.03 | 105 807 | 109 066 | 0.70 | 76 346 | 5 990 | 0.64 | 3 834 | 31 697 | 0.76 | 24 098 |
| NORTH | 254 748 | 1.05 | 267 591 | 182 439 | 0.69 | 126 744 | 10 422 | 0.59 | 6 146 | 44 984 | 0.88 | 39 431 |
| Zambezia | 165 942 | 0.96 | 158 883 | 54 273 | 0.75 | 40 705 | 11 165 | 0.50 | 5 582 | 62 628 | 1.19 | 74 777 |
| Tete | 127 307 | 1.04 | 132 993 | 44 837 | 0.68 | 30 489 | 21 829 | 0.50 | 10 914 | 243 | 0.59 | 143 |
| Manica | 129 983 | 1.42 | 184 597 | 30 697 | 0.71 | 21 795 | 10 162 | 0.52 | 5 284 | 487 | 0.81 | 395 |
| Sofala | 59 896 | 1.34 | 79 987 | 36 561 | 0.75 | 27 421 | 6 994 | 0.58 | 4 057 | 19 591 | 1.12 | 21 922 |
| CENTRE | 483 128 | 1.15 | 556 460 | 166 368 | 0.69 | 120 410 | 50 150 | 0.52 | 25 838 | 82 949 | 1.17 | 97 237 |
| Inhambane | 89 632 | 0.50 | 44 816 | 19 420 | 0.50 | 9 710 | 8 594 | 0.49 | 4 211 | 2 701 | 1.20 | 3 242 |
| Gaza | 47 162 | 0.24 | 11 319 | 19 237 | 0.20 | 3 847 | 4 883 | 0.26 | 1 269 | 2 806 | 0.00 | 0 |
| Maputo | 24 770 | 0.30 | 7 431 | 652 | 0.30 | 196 | 0 | 0.00 | 0 | 2 222 | 0.00 | 0 |
| SOUTH | 161 564 | 0.39 | 63 566 | 39 309 | 0.35 | 13 753 | 13 476 | 0.41 | 5 480 | 7 729 | 0.42 | 3 242 |
| TOTAL | 899 440 | 0.99 | 887 616 | 388 116 | | 260 907 | 74 049 | 0.51 | 37 464 | 135 662 | 1.03 | 139 910 |

| **Province/ Region** | **Beans** | | | **Groundnuts** | | | **Cassava** | | |
|---|---|---|---|---|---|---|---|---|---|
| | Area harvested | Yield | Production | Area harvested | Yield | Production | Area harvested | Yield | Production |
| | (ha) | (tonnes/ha) | (tonnes) | (ha) | (tonnes/ha) | (tonnes) | (ha) | (tonnes/ha) | (tonnes) |
| Cabo Delgado | 39 841 | 0.40 | 15 937 | 31 060 | 0.45 | 13 977 | 118 522 | 5.90 | 699 282 |
| Niassa | 40 685 | 0.43 | 17 495 | 2 595 | 0.43 | 1 117 | 16 505 | 5.90 | 97 381 |
| Nampula | 63 732 | 0.43 | 27 405 | 55 031 | 0.58 | 31 924 | 384 872 | 5.90 | 2 270 747 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| NORTH | 144 259 | 0.42 | 60 836 | 88 686 | 0.53 | 47 018 | 519 900 | 5.90 | 3 067 410 |
| Zambezia | 40 954 | 0.56 | 22 849 | 25 509 | 0.54 | 13 794 | 209 709 | 5.90 | 1 237 284 |
| Tete | 34 712 | 0.38 | 13 191 | 12 696 | 0.44 | 5 548 | 1 089 | 4.50 | 4 901 |
| Manica | 2 902 | 0.46 | 1 335 | 3 236 | 0.58 | 1 873 | 877 | 5.50 | 4 825 |
| Sofala | 11 226 | 0.51 | 5 699 | 7 818 | 0.58 | 4 535 | 7 396 | 5.50 | 40 678 |
| CENTRE | 89 794 | 0.48 | 43 073 | 49 260 | 0.52 | 25 750 | 219 071 | 5.88 | 1 287 688 |
| Inhambane | 43 866 | 0.20 | 8 772 | 61 364 | 0.60 | 36 819 | 53 424 | 4.70 | 251 107 |
| Gaza | 16 715 | 0.20 | 3 384 | 4 677 | 0.45 | 2 105 | 5 167 | 4.38 | 22 633 |
| Maputo | 3 952 | 0.30 | 1 192 | 3 817 | 0.45 | 1 718 | 2 488 | 5.83 | 14 509 |
| SOUTH | 64 534 | 0.21 | 13 348 | 69 858 | 0.58 | 40 641 | 61 079 | 4.72 | 288 250 |
| TOTAL | 298 587 | 0.39 | 117 257 | 207 804 | 0.55 | 113 408 | 800 051 | 5.80 | 4 643 348 |

Table 3 shows changes in crop production by Region and indicates the dramatic effect of the floods and storms in the South.

## Table 3 : Regional Area Harvested and Production by Crop ('000 tonnes)

| | **North** | | | | **Centre** | | | | **South** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1999** | | **2000** | | **1999** | | **2000** | | **1999** | | **2000** | |
| | **ha** | **tonnes** | **ha** | **tonnes** | **ha** | **tonnes** | **ha** | **tonnes** | **ha** | **tonnes** | **ha** | **tonnes** |
| Maize | 302 | 331 | 255 | 268 | 612 | 736 | 511 | 600 | 237 | 180 | 240 | 127 |
| Sorghum | 214 | 147 | 182 | 127 | 214 | 156 | 166 | 120 | 33 | 24 | 39 | 14 |
| Millet | 12 | 7 | 10 | 6 | 66 | 36 | 50 | 26 | 16 | 10 | 13 | 5 |
| Rice | 50 | 40 | 45 | 39 | 108 | 121 | 83 | 97 | 12 | 24 | 8 | 3 |
| **Total Cereals** | **588** | **525** | **492** | **440** | **1 000** | **1 049** | **810** | **843** | **298** | **238** | **300** | **149** |
| Beans | 172 | 81 | 144 | 61 | 112 | 63 | 90 | 43 | 87 | 42 | 79 | 21 |
| Ground-nuts | 104 | 58 | 89 | 47 | 57 | 44 | 49 | 26 | 94 | 45 | 70 | 41 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cassava | 609 | 3 596 | 519 | 3 067 | 261 | 1 535 | 219 | 1 288 | 85 | 421 | 61 | 288 |

## 3.3 Other crops

Apart from the foodcrops listed above, there is a significant production of cash crops throughout most coastal zones of the country. Copra and cashew crops are exported and provide a solid income base for farm families. In such zones cassava and groundnuts provide major contributions to the diet. This year's cyclones in March are known to have decreased cashew production in Maganje da Costa (Zambezia) and Maputo province by some 50 percent as they coincided with flowering/ fruit set. Elsewhere, the effect may not have been so dramatic but lower yields are expected. Copra production is likely to have been sustained. Around 42 000 tonnes of sugar cane were lost in Maputo province and related industrial processing plants have been destroyed.

Good vegetable crops from April onwards are expected due to a wide distribution of seeds for use in the second season and increased opportunity to plant due to greater areas with residual moisture from the floods and the heavy rains. The sweet potato area is also expected to increase as the crop is being promoted by NGOs to take advantage of the extended second season area.

This year, the national cotton crop is expected to be much lower due to less planting by the few remaining commercial companies. Falling international prices have compounded the existing problems of input supply and irregular rains without supplementary irrigation.

## 3.4 Livestock

Livestock numbers in Mozambique fell dramatically during the civil war and have not yet recovered. Consequently, there is abundant forage in most districts of the Northern and Central provinces. Only in Tete was heavy grazing reported by the Mission teams.

Initial reports issued during the floods indicated that some 165 000 cattle and 300 000 small ruminants, 30 000 pigs and 600 000 poultry were present in the areas affected. Subsequent rapid assessments suggest that some 20 000 cattle were lost. Other stock numbers actually lost have yet to be verified but it is anticipated that losses of small ruminants, from all affected districts in the Southern provinces of Maputo, Gaza and Inhambane are significantly high, reducing the income generating opportunities livestock production normally offers. Further, the remaining livestock, particularly goats and cattle are noted to have suffered from loss of grazing from riverine areas. The excess water and humidity has exacerbated parasitic challenges and foot rot infections. These debilitating factors will have lowered production and increased demand for veterinary products and services. At the time of the Mission large areas of pasture in Gaza and Maputo were still flooded and livestock were grazing the higher pasture lands. No serious epizootic diseases of large animals were noted this year. Livestock in North and Central Regions were noted to be in good condition concomitant with the end of the rainy season.

Apart from the losses to the poultry sub-sector in the South, the disease status of the traditional chicken sector is cause for concern. No established routines of Newcastle disease vaccination allows for a repetitive cycle of population crashes that eliminate the backyard poultry units. There is no veterinary support to the sub-sector in the form of regular campaigns, nor vaccines on the local market. Chicken prices at 40 000-50 000 meticais in the Southern region compared unfavourably with prices of 15 000-25 000 meticais in the Central and Northern Regions as a result of the birds lost in the floods.

# 4. SITUATION BY PROVINCE

## 4.1 Northern Region (Niassa, Cabo Delgado and Nampula)

### Niassa Province

Niassa, situated in the north east corner of Mozambique, has a long coast line with Lake Malawi to the west of the province, a land frontier with Tanzania to the north, and connects to Cabo Delgado and Nampula provinces to the east and south respectively.

Agricultural production is limited by poor infrastructure, which prevents easy movement of commodities away from or inputs into the province in any direction. An absence of any major towns and a low density rural population limits the internal absorptive capacity of family farm surpluses.

The main crops are maize, sorghum and cassava with minor crops of beans, groundnuts and millet. Production is normally limited to a main season from October to May, although cassava grows and may be harvested all the year round, according to need.

This year, the rains began late in the third dekad of November and were very irregular with dry spells in December. From January to the third dekad of April the rainfall was sufficient. Heavy rains and hail falling in Majune district in March caused local crop damage.

Seeding began in October and finished in December, providing opportunities to resow where necessary. As the majority of seeds used are local, landraces carried over from the previous harvest or purchased from neighbouring farmers, were available as needed.

In contrast, agricultural tools are generally in short supply and are expensive. No fertilizers or chemical inputs are used in the food production sub-sector. Inputs are, however, usually used in the cash crop sub-sector, which produces cotton and tobacco. This year, the area planted to cotton has fallen dramatically due to low prices and poor returns.

With the exception of the destruction and eating of crops by monkeys, elephants and wild pigs, the year has been relatively pest free.

Production of foodcrops is placed at 112 000 tonnes of maize, 18 000 tonnes of sorghum, 3 000 tonnes of rice, 17 000 tonnes of beans and 97 000 tonnes from cassava. Storage is poor and losses of stored crops are high. Sales are limited by few traders, undercapitalization of the existing traders and poor communications.

## Cabo Delgado

Cabo Delgado is located between Niassa province and the Indian Ocean, separated from Tanzania to the north by the Rovuma River. A network of fertile valley bottoms created by the tributaries of the Messaio, Lugenda and Rovuma rivers and a fertile coastal plain provide the major agricultural areas. Cereals, cassava and cotton are the main crops.

This year, the rains began on time in the first dekad of September but fell irregularly until February affecting plant establishment and necessitating reseeding several times. Around 10 percent of the area planted was reported lost due to dry weather.

Extremely heavy rain in the first dekad of March caused the rivers Messaio, Montepuez, Naga and Quilite to flood, which caused the loss of some 6 000 hectares. Consequently, maize production is lower than expected. Cassava production is, however, good relieving problems of local food insecurity.

Regarding agricultural inputs, except for MADR distributed beans, seeds and planting material are sourced locally, and there is no tradition of fertilizer use on foodcrops. Agricultural implements are in short supply and were identified as a priority requirement by the farm families.

The most important pests of field crops this year were rats, monkeys and elephants, the latter destroying crops in the districts of Ancuahe and Mecufi. Grasshoppers were reported as a problem on rice. Mosaic viral diseases of cassava and pigeon peas and fungal attacks on maize and sorghum were also noted.

Because of the adverse rainfall effects cereal production is expected to be lower than last year at 50 000 tonnes of maize, 33 000 tonnes of sorghum, 2 000 tonnes of millet and 12 000 tonnes of rice. Some 700 000 tonnes of fresh cassava is likely to be available for consumption.

There is a dynamic informal trade between the interior of the province and the coast, whereby household surpluses are accumulated by small traders. Notwithstanding this local market, there are no recognizable formal trade routes whereby surpluses may be moved to other regions.

## Nampula

Situated south of Cabo Delgado and bordering Niassa to the west and Zambezia to the south, the province of Nampula has a long coastline with the Indian Ocean which includes the important port and commercial

centre of Nacala. The main foodcrop is cassava followed by maize, sorghum, beans and groundnuts. Cotton is the main cash crop.

This year the rains started on time in late November and for most districts fell regularly until April so did not present any general problems at provincial level. Provided they continue, the later sown crops as well as the earlier sown cereals are expected to do well. Only in Nacanoa district were irregular rains noted.

Fertilizer use is restricted to small scale pilot interventions by MADR and no agro-chemicals are used on foodcrops.

The main pests in Nampula this year were rats and monkeys, which are destructive at local levels, particularly in the districts of Nacarna and Mussoril. Plant diseases noted included the general presence of pigeon pea and cassava mosaic viruses. The rotting of cassava tubers was noted in the village of Madibane.

Commercial and household stocks exist in the province, due to the good season last year, but are difficult to quantify. Unlike other coastal provinces, there are no recorded area reductions in the foodcrop sub-sector. The cotton area has been reduced considerably in the districts of Mecanta and Monapo for economic reasons.

The expected cereal harvest from the province is 106 000 tonnes of maize, 76 000 tonnes of sorghum, 3 000 tonnes of millet and 24 000 tonnes of rice. In addition, 2.3 million tonnes of fresh cassava is expected to be available for consumption this year.

## 4.2 Central Region (Zambezia, Sofala, Manica and Tete)

### Zambezia

Zambezia province is located north of the Zambezi river which separates the province from the rest of the Central Region. It borders Malawi to the west and Niassa and Nampula to the north. The province is characterized by a high population, a poor road network and a small fishing and commercial port in the capital, Quelimane.

The main crops grown are cassava and maize, beans and groundnuts. Copra, cashew and tea are the major cash crops, with minor crops of tobacco. Commercial rice and cotton production has declined markedly over the past 16 years with the collapse of the large scale irrigated farms. Tea estates are in the process of rehabilitation.

This year, the rains were late, beginning in the second and third dekad of November. They were also badly distributed with dry spells in December that necessitated reseeding on a large scale. Better rains in January and February were followed by heavy rains in March that continued spasmodically until mid-April. The quantity of precipitation was, therefore, below normal and unfavourable for high levels of cereal production in the interior. Storms in coastal areas in March were noted to have reduced cashew yields in some 300 farms monitored by an

ADRA/USAID project. Further, estimates of area affected due to floods and cyclones were placed, by the Provincial authorities, at some 26 000 hectares in Pebane and Maganja da Costa.

The main crop, cassava, was noted throughout the province at a wide range of physiological stages. Fields of pure cassava stands, at least 18 months old, were observed as were freshly planted areas on the same farm. This combination indicates a well balanced harvesting system in most areas, where the crops are taken as needed by the consuming farm families.

Regarding cereal crops, whereas the maize harvest had begun, the sorghum and rice harvests were still several weeks away, the season having been generally delayed due to late rains. Throughout the province the vast majority of farms use carryover seeds from their previous harvest or seeds purchased locally as needed. Maize seeding rates are high, at 25-30 kg per hectare. Spacings used suggest plant densities of 30 000-40 000 plants per hectare, even when intercropped with beans.

Tall dispersed-head landraces of sorghum, grown in blocks have high plant densities at around 80 000-90 000 plants per hectare. The crop was in good condition, particularly in Gurue district.

Under the prevailing conditions of no credit, no fertilizer and no agro-chemical use, production relies heavily on good hand cultivation. The practice of fallowing and preparing well-dug ridges and burying the fallow grasses at the beginning of the season, helps to maintain soil fertility, particularly in the west of the province. During the season the foodcrops are weeded at least twice. A shortage of hand tools was, however, reported to be limiting the cultivation capacity of the farm families, who were said to be resorting to burning the fallow grasses, a practice that should be discouraged.

No migratory pests were noted this year and only mild outbreaks of stemborer were reported, plus a mild grasshopper infestation of rice in Namacurra district. Mealy bug and mosaic viral disease in cassava were considered to be present at the expected levels.

At the provincial level some 6 000 tonnes of maize stocks are held by ICM. Household stocks are known to be present but difficult to quantify. Losses in the traditional silos are expected to be in the order of 40-50 percent due to the long period of storage given high production last year, when yields from samples in six districts recorded by World Vision averaged 1.6 tonnes per hectare and ranged up to 2.5 tonnes in Gurue.

Informal trading was underway during the Mission's visits and farm-gate prices of 640 meticais/kg (US$ 40/tonne) were common, reflecting lack of competition between traders and a low level of trade capitalization.

A second season of about 10 percent of size of the main season includes maize, beans, sweet potatoes and vegetables. Planting had started along the river banks. and in areas with high residual moisture. Seeds of Matuba maize and vegetables were reported to be scarce and expensive.

The Mission estimates that cereal production will be some 159 000 tonnes of maize, 41 000 tonnes of sorghum, 6 000 tonnes of millet and 75 000 tonnes of rice. Bean production is estimated at 23 000 tonnes. Around 1.24 million tonnes of fresh cassava is expected to be available for consumption as required.

The integration of the farm lands with the forests throughout the province, offers ample opportunity for other income generating activities. Charcoal production is a major household industry, with farm families producing 12-30 bags per month. Marketing of the produce, however, is difficult. Heavy timber and building pole production is equally apparent and connected to `informal trade routes to Malawi' according to local informants.

## Sofala

Situated in the eastern sector of the Central Region, Sofala province is characterized by 12 agro-ecological zones resulting in a diverse pattern of agricultural production encompassing significant rice production in Beira and Nhamatande, cashew-cassava combinations, and ridge and furrow maize production often intercropped with beans and pigeon peas. Groundnuts and sweet potatoes are also grown as single stands and intercropped with maize and young cassava.

The main season usually begins in October and ends in April, allowing for more than one crop cycle when rains are good. The second season based on the residual moisture in riverine and low lying areas may allow planting of around a further 20 000 hectares and is usually finished by July.

This year, the rainfall was poor both in terms of distribution and quantity. The rains were late, starting generally in mid-November. Dry spells in December necessitated reseeding in January. Good rainfall in January and February became heavy to extreme rains in March, resulting in losses of maize areas in Machanga, Chibabava and Buzi at some 4 000, 1 000 and 7 000 hectares respectively. Areas of sorghum and rice were also lost. Where the floods were present in a series of short duration discontiguous events, rice and sorghum may even have benefited although beans and groundnuts will have suffered.

Precipitation, as a result of the diverse patterns exhibited, ranged from well above average to below average. The second season opportunities in the flooded area will partially compensate for losses in the next few months. Much planting of maize, beans and vegetables supported by NGOs is already apparent.

With the exception of the small scale introduction of agricultural inputs via the pilot programmes for some 120 families, farmers use their own seeds and are not accustomed to using fertilizers or agro-chemicals on foodcrops. Sowing rates for maize at around 20-30 kg per hectare were noted and plant densities of 40 000 plants per hectare were observed in Nhamatende and Gorogonsa. Cultivation is by hand and includes the preparation of ridges early in the season and at least two weedings during the vegetative stages.

Regarding pests and disease, although the presence of rats, birds, grasshoppers and mealy bugs were noted, all infestations this year were said by farmers, administrators and agriculturalists to have been mild so far. However, villagers from Gondo, Chibabava reported that the levels of high humidity had encouraged a proliferation of three types of caterpillars, which they felt would challenge their newly planted second season maize, beans and vegetable crops.

With the exception of the flooded villages in Buzi, Chibabava and Machanga stocks of maize from the good 1998/99 harvest were currently being sold to informal traders along the main roads in 18 kg (20 litre) lots. Prices noted in all areas except Buzi were fairly uniform at 1 110 meticais/kg (US$ 69/tonne) and said to be falling as more maize became available. In Buzi, due to the loss of the maize crop and its isolation, maize was for sale at 2 500 meticais/kg (US$175/tonne), from 1 700 meticais/kg (US$106/tonne) before the floods.

In districts close to Beira, an estimated 20 percent of farmers use post-harvest agro-chemicals to reduce maize losses. Without such chemicals losses are expected to be too high to warrant long term storage.

Given the above, cereal production in Sofala is estimated to be 80 000 tonnes of maize, 27 000 tonnes of sorghum, 4 000 tonnes of millet and 22 000 tonnes of rice. Bean production is estimated at 6 000 tonnes and some 41 000 tonnes of fresh cassava is expected to be available for consumption as required.

Income generating activities in the province connect closely to the forests. Charcoal production makes an important contribution to rural incomes. A collection network along the main roads to Beira has evolved assisting in the marketing of the product. Key informants interviewed in Nhamatande/Chibabara reported that they regularly processed 30 bags a month for three months after the end of the main agricultural season. Competition to sell had caused vendors to increase, through the use of grass extensions, the size of the "charcoal sack" by about 15 percent.

## Manica

Manica province borders Zimbabwe to the west, Tete to the north, Sofala to the east and Inhambane and Gaza to the south. The agriculture is influenced by three major topographical features, the western mountain range, a central plateau and a series of three river valleys, the Pungwe, Save and Zambezi and their tributaries. Tobacco and cotton are important cash crops in the province, the former with outgrower schemes augmenting production from large privately owned estates. The foodcrop sub-sector is based on small hand cultivated family farms growing maize, sorghum and millet during a main season which extends from October to April. A small second season, accounting for some 6 percent of the provincial harvest, is noted.

This year, the rains began late, in the second and third dekad of November and did not really become established until January. Heavy rains followed in February with extreme events in March. Rains in Zimbabwe caused the three rivers to flood to levels unprecedented in recent years. In the southern riverine districts, three distinct floods occurred, the first one due to heavy rains in Zimbabwe, the second due

to local rains and the third due to release of Zimbabwean flood waters. In this regard, the most affected districts were Machaze, Mossurize and Sussundenza where some 3 200 hectares, 1 000 hectares and 1 000 hectares of maize were lost respectively. A further 4 000 hectares of sorghum and 1 900 hectares of millet were also flooded. However, a much larger area, estimated at around 15 000 hectares is noted to have been affected by the earlier intermittent dry spells, with concomitantly reduced yields.

Local seeds are used for all sorghum and millet production, either from previous harvests or from local purchases from neighbouring farmers. Maize production includes the use of purchased varieties, especially `Matuba', but is still predominantly based on the farmers' own seeds. No credit, fertilizers or agro-chemicals are used in the foodcrop sub-sector, although both inputs are used on tobacco and cotton crops by a few large scale, mechanized farmers located in the province.

Fortunately, this year there were no reports of significant pests or diseases.

Stocks, particularly of millet, were reported to exist at household level. Post-harvest losses were said to reach up to 40 percent for other grain crops. Maize prices were noted at 1278 meticais/ kg (US$ 80/tonne).

Cereal production this year is estimated at 214 000 tonnes from 171 000 hectares. The usual low level bean and groundnut harvests of around 1 000 tonnes are also anticipated. Cassava production is not expected to be more than 5 000 tonnes of fresh material, similar to previous years.

Other income-generating activities in the Province include hunting and livestock production. It is noted that hunting in Machaze was disrupted by the floods and riverine grazing areas reduced elsewhere, at least, until the pastures regrow when the floods dry out. Livestock prices are stable and animals are in good condition.

## Tete

Tete province is situated in the north west corner of the Central Region bordering Malawi, Zimbabwe and Zambia to the west, north and east and Manica province to the south. The northern districts of Tsangano and Angonia are usually important cereal producing areas where some farmers are reported to be using animal traction. Livestock production was significant before the civil war, however, very heavy losses were experienced and the herds have not yet recovered.

This year, a late and sporadic start to the season necessitated reseeding at least once in most areas and in some villages reseeding three times was necessary. In the districts of Mugoe, Cahora Bassa and Changara the rains continued to be disappointing, however in the main cereal growing areas both quantity and rainfall distribution improved, providing sufficient moisture to sustain cereal yields at reasonable levels.

Agricultural inputs are generally not available, hand tools are in demand but no traders are willing to supply due to the remote nature of the province and the lack of roads. Local carried over seeds form the bulk of

the planting material and only in the cash crop sub-sector are any fertilizers or agro-chemicals used.

Because of poor storage conditions, stocks are sold early, creating cereal shortages, except for millet, later in the season. During the Mission, farm-gate maize prices for 18 kg lots were around 1 278 meticais/kg (US$80/tonne), at similar levels to last year.

Cereal production this year is placed at 133 000 tonnes of maize, 30 000 tonnes of sorghum and 11 000 tonnes of millet. Only some 5 000 tonnes of cassava are expected to be available for consumption. Bean and groundnut production is estimated at 13 000 and 6 000 tonnes respectively.

Depending on district, other income generating activities are connected to fishing, informal trade with neighbouring countries, charcoal and fuel wood processing and provision of labour for the tobacco and cotton estates.

## 4.3 Southern Region (Inhambane, Gaza, Maputo)

### Inhambane

Inhambane is situated in the south east of the country bordering Gaza province to the west, Sofala and Manica provinces to the northern and the Indian Ocean to the east. Rainfall decreases from east to west and agricultural holdings are farmed mostly within 80 km of the coastline, involving a cashew/coconut/ cassava complex with annual crops of groundnut and maize. The average size of farm is around 2.5 hectares.

The main season of the province extends from October to April and a small second season mostly in the east, supported by high humidity and light showers, occurs from April until August.

This year, the rains began at the normal time in both eastern and western districts. Rainfall continued irregularly in December, necessitating reseeding at least once and disrupting vegetative growth which has reduced cereal yields. In January and February the rains stabilized, becoming excessive in March. Consequently, despite the dry spell, heavier than average rains were recorded throughout the province. Flowering of maize was adversely affected, further reducing yields of the later sown crops. The continuation of rains extended until the end of April has offered opportunities for second season planting in the coastal zone and along the rivers, but in conjunction with floods from neighbouring provinces has caused the loss of some 4 500 hectares of maize, 2 000 hectares of beans and affected an equivalent area of sorghum and millet plus around 110 hectares of rice.

Although a wide variety of seeds are usually used for the second season, main season cereal production relies on seeds carried over from the previous harvest. There is no credit and no fertilizers or agro-chemicals are used in the foodcrop sub-sector, which is hand cultivated using African hoes.

Pests and disease problems were mild in the first season. Although stem borers and grasshoppers were noted in stover crops, infestations were not cause for concern.

There were no cereal stocks at household or commercial level from the 1998/99 harvest, and the current farm gate prices at 2 500 meticais/kg (US$156/tonne) are higher now than three months ago or at the same time last year when they were around 1 667 meticais/kg (US$104/tonne).

Regarding other crops, groundnut production is expected to rise throughout the province and copra yields are expected to be similar to last year. Cashew nut yields may be lower due to inclement weather at the flowering stage. Farm families in the agro-forestry systems have a number of options and crops that are, by and large, resistant to rainfall distribution changes.

Livestock numbers are higher in Inhambane than in the Central and Northern Regions. In comparison with other provinces in the Southern Region only a few animals were lost in the floods as they were grazing higher pastures at the time. Livestock prices are firm or increasing, possibly reflecting better pasture in the higher areas and pasture potential in the low lying areas as the flood waters recede.

Production of cereals from the main season are therefore estimated at 62 000 tonnes from 121 000 hectares. The groundnut harvest is estimated at 37 000 tonnes but beans have performed poorly in the first season at around 9 000 tonnes. A further 10 000 tonnes of maize and more beans are expected from the second season. Around 251 000 tonnes of fresh cassava are estimated to be available for consumption.

## Gaza

Gaza province stretches from the south east coastline to a north west and west border with Zimbabwe and South Africa. Normally the interior of the province is dry, agricultural production being confined to the river valleys of the Limpopo, Changane and Elephant rivers and a narrow coastal strip north and east of Xai-Xai. Rice is produced from the Chokwe irrigation scheme west of Xai-Xai and the cassava, cashew, coconut complex of the coastal zone extends north and east of Xai-Xai to the Chibuto and to the border with Inhambane. The second season, supported by residual moisture in the river valleys and low lying areas, and with the high humidity and showers of the coastal zone, is usually as important as the main season with regard to annual crop production.

This year, the first rains were late and irregular, necessitating reseeding. They were followed by non-stop rains for two to three months which, with flood waters from neighbouring areas, caused widespread and continuous inundation resulting in the loss of some 31 000 hectares of maize and beans, 3 000 hectares of rice and affected some 19 000 hectares of sorghum, millet and groundnuts.

Riverine areas are still flooded, and large areas of the districts of Xai-Xai, Chokwe, Bilene, Ginja and Chibuto remain isolated, disrupting the flow of

commodities, causing prices to rise and reducing income generation opportunities.

Consequently, the first season has been devastated, production of annual crops severely reduced. Other factors such as no input use and negligible pest attacks are insignificant compared to the effect of the floods and heavy rains.

Prospects for the second season are, however, good. Seeds have been supplied to flood affected areas through the Government and NGOs. However, farmers outside of the belt exhibiting infrastructural damage are noted to be in need of seeds if they are to capitalize on higher than usual residual moisture.

Prices of maize in the province are high, for example at 4 167 meticais/kg (US$260/tonne) in isolated Bilene and Chokwe several times higher than last year. This reflects not only the loss of crops but also the loss or destruction of on-farm stocks. Regarding other crops, the cashew harvest is expected to be less than usual due to storms at flowering time.

The reduced level of cereal production from the main season this year is estimated at 16 000 tonnes from 73 000 hectares. A further 50 000 tonnes of maize may result from the second season given favourable conditions and completion of the tools and seeds distribution programmes. Some 22 000 tonnes of fresh cassava is available for consumption.

The livestock sector has been seriously affected by both floods and heavy rains. Cattle losses from the private enterprises and family farms are high at some 12 percent of herds. Similar losses are forecast from goats but not yet quantified. Animals have also suffered from increased parasite infestations and foot rot. Production from surviving animals will, therefore, be lower than normal. Livestock prices are presently stable.

## Maputo

Maputo, located in the extreme south of the country, has the smallest agricultural area of the ten provinces. Cereal production is usually significant in the districts of Maputo city/Matola, Magunde, Boane and Moamba and cassava production is significant in Namoacha.

Cashew production is an important source of income with an estimated 500 000 trees growing in the coastal zone as part of the cashew-coconut-cassava complex.

This year, following a late start, the rains were heavy, resulting in widespread flooding and the loss of some 26 000 hectares of maize, 5 000 hectares of beans and 2 400 hectares of rice. The cyclone is also noted to have affected cashew nut production adversely, reducing the probable yield by around 50 percent.

Other factors affecting the main season pale into insignificance besides the effect of rainfall and floods. There were no reported problems of pests and diseases and the lack of use of agricultural inputs in the

foodcrop sub-sector is irrelevant under the prevailing conditions. Further, on-farm stocks that existed before the flood have either been washed away or severely depleted by bacterial and fungal attack under the highly humid conditions. This is reflected in the high local prices in the markets and lack of market presentations.

The second season is normally around 15 percent of the main season. Opportunities to plant become available as the floods recede and agencies are providing seed packages including maize, beans and vegetables along with tool packages including hoes, sickles and machetes.

Other income generating activities such as livestock production and hiring of labour have also been affected. Cattle and small ruminant losses in the province are high and debilitating diseases such as foot-rot and internal/external parasite infestations were noted to have increased, placing pressure on the very limited veterinary services.

Agricultural openings for sale of labour have been reduced as commercial farmers, who usually recruit casual labourers for harvesting irrigated and main season crops, have also been affected.

Cereal production from the main season this year is expected to be very low at about 7 000 tonnes from 32 000 hectares, with a further 8 000 tonnes of maize anticipated from the second season provided seeds and tools are distributed in time and the farmers take up the planting option. Some 15 000 tonnes of fresh cassava is estimated to be available for consumption.

# 5. FOOD SUPPLY SITUATION

## 5.1 Food prices

As result of the skewed distribution of cereal production, there are significant differences in maize prices between regions. These disparities are illustrated in Figure 2 below, presenting retail maize prices per kilo, published by the Ministry of Commerce, in the three most important regional informal markets. Retail prices of maize in the surplus areas of the North (Nampula market) by the end of April, at 1 280 Meticais/ kg 2/, were less than half of those in the deficit Southern region (Maputo market), at 3 175 Meticais/kg. Despite these significant differences, high internal transport costs make it uncompetitive to move the maize from the North to the South compared with imported South African grain. A recent study by the Ministry of Industry and Commerce/FAO-EC project comparing prices CIF Maputo from formal traders 3/ in northern areas of Mozambique with those from South Africa indicates a difference up to US$68 per tonne.

As shown in the graph, real prices of maize in Central and Northern regions have been at low levels and remained relatively stable during most of marketing year 1999/2000. This has reflected abundant supplies from last year's good output, coupled with difficulties in marketing the

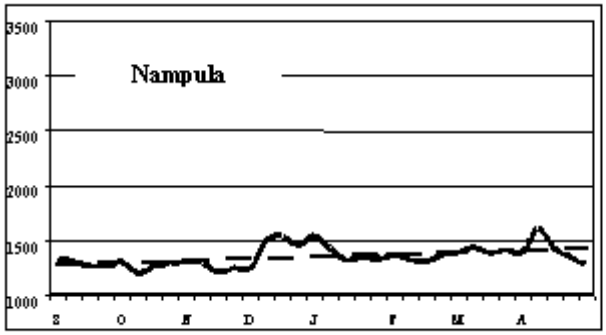
crop in neighbouring countries. A bumper 1999 harvest in Malawi resulted in exportable surpluses and reduced traditional informal maize imports from northern Mozambique. Further, the withdrawal of Mozambique in November 1996 from the Common Market for Eastern and Southern Africa (COMESA), the sub-regional common market comprising 21 countries including neighbouring Malawi, Zimbabwe, Zambia and Tanzania, has reduced destinations for Mozambique maize. Trade barriers imposed by COMESA entail a 25 percent import tax and in some cases an additional 50 percent surcharge on outside maize, making exports from Mozambique uncompetitive. Overall, it is estimated that only some 45 000 tonnes, out of an estimated exportable surplus of 160 000 tonnes of maize last year, have gone into neighbouring countries, mainly to deficit southern Malawi where prices were higher. This has also resulted in a build-up of substantial old crop maize stocks.

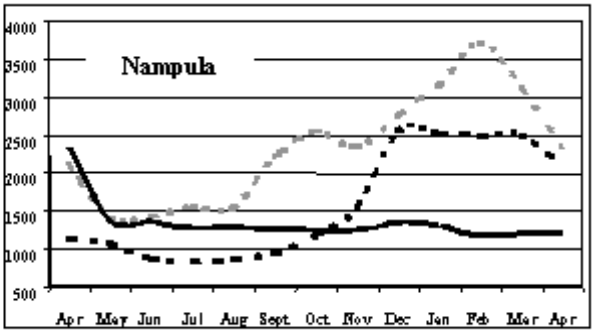
In the Northern and Central regions, prices have declined from March/April with the imminent arrival of another good crop into the markets. Although not strictly comparable with the retail price series presented in the graphs, farm-gate prices provided to the Mission by small traders in late April confirm a declining trend in these regions. Maize price quotations collected by the Mission ranged from levels as low as 550 Meticais per kilo in Mocuba, province of Zambezia to 1100 Meticais/kg in most of Sofala province for same quality of maize.

In the South, by contrast, the loss of household stocks due to the floods, as well as the isolation and difficult access to several areas, resulted in sharp increases in maize prices in February and early March. With the progressive re-opening of the roads and improved access to affected areas, prices of maize declined but, by late April, they were on the increase and well above the level of a year ago. This trend mainly reflects almost crop failure in Gaza and Maputo provinces and reduced harvest elsewhere in the Southern region. Prices for the better supplied Maputo market shown in the Graphs only partially reflect the trend observed by the Mission in other districts and provinces of the South Region. Maputo has regular supply channels from South Africa and roads linking Maputo to that country were only briefly interrupted. Price series for other locations in the South were not available at the time of the Mission. No local maize was found by the Mission in the district markets of Maputo and Gaza Provinces. Where maize from other parts was noted, prices were around the Maputo city market price of 3 175 Meticais/kg, with higher levels in areas still difficult to access. **Figure 2: Retail Prices of Maize (meticais/kg)**
**Nominal Prices Real Prices [1/]**

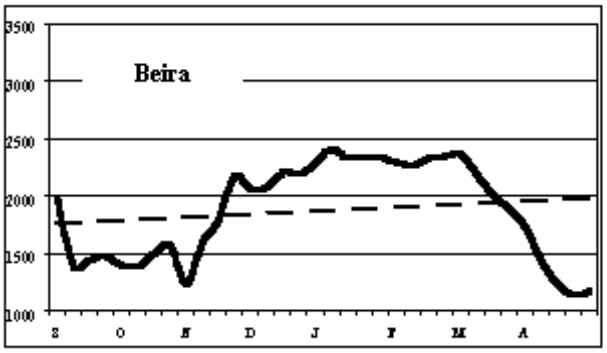
**(September 1999/January 2000)** **(April 1999/April 2000)**

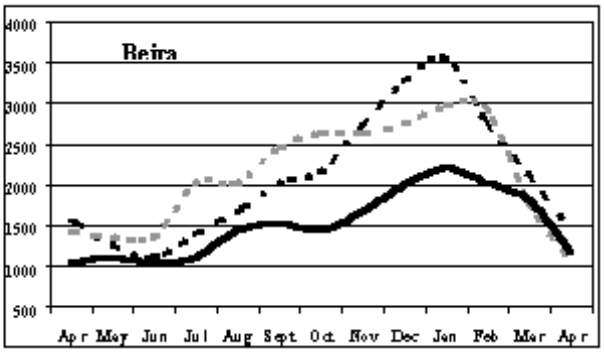
**North**



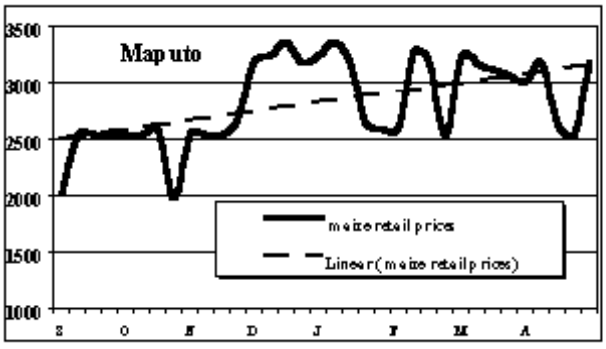



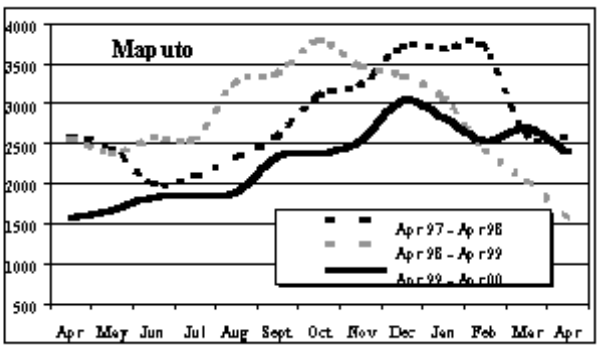

**Central**




**South**




Source: Ministry of Industry and Commerce/DNCI/FAO/EC Project

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1/ Deflated by Consumer Price Index.

The maize surplus in northern areas is uncompetitive due to high transport costs; however, efforts should be made to purchase these surpluses for requirements in the flood affected areas and food deficit southern provinces. WFP supports local purchase initiatives and has recently bought maize in central provinces for the emergency operation in the south. The Mission feels that local purchases should always be an option in procurement, but issues such as price and transport versus

available resources must be weighed carefully to ensure long-term sustainability and competitive market environments

Prices of imported rice have been stable and below the level of previous years in real terms. Prices of beans, groundnuts and cassava show the same marked differences as for maize between North and South.

## 5.2 Overall food supply situation and access to food

Overall, the national food supply in 2000/01 is expected to remain satisfactory. Floods and excessive rains devastated cereal production in southern areas, but these normally account for only 13 percent of total production. In the main growing northern and central regions, a good harvest has been obtained despite lower yields in parts. After discounting for changes in the database used to estimate production, the Mission estimates that cereal production declined by some 8 percent from last year's good level. Furthermore, the output of cassava, a major staple in the North, was close to that of the previous year. Large carry-over stocks of maize have also boosted the national food supply in 2000/01.

However, the overall food supply situation masks serious differences between regions. In the North and Central regions, where there are substantial maize stocks, food prices are falling and cassava production has been satisfactory. In the South, by contrast, even if the second season crop were good, total food production will be substantially lower than last year and food prices are on the increase. Besides those directly affected by the floods, food difficulties are anticipated in this region for a large proportion of the population due to partial or total crop failure of the main season. In Inhambane Province, production of fruit, harvesting of wild forestry products, fishing and livestock are likely to provide coping mechanisms for the affected populations. However, in a number of districts of the worst affected provinces of Maputo and Gaza, alternative sources of income are limited. While employment opportunities outside agriculture are few, agricultural openings for sale of labour have been reduced as commercial farms in irrigated areas have been seriously affected by this year's floods.

## 5.3 Supply/demand balance for 2000/01

With the release of the 1997 Population Census final estimates, a mid-2000/01 projected population of 17.236 million has been used in the food supply and demand balance. Since the census figure is 2.431 million lower than the previous projection, changes in apparent consumption have also resulted. Assumptions underlying the construction of the 2000/20001 balance sheet are as follows:

**Opening stocks**: Carry-over stocks of maize, by the end of March 2000 are estimated at 85 000 tonnes. Of these, 30 000 tonnes were kept by a few large traders (estimate of the Ministry of Industry and Commerce) and the rest was in the hands of farmers in central and northern areas. Following stock losses and the isolation of several locations during the floods, no carry-over stocks are estimated in the Southern Region.

Stocks of sorghum and millet are estimated to be negligible. Stocks of imported wheat and rice held by traders are estimated at relatively high levels of 46 000 tonnes and 33 000 tonnes respectively.

**Food use**: The total production of sorghum/ millet and cassava in Mozambique is assumed to be consumed on farm or sold in the immediate vicinity. Imports or exports for any of these crops are not anticipated. Apparent consumption of sorghum/millet has been revised upwards to 14.6 kg/caput per year reflecting the smaller population figure derived from the 1997 Census. Consumption of imported wheat and rice has been adjusted similarly to 10 kg/caput per year and 13.4 kg/caput per year respectively. The historical consumption of maize has been maintained at 50 kg/year per caput. In aggregate, per caput consumption of cereals has been raised from 80 kg/caput to 90 kg/caput per year. Beans consumption is assumed at 9.3 kg/caput per year. Cassava consumption is calculated at 188.5 kg/caput per year.

**Other uses**: The allowance for seeds and losses has been increased to reflect higher levels of losses suggested by recent studies and Mission's inspections. In the Central and Northern regions, maize is stored on the cob in elevated, thatched wooden granaries. Although the use of crop protection chemicals is well known, few farmers can afford them and they are not available on credit. Consequently, farmers either sell the vulnerable grains early or rely on traditional methods of protection. As a result, post-harvest losses are estimated to be high even in normal years. The percentage of other uses/losses for maize has been raised from 12 percent of production to 20 percent and for sorghum/millet to 15 percent. For rice it has been increased from 8 to 11 percent. For imported wheat, this percentage remains at 5 percent. Bean seed and losses are estimated at 15 percent of production.

**Exports**: An exportable surplus of 45 000 tonnes of maize, similar to last year's exports, is estimated. Much of this year's exports will depend on the evolution of maize prices in bordering areas. Malawi, which had been the traditional market for Mozambique maize absorbing at least 60 000 tonnes per annum, is expected to have a good crop for the second consecutive year. Last year, however, some 40 000 tonnes from Mozambique went into southern Malawi due to attractive prices. At the time of the Mission, there was a convergence of prices between southern Malawi and neighbouring provinces of Mozambique, which may in part be attributed to increased cross-border trade activity. Limited quantities are estimated to go informally into deficit Zimbabwe, and into Zambia from Tete province.

**Closing stocks**: As opening stocks of wheat and rice are at high levels, a small drawdown of stocks has been estimated. For maize, the level of final stocks could vary depending on the quantities that will be actually exported.

The supply/demand balance sheet for 2000/01 is shown in Table 4 below.

## Table 4: Mozambique - Cereal supply/demand balance 2000/01 (`000 tonnes)

| | Maize | Rice | Wheat | Sorghum/ Millet | Total Cereals | Pulses | Cassava |
|---|---|---|---|---|---|---|---|
| Domestic availability | 1 079 | 126 | 46 | 311 | 1 562 | 139 | 4 643 |
| Opening stocks | 85 | 33 | 46 | 13 | 177 | 5 | - |
| Production | 994 | 93 | - | 298 | 1 315 | 134 | 4 643 |
| Utilization | 1 182 | 266 | 216 | 311 | 1 975 | 177 | 4 643 |
| Food use | 869 | 231 | 172 | 253 | 1 525 | 160 | 3 250 |
| Other uses losses | 200 | 15 | 8 | 45 | 268 | 17 | 1 393 |
| Closing stocks | 68 | 20 | 36 | 13 | 137 | 0 | - |
| Exports | 45 | - | - | - | 45 | - | - |
| Import requirement<br>Commercial<br>Food Aid | 103<br>60<br>43 | 140 | 170 | - | 413 | 38 | - |

The balance sheet shows deficits for wheat (170 000 tonnes) and rice (140 000 tonnes), which are expected to be largely covered by commercial imports. In addition, some 60 000 tonnes of maize, in the form of maize and maize meal, are normally imported from South Africa and Swaziland, mostly for urban consumption in southern maize-deficit areas. This level of imports is anticipated to be maintained in 2000/01. Anticipated food aid amounts to 43 000 tonnes of maize. WFP has bought some 6 000 tonnes of maize from northern and central parts for distributing into the central areas, but, given the above mentioned marketing problems, the bulk of the remaining maize requirement is likely to be imported. Donor assistance may be necessary in the mobilization of surplus from North to South to reduce the imported food aid.

## 5.4 Food Assistance Requirements

### The Context

Three factors explain food supply pattern in southern and south-central provinces for the period April 2000 through March 2001.

First, production losses caused by late onset of the rains and subsequent excessive rains and extensive floods in February and early March 2000. This disrupted normal expectations for food supply in flood affected areas and in those less directly affected by floods.

Second, the floods also damaged households' stored products and on farm stocks that were expected to contribute to households' food supply during the season. Much of on-farm stocks have been lost to the floods, particularly in the Incomati, Umbeluzi, Limpopo, Buzi, Save and Govuro river basins.

Third, flood-damaged infrastructure brought about physical isolations and market access problems for areas within and outside flood affected areas. Many households in the flood affected provinces and districts remain without any form of market access, hence greatly reducing households' capacities to market participation. The rehabilitation of bridges, primary and secondary roads in the provinces of Maputo, Gaza, Inhambane, Sofala and Manica may take a long time, perhaps up to the end of the year. As a result, markets are unlikely to function normally.

Given these conditions, the Mission recognises four levels of food supply problems. The first is emergency food assistance for the population living within and outside the flooded river basins, wetlands, mangroves and swamps. While the floodwaters have receded, many areas are still logged with stagnant water that will hamper receding agriculture and second season crop production. The flood-affected areas experienced a near complete loss of production, complete loss of on farm stocks and destruction of basic infrastructure. Outside flood affected areas many farmers have experienced crop failure of the first season. An estimated 650 000 people have been assisted with emergency food from February to April. From May to September 2000 the number of beneficiaries will be reduced to 475 000. A total of 52 850 tonnes of food assistance has been pledged for these populations. These include 43 800 tonnes of maize, 4 400 tonnes of pulses, 1 600 tonnes of oil and 2 000 tonnes of sugar, 500 tonnes of salt, 600 tonnes of CSB. However, the mission feels that the emergency food assistance may terminate prematurely, at least for some part of the population, before sufficient food supply and access conditions are likely available to the people either from the second season harvest or re-establishment of coping resources for most of the areas. A six-month extension of the ongoing emergency food assistance is recommended for 150,000 people to bridge the gaps in food supply and access problems for the population. The recommended extension of food assistance will require to resource an additional 13 500 tonnes of food aid for the population.

Second, many of the areas within the flooded river basins are cut off from markets that link surplus producing areas and districts. As a result, many households that reside in isolated areas together with attendant problems of chronic food insecure areas will face severe food access problems over the coming months. Market isolation resulting from destruction of primary and secondary roads, bridges and railways by the floods, as well as chronic food insecurity in the isolated areas are expected to worsen food access problems for the population. Regular food assistance programmes for these areas will have to be covered through Food Fund facility.

Third, is a more general and chronic supply shortfalls, the inadequate supply of food in the central and southern regions, which will undermine adequate food availability and nutritional wellbeing of urban and rural population unless measures are taken to ameliorate these conditions. As in the past, chronic food insecurity for the population residing in high-risk zones of the central and southern regions should be supported through Food Fund facility. The VA group should undertake detailed seasonal food insecurity updates to identify areas and target specific population groups.

Fourth, food security conditions of the deficit and flood affected districts will remain critical until normal production and domestic coping abilities of households are partly or fully re-established.

## Targeting food aid assistance

Districts that have experienced significant production losses are generally located along the river basins, wetlands, mangroves and swaps of the Southern and Central Mozambique.

WFP food assistance will primarily be targeted to most vulnerable populations living within the flood affected areas and isolated from the markets by the destruction caused by the floods. Targeting food aid to these locations will be achieved through two important instruments:

a) Vulnerability Analysis and Mapping (VAM) Unit of WFP in cooperation with the multi-agency VA working Group will undertake a detailed analysis and needs assessment to determine the location and magnitude of supply problems.

b) WFP in collaboration with the Government departments and partner NGOs will undertake registration of beneficiaries and specific social and economic groups within the affected areas. Based on indication by the VA group, priorities for food assistance will be given to the most vulnerable populations focusing on households who experienced a near complete loss of production, constrained by lack of alternative sources of income and coping ability, female headed households, pregnant mothers and children.

## Food aid strategies and programmes

A WFP Emergency Operation (EMOP) is being implemented in collaboration with relevant government departments and NGOs. Beneficiary identification, registration and logistic arrangements are well organised and the necessary arrangements are put in place. During the extension phase, a detailed needs assessment and identification of beneficiaries will be conducted. Emergency operations for the flood-affected areas will be implemented along with and by expanding up on the on-going Food Fund programme. The provision of WFP emergency assistance falls under the following broad categories.

- Emergency Feeding

  Emergency food assistance will continue to be provided for the flood affected population by giving priority to households who have lost their farm income and property, pregnant women, children and economically disadvantaged groups. WFP's food assistance is being provided through distribution centres in collaboration with government institutions, NGOs and local authorities. Nutritional conditions of the affected population will regularly be monitored to assess impacts of the emergency assistance.

  Supplementary feeding will be implemented on a need basis for at-risk areas within the flood zones from May onwards. The

strategic focus of this programme is to avoid malnutrition of children less than five years, nursing and pregnant mothers.

- Expansion of Food Fund Programme in the affected areas

  WFP has been providing relief and development assistance to areas within and outside the flood affected areas, isolated from market access and chronically food insecure districts. By making good use of existing partnership in place, on-going Food Fund activities will be expanded upon to cover needs of the population within existing programme framework. These include Food-for-Work programme. The strategic focus of this programme has been to target high-risk districts where problems of economic and social infrastructure are a major factor in contributing to food insecurity and coping ability. The Food for Work programme has been carried out in selected districts of Maputo, Gaza, Inhambane, Sofala and Tete provinces as well as limited institutional feeding of at-risk population in urban and peri-urban areas that are involved in capacity building activities.

## Food Aid Logistics

WFP has already implemented Special Logistics Operation to rescue population trapped by the flood waters, transport food aid as well as other services for the ongoing emergency operation. This Special Operation is phasing out, as more on land transport is accessible. WFP will continue to assume responsibility for the procurement and cost of delivery of emergency food consignment up to the port of entry including inland transport to primary and tertiary warehouses. WFP's Regional Logistic Officer based in Maputo is now fully part of the Country Office's logistics team, and will continue to provide the necessary technical and operational leadership for the Country Office and work out detailed transport arrangements and cost efficient routes.



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1 As twenty years of civil strife destroyed the agricultural statistics system, the Early Warning Unit of the Ministry of Agriculture derive food production statistics from the population census data at district level, agriculturally active population, family size, average farm sizes and planting indices, adjusted for population increase, rainfall and probable harvested area. The recent publication of the 1997 Census final figures has resulted in the change of these parameters this year. This prevents any meaningful comparison with previous years.

2/ 1 US $ = 16 000 Meticais

3/ Commercial traders price of maize are substantially higher than retail prices in informal markets as they include the cost of buying large quantities, selection, cleaning, chemical treatment, storage and packing of the grain. By the end of April the commercial traders price of maize ex-Nampula was US$138/tonne.