

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 MALAWI

29 May 2002

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MISSION HIGHLIGHTS

Maize production in 2002 is estimated at 1 539 000 tonnes, 10 percent below last year's poor harvest. The major cause was erratic rainfall with long dry spells.

Cereal supply in 2002/03 marketing year (April/March) is estimated at 1.721 million tonnes, while the national cereal requirement is estimated at 2.206 million tonnes. This results in an import requirement of 485 000 tonnes.

Commercial imports of cereals are forecast at 225 000 tonnes and food aid

requirements at 208 000 tonnes which will need to be covered by the Government and external assistance.

Approximately 3.2 million people seriously affected by the combined effects of reduced food availability and purchasing power need emergency food assistance estimated at approximately 207 689 tonnes of cereals, mainly maize.

National production of roots and tubers has increased, and this will moderate the maize shortage in many areas.

Emergency provision of agricultural inputs such as maize seed, bean seed, fertilizer and hand hoes is recommended to assist affected farming households to carry out winter cultivation in wetlands and irrigated areas in May/June and for the main planting season in October/November. Rapid cassava multiplication and provision of treadle pumps are recommended measures to further improve food security at household level.

1. OVERVIEW

A number of factors, including a poor harvest in 2000/01, very low levels of stocks of maize, rapidly rising food prices, a generally late start to the planting rains for the 2001/02 season, flooding in several districts, and a dry spell early in 2002, pointed to a developing food crisis in Malawi. This prompted the Government to declare a state of national disaster at the end of February, and to request FAO and WFP to carry out an assessment of the food situation in the country. Accordingly, an FAO/WFP Crop and Food Supply Assessment Mission visited Malawi from 21 April to 11 May 2002. The Mission's objectives were to assess the country's 2001/02 crop production, estimate the levels of existing food stocks, review the overall food supply situation, and draw up a national food balance sheet indicating the magnitude of the food gap. A representative of SADC's Regional Early Warning Unit (REWU) participated in the Mission as an observer.

The Mission was briefed in Lilongwe by the staff of various departments in the Ministry of Agriculture and Irrigation (MAI), the National Food Reserve Authority (NFRA), the Agricultural Marketing Development Corporation (ADMARC), the Reserve Bank of Malawi, UN and other international and bilateral organisations, and NGOs. In addition, the Mission was provided with extensive documentation prepared by the Government and non-government agencies on recent weather conditions, current crop assessments and forecasts, and reported food shortages. Most importantly, the Mission had access to MAI's Second-Round Agricultural Production Estimates which had been prepared in March 2002.

After its initial briefing, the Mission split into two teams to visit the southern part of the country, and into three teams to visit the northern part. Between them, the teams visited all the country's eight Agricultural Development Divisions (ADDs) and its 26 mainland districts. The local situation was discussed with MAI and other Government officials at each ADD headquarters and again in each district, with a view to establishing the continuing validity or otherwise of the forecasts presented in the Second-Round Agricultural Production Estimates. The teams also travelled extensively in the field in order to observe and evaluate standing crops, and to discuss with farmers their experiences of the summer cropping season, their plans for the winter cropping season, and their perceptions of their level of food security at present and for the coming twelve months. Markets were visited in order to observe the level of availability and prices of staples, and the current season was discussed with traders and owners of small maize

mills. Some health officials were also interviewed in order to get an indication of the effects of the recent food shortage on people's health.

On its return to Lilongwe, the Mission briefed the Government and donor agencies on its preliminary findings.

Maize is the preferred staple of the vast majority of Malawians, and a lack of maize is generally interpreted as a lack of food. Poor production in 2000/01 led to serious shortages towards the end of 2001 and during the first three months of 2002. Hopes of a better harvest in 2001/02 were dashed by flood damage in several areas, followed by a prolonged dry spell over most of the country during the critical months of February and March. Furthermore, the actual harvest is expected to be lower than the second-round estimates as a result of the widespread pre-harvest consumption of maize in the field, a consequence of the shortages caused by last year's poor harvest. With virtually no carryover stocks, and a forecast maize harvest of only 1.54 million tonnes, the national maize requirement of about 1.72 million tonnes for human consumption alone (based on the average historic rate of consumption of about 151 kg/caput/annum) will not be fully met internally. Taking total utilization requirements (including seed, feed, losses, etc.) of all cereals, the country faces an import requirement of about 485 000 tonnes. Malawi's production of roots and tubers has increased significantly in recent years, as has the acceptance of these crops as an important contributor to household food security. These crops will contribute to reducing the cereal deficit. Commercial cereal imports are forecast at 277 000 tonnes and food aid at 207 687 tonnes for an estimated 3.2 million people affected by the combined effects of reduced food availability and declining purchasing power.

2. SOCIO-ECONOMIC CONTEXT

2.1 Macro-economic situation

During the last twenty years Malawi has faced two central economic challenges: the need to reduce the level of absolute poverty and to cut the budget deficit. The strategies for poverty alleviation have included liberalisation of domestic markets, relaxation of agricultural marketing arrangements and privatisation of parastatal companies, together with specific rural development programmes. Overall, there has been little noticeable diversification of the production base, agriculture being by far the dominant sector. Between 1981 and 2001, real GDP growth averaged 3 percent a year.

In December 2000, the IMF approved a three-year poverty reduction and growth facility that formalised the objective of poverty reduction and emphasized fiscal policy reform and promotion of private-sector development and investment.

Macro-economic instability has been a major problem in recent years. The Government has been attempting to control public spending through the introduction of a medium-term expenditure framework, but it is believed that the budget deficit target of 1.9 per cent of GDP for 2001/02 is unattainable. Between 60 and 70 per cent of government expenditure is funded from external sources in the form of grants and loans. There has been rapid growth in money supply and inflation, as the Reserve Bank covered the government budget deficit with internal credit. Open-market operations, mainly issuance of treasury bills, have been used in an attempt to minimise the inflationary effect of public sector borrowing and to support the national currency, the Malawi kwacha (MK). This has resulted in high nominal and real interest rates.

High levels of inflation have historically made the kwacha vulnerable to depreciation, but a rare appreciation occurred in 2001 that caused profit uncertainty among traders who had signed future contracts in US dollars. Tobacco export revenues are expected to increase this year, following a switch to the higher-value flue-cured tobacco and an improvement in the quality of the burley tobacco crop. However, declining international prices for coffee and tea are reducing export receipts from these crops.

Public and publicly guaranteed long-term external debt was US\$2,596 million at the end of 1999 and debt service was US\$44 million. Total foreign currency reserves at the end of 2000 were US\$248 million, representing less than six months of imports of goods and services.

2.2 Performance of the agricultural sector

Agricultural output generates over 90 percent of export earnings, mostly from tobacco, and 30-40 percent of GDP. The agricultural sector is dualistic, consisting of small-scale farmers and an estate sub-sector. The two sub-sectors have been historically distinguished on the basis of legal and institutional rules regulating land tenure, type of crops and marketing arrangements. The smallholder sub-sector is based on a customary land-tenure system and is primarily subsistence, providing the bulk of food production. The main food crop is maize, supplemented by rice, sorghum, pulses, cassava and sweet potatoes. Since the mid-1990s, smallholders have been allowed to produce export/industrial crops, and this has generated great response in production, particularly of tobacco. Other cash crops include cotton, groundnuts and pulses. The estate sub-sector comprises about 14 700 estates occupying some 850 000 hectares of leased land. The main crops are tobacco, tea and sugarcane. Approximately 80 percent of the workforce is employed in the smallholder sub-sector and 11 percent on estates.

Agricultural production grew at an annual rate of 2.1 percent from 1980 to 1993, down from a high of 4.4 percent per annum between 1970 and 1980. This was mainly because ADMARC's purchases were drastically reduced in 1986/87, with maize purchases going down from 271 000 tonnes in 1985 to 59 500 tonnes in 1987, as result of excessive stocks and Government budgetary constraints. Furthermore, guaranteed producer prices were held down to reduce Government expenditure, with the price of maize constant for three years up to 1997. This led to a steep fall in the marketed maize and a resurgence of food shortages after many years of surpluses.

Throughout the 1990s, agricultural production was characterized by marked swings, mainly due to droughts. Following a drop in maize production in 1996/97, there was a significant recovery in 1998/99 and 1999/00, which was attributed to increased use of modern agricultural inputs (improved seed and fertiliser) under the Starter Pack scheme, and increased cropped area. During the 2000/01 season, distribution of inputs was drastically reduced due to very limited donor involvement in financing the scheme, and reduced credit availability following extensive defaults by farmers in 1999/00 due to very low maize prices.

2.3 Population

The size of Malawi's population is a contentious issue, and one which has very significant implications for the assessment of national food security. The figure currently used by MAI is 11.44 million, which is based on an annual growth rate of 2.7 percent since the 1998 census. This is higher than the inter-censal annual growth rate of 1.9 percent for 1989-1998. On the other hand, the US Central Intelligence Agency (CIA), which explicitly takes into account the effects of high mortality attributable to AIDS, assumes an annual population growth rate of only 1.5 percent. Using this rate, the CIA arrives at a population figure of about 10.6 million in 2001.

For the purpose of calculating national food requirements, the Mission has used the Government's population figure of 11.44 million.

3. FOOD CROP PRODUCTION IN 2001/2002

3.1 Main factors affecting production in 2001/2002

Agricultural credit

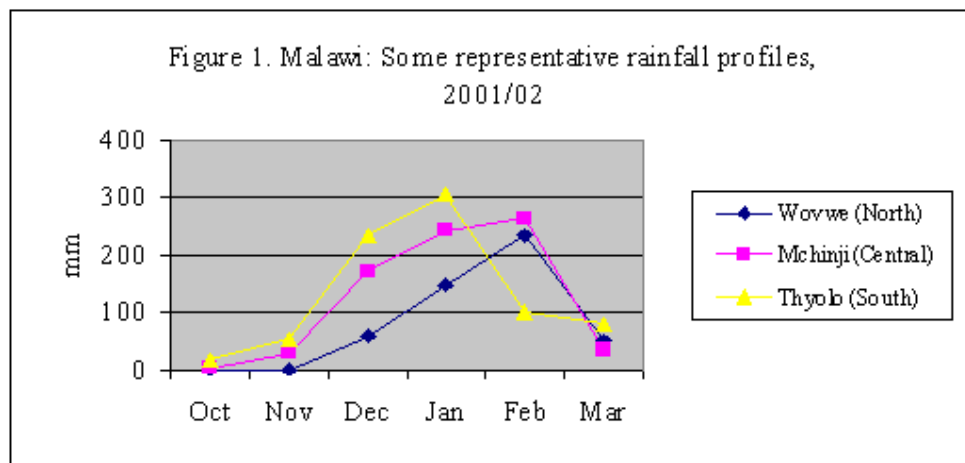
Credit was less available to small farmers this year because of poor repayment of loans in 2000/01. Shortage of credit generally resulted in reduced ability to purchase seed and other inputs.

Rainfall

In reviewing rainfall for the 2001/02 cropping season, the Mission examined recent precipitation records from around the country, as well as satellite imagery of the country for the three summer seasons 1999/00, 2000/01 and 2001/02. Discussions were also held with farmers and extension workers concerning the effects of the season's rainfall on crop production.

In most parts of the country, rainfall was the most significant single determinant of crop production in 2001/02. Rains in mid-November prompted many farmers to plant early, especially in the central and southern zones, where these early rains appeared to indicate the beginning of the season. However, this turned out to be a false start in many cases, and, where emergence was hampered by dry conditions in late November and early December, farmers were forced to replant later. Drier-than-normal conditions prevailed over the northern and central zones until the second half of December, by which time much of the country's planting had been significantly delayed. Abnormally heavy rains at the end of December and the beginning of January led to flood damage and some crop loss in parts of all three regions. Rainfall then stabilised to a normal pattern during January, leading to expectations that the maize crop could, after all, be quite satisfactory. Then, towards the end of February, when much of the late-planted maize was at the teaselling stage, rainfall declined dramatically over most of the country. Central and southern regions were most seriously affected, but all parts of the country experienced below-average rainfall until late March, when the rains returned to normal or above-normal. A further setback came in the second week of April when rainfall stopped abruptly in many parts of the country, especially in the southern and central regions; late-planted maize was again adversely affected.

The late start to the season, the flooding, the dry spell during February-March, and the early cessation of rains in April all contributed to reduced maize production this year, despite the fact that total rainfall recorded up to the end of March was not very different from normal. Roots and tubers, however, were relatively unaffected, and the above-average rainfall in many areas at the beginning of April facilitated further planting of these crops. This should go some way towards reducing the impact of low maize production on national and household food security. Figure 1 shows three representative rainfall profiles from October 2001 to March 2002 (the latest month for which rainfall records were available at the time of the Mission.)



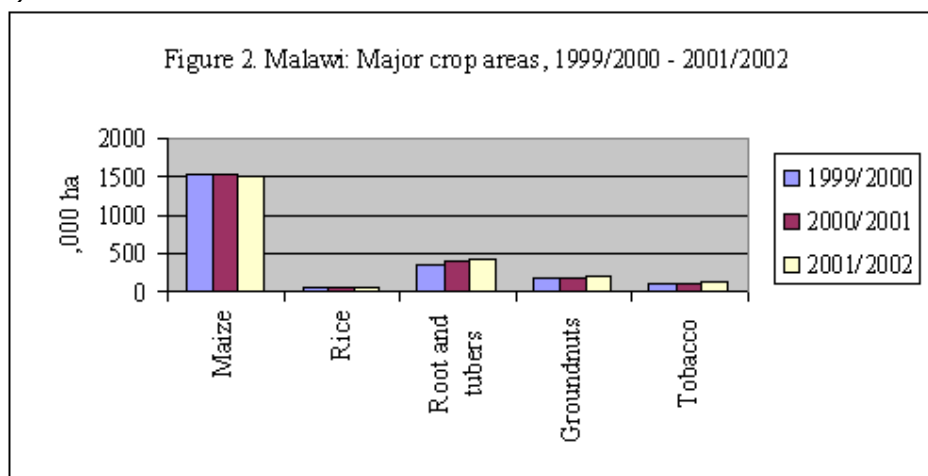
Area planted

The area planted to maize in 2001/02, estimated at 1.49 million hectares, is marginally less than for either 1999/00 or 2000/01 (both about 1.51 million hectares). Some of the loss to maize may have been taken up by tobacco, the area under which expanded slightly from 114 000 hectares in 2000/01 to 122 000 hectares in 2001/02 in response to expectations (unrealised) of enhanced financial returns. Likewise, groundnuts, which are regarded partly as a cash crop, have been planted to increasingly large areas in recent years. The area under rice has also expanded from 44 000 hectares in 1999/00 to 57 000 hectares in 2001/02. The area under roots and tubers has shown a steady expansion in recent years from a reported combined total of 351 000 hectares in 1999/00, through 394 000 hectares in 2000/01, to 431 000 hectares in 2001/02. (The reliability of these figures, however, is suspect since they may include intercropping, but they do nevertheless indicate real expansion. See below (Roots and tubers) for further discussion.) The recent evolution of major crop areas is given in Table 1 and illustrated in Figure 2.

Table 1. Malawi: Areas ('000 hectares) under major crops, 1999/00-2001/02

	Maize	Rice	Roots and tubers ^{1/}	Groundnuts	Tobacco
2001/02	1 488	57	431	209	122
2000/01	1 507	50	394	189	114
1999/00	1 507	44	351	176	119

^{1/} The figures for roots and tubers may not be reliable in absolute terms (see text).



Agricultural inputs

Low maize production was attributed in many areas to a shortage of seed, retained seed having often been consumed as a result of the poor harvest of the previous year. A further problem was the necessity to replant in those areas where there had been a false start to the season, followed by a period of relative drought, during which emerging plants dried out. Farmers often had no more seed left after the first planting. DIFD's Targeted Inputs Programme (TIP) was reduced significantly in 2001, with the result that many farmers who were depending on seed from this programme for their summer

planting were disappointed. On the other hand, the late distribution of winter-TIP seed in 2001 prompted some farmers to keep it for the 2001/02 summer planting.

A significant proportion of Malawi's maize area is planted to hybrids (though the MAI's extension service is now advocating greater use of composites and OPVs), and there appear to be many cases where farmers, unable to purchase new seed, plant the seed retained from their hybrid crop, with a consequent yield reduction.

Farmers in many areas experienced difficulty in obtaining cassava cuttings and sweet potato vines. Nevertheless, the area under these crops has increased, and the MAI is successfully encouraging the establishment of nurseries for planting material.

Malawian smallholders purchase relatively little fertilizer for their food crops since the price, now no longer subsidised, is often unaffordable. (Current prices of 25 kg bags of urea, 23.21.0, and CAN are approximately MK 1,060, 1,260 and 960 respectively.) A great many farmers continue to depend on fertilizer distributed either free or on credit through various programmes such as TIP and the EC's Agricultural Productivity Investment Programme (APIP). The reduction in these programmes during 2001 had a detrimental effect on fertilizer use and on total maize production. Compost-making is being actively encouraged by the MAI.

Weeds, pests and diseases

The contribution of weeds to crop yield reduction was relatively high this year, since many farmers, more occupied than normal with finding food elsewhere, had less time to weed their gardens. There were reports of very localised striga infestations, but their severity was minimal.

Armyworm outbreaks were reported and contained in a number of locations. Yields of sorghum and millet were reduced by quelea birds, especially in Shire Valley; the severity of attacks, however, was not abnormal.

The most serious diseases of maize during the summer season were grey leaf spot and streak, both of which led to significant yield reductions locally. Sorghum was attacked by smut, and some downy mildew was noted on bulrush millet, but the level of incidence was about normal in both cases.

3.2 Food crop production estimate

Cereals

Following the Mission's observations and discussions, four separate adjustments were made to the MAI's Second-Round Agricultural Production Estimates for maize.

1. Since the Second-Round Estimates did not take into account the extensive pre-harvest consumption of maize during the month of March, a reduction of the final production figure was deemed necessary. It was considered reasonable to suppose that about 40 per cent of the nation's monthly maize consumption requirement of 143,000 t would have been consumed straight from the field during March. A factor of 4 per cent was therefore applied to each ADD's summer production figure as given in the Second-Round Estimates, resulting in an overall national reduction of 59,380 t. (Any pre-harvest consumption during April was regarded as part of production for the marketing year 2002/03.)

2. Since the Second-Round Estimates were carried out prior to the early cessation of the rains in April, a further adjustment was required to take account of this. First, an estimate was made of the proportion of the crop that would have been affected by the early cessation of rains; this varied according to ADD in order to allow for the geographical differences both in crop maturation date and in date of cessation. An estimate was then made of the extent to which the yield of the affected portion of the crop would have been depressed as a result of the early cessation of the rains. These two factors were applied to the amount of crop still standing in the field at the beginning

of March, i.e. following the adjustment for pre-harvest consumption in March. The result was a further reduction of 42 133 tonnes.

3. The early cessation of the rains in April resulted in drier-than-normal soil conditions at the beginning of the winter season. Since the Second-Round Estimates were made on the assumption that soil-moisture levels at the beginning of the season would be normal, the Mission considered it necessary to reduce the MAI's projected production figures for winter maize by 10 percent or 14 148 tonnes.

4. The Second-Round Estimates were carried out prior to the finalisation of the winter-maize TIP, and therefore did not take into account the extra production that is expected to result from this programme. The average yield of winter maize, based on the MAI's area estimates and on production figures adjusted for low soil moisture at the beginning of the season, is 1.53 tonnes/hectare. The TIP will cover 30 000 hectare, and the average yield expected from TIP plots is 2.5 tonnes/hectare. Therefore an increment of 0.97 tonnes/hectare over 30 000 hectares, or a total of 29 060 tonnes, is expected. (The TIP organisers anticipate an increment of about 75 000 tonnes to result from the programme, based on the assumption that all the TIP plots will be on land that would otherwise be either uncultivated or under a crop other than maize. However, from discussions with farmers, the Mission concluded that the vast majority of TIP plots would be on land that was already destined for winter maize). The figures showing these adjustments are presented in Table 2.

Rice production for 2001/02 is estimated at 94 400 tonnes, the bulk of it coming from Machinga and Salima ADDs, with a national average yield of 1.67 tonnes/hectare. Sorghum and millet are expected to contribute 37 800 tonnes and 20 500 tonnes respectively, with national average yields of 0.69 and 0.60 tonnes/hectare.

Wheat is grown in a few highland locations, especially in Blantyre ADD. In 2001/02, it is forecast to contribute about 2 400 tonnes to the national food balance.

Total cereal production for Malawi in 2001/02 is therefore estimated at 1.69 million tonnes, as shown in Table 3. The trend in production of the major food crops over the last three years is illustrated in Figure 3.

Roots and tubers

Estimation of cassava production over large areas is notoriously difficult. In Malawi, both bitter and sweet varieties are grown, with maturation periods ranging from eight months to two years. Consequently, the area under cassava at any one time is no more than a very approximate indication of the amount of produce that will be available in the next twelve months. Populations in the north of the country and close to Lake Malawi, such as Nkhata Bay, mostly grow bitter cassava, which they regard as their staple. In most other areas, however, where maize is regarded exclusively as the staple, sweet varieties are grown for consumption as 'snacks'. Official production figures for cassava in recent years have been extremely high. For instance, the estimate for 2002 (Second-Round Crop Production Estimates) gives the total national production as more than 3.5 million tonnes fresh weight, with average ADD yields ranging from 12 tonnes/hectare (Shire Valley and Machinga) to 23 tonnes/hectare (Mzuzu). Although Malawi is a reasonably good cassava producer, its growing conditions, especially for the short-cycle varieties planted at the end of the summer season (shortening day lengths at planting, cool nights and dry conditions during bulking) are not ideal. Much of the crop is also grown as an intercrop. Taking account of these facts, as well as the fact that 3.5 million tonnes of cassava would provide each person in Malawi with more than 300 kg annually, the Mission considers - and many agriculturalists in Malawi agree - that the production projection for the year 2001/02 is a gross over-estimate. What appears to be irrefutable though is that the area under cassava is growing steadily and that traditional maize-eating populations are consuming more cassava. The latter is especially evident this year, following the shortages of 2000/01.

The official MAI production figures for sweet potato (more than 3 million tonnes fresh weight, with a national average yield of 14 tonnes/hectare) are, like those for cassava,

considered to be grossly over-estimated. (3.5 million tonnes of cassava and 3 million tonnes of sweet potato would provide more than half a tonne of root crop to each Malawian over the course of a year, and this in a population in which more than 30 percent are under the age of 10). The Mission suspects that both the total area and the yield of the crop may have been over-estimated, largely as a result of the inclusion of intercropped stands. However, again as for cassava, the area planted to sweet potato has also increased significantly in recent years, as has the crop's acceptability as a valuable food in the predominantly maize-consuming populations.

In attempting to deal with the problem of estimating the amount of cassava and sweet potato that would be available during the current marketing year, the Mission decided that it would be realistic to divide the MAI's production figures for cassava by 3.5 (taking account of possible over-estimation of area, of probable over-estimation of yield, and of the non-availability in the current year of the produce from long-cycle varieties), whilst those for sweet potato could be divided by 1.5 (taking account of possible over-estimation of area, and of probable over-estimation of yield). This gives a supply of one million tonnes of fresh cassava, and two million tonnes of fresh sweet potato.

Irish potato is produced in several high-altitude locations. The main area of production is around Dedza Hills in Lilongwe ADD, but significant amounts are also produced in Blantyre ADD. The MAI estimates national production for 2001/02 at about 377 000 tonnes, which is an increase of more than 50 000 tonnes on the previous year.

The MAI's production figures for roots and tubers in 2000/01 and 2001/02 are given in Table 4.

Legumes

Groundnut production in 2001/02, estimated at more than 175 000 tonnes, is higher than either of the previous two years (155 000 tonnes in 2000/01, and 122 000 tonnes in 1999/00). Estimated pulse production (mainly beans and pigeon pea) in 2001/02 is, at just over 300 000 tonnes, similar to that of 2000/01. The figure, however, shows a significant increase on 1999/00, when total production was estimated to be about 267 000 tonnes.

Table 2. Maize production, 2001/02, adjusted for pre-harvest consumption, early cessation of rains in April, low soil moisture at the beginning of the winter season, and winter TIP.

ADD		MAI Round-2 Estimates			Summer production					Winter production			Adjusted 2001/2002 prodn. with TIP	
		Total	Summer	Winter	R-2 minus pre-harvest consumption	% affected by late drought	Affected summer prodn.	% redn. due to late drought	Prod. redn. due to late drought	Adjusted summer prod	Round-2 minus 10% for dry start	Increment due to TIP		Adjusted winter prodn.
Karonga	Area ('000 ha)	35.9	33.5	2.4						33.5	2.4	1.5	2.4	35.9
	Yield (t/ha)	1.33	1.32	1.47						1.26	1.32	1.18	2.06	1.31
	Production ('000 t)	47.7	44.2	3.5	42.4	5	2.1	10	0.2	42.2	3.2	1.8	4.9	47.2
Mzuzu	Area ('000 ha)	143.6	139.4	4.2						139.4	4.2	5.0	4.2	143.6
	Yield (t/ha)	1.15	1.13	1.88						1.07	1.69	0.81	2.65	1.12
	Production ('000 t)	165.5	157.6	8.0	151.3	10	15.1	10	1.5	149.8	7.2	4.0	11.2	161.0
Kasungu	Area ('000 ha)	270.6	253.3	17.3						253.3	17.3	4.0	17.3	270.6

	ha)													
	Yield (t/ha)	1.31	1.26	2.00						1.16	1.80	0.70	1.96	1.21
	Production ('000 t)	354.2	319.7	34.6	306.9	30	92.1	15	13.8	293.1	31.1	2.8	33.9	327.0
Salima	Area ('000 ha)	115.3	110.1	5.2						110.1	5.2	2.3	5.2	115.3
	Yield (t/ha)	1.07	1.05	1.43						0.97	1.29	1.21	1.82	1.01
	Production ('000 t)	122.9	115.5	7.4	110.9	20	22.2	20	4.4	106.5	6.6	2.8	9.4	115.9
Lilongwe	Area ('000 ha)	285.4	269.6	15.8						269.6	15.8	4.6	15.8	285.4
	Yield (t/ha)	1.07	1.02	1.89						0.94	1.70	0.80	1.94	0.99
	Production ('000 t)	304.9	275.0	29.9	264.0	30	79.2	15	11.9	252.2	26.9	3.7	30.6	282.7
Blantyre	Area ('000 ha)	236.0	232.9	3.0						232.9	3.0	3.0	3.0	236.0
	Yield (t/ha)	1.11	1.10	1.80						1.05	1.62	0.88	2.50	1.06
	Production ('000 t)	261.8	256.4	5.4	246.1	10	24.6	10	2.5	243.7	4.9	2.7	7.5	251.2
Machinga	Area ('000 ha)	301.1	289.5	11.7						289.5	11.7	5.4	11.7	301.1
	Yield (t/ha)	0.90	0.86	1.76						0.80	1.58	0.92	2.01	0.85
	Production ('000 t)	269.6	249.2	20.5	239.2	20	47.8	15	7.2	232.0	18.4	5.0	23.4	255.4
Shire Valley	Area ('000 ha)	98.9	75.3	23.6						75.3	23.6	4.5	23.6	98.9
	Yield (t/ha)	1.00	0.89	1.37						0.84	1.23	1.27	1.47	0.99
	Production ('000 t)	99.2	67.0	32.3	64.3	10	6.4	10	0.6	63.6	29.0	5.7	34.8	98.4
Malawi	Area ('000 ha)	1486.8	1403.7	83.2						1403.7	83.2	30.3	83.2	1486.8
	Yield (t/ha)	1.09	1.06	1.70						0.99	1.53	0.94	1.87	1.03
	Production ('000 t)	1626.0	1484.5	141.5	1425.1		289.6		42.1	1383.0	127.3	28.4	155.7	1538.7

Table 3. Malawi. Cereal production, 2001/02

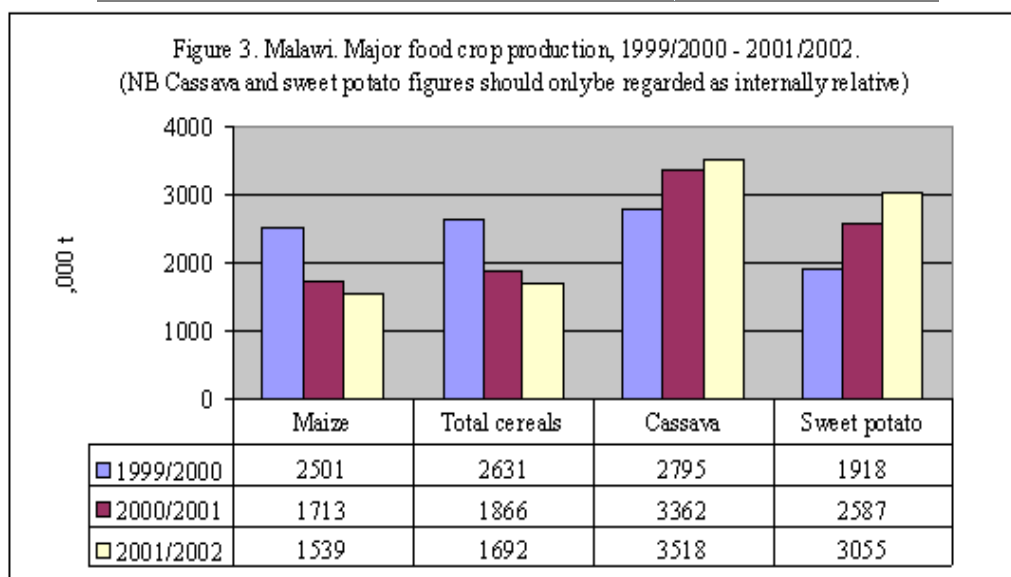
ADD		Maize	Rice	Sorghum	Millet	Wheat	Total cereals
Karonga	Area ('000 ha)	35.9	9.7	0.3	2.2	0.0	48.1
	Yield (t/ha)	1.3	1.68	0.36	0.74		
	Production ('000 t)	47.2	16.3	0.1	1.6	0.0	65.1
Mzuzu	Area ('000 ha)	143.6	2.0	0.0	8.6	0.1	154.3
	Yield (t/ha)	1.1	2.04		0.67	1.02	
	Production ('000 t)	161.0	4.2	0.0	5.7	0.1	171.0
Kasungu	Area ('000 ha)	270.6	0.3	0.1	0.8	0.04	271.8
	Yield (t/ha)	1.2	1.30	0.57	0.46	1.32	
	Production ('000 t)	327.0	0.4	0.0	0.4	0.05	327.8
Salima	Area ('000 ha)	115.3	13.0	1.6	2.5	0.0	132.4

	Yield (t/ha)	1.0	2.00	0.77	0.66		
	Production ('000 t)	115.9	26.0	1.2	1.7	0.0	144.7
Lilongwe	Area ('000 ha)	285.4	0.1	0.3	12.4	0.3	298.4
	Yield (t/ha)	1.0	1.28	0.60	0.57	0.77	
	Production ('000 t)	282.7	0.1	0.2	7.1	0.2	290.3
Blantyre	Area ('000 ha)	236.0	7.1	26.3	1.2	2.5	273.1
	Yield (t/ha)	1.1	1.08	0.73	0.48	0.80	
	Production ('000 t)	251.2	7.7	19.1	0.6	2.0	280.5
Machinga	Area ('000 ha)	301.1	19.6	18.5	1.1	0.0	340.4
	Yield (t/ha)	0.8	1.76	0.75	0.52		
	Production ('000 t)	255.4	34.4	13.8	0.6	0.0	304.2
Shire Valley	Area ('000 ha)	98.9	4.8	7.4	5.3	0.0	116.4
	Yield (t/ha)	1.0	1.16	0.45	0.54		
	Production ('000 t)	98.4	5.5	3.3	2.9	0.0	110.1
Malawi	Area ('000 ha)	1486.8	56.6	54.4	34.1	2.9	1634.9
	Yield (t/ha)	1.03	1.67	0.69	0.60	0.81	
	Production ('000 t)	1538.7	94.4	37.8	20.5	2.4	1693.8

Table 4. Malawi. Comparative root and tuber production, 2000/01 and 2001/02

ADD		Cassava		Sweet potato		Potato	
		2000/01	2001/02	2000/01	2001/02	2000/01	2001/02
Karonga	Area ('000 ha)	14.2	15.4	6.6	6.4	0.3	0.0
	Yield (t/ha)	15.7	17.8	17.2	16.2	10.0	8.9
	Production ('000 t)	223.8	274.5	113.4	104.0	2.8	0.3
Mzuzu	Area ('000 ha)	38.7	43.7	13.1	17.5	1.3	1.3
	Yield (t/ha)	25.2	23.0	15.4	15.6	9.9	10.3
	Production ('000 t)	973.1	1005.0	200.9	274.2	12.6	13.2
Kasungu	Area ('000 ha)	16.6	18.5	24.7	30.3	2.2	2.2
	Yield (t/ha)	14.7	15.3	13.5	13.9	12.5	12.3
	Production ('000 t)	245.4	282.6	332.1	423.2	27.3	26.5
Salima	Area ('000 ha)	27.5	30.2	11.0	14.9	0.0	0.0
	Yield (t/ha)	17.5	19.3	9.6	11.0		
	Production ('000 t)	482.3	581.7	105.4	164.1	0.0	0.0
Lilongwe	Area ('000 ha)	20.2	23.5	24.0	26.2	15.3	18.4
	Yield (t/ha)	13.8	14.6	14.7	15.3	13.7	14.0
	Production ('000 t)	278.3	344.0	353.5	401.2	209.8	256.4
Blantyre	Area ('000 ha)	40.4	42.7	62.8	65.2	3.6	4.1
	Yield (t/ha)	12.9	13.2	12.9	13.5	19.4	19.0
	Production ('000 t)	519.7	563.7	808.4	881.3	69.6	78.1
Machinga	Area ('000 ha)	43.2	38.4	40.9	46.4	0.1	0.2

	Yield (t/ha)	14.3	11.6	13.2	14.8	9.1	9.7
	Production ('000 t)	616.5	446.7	540.5	687.9	1.2	2.1
Shire Valley	Area ('000 ha)	1.5	1.6	9.6	10.0	0.0	0.0
	Yield (t/ha)	15.6	12.3	13.9	11.9		
	Production ('000 t)	23.3	20.2	132.6	118.9	0.0	0.0
Malawi	Area ('000 ha)	202.3	214.0	192.5	217.0	22.8	26.2
	Yield (t/ha)	16.6	16.4	13.4	14.1	14.2	14.4
	Production ('000 t)	3362.4	3518.3	2586.8	3054.8	323.3	376.7



3.3 Livestock and pasture

Livestock condition in Malawi is currently good, and pasture is considered to be adequate for the coming year. Large numbers of livestock were sold at greatly reduced prices during the period of food shortage at the beginning of 2002, by families desperate for cash to buy maize and other foodstuffs. Some of these animals undoubtedly went for slaughter, but a significant number are thought to have merely changed hands. Consequently, although the country's total livestock population may have decreased only slightly, some owners now have larger herds, while a great many others have lost a valuable buffer against future food shortages.

4. AGRICULTURAL SITUATION BY ADD

Karonga

Rains started sporadically at the beginning of December, but amounts sufficient for planting were not received until the second half of the month. Some areas had excessive rainfall at the end of the year, and 1 850 hectares of maize were reported to have been affected by flooding. Rainfall in January and February was generally good, with some diminution in March. The early cessation of rains in April was less dramatic than elsewhere in the country. With the generally high moisture content resulting from the satisfactory rains, winter maize planting is expected to increase. Despite an overall reduction in area, maize production in 2001/02 is estimated to be higher than that of

last year. Cassava, sweet potato, rice, groundnuts, tobacco and cotton have all performed well; tobacco and rice showed an increase in area, although the irrigated summer rice area declined.

Mzuzu

Some areas received rains in October, prompting farmers to plant their maize, but this was followed by a dry spell. Some of these early-planted crops survived, but some dried out, necessitating replanting. In most parts of the ADD, effective planting rains were not received until the second half of December. They were then well distributed, except in some areas which experienced a dry spell of two to three weeks after mid-February. Some parts of Rumphi District experienced slight flooding. Maize production is forecast to be down on last year's by about 20 000 tonnes. Significant increases in the areas under cassava and sweet potato were registered. Fungal disease and beetle infestation were reported to have reduced bean yields. The generally late arrival of the rains is reported to have resulted in local shortages of water and pasture for livestock.

Kasungu

Mchinji was the first district to receive planting rains in mid November. Elsewhere the rains arrived in late December, leading to a very wide range of planting dates within the ADD. Following good rains in January and February, most districts experienced an unusually long dry spell in March. The rains returned at the end of March, but stopped abruptly in most places in early April. Maize production for the ADD, which is one of the country's most important producers, is forecast to be about 35 000 tonnes down on last year. Most of the reduction will be in Kasungu and Mchinji districts. Both cassava and sweet potato production are expected to show an increase over 2000/01; most of this will be attributable to an increase in planted area. Tobacco production is down slightly on last year, but groundnut production shows an increase.

Salima

Dry conditions up to the second half of December were followed by heavy rains which caused flooding in most areas of the ADD. The rains became more normal later in January and February, and, in the north of the ADD, continued normal during March. However, Salima district experienced an unusually long dry spell in March. Rains generally stopped early in April. Maize production is forecast to be similar to that of last year. Although the area under rice has increased significantly over last year, production is forecast to be about the same. The area under cassava and sweet potato has also increased and production is forecast to be considerably higher than that of last year; production of sweet potato alone is expected to increase by 50 percent.

Lilongwe

Some parts of the ADD experienced a false start to the rains in October, which frequently led to the need to re-plant later in the season. Good planting rains generally did not arrive until late December. Rains were normal during January and February, but this was followed by a prolonged dry spell from the end of February to mid March when much of the maize crop was at the critical teaselling and cobbing stages. Maize production this year is forecast to be down about 50,000 t on last year. On the other hand, substantial increases in cassava and sweet potato production are forecast. Lilongwe ADD is the country's main producer of potatoes, and this year's production estimate of about 256 000 tonnes is more than 45 000 tonnes up on last year's, mostly as a result of an expansion of area. Tobacco production is also higher this year for the same reason.

Blantyre

The arrival date of the rains in Blantyre ADD was very varied, resulting in a wide range of planting dates. Thyolo received good rains in October, but elsewhere the rains started at different times in November. Heavy rains in December resulted in some flooding in all districts. A dry spell over most of the ADD in early January had little effect on crop

production since by then the soil moisture status was generally adequate to withstand it. Rains resumed later in January and continued satisfactorily into February, but another dry spell struck at the end of February and lasted until mid March. By this time, however, most of the maize crop was already mature. Both the area and production of maize are forecast to be slightly lower than last year. Cassava and sweet potato areas and production are estimated to be up on last year.

Machinga

Although there were some light rains during October and November, planting rains did not arrive until late December. These were heavy, but were quickly followed by a dry spell in January, which, because of the high soil-moisture status at that time, was not particularly damaging. Heavy rains returned later in January and continued into February, causing extensive flooding and water-logging, and yield reduction over an estimated 4 000 hectares of maize. Dry conditions returned at the end of February and lasted up to mid March. Late-planted maize was badly affected by this drought, especially in Mangochi District. The area under maize this year is greater than last year, but production is forecast to be lower. However, rice production is forecast to be up by about 3 000 tonnes on last year. Machinga is the only ADD in which a reduction of area under cassava has been reported; sweet potato, however, shows an increase in area and production.

Shire Valley

Erratic light rains fell in late November and early December, leading to some false starts to the season and often necessitating re-planting. Good planting rains arrived in the second half of December. These turned very heavy, causing flooding in low-lying areas. A dry spell in early January was followed by more flooding at the end of the month. Dry conditions returned in late February, but by this time most of the maize crop was mature. Total maize production is forecast to be slightly down on last year. The relatively dry start to the winter season is expected to have an impact on winter maize production, which is very important in this ADD, especially on the Shire floodplain. Cotton production shows little change compared with the last few years.

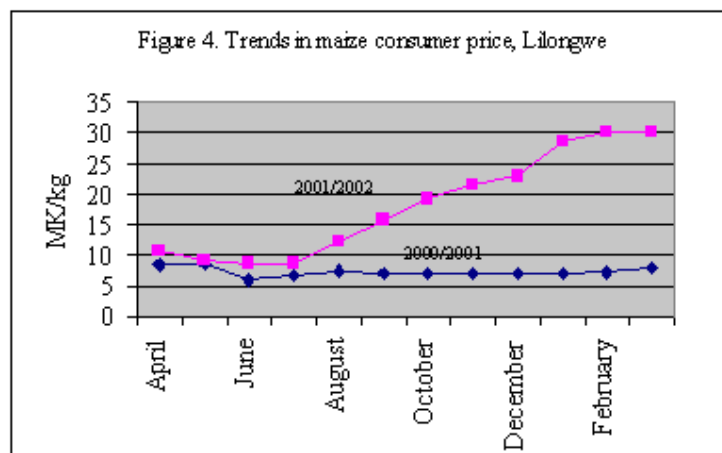
5. FOOD SUPPLY SITUATION

5.1 Market conditions

Malawi has a relatively free market for maize and other staple foods. Prices are freely determined in the market, but during periods of scarcity the Government has tended to maintain some control on consumer prices through ADMARC's retail sales of the Government-owned strategic grain reserve. Exports are usually banned and only allowed during periods of production surplus.

After a bumper crop in 1999, a strategic grain reserve of 167 000 tonnes was established. However, this reserve was released both domestically and for export between mid 2000 and early 2001. By March 2002 (the end of marketing year 2001/02), and following a severe shortage of maize on the domestic market, the National Food Reserve Agency imported 106 000 tonnes of maize, which were channelled into the market through ADMARC and private traders initially, but later through ADMARC alone at a fixed price of MK 17/kg, which, at the prevailing exchange rate and rising maize prices in South Africa (the main source of imports) included a subsidy element.

In marketing year 2001/02, maize prices rose sharply from around August 2001 (Figure 4) reaching a national average of 32.5 MK/kg by January/February 2002. This reflected the serious maize shortage and slow arrival of imports. The increase in prices severely curtailed access to food for a large section of the country's population.



5.2 Food supply/demand in marketing year 2002/03

The 2002/03 projected balance for cereals is summarized in Table 5, based on the following parameters and assumptions:

- The 2001/02 cereal production is estimated at 1 694 000 tonnes.
- About 20 000 tonnes of maize stocks are currently held by ADMARC, on behalf of the National Food Reserve Agency from imports that arrived late at the end of the marketing season. In addition, major milling companies based in Blantyre normally hold normally about 7 000 tonnes of maize, wheat and rice in stock for their operations. Other major traders indicated to the Mission that they had no stocks of cereals from the past marketing season, and it is also assumed that farmers and small-scale traders have no cereal stocks following the extreme shortage of maize during the past few months. Total opening stocks are therefore estimated at 27 000 tonnes.
- Food consumption in marketing year 2002/03 is forecast on the basis of a mid-marketing year population of 11.44 million, derived from the official figure from the National Statistical Office, and an annual per caput consumption of cereals of 165 kg, the per caput apparent consumption.
- Other uses include seed requirements and post harvest losses; no significant use of domestically produced grains for animal feed. Use of sorghum for brewing purposes is assumed to be part of the overall food consumption requirement.
- Even though maize exports are currently banned, some outflow through unrecorded cross-border exchange occurs with neighbouring countries. However, given the severe domestic food shortage during the last months of the last marketing year and the significant shortfall forecast for 2002/03 marketing year, with maize prices expected to be higher than in Mozambique and Tanzania, it is assumed that no exports will take place.
- Closing stocks are estimated at 7 000 tonnes, the minimum required by milling companies to operate. Any replenishment of the strategic grain reserve, which is targeted at 60 000 tonnes, will be carried out through tendering for additional commercially imported grain.

Table 5. Malawi: Cereals balance sheet, April 2002-March 2003 ('000 tonnes)

	Maize	Rice	Sorghum/Millet	Wheat	Total
Domestic availability	1 563	96	58	4	1 721

Opening stocks	24	1	0	2	27
Production	1 539	95	58	2	1 694
Total utilization	1 996	100	58	52	2 206
Food use	1 724	62	52	50	1 888
Other uses	268	37	6	0	311
Closing stocks	4	1	0	2	7
Import requirements	433	4	0	48	485
Estimated commercial imports	225	4	0	48	277
Food aid	208	0	0	0	208

Estimates of commercial imports of about 225 000 tonnes are based on planned amounts by the NFRA, the milling industry, leading private sector trading companies and other traders. Companies are already planning ahead in anticipation of transportation congestion in the sub-region from August/September. Cross-border unrecorded grain inflows from Tanzania and Mozambique could also be substantial, given the expected high cereal prices in Malawi relative to the two countries.

Cassava and sweet potato production and consumption have increased in recent years, as maize production has become unreliable from year to year. However, as available official production figures appear to be grossly overestimated, it was difficult for the Mission to integrate them into the overall food supply calculations. In general terms, therefore, it can be said that substantial quantities of cassava and sweet potato will be available for consumption during the marketing year, and this will moderate the impact of the maize shortage in many areas.

Food aid estimated at 208 000 tonnes will need to be provided through Government import and external food assistance.

6. HOUSEHOLD VULNERABILITY ANALYSIS AND ESTIMATION OF EMERGENCY FOOD AID NEEDS

To better understand household vulnerability analysis and to make estimation of emergency food aid needs, three field assessment teams augmented the core FAO/WFP Mission. These vulnerability analysis teams each focused on a specific region in Malawi. Fifteen professionals from WFP, UNDP, government, FEWSNet, NGOs, and donors composed these teams, which conducted their field research simultaneously with the main FAO/WFP teams. The vulnerability analysis team members used a consistent assessment instrument conducting over 200 community and household interviews, facilitating the integration of their findings.

The following analysis of household vulnerability and emergency food needs draws information from both the core FAO/WFP Mission and the complementary vulnerability analysis assessment.

Underlying vulnerability

The majority of Malawians are highly vulnerable to disturbances in access and availability of food. This is mostly due to deep structural issues (economic, geographic, and political), but also includes some characteristics that could be changed in a short time frame. The UNDP Human Development Report for Malawi estimates that over 65 percent of Malawians live below the poverty line, making it one of the poorest countries in the world. Malawi is a landlocked country with poor infrastructure connecting it to major ports, having a direct effect on the availability of commodities and their prices.

Over 80 percent of Malawians are directly engaged in agricultural activities for their main livelihoods, and 82 percent of the poorest 50 percent of the population has access to some land. The average household land holding size in this group, however, is less than .87 ha, with a national average of less than 1 ha. This is further compounded by the fact that nationally the most fertile lands in the country (particularly in the districts of Thyolo and Mulanje) are mostly dedicated to private estate cultivation of tobacco, tea, macadamia nuts, and other export oriented crops that do not directly benefit household food security of the rural poor (excepting for the small percentage of people employed on the estates). In general the rural farming systems are not sophisticated with regards to soil fertility management, water management, and holistic farming systems including agro-forestry and animal husbandry. The percentage of cropland under maize is disproportionately high (roughly 75 percent), especially considering the sensitivity of maize to climatic variations as compared with more robust crops like sorghum, millet, cassava, and sweet potatoes.

Two health indicators represent both causes and outcomes of vulnerability to food insecurity, and poverty in general. The percentage of children under 5 who are <2sd from the mean in stunting averages to 49.3 percent for the whole of Malawi, with some variation by district (see Table 6). These rates are averaged over several years of nutritional surveillance from UNICEF, and thus represent a chronic problem. Indeed, the relative poverty assessment release by the government in December 2001 indicates that the poorest 50 percent of the population regularly consumes roughly 1 800cal/capita/day, less than the WHO standard of 2 100 cal/capita/day.

Another health indicator is the very high prevalence rates of HIV/AIDS. The national average is 19.5 percent prevalence throughout the country, again with some variation by district (Table 6). The field assessment confirmed the direct linkages between household food security and HIV/AIDS, including loss of able-bodied labour within the household, loss of remittances from a working family member, adoption of orphans by the elderly, child-headed households, increased expenditures on health care and funerals, inter alia. While HIV/AIDS devastates all social groups, as survivors of HIV/AIDS victims women, children, and elderly are particularly affected. This is due to their relative lack of opportunity for wage labour as compared with able-bodied men. This is further discussed on the section below discussing access issues.

Table 6: Percent Under 5s <2sd in Stunting and HIV/AIDS Prevalence, by District

District name	Under 5 years percent <2sd Stunting	HIV/AIDS prevalence
Chitipa	51.3	12.1
Karonga	38.8	16.9
Nkhata Bay	51.3	13.7
Rumphi	51.3	12.3
Mzimba	43.9	13.8
Likoma	51.3	21.9
Kasungu	47.4	12.6
Nkhotakota	51.3	12.6
Ntchisi	51.3	9.6
Dowa	51.3	10.1

Salima	54.6	21.8
Lilongwe	54.2	19.4
Mchinji	51.3	11.7
Dedza	51.3	10.1
Ntcheu	51.3	10.0
Mangochi	47.5	24.7
Machinga	44.5	24.4
Zomba	45.7	27.2
Chiradzulu	51.3	24.8
Blantyre	38.1	38.5
Mwanza	51.3	25.1
Thyolo	46.3	26.0
Mulanje	49.5	26.2
Phalombe	51.3	24.6
Chikwawa	51.3	25.8
Nsanje	51.3	25.7
Balaka	51.3	24.7
Average	49.3	19.5

Source: UNICEF and UNAIDS, 2001

And lastly, when examining vulnerability for this coming consumption year (through March 2003), it is critical to understand the stressed conditions experienced by most farmers last year. There was a humanitarian crisis in Malawi last year due to low production and extremely high prices of maize, leaving the majority of farm families without enough food, particularly during the months of November through April. This has had a direct impact on nutritional well-being (with some deaths due to lack of food), as well as stretched the coping capacities of most households (see below for a more thorough discussion on coping). The European Union conducted a nutritional comparison of comparative months in 2001 and 2002. For the month of February, cases of severe malnutrition increased by 80 percent in clinics throughout the country. WHO has recently completed a field assessment of crude mortality rates in the country for the six months prior to April 2002, and found the rate to be a staggering 1.9, whereby anything above 1 is considered to be indicative of an extreme anomaly. Thus, farm families entered this coming consumption year in a very precarious condition. Successive years of stress will surely compound food insecurity this coming year. Furthermore, early indications are that the coming agricultural year is under threat of a possible El Nino event. If this occurs, precedent in Malawi indicates that the coming agricultural year could be even worse than this past one

Issues of access

Maize prices are key to understanding food security in Malawi. Current market prices for maize (about 12 Kwacha per Kg) have dropped significantly from their peaks in February (about 30 Kw/kg). This reflects the arrival of the new harvest. The concern is, however, that the current price of roughly 12 Kw/kg is already roughly 60 percent more than the price at this time last year.

Based on monthly data from twenty markets around the country, the National Statistics Office reports that by November 2001 maize prices were reaching 250 percent higher than that of November 2000 (18 kw/kg and 7 kw/kg respectively), and by March 2002 they were almost 400 percent higher than that of March 2001 (30 kw/kg and 7 kw/kg). While ADMARC sold limited amounts of maize last year for a fixed price of 17 Kw/Kg,

this was also an increase from the fixed price of 5 Kw/Kg the previous year. The ADMARC price level reflected the import parity price from South Africa by September 2001. However, the need to import derived not only from the low availability, following a bad harvest in the 2000/01, but also reported mismanagement of the national strategic grain reserve, which was sold off early in the year creating a scarcity of maize in the ADMARC outlets throughout the country. The dramatic increase in prices played a critical role in contributing to the humanitarian crisis experienced last year.

The core reasons for the access effects on household food security are three-fold, having to do with rural livelihood patterns, household purchasing power, and the anticipated costs of required maize. Firstly, maize is the dominant crop both in terms of production and consumption, accounting for nearly 80 percent of the Malawian diet. The vast majority of rural farmers, and increasingly so for the poorer households, normally depend on purchasing their maize from December until the next harvest. Due to a bad harvest last year, however, most farmers had to start purchasing from October/November, as their own supply of food stocks had been consumed. Such reliance on purchasing is expected to begin even earlier this year.

Secondly, the purchasing power of the poorest 50 percent of Malawians is extremely low, with a combined net worth (i.e., all income sources plus the value of consumed goods) in the range of 15-20 MK per household per day (Government of Malawi Relative Poverty Study, December 2001). During the most critical food security months, however, household purchasing power is less than 15-20 MK/day because this is estimated on equal distribution of daily income throughout the year. By December, most households have typically sold and spent much of their cash crop incomes, leaving a proportionately lower amount available up until the next harvest. While common throughout the year, the rural poor typically rely on casual labour (ganyu) as an income source to purchase food, especially from December onwards. Casual labour rates in Malawi (20 MK/day) have not increased in the past five years, despite overall inflation in the economy. Ganyu is piece-meal labour typically conducted on nearby farms, and is not available on a daily basis.

In the coming year there will be an expected increased number of people searching for ganyu, leading to a decline in both opportunities for casual labour and in the actual daily rates. This dynamic will most directly affect the elderly and women, who have lower priorities in the competitive ganyu market. The increasing prevalence of HIV/AIDS further exasperates ganyu availability, especially for the elderly and children. Given the importance of purchases for poorer household food consumption and the heavy reliance on ganyu as an income source, loss of able-bodied household members has a direct effect on the household income, and thus food acquisition potential. Whereas a young child or elderly person at least has some potential to work on their own farms to contribute to household food needs, the ganyu market is competitive and stronger persons are given priority, making ganyu an increasingly non-viable option for households with disproportionate numbers of children and elderly. Thus, while HIV/AIDS undermines both availability and access to food, its effects on the household unit are particularly pronounced with regards to access issues. For rural Malawians HIV/AIDS will continue to have a severe effect on their food security.

This year the main smallholder cash crop prices (including tobacco and cotton) are also down from previous years. Some farmers are currently selling tobacco at 15 MK/Kg, whereby the auction floor price fluctuates around 78 MK/Kg. Even the current auction floor price is roughly 50 percent less than that realized in recent years. These prices will directly impact the overall household economy for the majority of farmers.

Thirdly, a typical household of 5 people requires approximately 2 kg of maize for daily consumption, allowing for additional required calories to come from other foodstuffs. With a daily purchasing power of 15-20 MK/day, the price of maize from December to March last year was almost 200 percent more than what 50 percent of Malawian households could afford. With maize prices already 60 percent more than what they were this time last year, the trajectory for the coming year is set to reach or exceed the high maize prices of last year. This is further supported from analysis of high import parity prices for landlocked Malawi and interviews with private traders who indicate that

they will have to sell imported maize at a minimum of 24 MK/kg. Although the free market price is expected to exceed this amount, even the minimum commercial price of maize is more than twice as much as what the poorest 50 percent of the population can afford.

Thus, maize prices reached unprecedented levels last year, the demand for purchases increased due to bad harvests, and purchasing power was a fraction of what was needed to purchase household food supplies. All indications are that the high maize prices of last year will again be realized this year if not higher, especially in the absence of humanitarian intervention. These access issues seriously throw into question the extent to which the commercial sector can alleviate the expected food crisis this year, especially for the rural poor (see further discussion below).

Issues of availability

This year's maize harvest is expected to be 1.54 million tonnes, which is a decline of 10 percent from the estimated harvest of last year. These estimates are further confirmed with our household surveys, which indicate that the majority of farmers expect their harvest to last to September/October, whereby it normally last through December. Section 3 of this report details the reasons for this and the extent of the problem. Indeed due to erratic rainfall, lack of inputs, early consumption, and other factors, a smaller percentage of farmers expect their harvest to only last through June. This severe decrease in availability will have combined negative effects on farmers: increasing their reliance on purchasing earlier than normal, and effectively increasing the price of maize due to increased demand.

To some degree, the decrease in maize production from the main harvest will be offset by an anticipated increase in normal winter cropping and an increase in normal root and tuber crops (see discussion in section 3.2 of this report). That said, there is expected to be a severe shortage of available grain in the country, with an estimated gross deficit of 485 000 tonnes. This will have to be brought into the country through the combined efforts of the government, commercial traders, petty traders, and the humanitarian community.

Coping strategies

Because last year was a stress year, it is possible to ask what farmers did to cope last year, and anticipate that similar strategies will be employed this year. Following are commonly cited coping strategies during the household interviews.

Because of the need to purchase more maize last year, and with little other income opportunities, an increased number of the rural poor relied on ganyu if it was available. Some farmers reported that whereby they normally employ others to work on their farms, this past year they themselves were seeking labour opportunities. While ganyu is a normal strategy, any increased dependence on it has a direct effect on the amount of time a farmer can spend on his/her own farm. This can lead to diminishing long-term returns as the farmer attempts to meet immediate needs.

Households and district officials reported that the majority of farmers this past year began to consume their harvest prematurely. While this is a normal occurrence for some, the widespread nature and the amounts well exceed normal strategies. The food balance sheet (Table 5) takes into consideration early consumption for the month of March.

Rampant theft of cassava and maize was widely reported. While in an abstract way this can be seen as a redistribution of calories, it does have negative effects on long term food security for households as well as negative effects on social cohesion and community trust.

Although livestock numbers in general are low throughout the country, those who had goats or chickens readily sold them to purchase food. This is indicated in the price of livestock with decrease in the goat price from roughly 400 Kw during a normal year to 150 Kw last year for comparative months, and in the chicken price from 70 Kw to 15 Kw. The sale of livestock as a coping strategy is a classic example of how successive years of stress compound food insecurity - sale of livestock to meet food needs one year

means less livestock for potential sale in a successive stress year, like what is expected this year.

Other households reported sale of capital assets including cooking materials, farming implements, and other items. In some parts of the country there was out migration from one district to another in search of ganyu or food. Skipping meals and/or eating unknown and sometimes poisonous wild roots were also widely reported.

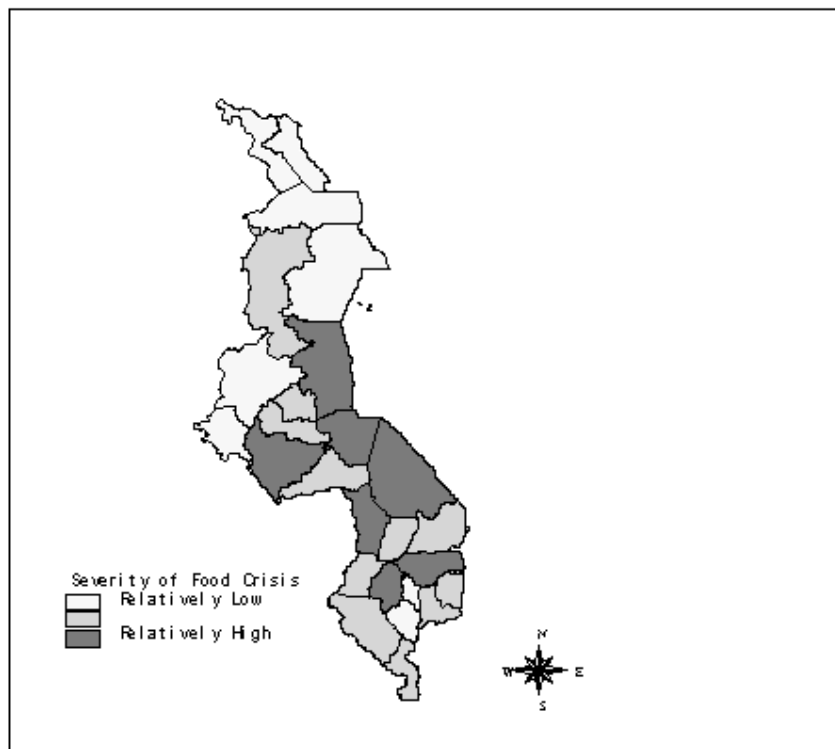
All of these negative or distress coping strategies can be expected this year without significant humanitarian intervention.

On the positive side, the shock from last year and concerns for this year has encouraged many farmers to engage in positive strategies for the coming season. These include increased planting of cassava and sweet potatoes (see discussion in section 3.2), decreasing the amount of maize sold immediately post-harvest, and increasing cultivation of more drought resistant grains such as millet and sorghum. These strategies will contribute to alleviating the expected crisis this year, and should be encouraged.

Distribution of problem and food needs analysis

Combining data sources from secondary indicators such as nutrition rates, HIV/AIDS, market prices, and crop production with primary data collected during the field assessments, the team has developed a relative severity map to illustrate the expected distribution of food crisis by district in the country (Map 1).

Map 1. Estimated Distributions of Relative Severity of Food Crisis, by District



The main differences in vulnerability between districts concerns the anticipated harvests from last year, access to sources of income other than ganyu, degree of reliance on maize versus root and tubers, and proximity to external markets (such as Tanzania and Mozambique). The analysis was done at an EPA level (for all 154 EPAs and then aggregated up to districts. Thus, for some districts that may not have an overall severity, there are possibly pockets of EPAs for which the situation will indeed be severe this coming year, making the district as a whole appear to have relatively low severity. Also note that the lowest category of severity includes both districts that are not expected to need food assistance along with some that will indeed require assistance for

up to 17 percent of the population. The map illustrates the broad spatial pattern of severity in the country. See Table 7 for specifics by district.

Due to the combined effects of reduced availability of food along with an anticipated very much reduced access to food (through declining purchasing power), the assessment recommends assistance to roughly 3.2 million beneficiaries in the form of 207 687 tonnes of food aid so as to avert a humanitarian crisis. The national levels of recommended humanitarian assistance are also consistent with findings from a recent Save the Children-UK Risk Map study. The district specific analysis in Table 7 indicates the cumulative percentages of people who will need food aid and metric tons. The metric tonnages of maize are calculated on a 10 kg/person/month ration level. This amount is less than a full ration of 15 kg with the assumption that households will have access to a least some alternative food sources. Additionally, other food basket considerations are not included here, but should be part of an emergency package, which would total closer to a full ration. This is also consistent with previous food aid distributions in Malawi whereby each household (average 5 persons) has been allocated 50 Kg/month. Furthermore, distributing 10kg/person/month rations allows for a wider distribution of beneficiaries for what will most likely be a limited amount of food aid.

Table 7. Cumulative Food Aid Estimates, by District

Region	DISTRICT	EST. 2002 POP. 1/	Total Cumulative Percentage PPND	Total Cumulative Number of Beneficiaries	Total Cumulative MT from June to March 2003
Central	Salima	290 119	53	153 763	9 458
Southern	Mangochi	698 246	39	269 988	17 503
Central	Lilongwe	1 594 011	38	610 413	37 806
Southern	Blantyre	958 210	35	335 373	22 039
Southern	Zomba	627 535	35	216 948	14 514
Central	Nkhota kota	275 982	33	89 694	5 658
Central	Ntcheu	402 475	32	128 792	8 412
Southern	Mwanza	154 531	30	46 875	3 127
Southern	Mulanje	463 601	30	139 080	9 040
Southern	Nsanje	206 201	30	61 860	4 207
Southern	Balaka	286 732	30	86 020	6 021
Central	Dedza	550 372	30	163 277	10 329
Southern	Machinga	423 576	26	111 189	7 148
Southern	Phalombe	254 487	25	63 622	4 263
Central	Dowa	476 209	25	116 671	7 810
Northern	Mzimba	727 937	23	167 425	10 628
Central	Ntchisi	199 071	21	41 805	2 867
Southern	Chikwawa	398 136	20	80 954	5 866
Northern	Rumphi	151 236	17	25 710	1 754
Southern	Thyolo	502 948	17	83 825	5 868
Central	Kasungu	582 604	15	87 391	6 117

Central	Mchinji	378 586	14	53 002	3 824
Southern	Chiradzulu	262 496	13	32 812	1 903
Northern	Karonga	227 433	7	15 920	1 114
Northern	Chitipa	148 194	4	5 928	415
Northern	Nkhata Bay	190 427	0	0	0
Northern	Likoma	8 646	0	0	0
TOTAL		11 440 000	28	3 188 337	207 689

1/ The population figures by district are proportioned estimates based on the current official national figure of 11.44 million. The proportions are derived from the district populations indicated in the 1998 census.

The mission recommends a phased approach divided into three time periods. The first time period (June through August) would assist those people currently in need of assistance due to carried over effects from last year and/or minimal to no harvest this year. The second time period (September through November) would assist people whose current stocks are only expected to last to August or September. Food assistance for these people provides both a necessary caloric input as well as reducing the need to search for ganyu or other income sources, while neglecting their own farms. The third time period (December through March 2003) is the most critical time period, as maize is expected to be in limited supply and/or sold at a price with is vastly unaffordable for at least the poorest 50 percent of households. The recommended phases and metric tons are displayed in Table 8.

Table 8: Recommended Phases for Food Assistance and Amounts

Timing	Percent of Population	No. of Beneficiaries	Tonnes
June through August	5	545 132	15 904
September through November	19	2 141 699	64 250
December through March 2003	28	3 188 337	127 533
Cumulative Totals	28	3 188 337	207 687

The phased approach to food aid distribution is predicated on the need to distribute only minimal required food aid in the early months and expand as the hungry seasons approach. There are three main reasons for starting small and enlarging over time: (1) the majority of farmers do have a harvest that will last for several months, and early large-scale distribution would give the wrong signal to farmers who are busy preparing their winter crops and taking many other proactive or risk aversion measures in anticipation of hard times to come, (2) it would give the wrong signal to commercial traders who will have a critical role in this coming year but will be looking to the government and international community to see if there is a danger that the market will be flooded with maize from food aid shipments, and (3) if one assumes that there will be a limited and finite amount of food aid coming to the country, it would be very unwise to use significant portions of that assistance during months when it is not really needed, as opposed to December through March when the situation will be most critical.

While Table 8 indicates timing for phasing in distribution to beneficiaries, it is imperative that international supplies of maize be mobilize immediately so that there is minimal disruption to the pipeline. Furthermore, logistic difficulties due to the rainy season in December are expected, advising for early pre-positioning of food aid stocks to the remote extended delivery points well ahead of scheduled beneficiary distributions.

The estimated food aid requirement of 207 687 tonnes is needed to cover the gap indicated on the food balance sheet, after subtracting expected imports of the commercial sector.

Being a function of both availability and access, analysis of household food security needs to consider the price of commercially supplied maize vis a vis the household purchasing power. From a humanitarian perspective, maize brought into the country by the commercial sector will likely be inaccessible to the rural poor, as it was last year (discussed above). While the food assistance indicated above will alleviate food insecurity for 3.2 million beneficiaries, both the import actions by commercial traders and the market prices should be closely monitored. If the commercial sector does not import the expected amounts and/or the maize prices continue to climb even higher than last year, there will be a need for immediate increases in humanitarian assistance. Also, the food balance sheet considers expected increases in winter harvesting. Such should be closely monitored, and if increased winter harvests are not realized for whatever reasons there will also be a need for immediate increases in assistance so as to avert a humanitarian crisis

The vulnerability analysis agrees with the principle not to flood the market with free maize distributions to the point where it will disrupt incentive to grow maize in the future. With prices expected to reach levels of last year (up to 400 percent of what they were the previous year), however, there will still be incentive for farmers to grow maize for their own household consumption and/or sale. Regarding effects on the commercial sector, the recommended food aid would be targeted to the most vulnerable populations through both geographic and social targeting (reaching a maximum of 28 percent of the population). This will leave substantial maize consumption needs during the lean months to the commercial sector. For this strategy to be realized, the anticipated role of the commercial sector (i.e., the amount of maize it is assumed they will import) must be clearly communicated so that the large traders are assured of a market for their investments. If the large traders do not import the expected amounts, there promises to be an even larger scale humanitarian crisis.

Current WFP Assistance

WFP began an emergency operation in March to assist approximately 300 000 Malawians through May. An Emergency Operation appealing for 54 426 tonnes has recently been submitted to meet immediate food aid needs as specified in this document. Thus, of the total recommended food aid of 207 687 tonnes through March 2003, 54 426 tonnes should already be covered through donor assistance, leaving an unmet deficit of 153 261 tonnes, which will have to be appealed for from the international community.

This report is prepared on the responsibility of the FAO and WFP Secretariats with information from official and unofficial sources. Since conditions may change rapidly, please contact the undersigned for further information if required.

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