

SPECIAL REPORT

FAO/WFP CROP AND FOOD SUPPLY ASSESSMENT MISSION TO SWAZILAND

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME



WORLD FOOD PROGRAMME, ROME

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Mission Highlights

- There was a good start to the season, but this was followed by poor rains, extended dry periods and unusually high temperatures during parts of January and February. These conditions coincided with the critical tasselling stage for much of the maize crop. Rains came back at the end of March and continued through May but were too late to remedy the situation.
- Largely in response to the very encouraging rainfall at the beginning of the season, the area under maize increased, compared with both 2006/07 and the average of the last five years.
- The Mission estimates just over 60 000 tonnes of maize harvest from Swazi Nation Land, and a further 4 000 tonnes from Title Deed Land. This is more than twice last year's production, but still below that of each of the preceding four years.
- Total cereal import requirement in the 2008/09 marketing year (April/March) is estimated at about 136 500 tonnes, of which 129 000 tonnes are expected to be imported commercially. If these imports materialize the country will not face an uncovered cereal deficit this year as the remaining food gap can be covered with the WFP's current in-country food stocks and quantities in the pipeline.
- Rapidly soaring food prices are seriously eroding food access for the poor and vulnerable groups.
- It is estimated that about 210 000 people are food insecure during the 2008/09 marketing year. Of these, 60 000 people are transitory food insecure, primarily due to rising food prices and have a food assistance need of about 4 300 tonnes of cereals and 900 tonnes of other commodities.
- Pasture and livestock have benefited from the late rains in March, April and May. However, levels in water sources in the drier parts of the country were still lower than usual in mid-May.
- The mission recommends emergency assistance for diversification into drought tolerant crops such as cassava, sorghum and pigeon peas and provision of agricultural inputs well before the start of the next season to enable poor farmers to take advantage of the soaring food prices.

1. OVERVIEW

An FAO/WFP Crop and Food Supply Assessment Mission (CFSAM) visited Swaziland from 5 to 16 May 2008 at the invitation of the government to estimate the 2007/08 maize harvest, stocks in the country, and import requirements - including food assistance - for the 2008/09 marketing year (April/March). Maize production was extremely low in 2006/07, and it was feared that poor rainfall at the beginning of 2008 might result in similarly low production.

The Mission's findings are based partly on discussions with relevant government agencies (the Ministry of Agriculture and Cooperatives (MOAC), the Central Statistics Office (CSO), the National Meteorological Services (NMS), the National Disaster Management Agency (NDMA), the Ministry of Regional Development and Youth Affairs, and the Central Bank of Swaziland (CBS)), parastatal organizations (the National Agricultural Marketing Board (NAMBOARD) and the National Maize Corporation (NMC)), various NGOs (World Vision International (WVI), Save the Children UK (SCF/UK), Lutheran Development Services (LDS), Africa Cooperative Action Trust (ACAT) and Caritas Swaziland), UN agencies (FAO, WFP and UNICEF), major milling companies (Ngwane Mills and Universal Milling), and commercial agricultural-input companies (Pannar Seed Swaziland Pty Ltd., Farm Chemicals Ltd. and Mbovane Marketing); and partly on field observations and discussions with farmers, extension officers, rural community leaders and heads of rural households. The Mission was joined by an officer from the USAID-funded Famine Early Warning System (FEWS-Net) as an observer.

The 2007-08 rainfall pattern was characterized by a good start in all agro-ecological zones, but this was followed by a long period (late December to early March) of poor and erratic rainfall and unseasonably high temperatures, which coincided with the critical tasselling stage of much of the maize crop. Moisture stress caused by the poor rainfall distribution was the main determinant of production this year, while other factors such as pests and diseases were of relatively minor importance. The good early rains encouraged planting, with the result that the area under maize was the largest since 2002/03; this was further helped by

satisfactory availability of agricultural inputs and some assistance in purchasing them provided by FAO and ECHO. However, the dry spells during the tasselling and silking stages of maize development reduced yields considerably, especially in the lowveld. Many farmers reported total crop loss, particularly in southern parts of the lowveld. The average maize yield for the whole country was about 1 tonne per hectare, giving a total production on Swazi Nation Land of just over 60 000 tonnes. This is more than double last year's production but still significantly less than the average for the previous four years.

Late rains arrived towards the end of March and continued into May. These came too late to save the maize crop, but they did improve pastures. Cattle are in good condition and look set to remain so until the next ploughing season begins. Most water sources are adequately filled though to a slightly lower level than is usually expected at this time of year.

The extension service has encouraged crop diversification for many years but uptake has been disappointing. The Mission recommends that crop diversification, including drought tolerant crops such as cassava, sorghum and pigeon peas be promoted actively with the Government and international support.

The Mission also found that inflation is on the increase, largely driven by rising food and oil prices. But many surplus-producing farmers complained to the Mission that prices received for their maize do not cover their production costs.

Analysis shows that food constitutes more than half of total expenditure and that the expenditures, for both food and non-food items, have been increasing rapidly. About 40 percent of the households interviewed by the CFSAM Mission indicated higher cost of food as one of the main shocks affecting them this year.

2. SOCIO-ECONOMIC CONTEXT¹

2.1 General

The Kingdom of Swaziland is a small landlocked country, with a total land area of 17 364 square kilometres and almost completely surrounded by the Republic of South Africa except to the east where it borders Mozambique. It is a predominantly rural society, with most of the population dependent on subsistence agriculture for their livelihoods. It has a dual land tenure system consisting of Swazi Nation Land (SNL), which constitutes about 60 percent of the total land area and is held in trust by the King and allocated to households by traditional chiefs on his behalf, and Title Deed Land (TDL) which is freehold and owned mainly by companies (sugarcane, forestry, citrus and pineapple plantations) as well as by some individuals. Production on TDL is market-oriented and uses modern technology and irrigation, while production on SNL is subsistence-oriented and relies on rainfall. Agriculture's contribution to GDP is currently estimated at around 8.5 percent. TDL contributes over 60 percent while around 40 percent comes from SNL and is subject to wide fluctuations. Under the current land tenure system, production expansion on TDL is highly constrained by a shortage of both land and irrigation water.

Sectoral contribution to GDP in 2006 was as follows: services (with government in the lead) 45.5 percent; manufacturing 41 percent; agriculture 8.5 percent; other (mainly mining) 5 percent.

The Swazi economy is closely linked to that of South Africa, from which it receives more than 90 percent of its imports and to which it sends around 70 percent of its exports. Other major trading partners are the United States and the EU, from which the country has in the past received trade preferences for apparel (US under AGOA) and sugar (EU). Furthermore, the Swazi currency, the Lilangeni, is pegged at par to the South African Rand, meaning that imports from South Africa are not constrained by lack of foreign exchange.

Swaziland is classified as a lower middle-income country with GNI per capita of USD 2 430 (Atlas method, 2006). However, income distribution is highly skewed with an estimated 20 percent of the population

¹ This section is based on data and information from Government of Swaziland Ministry of Economic Planning & Development; Central Bank of Swaziland; Central Statistical Office; World Bank *Country Brief* April 2008; IMF Public Information Note, 19 February 2008; Economist Intelligence Unit Swaziland *Country Report* April 2008 and Swaziland *Country Profile* 2007.

accounting for more than 50 percent of national income. It is also estimated that about 43 percent of the population live in extreme poverty and 76 percent of the poor live in rural areas.

2.2 Recent macroeconomic trends

The GDP growth rate has been quite low in recent years, averaging just over 2 percent per annum over the past five years (Table 1). Contributing factors include declining foreign direct investment, relocation of companies to South Africa following the end of the apartheid era, factory closures such as textile mills due to the erosion of preferential treatment for Swaziland's exports (apparel and sugar) and declining competitiveness. This near-stagnation in growth partly accounts for the high rates of poverty, high unemployment (rate over 30 percent) and income inequality.

Table 1. Swaziland: Performance of the economy in recent years*

Domestic economy	2003	2004	2005	2006	2007*
Real GDP (USD bn)	3.8	2.6	2.5	2.8	2.3
Real GDP growth (%)	2.4	2.1	1.8	2.8	2.3
Average consumer price inflation (%)	7.3	3.4	4.8	5.3	8.1
Gross official international reserves (USD m)	265	262	231	364	637
In months of imports of goods & services	2.1	1.5	1.3	2.2	3.4
Debt service as % of exports of goods & services	1.1	1.0	1.1	1.2	1.2
Average exchange rate E:USD	7.6	6.5	6.4	6.8	7.0

* Estimate

The average annual inflation rate although relatively low, increased to 8.1 percent in 2007 over 2006, largely driven by increases in oil and food prices. On the positive side, Swaziland has maintained a relatively low level of external debt relative to its export earnings. In 2007 it saw a significantly improved international currency reserve position, with an amount adequate for over three months' worth of imports of goods and services. However, there are concerns that this favourable position may not last long as it relies heavily on customs duty revenues from the Southern African Customs Union (SACU). These revenues currently contribute over 60 percent of government revenue but are forecast to fall in the coming years. Table 2 below shows trends in government revenue by source for the period 2005-2008.

Table 2. Trends in government revenue in recent years (%) by source and investment in agriculture

Source/Financial Yea	2005/06	2006/07	2007/08
Income taxes	24	22	17
Taxes on goods and services*	73	76	81
Non-tax revenue**	3	2	2
Investment in agriculture (% budget allocation)	3.38	2.44	2.76

* mostly SACU transfers.

**mostly grants.

Source: GoS Budget Estimates 01 April 2007-31March 2008

A further unfavourable trend relates to public investment in the agriculture sector (which includes forestry and fisheries). This is shown by the statistics in Table 2. Compared to the internationally recommended target of at least 10 percent of annual national budgets to be allocated to agriculture in developing countries, the allocation in Swaziland is far from satisfactory.

2.3 Population

Currently there is no consensus regarding the actual population of Swaziland. The 1997 census estimated the total population at 930 000 with an annual growth rate of 2.8 percent. However, it is widely believed that the growth rate has declined since then due to high mortality rates caused by AIDS coupled with declining fertility rates. Consequently, a number of international economic reports on Swaziland have assumed a zero population growth rate and held the population figure constant at around one million for the last 5 years. The

Central Statistical Office (CSO) carried out a population census in May 2007 and in September of the same year submitted to the United Nations Statistics Division² provisional results indicating a total resident population of 953 524, with the caveat that “A population decline or stagnation was not expected and this result is most surprising. It invites to speculate about possible causes. However, at this stage, it is not possible to adventure conjectures regarding this population trend. Only the demographic and statistical analysis of the 2007 Census will provide reliable answers. It is important to repeat that these results are provisional, very general, and not as reliable as the results that will be obtained from the processing of the whole census questionnaires”. The Mission was informed that this processing was still underway.

The Mission had used population figure of 1 179 285 for 2007/08 marketing year. In the absence of a consensus concerning the country’s population and its growth rate, it was decided to use the same population for 2008/09 to calculate national food requirements.

3. AGRICULTURAL PRODUCTION IN 2007/08

3.1 Agro-meteorological conditions

Swaziland can be divided into four major agro-ecological zones (AEZs) - the highveld, the middleveld, the lowveld and, in the east, the Lubombo Plateau. The middleveld may be further divided into two more narrowly defined AEZs, the moist middleveld between 700 and 900 m, and the dry middleveld between 450 and 700 m. Table 3 gives an indication of the altitude range and the long-term average rainfall and temperature characteristics of each of the major AEZs.

Table 3. Characteristics of the main agro-ecological zones (AEZs)

AEZ	Altitude, m	Rainfall, mm	Average temperature, °C
Highveld	900 - 1200	1000 - 1500	16
Middleveld	450 - 900	750 - 1000	19
Lowveld	150 - 450	500 - 750	22
Lubombo Plateau	450 - 700	750 - 875	19

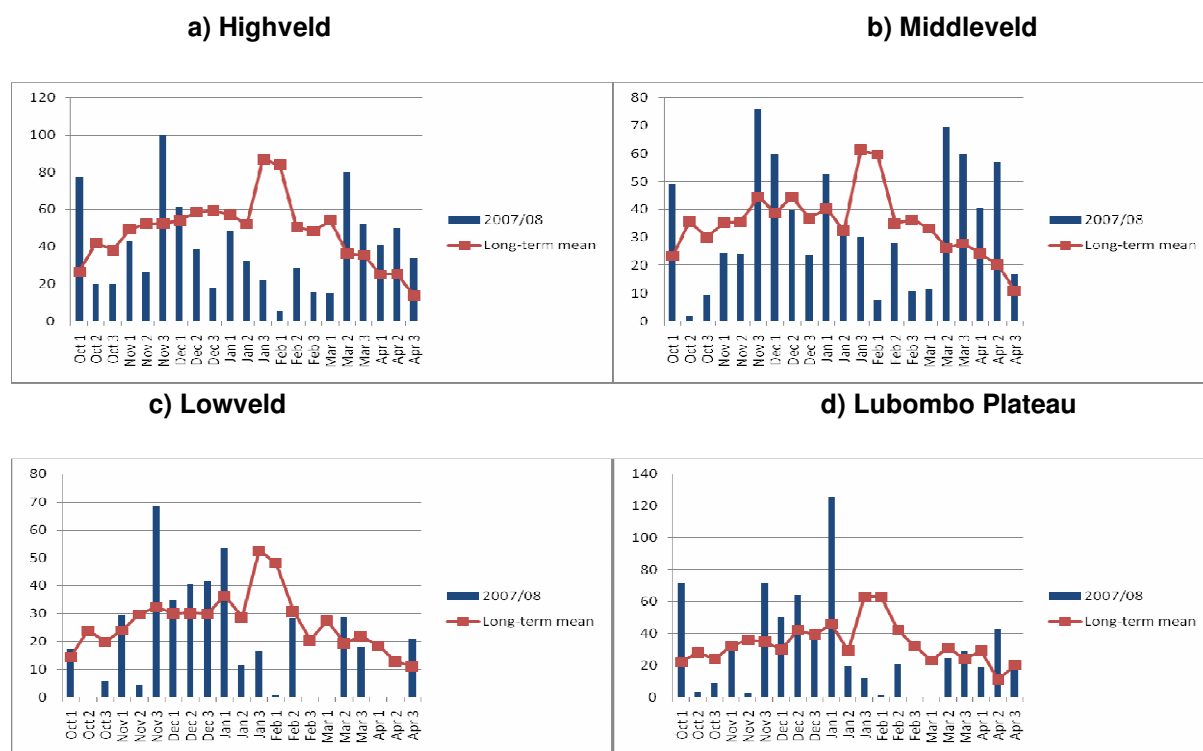
Source: MOAC 1991. Farmers’ Notebook, Swaziland

Most areas in all four of the country’s main AEZs had a promising start to the 2007/08 season with the first rains falling in October or early November. December rainfall was generally less encouraging, and this was followed by erratic rainfall, prolonged dry spells and unseasonably high temperatures in January, February and early March, when most of the maize crop was tasselling. There was an apparent trend, most evident in the lowveld, of better rainfall in the north of the country than in the south. Late rains, starting at the end of March and continuing into May, came too late to save the maize crop but were very beneficial for pasture and livestock. During this period, many parts of the country experienced hail storms.

Figure 1, panels a to d (from data provided by the Agro-Meteorological Department of the National Meteorological Service) show the mean rainfall amounts per dekad and the cumulative rainfall for 2007/08 derived from a number of different locations in each of the four main AEZs, compared with the long-term means. These clearly illustrate the poor rainfall distribution in all AEZs during the critical development stage of the maize crop. The highveld and the lowveld also show significant divergence of cumulative rainfall from the long-term mean from early January and late January respectively. On the Lubombo Plateau the total rainfall for the season was about normal, but its distribution in January, February and March was particularly poor.

² UN Statistics Division- Demographic and Social Statistics : 2010 World Population and Housing Census Programme – 2007 Swaziland Population and Housing Census – Provisional Results

Figure 1. Mean rainfall (mm/dekad), October 2007-April 2008, compared with long-term mean



Source: Agro-Meteorological Department, Swaziland

3.2 Agricultural inputs

The availability of agricultural inputs was generally satisfactory in the approach to the 2007/08 cropping season, although prices had increased significantly compared with the previous year. In order to reduce the impact of these price rises, FAO and ECHO distributed input vouchers to 30 000 and 20 400 farmers respectively between August and October 2007. The value of each of these vouchers, which could be exchanged at 'input trade fairs' to which farmers were invited, was equivalent to one 50-kg bag of fertilizer and sufficient maize seed to plant half a hectare (10 - 15 kg). Access to inputs was timely in most parts of the country, though the MOAC said that delivery was slightly late in some areas. As a result of the voucher scheme, Pannar, one of the main seed companies in the country, reported its best-ever sales season. Eighty percent of its sales consisted of the hybrid 'RO 413', and much of the remaining 20 percent consisted of an older, drought-stress resistant hybrid 'PAN 6549'. Farm Chemicals Ltd., which not only sells its own seed but also acts as distributor for other companies including Pannar and Universal Seed, reported total sales for 2007/08 as being up more than 50 percent on the previous year (Table 4). Despite the quoted amount of 1 054 tonnes of maize seed, which would be sufficient to plant about 50 000 hectares (more than 80 percent of the country's total area under maize this year), a large number of small farmers still use the seed of open-pollinated varieties (OPVs) retained from their previous harvest. Some sources claim that the use of OPVs has increased in recent years.

Table 4. Input sales (tonnes) by Farm Chemicals Ltd., 2004/05 - 2007/08

Input type	2004/05	2005/06	2006/07	2007/08
Maize Seed	na	na	689	1 054
Fertilizers				
2:3:2 (22)	2 150	2 687	3 700	3 652
2:3:2 (38)	858	2 352	2 325	1 530
LAN	2 346	3 000	3 492	3 369
Total	5 354	8 039	9 517	8 551

Fertilizer sales were slightly below those of 2006/07. Because of price increases and the fact that the value of the crop is often less than the cost of production, small farmers tend to apply less than the recommended

quantities of fertilizer. This trend is likely to continue and to have a negative impact on future harvests; a 50-kg bag of basal fertilizer that cost E170 in October 2007 now sells for about E240.

Acid soils are a constraint to crop production in many parts of Swaziland, especially the highveld and the middleveld, hence the recommended use of LAN (limestone ammonium nitrate) for maize. Apart from LAN, the main fertilizers used for maize in Swaziland are 2:3:2 (22) and 2:3:2 (38). Unfortunately the current fertilizer recommendations for smallholder maize are uniform throughout the country. It would be advantageous for both national production and household food security if these recommendations could be refined to reflect more accurately the specific soil conditions found in different parts of the country.

3.3 Farm power

Timely planting is of the utmost importance in ensuring optimal maize yields. Slightly more than half of Swaziland's farmers use oxen for their land preparation, but the government also has a pool of tractors which are available for hire through the RDAs at E140 per hour (equivalent to ploughing 0.4 hectare). Private tractor hire is also available in some areas for about E200 per hour. Those farmers using government tractors must reserve them in advance for a specified date. The perennial shortage of operational tractors in the government pool at planting time means that a large number of farmers who depend on mechanization for their land preparation plant late. It would appear that the problem lies not in the absolute number of tractors in the government pool but rather in the poor standard of maintenance. The government pool currently comprises 257 tractors. Minor repairs and maintenance are carried out on site by RDA mechanics while major repairs are the responsibility of the Central Transport Authority (CTA) based in Matsapha. CTA does not carry a stock of replacement parts, so any parts that are required must be ordered from dealers, a process which usually involves further delay. Of the national fleet of 257, only 31 tractors are currently booked in for service by the CTA in advance of the coming cropping season, while a further 87 will be serviced on site. The Mission noted at Madlangamphisi RDA, which has eight tractors at its disposal (for a total of 1 400 households in the RDA), that the average number of hours of work registered on the tractors' dashboards was just over 1 000, which is only about 15 percent of the expected working life of a tractor; yet not all eight tractors were operational. Improved standards of maintenance and servicing and a more efficient procedure for obtaining replacement parts could probably add significantly to the country's maize production.

The late rains of the current season should ensure that there is sufficient pasture to keep working oxen in good condition for the start of the next season.

3.4 Planted areas

Probably in response to the very promising start to the rainy season, the area planted under maize was significantly larger this year than in 2006/07 in all four major AEZs. It is likely that the enhanced availability of agricultural inputs resulting from FAO's and ECHO's voucher programmes also played a part in this expansion. At 60 355 hectares, the total area planted under maize in the 2007/08 season was the highest since 2002/03. (Purely for purposes of comparison it is interesting to note that the area under forestry is about 55 000 hectares.) Figures for the areas planted under maize over the last five years are given in Table 5.

Table 5. Area planted under maize, 2002/03 - 2007/08 (hectares)

AEZ	02/03	03/04	04/05	05/06	06/07	5-year average	07/08	% of average
Highveld	16 700	17 236	15 340	13 713	14 682	15 534	18 349	118
Middleveld	22 940	23 642	21 840	19 114	16 645	20 836	21 824	105
Lowveld	22 142	11 064	15 730	11 320	13 331	14 717	15 863	108
Lubombo Plateau	5 900	2 528	3 355	2 826	2 751	3 472	4 319	124
Swaziland	67 682	54 470	56 265	46 973	47 409	54 560	60 355	111

Source: Central Statistics Office

Late planting of maize is a perennial problem in Swaziland, attributable in large measure to the poor standards of tractor maintenance described above. Other constraints include difficulties in sourcing and paying for seed and fertilizer. Many farmers will hesitate at the beginning of the season, wanting to be absolutely sure of the rainfall before they start planting. The 2007/08 season clearly illustrated the dangers of this approach. Farmers who planted early (at least in the highveld and the middleveld), generally got acceptable yields; but by the time other farmers eventually decided to start planting, or had the means to do so - often as late as December - the best of the season's rains had already fallen, and most got very poor and sometimes negligible harvests.

Although, at more than 15 000 hectares, the area under maize in the lowveld is substantial (more than 25 percent of the national total), much of it appears to be cropped opportunistically. A number of lowveld farmers interviewed by the Mission claimed to have obtained little or no maize harvest for several years, including this year, despite having planted each year. The lowveld is naturally suited to livestock and this has been the traditional mainstay of the lowveld population in the past, whereas crop production seems to be regarded as a bonus that sometimes pays off. Farmers, knowing that a reasonable crop can be obtained once every five years or so, consider it worthwhile to plant each year in anticipation of reaping the benefits of the occasional good year. This practice is used as the opportunity cost of the land and labour is low, even though the cost of seed and inputs for five years may outweigh the returns from the good year.

The prevailing land tenure system, whereby all SNL land is held in trust by the King, is regarded by many as a constraint to crop production. Although farmers have a strong usufruct claim to the land that they farm, they cannot use it as collateral for obtaining inputs or equipment credit. The fact that the land does not belong to them also acts as a disincentive to improving the land, such as sinking a well and installing an irrigation system. There are also reports that farmland close to urban areas is coming under increasing pressure from unregulated development in the form of housing and access roads. This further reduces the country's productive potential and has a negative impact on individual farm households.

Despite complaints in many parts of the country that agricultural land is in short supply, quite large areas of land with apparent agricultural potential remain under-utilized. Such land is often regarded as grazing land but little account would appear to be taken of stocking rates and rangeland maintenance. This is unfortunate in a country that complains of a shortage of agricultural land; it would appear that, with a change in management approach, such land could probably be much more productive.

3.5 Pests and diseases

There were local reports of yield reduction and crop loss due to downy mildew (Lubombo Plateau), stalkborers (all AEZs), termites (lowveld especially), hippopotamuses (near rivers and reservoirs), moles and monkeys. However, the levels of loss were not significantly different to those of other years.

3.6 Yields

Maize yields were generally better this year than last, although total crop loss was still extensively reported in the lowveld.

At the end of March, in response to the adverse weather conditions at the beginning of 2008, the MOAC's Directorate of Agricultural Extension prepared a National Drought Prevalence Report which included rapid estimates by each of the country's four regions of its crop production. A synthesis of all the data provided gave an area of 44 269 ha under maize (which was later adjusted upwards), and a total production forecast of 51 644 tonnes, giving an average yield of 1.17 t/ha.

At about the same time, the Agro-Meteorological Department of the National Meteorological Service prepared preliminary maize yield forecasts for each of the country's AEZs using the 'water requirement

satisfaction index' (WRSI) method³. This method consists of adjusting the recorded best yield of the crop in its AEZ according to the rainfall conditions experienced during the cropping period. As the method is based on a model, it is subject to various unavoidable inaccuracies when applied to extensive areas of smallholder production of a specific crop. Major sources of inaccuracy include:

- the wide range of planting dates (different fields are at different developmental stages when they experience the same rainfall events).
- the use of different varieties which have different maturation periods and therefore encounter the same rainfall events at different stages of their development.
- the non-uniformity of rainfall over large areas which are classified as a single AEZ.
- other factors such as soil fertility (including the use or non-use of fertilizers), level of crop husbandry, field aspect and altitude.

As the diversity within these sources of inaccuracy increases, so the reliability of the method decreases. Therefore, in the case of smallholdings in Swaziland, where variations within AEZs can be considerable, the method should be regarded as no more than indicative.

The Department's starting yield figures for the four major AEZs (based on the highest observed historical average yields, and assuming no reduction due to adverse rainfall distribution) and the reduced yields calculated according to the WRSI model on the basis of rainfall actually received are given in Table 6.

Table 6. Maize yields (t/ha) by agro-ecological zones (AEZ)

AEZ	WRSI prediction		CFSAM
	No reduction due to rainfall	Adjusted according to recorded rainfall	
Highveld	2.15	1.32	1.5
Middleveld	1.68	1.08	1.0
Lowveld	0.95	0.64	0.4
Lubombo Plateau	1.72	0.95	1.0
Swaziland			0.99

Following its field visits, the Mission discussed these figures with the Agro-Meteorological Department and the MOAC and reached a consensus. The average yield figure for the highveld should be higher than that forecast using the WRSI method, while that of the lowveld should be lower, and that the average yield figures for the middleveld and Lubombo Plateau should remain substantially unchanged. The agreed yield figures, along with those initially proposed by the Agro-Meteorological Department, are given in Table 6. Swaziland's overall maize yield for Swazi Nation Land in 2007/08 is put at 0.99 t/ha.

3.7 Overall production

Swaziland's overall maize production this year on Swazi Nation Land is estimated to be 60 012 tonnes, which is more than double the production of 2006/07. Production figures by AEZ for the six years 2002/03 to 2007/08 are given in Table 7 and illustrated in Figure 2.

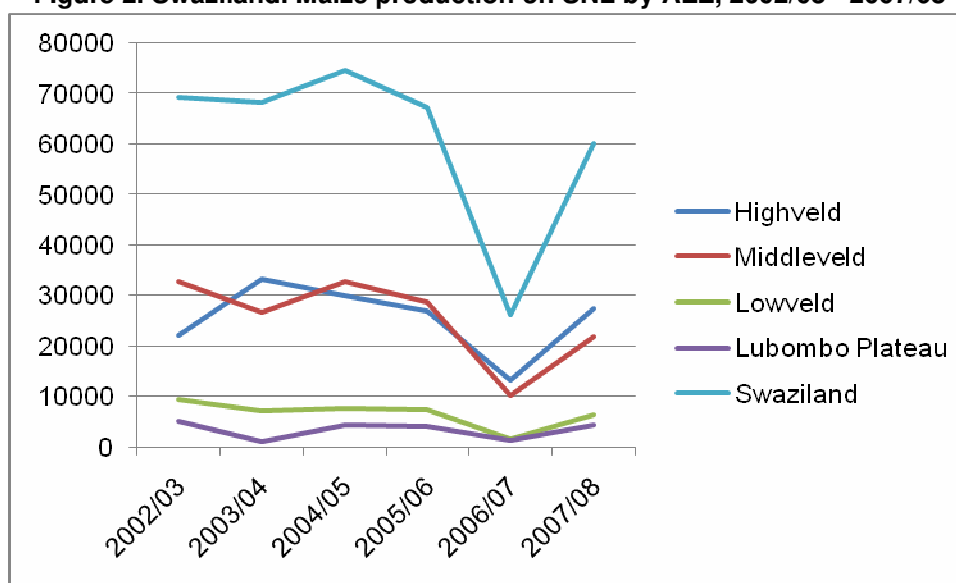
There was some uncertainty surrounding the national maize production figure for 2006/07. Government agencies estimated a total of about 46 000 tonnes, whereas the CFSAM estimated just over 26 000 tonnes. A consensus has not yet been reached as to which figure should be accepted, however, based on the actual imports of maize for that year (90 000 tonnes), the figure of 26 000 tonnes seems more reasonable as it produces per capita consumption in 2006/07 similar to other years. Consequently this year's production, although almost equal to the five-year average (which includes the low figure for 2006/07), is significantly lower than the average of 69 757 tonnes for the preceding four years 2002/03 - 2005/06.

³ Doorenbos J and W.O. Pruitt, 1977. Crop water requirements. FAO Irrigation and Drainage Paper No. 24. Food and Agricultural Organization of the United Nations, Rome, Italy, 144p.

Table 7. Swaziland. Maize production on SNL by AEZ, 2002/03 - 2007/08 (tonnes)

AEZ	02/03	03/04	04/05	05/06	06/07	5-yr avg	07/08	% of 5-yr avg
Highveld	22 078	33 367	30 058	27 058	13 123	25 137	27 524	109
Middleveld	32 722	26 537	32 629	28 629	10 206	26 145	21 824	83
Lowveld	9 462	7 128	7 642	7 528	1 475	6 647	6 345	95
Lubombo Plateau	5 011	1 055	4 211	3 911	1 366	3 111	4 319	139
Swaziland	69 273	68 087	74 540	67 127	26 170	61 039	60 012	98

Figure 2. Swaziland. Maize production on SNL by AEZ, 2002/03 - 2007/08



Maize is grown on about 1 000 hectares of title-deed land. Husbandry on this land is good, inputs are used, supplementary irrigation is often available, and yields are normally in the region of 5 to 8 t/ha. Some of this production, however, is used for livestock feed. Last year about 2 500 tonnes entered the food market from this source; with this year's rather better growing conditions it is assumed that about 4 000 tonnes will enter the market in 2008/09.

3.8 Other crops

There was a reduction this year in the area under **beans** (despite good sales of bean seed), groundnuts, cowpeas and juko beans (*Voandzia subterranea*). These legumes are usually planted at the end of December or the beginning of January, which this year was, in many areas, too dry for planting. However, some RDAs reported that the relatively small areas planted to groundnuts produced good yields.

Despite the efforts over several years of MOAC's extension service to encourage the use of **sorghum** and other drought-tolerant crops in areas of unreliable rainfall such as the lowveld, adoption rates continue to be very low. Farmer resistance to sorghum is partly due to it being a less preferred crop and partly based on the fear of crop loss to birds, which is an especially real danger when only a small area of the crop is planted. With other crops such as **cassava**, which would be much more appropriate than maize for drier areas, and thus needs to be promoted and supported as a part of the crop diversification strategy.

Farmers who expressed willingness to plant cassava and sweet potatoes complained of difficulties in obtaining planting material. This should not be an insuperable problem; cuttings and vines can easily be multiplied up on land close to a water supply. The potential productivity of cassava in Swaziland is not in question; land preparation has already begun on a 3 000-hectare site in the lowveld for the production of cassava for industrial use.

The area under **sugarcane** (the country's main source of revenue until about 15 years ago) has grown steadily since the 1960s, from 13 000 hectares in 1969 to more than 45 000 hectares now. The latter figure represents 90 percent of the 50 000 or so hectares of irrigated land in the whole of Swaziland, and about 75 percent of the area under maize. The Lower Usuthu Irrigation Project is currently set to expand by a further 7 000 hectares, despite the currently low price of sugar on the world market and liberalization in the EU market that will further erode Swaziland's preferential trading status. The number of outgrowers (often consortia of small farmers) has also increased in recent years. Average cane yields are more than 100 t/ha with a sucrose content of around 14 percent.

Cotton production has declined rapidly in recent years in response to rising costs of production and declining returns. Total national production in 2004/05 amounted to 3 200 tonnes and is thought to be even less now. The country has two ginneries, both of which are virtually idle.

3.9 Livestock

The late rains starting at the end of March provided useful moisture for pasture which is consequently in very good condition for the time of year. Water levels however are rather lower than they should be at many of the watering places, especially those that had dried out completely during the prolonged dry spells in January - March. This has led to fears that some may be seriously depleted before the beginning of the next rainy season. The goat population is reported to have increased this year in response to higher prices.

Cattle are generally in good condition and, assuming that water does not become a problem, should remain so until the beginning of the next season when their power will be required for land preparation. There have been some reports of lumpy skin disease and red water in cattle but these are perennial problems that are dealt with by the veterinary service. Heartwater, which is very difficult to diagnose, has also been reported. Fowlpox is not uncommon amongst poultry.

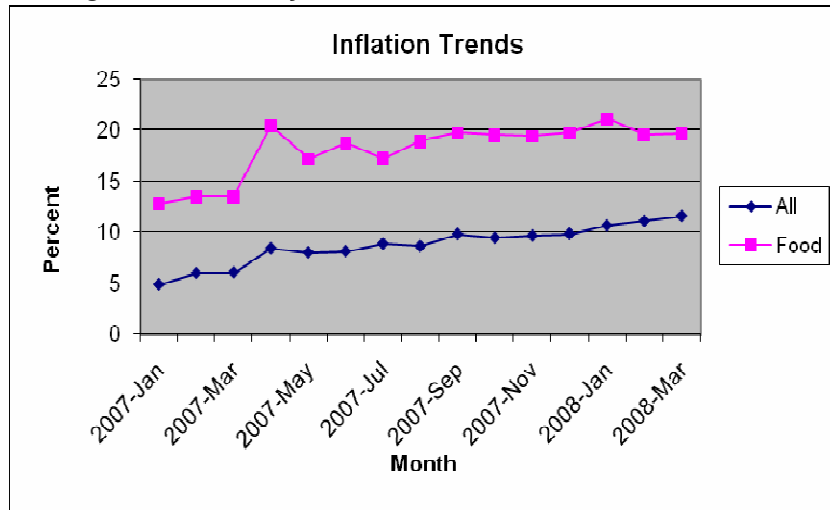
4. FOOD SUPPLY AND DEMAND SITUATION

4.1 Current market situation

Year-on-year inflation rates for Swaziland for 2007 through March 2008 show a rising trend (Fig. 3). Food price inflation has risen much more rapidly than the general inflation, implying a tightening economic situation for the poor and low-income groups who spend a large proportion of their meagre incomes on food.

Prices of maize, the staple food grain in the country, follow very closely the SAFEX market in the neighbouring South Africa. Regional and international maize prices have been rising since October 2006, when the white maize price in Randfontein in South Africa was slightly above Rand 1 000/t which nearly doubled in February 2007. Prices since then are either stable or show a small positive trend. Nevertheless, maize prices regionally for the 2007/08 marketing year, both in Rand and in US Dollar terms, have been generally much higher than at the same period the year before due to international and regional strong demand and weak supplies.

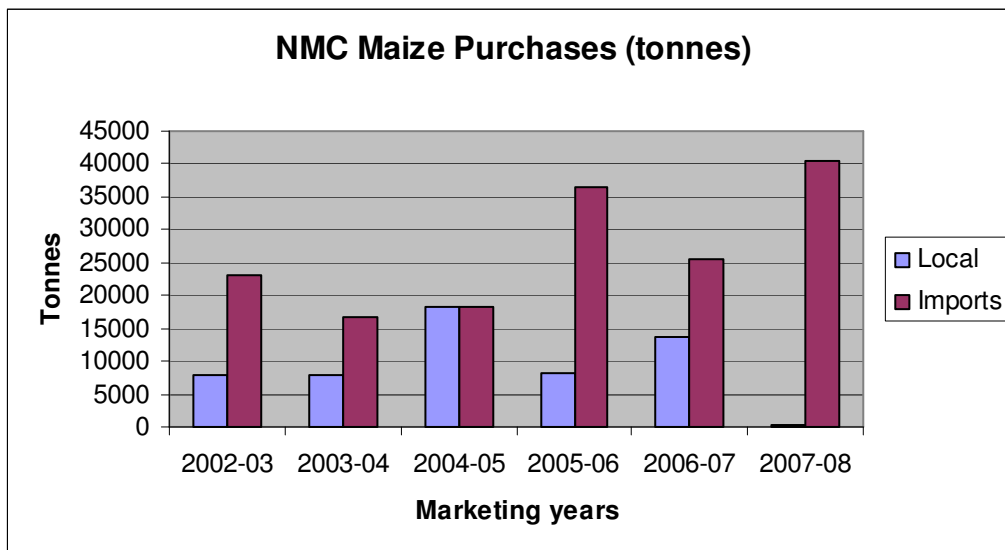
Figure 3. Year-on-year inflation rates, Jan 2007 - Mar 2008



Source: Central Statistics Office (CSO)

Even in relatively good rainfall years, Swaziland imports maize. Figure 4 below shows trends in white maize local purchases and imports by the National Maize Corporation (NMC), the parastatal which has a monopoly to import maize.

Figure 4. Local white maize purchases and imports by the NMC, 2002/03 - 2007/08



Source: NMC

Local maize purchases and maize imports are clearly inversely related, with imports soaring when local marketable surpluses dwindle usually due to drought (e.g. 2007/08), and vice versa. NMC sells the grain to millers at a price it determines, while the millers (two of them control around 90 percent of the maize flour market) set the prices at which they sell processed maize flour. This monopolistic/oligopolistic maize market tends to hurt consumers, especially those with low purchasing power. This situation explains to some extent the rising cost of food depicted in the previous graph. Furthermore, NMC sets the price it pays farmers for their maize. During the Mission's field visits, many farmers complained that the price they are paid is well below their production costs (tractor hire, fertilizers, seed, etc.).

In addition to white maize, the country also imports yellow maize mainly for animal feed, which has averaged about 35 000 tonnes over the last six years. In 2007/08 marketing year alone, the country imported 43 000 tonnes of yellow maize according to the National Agricultural Marketing Board (NAMBOARD). Adding this

amount to about 40 000 tonnes of white maize the same year (see Fig. 4 above), yields a total of 83 000 tonnes of commercial maize imports. This figure is significantly higher than average because domestic maize production in 2007/08 was, according to the 2007 CFSAM, the lowest on record.

Rice and wheat are wholly imported, as the country does not produce any. They are imported by millers directly, and their local selling prices are determined by those millers. Ngwane Mills, the largest milling company, reported importing an annual average of 36 000 tonnes of wheat, while Universal Milling, the second largest, has just entered the wheat market and expects to import an annual average of 12 000 tonnes. Universal Milling imports an average of 4 000 tonnes of rice a year, while Ngwane Mills recently dropped out of the rice market reportedly due to high operational costs. Smaller millers also import these foodgrains, albeit in small amounts.

The sharply rising prices of rice and wheat are of great concern to the millers. It was reported that between December 2007 and May 2008, the import price of rice had risen from 3 200 Rand/tonne (USD 457) to R 6700 (USD 957), a rise of over 100 percent. For wheat, the import price had risen from R 1000/t (USD 143) to R 4000/t (USD 571), a 300 percent increase. As the price of bread is officially controlled, millers are considering cutting back on wheat imports, which would lead to bread shortages, exacerbating inflationary pressures.

4.2 Cereal supply/demand balance, 2008/09 (April/March)

The forecast supply/demand situation for the marketing year 2008/09 (April-March), which is presented in Table 8, is based on the following assumptions, parameters and Mission observations.

- In the absence of a consensus concerning Swaziland's population and its growth rate, the Mission has assumed the same population for mid-2008/09 marketing year as for 2007/08 (1 179 285).
- Similar to past years the annual per capita consumption is set at 90 kg for maize, 36 kg for wheat and 11 kg for rice. These are apparent consumption rates based on trends in production and imports.
- Opening stock figures were provided by NMC, Ngwane Mills and Universal Milling.
- No stock changes are assumed. Closing stocks more-or-less represent a two weeks of maize requirement and three months of wheat requirement. Millers reported holding no rice stocks because supply from agents in South Africa is timely and reliable.
- Feed use is estimated at 35 000 tonnes/year, based on average yellow maize imports in recent years but slightly higher than the drought affected last year.
- Post-harvest losses and seed use are estimated at 6 percent for maize. Virtually all rice and wheat are imported.

Table 8. Swaziland. Cereal supply/demand balance for 2008/09 (April/March), ('000 t)

	Maize	Wheat	Rice	Total
Domestic availability	66.5	9.0	0.0	75.5
Opening stock	2.5	9.0	0.0	11.5
Domestic production	64.0	0.0	0.0	64.0
Total utilization	147.5	51.5	13.0	212.0
Food use	106.1	42.5	13.0	161.6
Feed use	35.1	0.0	0.0	35.1
Seed use and losses	3.8	0.0	0.0	3.8
Closing stock	2.5	9.0	0.0	11.5
Import requirement	81.0	42.5	13.0	136.5
Anticipated	73.5	42.5	13.0	129.0
commercial imports	7.5	0.0	0.0	7.5
WFP stock and pipeline	0.0	0.0	0.0	0.0
Uncovered deficit				

Total cereal utilization for the marketing year 2008/09 (April-March) is estimated at 212 000 tonnes against domestic availability of around 75 500 tonnes. This results in an import requirement of 136 500 tonnes, comprising of 81 000 tonnes of maize, 42 500 tonnes of wheat and 13 000 tonnes of rice. Private millers have the capacity to import the entire wheat and rice requirement. As regards maize, with WFP stock in-country and in the pipeline estimated at 7 500 tonnes (grain equivalent), the country needs to import 73 500 tonnes. As indicated in Section 4.1 above, formal commercial maize imports in 2007/08 amounted to 83 000 tonnes, which excludes informal imports estimated by NAMBOARD at around 20 percent of formal imports. Swaziland sources its maize import requirement almost entirely from neighbouring South Africa. Furthermore, with its currency, the Lilangeni, pegged at par with the South African Rand, imports from South Africa do not face a foreign exchange constraint. Thus, taking the above-mentioned facts into account, Swaziland has the capacity to import commercially all its maize import requirement of 73 500 tonnes and will therefore not require additional food aid in 2008/09 (April-March) over and above 7 500 tonnes currently available to WFP.

5. HOUSEHOLD FOOD SECURITY AND VULNERABILITY ANALYSIS

5.1 Method of food security assessment

The Mission assessed household vulnerability by undertaking secondary data analysis (SVAC baselines, SVAC reports from 2006 and 2007 and the Community and Household Surveillance (CHS)⁴), and by conducting Key Informant interviews, focus group discussion and household interviews in all 17 Rural Development Areas. In the Capital, key informants interviews were conducted, notably with Swazi VAC and the National Disaster Management Authority (NDMA).

The analysis provided below draws heavily on the SVAC model⁵, based on 2007 assessments and the Food Security Monitoring Information from the CHS.

The main challenge of the mission was the delayed Swazi Vulnerability Assessment Committee (SVAC) 2008 exercise that could have fed into the mission's vulnerability analysis.

5.2 Main determinants of household food security in Swaziland

About 80 percent⁶ of the Swazi populations are rural-based and predominantly dependent on subsistence farming and/or livestock herding. In addition, the agricultural system is dominated by a single crop – maize grown under rain fed conditions which increase households' vulnerability to erratic weather.

Over the past years, multiple interrelated factors such as small fragmented landholdings and minimal access to agricultural inputs (shown by the decline in Table 4), reduced employment opportunities, market inefficiencies and high HIV/AIDS prevalence have contributed to chronic food insecurity and gradually weakening livelihoods.

On the one hand the reliance on own production is compromised; on the other hand increased market purchases are required at a time of increasing prices. Given the above scenario, minimal shocks to agriculture have a profound impact on the ability of rural households to maintain their food security. Impacts of rising prices on vulnerable communities are one of the likely shocks that are impacting household food security. Hence closely monitoring will be needed.

The SVAC has defined seven Livelihood Zones in the country namely; Highveld Maize and Cattle Timber Highland Moist Middleveld Dry Middleveld Lowveld Lubombo Plateau Peri-Urban summarized Annex 1 and Annex 2

⁴ Carried out in March 2008 in all 4 regions of Swaziland, interviewing over 800 households, the CHS provides current data on key proxy indicators of food insecurity, such as changes in household food consumption, coping behavior and asset ownership.

⁵ The SVAC Household Economy Model is designed to monitor impact of shocks to food security, and was used to estimate effects of crop production and food price increases.

⁶ Swaziland Central Statistics Office, *Housing and Population estimation projections*.

There are some general points about the livelihood zones that are important to note:

- (i) The country is classified as a lower middle-income country, with **wide discrepancies** between households (Gini coefficient, a measure of inequality, of 0.61). The richest 20 percent of the population control 56.4 percent of national resources, whilst the poorest 20 percent control only 4.3 percent of national resources.⁷ There are big differences between livelihood zones, with the Lowveld being the most food insecure, but there are also huge differences between communities within the same zone. Community wealth depends on proximity to urban areas and resulting job opportunities, proximity to South Africa, availability of land, water and public services.
- (ii) A large number of households depend on cash income. Table 9 below illustrates how rural livelihoods are made up:

Table 9: Livelihoods of rural households in Swaziland

Timber Highlands	Food sources	Cropping (35%)	Purchase (30%)	Casual labour (19%)
	Income sources	Employment (40%)	Crop sales (26%)	Casual labour (26%)
Highveld Maize and Cattle	Food sources	Cropping (41%)	Purchase (24%)	Casual labour (19%)
	Income sources	Employment (32%)	Casual labour (19%)	Petty Trade (15%)
Peri-Urban Corridor	Food sources	Purchase (48%)	Cropping (27%)	Casual labour (15%)
	Income sources	Casual labour (43%)	Employment (34%)	Remittances (10%)
Lubombo Plateau	Food sources	Cropping (37%)	Purchase (24%)	Food aid (21%)
	Income sources	Casual labour (41%)	Employment (33%)	Crop sales (12%)
Wet Middleveld	Food sources	Cropping (42%)	Purchase (33%)	Food aid (10%)
	Income sources	Employment (46%)	Casual labour (26%)	Livestock sales (11%)
Dry Middleveld	Food sources	Purchase (38%)	Cropping (31%)	Food aid (21%)
	Income sources	Livestock sales (31%)	Casual labour (26%)	Employment (17%)
Lowveld	Food sources	Food aid (55%)	Purchase (23%)	Cropping (13%)
	Income sources	Employment (24%)	Casual labour (23%)	Livestock sales (23%)

Domestic agriculture production is the main source of food *only* in the agro-ecological zones suited for crop production, and even in these areas it constitutes at a maximum 40 percent of total food requirements. Other sources are purchase, casual labour earning food in-kind and food aid. For income sources in other livelihood zones, formal employment, casual labour and remittances are the main sources.

Almost every household visited by the Mission had members living in the industrial hub of Matsapha, looking for job opportunities in the factories or someone working in South Africa. Wealthier households have stable employment and use this income to run their agricultural production, including payment for casual labour to poorer households. This underlines strong links between rural and urban areas. Given the high dependence on urban economy, unemployment and poor economic growth are also big issues for rural areas. For the poor households in the traditionally food insecure Lowveld area, crop production plays an even smaller role as this zone has erratic rainfall pattern and therefore traditionally raises livestock and grows cash crops (cotton). These are traded in exchange with maize from Highveld farmers.

5.3 Ongoing emergency assistance

The Government (NDMA) and WFP traditionally provide assistance to Shiselweni and Lubombo. However, following the 2007 drought, food assistance was extended to rural areas throughout the country. Save the Children UK (SCF UK) also assisted some 45 000 people with a cash distribution project. In total, almost

⁷ The Swaziland Household Income and Expenditure Survey (2001)

650 000 beneficiaries received emergency relief last season, far above the recommended number from the SVAC (345 000). Most were covered under free food distribution.

Following a Feasibility Study for Cash Transfers in Swaziland undertaken by Save the Children UK (SCF_UK) in 2007⁸, which concluded that Swaziland was conducive for cash-based interventions, SCF_UK implemented a cash and food transfer programme, reaching 45 000 people. The beneficiaries received half food ration and another half portion as a cash transfer to cover additional food and other essential expenses. Regular monitoring has shown positive impact of this combined transfer, as compared to in-kind transfer alone. It is important, however, to consider the general preference for commodity-based assistance which has been expressed by both beneficiaries and non-beneficiaries in different monitoring assessments. Households have indicated preference for commodities, particularly in situations where household heads have used cash to meet other immediate needs such as funerals, medical expenses. Closely monitoring is especially critical to ensure cash transfers match up with rising food prices. An evaluation of the current programme is planned, which should guide stakeholders on whether cash, food or combination as an intervention is most suitable.

5.4 Current household food security situation and prospects

The Mission's estimate for maize production can be considered as relatively normal given the historical trends. About 20 percent of the poor/medium households harvested food adequate to meet household consumption of more than 6 months, while only 30 percent did not harvest. In 2007, over 50 percent of the same category households did not harvest. This year, households in drier areas have experienced a total crop loss. This has forced households in these areas for alternative income sources to meet their needs, most notably work migration and petty trading. Livestock continues to play an important role in these areas

Increased food prices

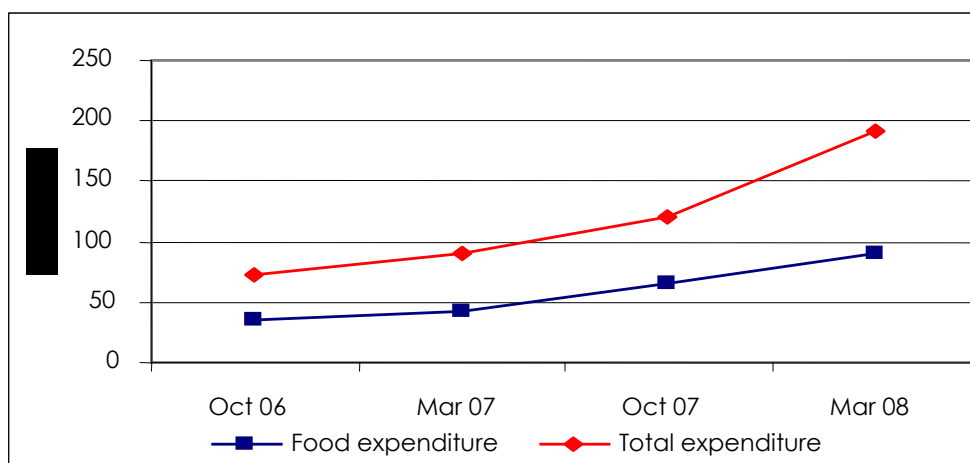
The Mission examined trends in food prices and their impact of rural households. Based on the analysis shown in section 4, it is clear that the country has experienced a dramatic increase in staple food prices over the past 5 years. During the last season (2007/8), NMC increased their maize grain selling prices by about 30 percent, driven by the regional price movement on the SAFEX, This does not however equal the price increases experienced by households, as NMC sells to millers who then sell to retailers. CSO data shows that overall food prices increased only by about 20 percent⁹ in the same period.

The CHS (March 2008) shows that food constitutes about 55 percent of total expenditure. Trend data shows the persistent increasing expenditures, both on food and non-food items between rounds of survey, October 2006 and March 2008 (Figure 5). About 40 percent of the households interviewed by the CFSAM Mission indicated higher cost of food as one of the main shocks affecting them this year. The exact impact on household food security is still unknown and will need to be further monitored.

⁸ Feasibility Study for Cash Transfer in Swaziland, an analysis of market functioning, Alexandro de Matteis on behalf of Save the Children, August 2007.

⁹ March 08 annual food price inflation was 19.6percent

Figure 5: Household food expenditure trends



5.5 Health and nutritional status

Nutrition

The general nutrition situation in Swaziland is not alarming. The Swaziland DHS 2006, reports stunting for children 6 to 59 months at 23 percent in urban areas and rural areas at 30 percent, with highest rates found in Hhohho region (32 percent) and lowest rates in Lubombo (24 percent). Wasting rates were estimated at 3 percent of children. The national prevalence of underweight children according to the DHS, is 5 percent, and the prevalence of severely underweight children is 1 percent.

Data from the SVAC 2007 showed that nearly 40 percent of under-five-year-old children were stunted, between 4.5 and 11 percent of children were underweight, and around 2 percent were wasted. See table 10 below:

Table 10: Nutrition situation

	Wasting		Underweight		Stunting	
	%	95% CI	%	95% CI	%	95% CI
Hhohho	3.4	0-7.4	12.6	5.5-19.8	48.3	37.6-59.0
Manzini	1.3	0-3.8	6.3	0.8-11.8	44.9	33.6-56.2
Shiselweni	2.2	0-5.4	9.0	2.9-15.0	27.0	17.6-36.4
Lubombo	1.6	0-3.5	12.0	7.3-16.8	43.7	36.5-51.0
Total	2.1		10.5		41.4	

HIV and AIDS

Preliminary findings from a demographic and health survey (DHS, 2006/7 reveal that HIV/AIDS rates of 26 percent for Swazi population aged 15-49 years. This is much lower than previous estimate of 39 percent. The difference between these two estimates is attributed to differences in the methodologies used. Swaziland continues to have the highest rate of HIV prevalence in the world. The latest survey also shows that the infection rate varies between men and women of the same age group, and between urban and rural areas. For men and women, the rates are estimated at 20 percent and 31 percent respectively, while for urban and rural areas they are estimated at 32 percent and 24 percent respectively. Furthermore, unusually high HIV prevalence is found among older age groups, with about a quarter (28 percent of men and 24 percent of women) aged 50–54 years found to be HIV-positive (Central Statistical Office Swaziland & Macro International, 2007)¹⁰.

The SVAC 2006 tested the statistical significance of the relationships of different socio economic/vulnerability

¹⁰ HIV/AIDS epidemic update HIV/AIDS (UNAIDS and WHO 2008).

economic/vulnerability indicators (such as age, gender, chronic illness, coping strategies, dietary diversity and adequacy, asset wealth, household type female/elderly headed households, orphan-hood, high dependency etc) with HIV/AIDS proxies. It was shown that:

- There is a statistically significant relationship between HIV/AIDS and socio economic/vulnerability indicators mentioned above.
- Increased frequency in use of distress-coping strategies when households are affected by HIV/AIDS. For example, households with a recent death of a member or with a member with a chronic illness have lower diet diversity and food frequency and thus are less food secure.

HIV/AIDS pandemic is the main underlying driver of food insecurity at the household level. It affects households by limiting their ability to generate income and cultivate by increasing the number of people that need to be taken care of, and taking the lives of the traditional caregivers. It impacts on the assets of households, affects the policies, institutions and processes that influence livelihoods and forces adaptations to livelihood strategies. During the Mission, households identified the most affected to be widows and elderly, households hosting orphans, those with chronically ill and those that have lost productive members.

5.6 Estimated household food access shortfalls

To estimate populations vulnerable to food insecurity the mission used two approaches:

- Swazi VAC predictive model for projecting those likely to be acutely food insecure
- CHS, and mission findings for triangulation for chronically food insecure households

A) Acute/transitory food insecure populations

The Swazi VAC provides a nation-wide forecast of rural populations at risk of acute food insecurity, using the Household Economy Approach predictive model. The spreadsheet is structured such that information on shocks can be used in a series of calculations to assess the effect on household economy as compared to the baseline in 2006. The Mission has used this methodology to estimate the populations in need of emergency assistance. Based on the model, it is estimated that 60 000 people, primarily very poor wealth groups located in the Lowveld and dry Middleveld, face food insecurity as a result of price increases. This number is in addition to the 150 000 people that are chronically food insecure (see below).

B) Chronic food insecure populations

Successive shocks and the HIV/AIDS pandemic have over-burdened communities and traditional structures, hence eroding coping capacities and inhibiting communities to recover. The impact of HIV and AIDS on communities is widely acknowledged in Swaziland. Rising morbidity and mortality rates associated with HIV/AIDS particularly among young adult has left approximately 80 000 children orphaned (NERCHA, 2004), a number projected to rise to 120 000 in 2010.

High rates of HIV/AIDS have had serious consequences for the Swazi nation and economy. In addition to high human losses, the pandemic causes high economic costs in terms of lost skills and knowledge, reduced output, a shrinking tax base, rising health care costs, declining household incomes, increasing numbers of orphaned children and widening imbalances in the public pension funds.

Data from the CHS were analyzed to identify chronically food insecure households. Based on the number of different assets owned, households were classified as poor, medium or rich. Lubombo and Shiselweni regions had the highest proportion of poor, 19 and 20 percent respectively while Hhohho and Manzini had lower rates of 7 and 6 percent respectively. The data further shows that households with poor asset wealth had relatively lower dietary diversity and food frequency and were employing adverse coping mechanisms more frequently to meet their food needs.

The Mission used the above analysis together with field interviews to estimate the number of chronically food insecure households. About 150 000 people were identified to be chronically food insecure (Table 13). A follow up analysis will need to be undertaken to quantify their needs and determine appropriate intervention options.

In total, 210 000 people in Swaziland are estimated to be food insecure. Out of this population, 60 000 people (transitory food insecure due to price shock) are recommended for food assistance amounting to 4 300 tonnes of cereals and 900 tonnes of other commodities (Table 14).

Table 13: Estimated number of food insecure persons in Swaziland (2008/09)

PROVINCE	July-September		October – December		January –March ('09)	
	Chronically food insecl.*	Transitory food insecl.	Chronically food insecl.	Transitory food insecl.	Chronically food insecl.	Transitory food insecl.
Hhohho	20 000	-	20 000	-	20 000	-
Manzini	30 000	-	30 000	-	30 000	-
Shiselweni	50 000	-	50 000	30 000	50 000	30 000
Lubombo	50 000	-	50 000	30 000	50 000	30 000
TOTAL	150 000	-	150 000	60 000**	150 000	60 000**

**including HIV/AIDS affected families*

*** using the most likely scenario*

Table 14: Estimated cereals requirements for populations in need in 2008/09 (tonnes)

Food insecure populations			Duration	Total cereal needs	Other commodities	Total food needs
Emergency assistance	Most likely scenario	60 000	6 months	4300 tonnes or cash equivalent	900 tonnes or cash equivalent	5200 tonnes or cash equivalent

5.7 Modalities of assistance

The 60 000 people in need of emergency assistance can be assisted through a cash or combination of cash/food for 6 months from the beginning of the lean season in October to the harvest period in March 2009. The distribution of food through general, or free, distributions should be limited wherever possible. Possible interventions recommended the Mission include: Conservation farming for dry-land areas where farmers are encouraged to prepare land for planting a mixture of cereal, legumes and cash crops that not only provide income but also increase yields and soil fertility; Food-for-training where food is an incentive for farmers to attend training programmes that encourage improved agricultural practices, such as promotion of sorghum, multi-purpose legume crops such as cowpea and pigeon peas, and promote post-harvest crop storage practices.

5.8 Relationship between estimated national food deficit and food assistance needs

This report estimates the national uncovered food gap (imported food aid) at 7 500 tonnes (shown in Table 8) and the food assistance needs of the food insecure people in the country between 4 300 tonnes (shown in Table 14). There is no inconsistency in these figures. Since the national food gap is higher than the food assistance needs, these quantities if imported are expected to have an effective demand (backed by purchasing power) since the total demand is based on the apparent consumption. Hence it is reasonable to assume that this residual amount would be covered as additional commercial imports (mostly as informal "grocery bag" imports) with private cross-border trade by petty traders or individual consumers crossing the border.

6. RECOMMENDATIONS FOR FOLLOW-UP ACTIONS

6.1 Recommendations related to agriculture

In order to enhance agricultural production, reduce frequent drops in harvests and improve food security on a sustainable basis in Swaziland, the Mission recommends that the Government and the international community actively promote and support:

1. crop diversification, especially production, processing and marketing of drought tolerant crops such as cassava, sorghum, and pigeon peas;
2. conservation farming which has been shown to produce more stable and generally higher yields than conventional agriculture in various regions;
3. small-scale irrigation schemes particularly in the lowveld areas;
4. commercialization of livestock production including cattle, small ruminants and others;
5. short-term provision of agricultural inputs to farmers in the next season to enable them to take advantage of the soaring food prices on one hand and, on the other, to mitigate their impact on consumers by enhancing production. Key inputs include seeds (e.g. virus-free cassava cuttings, sweet potato vines, and pigeon peas), fertilizers and farm machinery services, which should be made available well before the start of the next season.
6. The current system of land tenure should be reviewed with the two objectives of enabling farmers to use their land as collateral and to encourage them to invest in their land.

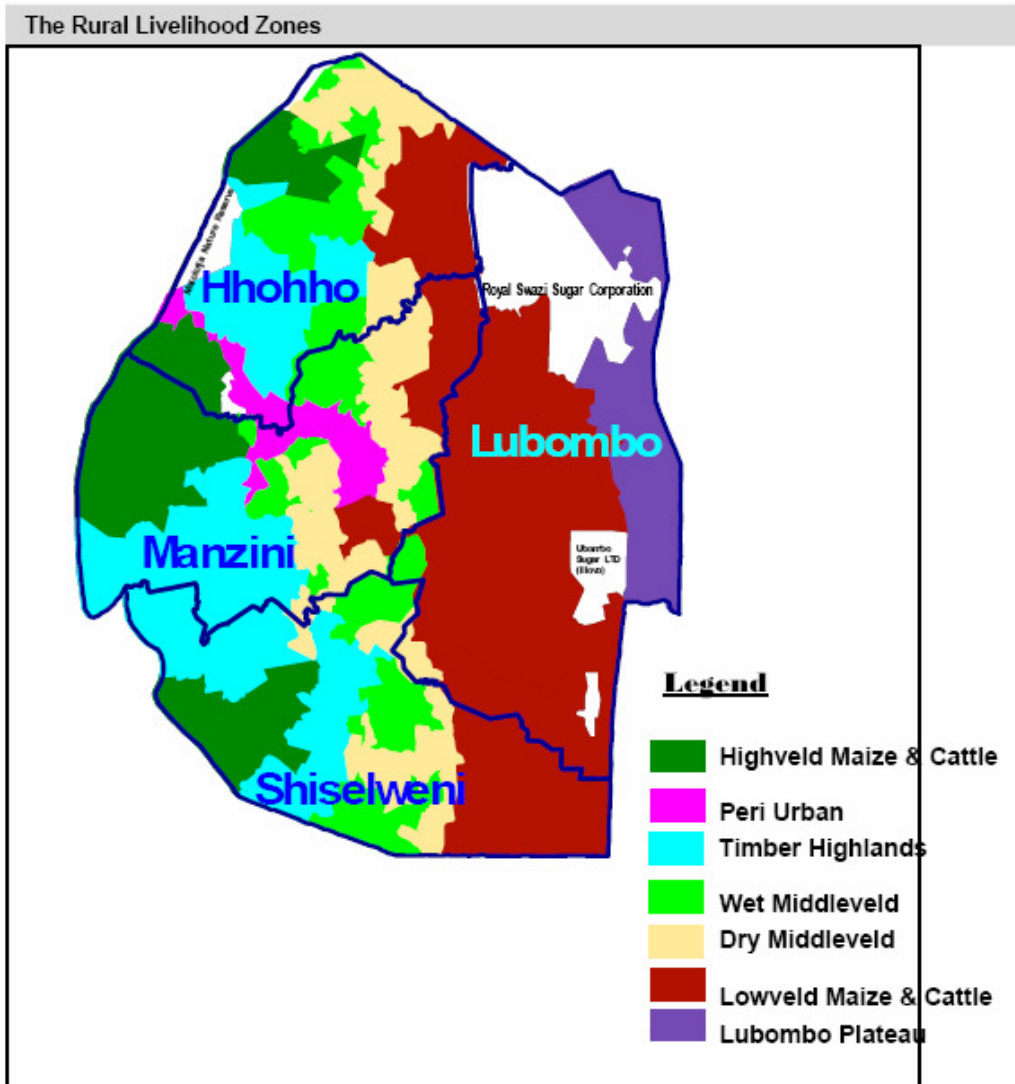
6.2 Recommendations related to household food security

The Mission has the following recommendations for improving the current analysis of vulnerability in Swaziland:

1. The current SVAC methodology is limited in capturing chronic food insecurity, which is, in the opinion of this Mission, the main concern in Swaziland. There is a need to better understand structural factors, especially the negative impact of HIV/AIDS on food security.
2. There is a strong need for a consolidated market-information system in Swaziland that can give reliable retail price data for the main food items (maize, wheat). Retail prices have been collected by different actors in an ad hoc manner these past years. A coordinated effort is required to provide regular and reliable market prices of basic commodities in strategic market places.
3. Similarly, beside the DHS, the country doesn't have reliable nutrition data. Nutritional data are collected via the CHS monitoring and annual SVAC that are food security-driven exercises. UNICEF has also set up surveillance through the health structures in the most vulnerable regions. Nutritional surveillance based on well trained and supervised staff is required countrywide, following a solid nutritional baseline survey that could confirm or inform current assumptions regarding the deterioration of nutritional status of under-5-year-old children in vulnerable rural areas.

Annex 1

Swaziland livelihood zones



Annex 2

Overview of livelihood zones in Swaziland

Highveld Maize and Cattle	This Livelihood Zone is one of the most productive in the country for maize and supports a relatively dense population of 140 000. Farmers also grow beans, sweet potatoes, and groundnuts, whilst fruits, especially wild guava, are a source of cash. Cattle and small stock are kept in relatively high numbers, although grazing deteriorates in the cold and wet winter conditions. Better-off people sell milk to the local market.
Timber Highland	This rugged zone contains the highest elevations in the country of over 1 400 metres above sea level, and is grown with trees used for timber. Wood-pulp industry is central to the support of a population of some 95 000, whether through direct employment or through supplying goods and services to those employees who migrate in from elsewhere.
Moist Middleveld	With annual rainfall above 900mm, moderate temperatures at altitude of 700-800 metres above sea level, this zone provides Swaziland's best environment for maize production, and other crops such as sweet potatoes, beans, and groundnuts, which are both consumed and marketed.
Dry Middleveld	This zone has poorer conditions for maize production, and is within the drought-prone lower-lying belts of the east of the country, so that not only is it more risky for farmers to invest in farming inputs, but in fact a significant amount of the arable land available to households is not cultivated. Poorer households get vital cash income not only from working for wealthier people but from collecting and brewing marula, as well as cutting and selling firewood and grasses. Livestock are held in some numbers by the wealthier households, although disease, and even quarantine regulations in one locality, limits this sector.
Lowveld	This is by far the largest Livelihood Zone in terms of area, but it has a relatively sparse population. With the lowest elevations amongst the livelihood zones at 250-400 metres above sea level, hot temperatures and rainfall of only 400-550mm per annum, the environment is more suitable for cattle rearing than for maize or most other rain-fed crops. In the current decade successive years of drought, as well as the collapse of the cotton industry, have respectively obliterated maize harvests, severely reduced livestock holdings, and diminishing cash-crop incomes.
Lubombo Plateau	This relatively small zone lies above the lowveld to its east and receives appreciably more rainfall, amounting annually to about 800mm. It is isolated from the main market and urban centre of the country, and whilst employment on the neighbouring sugar estates is a resource for this relatively small population, it is one which must be shared with many more people from other areas, notably the lowveld. A good mix of food crops (often intercropped) includes maize as staple, and pulses, sweet and Irish potatoes, leaf vegetables and pumpkins and melons.
Peri-Urban Corridor	This is a high population density zone in a middle-to-highland ecological and climatic setting. The livelihoods of the zone are dominated by the proximity of the city which stretches from Manzini through Matsapha to Mbabane, but cultivation of the relatively small plots of land is adequate to produce up to half of overall basic requirements if the rains are good; and while the ownership of this harvest is heavily skewed towards the middle and better-off groups, it nevertheless gives the poorer households local farm labouring employment, often paid directly in grain.