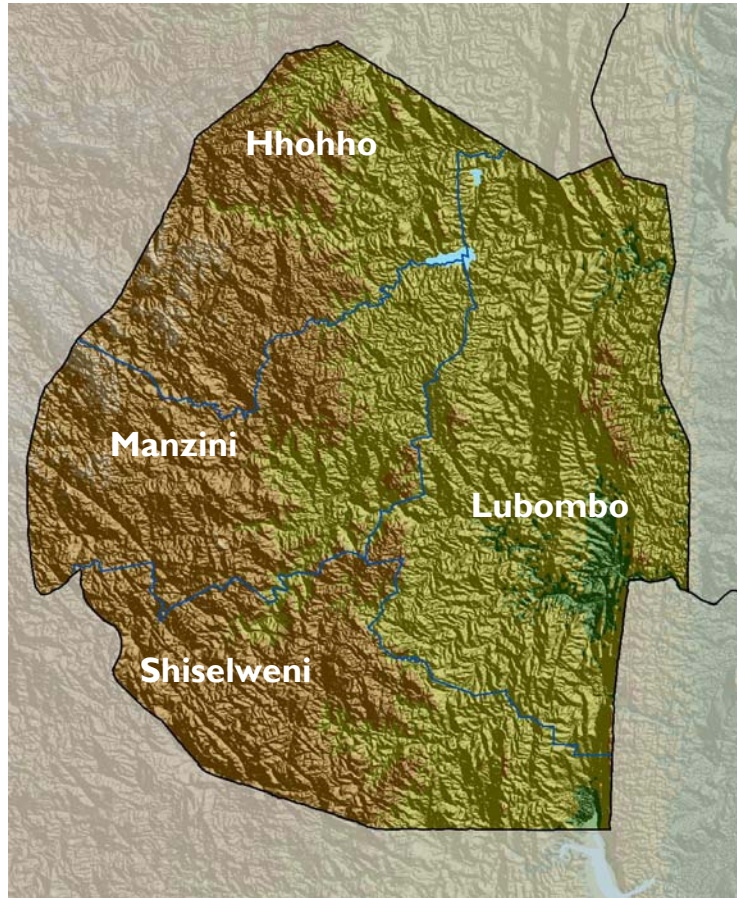




Swaziland National Vulnerability Assessment



Swaziland National Vulnerability Assessment Committee

September 2006

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MR. GEORGE NDLANGAMANDLA

CHAIRPERSON

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Executive Summary

The 2006 SwaziVAC survey was designed to assess levels of chronic food insecurity, nutrition, livelihoods and vulnerability in rural households in the four regions of the country. In addition, the design of this year's household survey intended to address the request for consolidated baseline data in order for the SwaziVAC to develop a multi-agency, inter-sectoral monitoring system in the country. WFP and the Government of Swaziland has supported the process keeping in mind that the need for continuous capacity building of core SwaziVAC members to undertake integrated food security and vulnerability analyses of household survey data.

In all, 84 enumeration areas were visited by the survey team and a total of 969 household were interviewed, more than 1200 children and 700 non-pregnant women were weighed and measured.

Two types of analyses have been conducted. At first this report focuses on key sectors (agricultural production and livestock, access to credit, access to employment and income, education, water and sanitation, nutrition, HIV and AIDS and shocks and coping strategies) for development and provides programmatic recommendations by sector and by administrative region.

In a last part, this report attempts to investigate vulnerability in a holistic and integrated manner. The methods applied by the SwaziVAC accept the view that vulnerability has many facets and that food security is *impacted by* and has an *impact on* various aspects of rural livelihoods. For the convergence of sectoral information for vulnerability analysis, Two-Step Cluster Analysis was used. The model focuses on indicators directly related to access to food, these being mainly purchasing power, production levels, and dietary outcomes such as dietary diversity and number of meals. The incidence of external shocks to the households and asset ownership were used to further refine this model (see discussion in next section). The access to food model resulted in four automatically generated groups of households:

Group 1 – Food insecure: (21% of total) These households have the least expenditure on food and non-food; greatest share of total expenditure for food; lowest dietary diversity; very little food assistance; highest percentage of poor households; highest prevalence of diarrhoea in children; lowest percentage of households taking loans.

Group 2 – Food assistance beneficiaries: (26% of total) More than 90% of these households are receiving food assistance, and 70% rely on food assistance as a primary or secondary main source of maize. As members of this group rely on food assistance, their real food security status cannot be determined as the food access and utilization indicators are thought to be impacted by food assistance.

Group 3 – Moderate to good food access: (35% of total) These households are characterised by higher per capita expenditure, greater dietary diversity and low number of poor households.

Group 4 – Best access to food: (18% of total) These households have the greatest number of crops produced, the lowest share of total expenditure for food and the greatest dietary diversity.

The report emphasises the need for further discussions among Swaziland stakeholders underlying the fact that the way to determine food security status (access) is always controversial. Although many methods are available for analysis of food security, there has been little agreement on the most appropriate method. A combination of criteria is presented at the end to allow decision makers to choose their most appropriate programmatic response. First the indicators/criteria are presented and defined and then their distribution is presented by administrative area.

I - Background and overview

I.1 – Overview of national context

Swaziland, a landlocked country between South Africa and Mozambique, is one of the smallest countries in mainland Africa. A former British protectorate, Swaziland gained its independence in September 1968. The country is one of the three remaining monarchies in Africa, with the Swazi King wielding executive power.

Swaziland has good agricultural and forestry resources, irrigation potential and minerals, such as coal, asbestos and diamonds. Sugar cane is the main export and it absorbs a vast majority of the manpower. Swaziland has one of the largest man-made forests covering 7% of the total area, with wood and wood products also being important export products. Most of the export commodities, mainly manufacturing products are sold to the South African market. The country's economy is highly dependent on that of South Africa, with tourism playing a major role.

Overgrazing, soil depletion, drought, and occasional floods persist as problems for the future. More than one-fourth of the population needed emergency food aid in 2004-05 because of drought, and nearly two-fifths of the adult population is infected by the virus that causes AIDS.

The country's new Constitution was effected in February 2006. It is hoped that this constitution will facilitate the implementation of policies designed to support programmes aimed at reducing vulnerability in the country, particularly addressing the needs of all vulnerable groups.

I.2 – Geography

Swaziland consists of 17,364 square kilometres bordered on three sides by the Republic of South Africa and by Mozambique on the eastern side. The country is divided into four agro-ecological zones: the *Lubombo Plateau*, the *Lowveld*, the *Middleveld* and the *Highveld*. The sub-tropical climate is characterised by wide ranges in total annual rainfall including periods of drought that particularly affect the *Lowveld* and *Middleveld*. However, in addition to protracted dry spells, heavy rainfall, storms and flooding also negatively impact agricultural production. This is especially so when summer tropical cyclones (Jan-March) strike the southern coast of Mozambique.

I.3 – Population

Officially, the nation's population is currently estimated at slightly over 1.1 million, which takes into account the impact of HIV/AIDS. Based on currently available information on the disease in the country, up to 40 percent of the population aged 15-49 years are infected, and life expectancy for the general population has plummeted from 60 years in 1997 to 37.5 years presently. The Government is currently undertaking a demographic survey which started in 2005, which will generate improved data on fertility, morbidity and mortality rates, as well as an accurate picture of the country's HIV prevalence rate and the effectiveness of past and ongoing anti-HIV/AIDS campaigns.

About 80% of the Swazi population is rural-based. Their livelihoods mainly depend on subsistence farming, livestock and herding. However the same rural population has diversified their income sources ranging from employment in the formal sector to petty trade and seasonal casual labour. In

the past remittances contributed significantly to rural household economies but with the decline in employment opportunities in South African mines, these have reduced significantly.

The country's official languages are Siswati (a language related to Zulu) and English. Government and commercial business activities are conducted mainly in English.

1.4 - Economy and infrastructure

In this small, landlocked economy, subsistence agriculture occupies more than 80% of the population. The manufacturing sector has diversified since the mid-1980s. Sugar and wood pulp remain important foreign exchange earners. Mining has declined in importance in recent years with only coal and quarry stone mines remaining active.

Swaziland is heavily dependent on South Africa from which it receives about nine-tenths of its imports and to which it sends nearly two-thirds of its exports. Political change in South Africa has eroded some of Swaziland's advantage in attracting foreign capital, on which much growth has depended in the past.

GDP growth has averaged about 3 percent between 1995 and 2001; GDP growth rate for 2006/07 is estimated at 1.7% with the GDP per capita of E 1,711 (est. 2004). However, 69% of the Swazi population live in poverty, most of them in rural areas.

Customs duties from the Southern African Customs Union and worker remittances from South Africa substantially supplement domestically earned income. The government is trying to improve the atmosphere for foreign investment.

Swaziland enjoys well-developed road links with South Africa. It also has railroads running east to west and north to south. The older east-west link, called the Goba line, makes it possible to export bulk goods from Swaziland through the Port of Maputo in Mozambique. Until recently, most of Swaziland's imports were shipped through this port. Conflict in Mozambique in the 1980s diverted many Swazi exports to ports in South Africa. A north-south rail link, completed in 1986, provides a connection between the Eastern Transvaal rail network and the South African ports of Richard's Bay and Durban.

The sugar industry, based solely on irrigated cane, is Swaziland's leading export earner and private-sector employer. Soft drink concentrate (a U.S. investment) is the country's largest export earner, followed by wood pulp and lumber from cultivated pine forests. Pineapple, citrus fruit, and cotton are other important agricultural exports.

Swaziland mines coal for export and there also is a quarry industry for domestic consumption. Mining's contribution to GDP was estimated at 1% in 2004 but has been declining in importance in recent years.

A number of industrial firms have located at the industrial estate at Matsapha near Manzini. In addition to processed agricultural and forestry products, the fast-growing industrial sector at Matsapha also produces garments, textiles, and a variety of light manufactured products. The Swaziland Industrial Development Company (SIDC) and the Swaziland Investment Promotion

Authority (SIPA) have assisted in bringing many of these industries to the country. Government programs encourage Swazi entrepreneurs to run small and medium-sized firms. Tourism also is important, attracting more and more visitors annually, mostly from Europe and other African countries.

1.5 – Agriculture

Nearly 60% of Swazi territory is held by the Crown in trust of the Swazi nation. The balance is privately owned. The question of land use and ownership remains a very sensitive one. For Swazis living in rural areas, the principal occupation is either subsistence farming or livestock herding. Culturally, cattle are important symbols of wealth and status, but they are being used increasingly for milk, meat, and profit.

The smallholder agricultural sector in Swaziland is the largest contributor to the livelihoods of the majority of the population and is the main raw material provider for the agro-based industries. Maize is the dominant crop and remains the staple food grown by the majority of rural households in the communal Swazi Nation Land (SNL) which accounts for about 86% of the land area planted. The land area under active cultivation has declined from about 56,425 ha in 2004/05 to 56,265 ha in 2005/06 (Agromet estimate). The outputs for the same period varied from about 74,540 tonnes to 67,130 tonnes depending on rainfall, access to tractor hire, timely planting, fertilizer use, type of seed used and related crop husbandry. The remaining SNL area is planted with relatively small amounts of cotton, groundnuts, pumpkins, various types of beans and sweet potatoes. Cassava cultivation has emerged in the *Lubombo Plateau*.

One of the main constraints to maize production is related to financing. Due to the low producer prices, farmers are reluctant to sell and are retaining their produce in their homesteads instead of sending it to market. This limits their income considerably and that is why they are using low levels of farm inputs especially fertilizer or simply depending on farm-yard manure only.

1.6 – Education

Projected rates of adult illiteracy for the year 2003 stand at 20.8%, according to the 2005 Human Development Report. There are government, mission, and private schools. The majority of primary and secondary schools are run by missions with grants from the government. In 2005 there were 555 primary schools with 221,600 pupils and 6,740 teachers and in secondary schools (junior and high schools) there were 71,120 students and 4,240 teachers. The pupil-teacher ratio at the primary level was 33 to 1 in 2005. In 1999, 93% of primary-school-age children were enrolled in school, while 37% of those eligible attended secondary school. Children go through seven years of primary and five years of secondary schooling. Schooling is not compulsory, and school fees are charged to parents. However, over the last few years, the Ministry of Education has been supporting orphaned and vulnerable children. Higher education is provided by the University of Swaziland and other colleges, including the Swaziland College of Technology, William Pitcher Teacher Training, Manzini Nazarene School of Nursing and Ngwane Teachers' Training. In all higher-level institutions there were 467

teaching staff and 5,700 students in 1996/1997. As of 1999, public expenditure on education was estimated at 6.1% of GDP.

1.7 – Health

Most killer diseases in Swaziland are due to poor environmental sanitation in and around human settlements. The diseases are mainly diarrhoeal in nature, e.g. typhoid, hepatitis and cholera. About 80% of all sicknesses and diseases in Swaziland can be traced to unsafe water that either effects people directly, or serves as breeding ground for diseases and insect vectors.

However, the most preoccupying health problem in the country remains HIV/AIDS. The epidemic has affected the kingdom in dramatic ways. Approximately 69,000 children (CSO projections) have lost one or both parents as a direct result of AIDS, and 60% of hospital admissions are due to HIV/AIDS-related illnesses. The majority of deaths occur among young people aged 15–49, the nation's most productive population segment. Life expectancy at birth in 1997 was 60 years, but it has dropped rapidly to 37.5 as a direct result of AIDS.

Efforts to address the epidemic are stymied by conservative religious and traditional beliefs against condom use, alongside social acceptance of multiple partners in both monogamous and traditional polygamous relationships.

II. Objectives and methodology

2.1 – Objectives

The main objective of the SwaziVAC survey was to collect household level information in order to assess levels of chronic food insecurity, malnutrition, livelihoods and vulnerability in rural households in the four regions of the country.

Sub-objectives include:

- Understanding distribution of various vulnerabilities around the country;
- Understanding linkages between food security, vulnerability and malnutrition in the country.
- Using the household survey as a baseline for developing a multi-agency, inter-sectoral monitoring system in the country.
- Building the capacity of core SwaziVAC members to undertake integrated food security and vulnerability analyses of household survey data.

2.2 – Survey methodology

With the goal of conducting the data collection in rural areas of all four regions, a comprehensive sampling strategy was developed. The SwaziVAC felt that with decentralization, the Government would want results by administrative region. Therefore, a sample was drawn for each region using the list of enumeration areas (EAs) from the Central Statistics Office (CSO). The team also used the 9 food economy/livelihood zones and weighted the region sample by the proportion of the population within each zone in order to capture the variance within a region. In all, 84 enumeration areas were selected (over-sampled by 4) and for each, 12 households were to be interviewed for a total of 969 household interviews.

Two survey instruments were developed by the core Swaziland VAC team with assistance from the RVAC. A community questionnaire was designed for key informant interviews to cover a range of topics including: community structure, migration, livelihoods, access to education and health services and agriculture. The household instrument contained modules on: household demographics, housing and facilities, households and productive assets, livelihoods, remittances, sources of credit, agricultural production, expenditure, food consumption and sources, shocks to food security and coping, maternal health and nutrition and child health and nutrition. Training was conducted by Swaziland VAC members, RVAC and Nutrition Council staff.

Data entry systems were designed by CSO and data were entered by their staff. Analysis was done in SPSS and was lead by an external consultant with participation by core Swaziland VAC members.

2.3 – Analytical methodology

The Swaziland VAC opted to analyse data from the vulnerability survey of rural households in order to present findings for two main purposes. The first, the analysis focuses on key sectors for development only while the second type of analysis attempts to investigate vulnerability in a holistic and integrated manner, acknowledging that there is a need to converge sectoral information.

However it is necessary to acknowledge that no single method for integrated vulnerability analysis has been agreed upon among professionals and research institutions working in this field. The methods applied by the Swaziland VAC accept the view that vulnerability has many facets and that food security is impacted by and has an impact on various aspects of rural livelihoods. The analytical team also views risk¹ assessment as a key analytical step to understand types of interventions.

The statistical approaches to analyse the sectoral information by administrative region (Hhohho, Manzini, Shiselweni and Lubombo) was mainly based on one-way analysis of variance (ANOVA) as well as multiple means comparisons tests which allow the team to determine differences between regions that are statistically significant at the $p < 0.05$ level or less. This means that the differences found between two regions, for example, would have a 95% chance of being REAL differences, and not due to chance. In addition, in some cases, composite indicators such as a coping index and dietary diversity index were developed.

For the convergence of sectoral information for vulnerability analysis, Two-Step Cluster Analysis was used. This procedure is an exploratory tool designed to identify natural groupings (or clusters) of households within a data set that would otherwise not be apparent. The algorithm employed by this procedure allows for inclusion of both continuous and categorical variables and allows for automatic choice of optimal number of clusters (SPSS Help guide).

Indicators used for access to food clusters

Domain	Indicator	Type
Food production	# crops planted	Continuous
Income	Planted cash crops	Yes/No
	Total cash expenditure	Continuous
	Total cash expenditure for food	Continuous
Food security outcome	Total weighted dietary intake	Continuous
	Number of meals for adults	Continuous
Control for food assistance	Main source of maize was food aid	Yes/No

The model focuses on indicators directly related to access to food, these being mainly purchasing power, production levels, and dietary outcomes such as dietary diversity and number of meals. The incidence of external shocks to the households and asset ownership were used to further refine this model (see discussion in next section). The model

resulted in four automatically generated clusters.

Access to food model – Four distinct groups were produced in the analysis:

Group 1 – Food insecure: (21% of total) These households have the least expenditure on food and non-food; greatest share of total expenditure for food; lowest dietary diversity; very little food assistance; highest percentage of poor households; highest prevalence of diarrhoea in children; lowest percentage of households taking loans.

Group 2 – Food assistance beneficiaries: (26% of total) More than 90% of these households are receiving food assistance, and 70% rely on food assistance as a primary or secondary main source of maize. As members of this group rely on food assistance, their real food security status cannot be

¹ Risk is perceived as the function of shocks and the lack of capacity of households to manage them without damaging their livelihoods.

determined as the food access and utilization indicators are thought to be impacted by food assistance.

Group 3 – Moderate to good food access: (35% of total) These households are characterised by higher per capita expenditure, greater dietary diversity and low number of poor households.

Group 4 – Best access to food: (18% of total) These households have the greatest number of crops produced, the lowest share of total expenditure for food and the greatest dietary diversity.

Outcomes from the one-way analysis of variance (ANOVA) are presented in the table below.

	Group 1	Group 2	Group 3	Group 4	Total	Significant Differences*
Total # crops planted	1.5	1.4	1.4	2.0	1.5	G4 to all
% HH planting cash crops	0	8.2%	0	1.8%	2.5%	G2 to all
Food expenditure ²	147	344	316	246	275	G1 to all; G2 to G4
Per capita non-food expenditure (6 mo.)	199	522	469	517	434	G1 to all
Average weighted dietary diversity index	13.9	25.8	33.8	34.4	27.6	All to all
% with very inadequate diet	24.5%	3.3%	0	0	6.0%	G1 to all
% HH where adults eat < 2 meals	100%	76%	100%	100%	94%	G1 to all
% with main or second main source of maize from food assistance	7%	71%	0	0	20%	G2 to all

*95% confidence that the difference is real and not by chance

² Per adult equivalent per 6 months

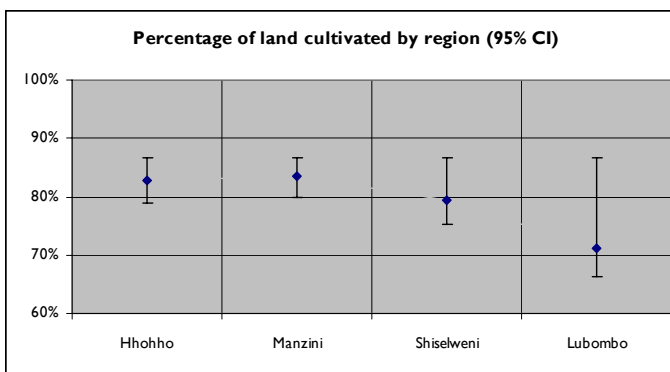
III. Sectoral analyses

This section presents indicators, results and programmatic recommendations for nine sectors: agricultural production and livestock, access to credit, access to employment and income, education, water and sanitation, nutrition, HIV and AIDS and shocks and coping strategies.

3.1 – Agricultural production & livestock ownership

Primary data from the household instrument show that there are several factors limiting agricultural production in rural Swaziland.

The results show that overall, 91% of the sample households had access to agricultural land. Access to land was highest in Shiselweni (97%) and Manzini (94%) and a bit lower in Lubombo (89%) and Hhohho (84%) samples.

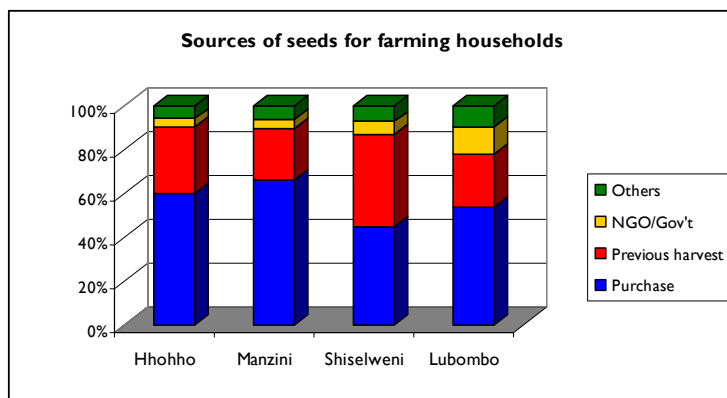


For those with access to agricultural land, the graph on the right shows that the mean percentage of land cultivated varies from 83% in Hhohho and Manzini to just over 70% in Lubombo. Ability to cultivate land can be influenced by a lack of labour or lack of access to animals or machines.

Fertilizer usage was highest in the sample of farming households in Hhohho region with 64% using chemical versions they had purchased and 10% using dung or compost. Nearly 70% of farming households in Manzini and Shiselweni were using fertilizers, mostly chemicals they had purchased and about 10% in each sample relying on dung or compost. Fertilizer use was lowest in the Lubombo sample with only 30% using any – mostly chemical from purchase.

Other inputs, such as pesticides are used less frequently but with strong regional variance. Nearly half the farming households in Shiselweni reported using pesticides as compared to around 30% in Hhohho and 27% in Manzini. Only 19% of the sample households in Lubombo were using pesticides on their crops.

The graph below shows the main source of seeds for the farming households in the sample. For all



regions, purchase is the most common source, followed by saving seeds from the previous harvest. Households in the Shiselweni sample are less likely to purchase and more likely to save seeds from the last harvest. Over 10% of the farming households

in the Lubombo sample reported receiving seeds from NGOs or Government.

The households were asked to name up to five main crops they cultivated. In Lubombo, more than 20% of the households did not have any main crops and only 15% reporting cultivating four or more different types of crops. Crop diversification was better in Shiselweni, where almost half the households had four different types of crops. Maize was the main crop for almost all households and was produced by nearly all farming households in the sample. In Hhohho, other important crops are groundnuts (24%), sweet potatoes (22%), and sugar beans (13%). Fifteen percent of the farming households in the Manzini sample were producing sweet potatoes or cow peas while another 10% were growing sugar beans in addition to maize. In Shiselweni, the agriculture patterns were a bit different with 98% growing maize, 19% growing sweet potatoes, 15% growing sugar beans and 4% growing cotton. Only 2 households were growing sugar cane. In Lubombo, the main crops again were maize (98%), cowpeas (14%) and sweet potatoes (14%) with 8% growing sorghum and 5% growing cotton.

Swaziland Annual Cereal Balance Sheet for Marketing Year (April – March) 2006/2006

(In Thousands of Metric Tons)	Maize	Wheat	Rice	Sorghum/ Millet	All cereals
A. Domestic Availability	71.60	10.60	0.40	0.00	82.60
A.1 Opening stocks @ 1st April	4.60	10.60	0.30	0.00	15.50
Formal/SGR	0.40	10.60	0.30	0.00	11.30
On Farm	0.20	0.00	0.00	0.00	0.20
Other	4.00	0.00	0.00	0.00	4.00
A.2 Gross Harvest	67.00	0.00	0.1	0.00	67.10
B. Gross Domestic Requirements	126.90	40.60	15.00	0.00	182.50
C. Desired SGR Carryover Stocks	2.00	4.00	0.50	0.00	6.50
D. Domestic Shortfall/Surplus	-57.30	-34.00	-15.10	0.00	-106.40
E. Commodity Cross Substitution	0.00	0.00	0.00	0.00	0.00
F. Imports	37.00	34.00	15.00	0.00	86.00
F.1 Received	50.18	45.14	14.05	0.00	109.37
Commercial	36.74	45.14	12.06	0.00	93.94
Food Aid	13.45	0.00	1.98	0.00	15.43
F.2 Expected	-13.18	-11.14	0.95	0.00	-23.37
Commercial	0.00	-11.14	2.94	0.00	-23.94
Food Aid	2.55	0.00	-1.98	0.00	0.57
F.3 Planned Imports	37.00	34.00	15.00	0.00	86.00
Commercial	21.00	34.00	15.00	0.00	70.00
Food Aid	16.00	0.00	0.00	0.00	16.00
G. Exports	0.00	6.92	0.00	0.00	6.92
Commitments Shipped	0.00	6.92	0.00	0.00	6.92
Commitments Not Yet Shipped	0.00	0.00	0.00	0.00	0.00
H. Import Gap	0.00	0.00	0.00	0.00	0.00
I. Forecasted Closing Stock	0.00	0.00	0.00	0.00	0.00
J. Current Stock @28th March 2006	4.46	8.13	0.00	0.00	12.59

Notes: On-farm stocks are based on last marketing year's unallocated surplus with a 15% adjustment for storage losses. Losses and other uses are estimated as 15% of gross harvest

Nearly 90% of the sample households owned at least one chicken with little variation between regions. Duck ownership was highest in the Lubombo sample (23%) and around 10% in the other regions. Very few households owned sheep while over 40% owned at least one goat – more than half the sample households in Lubombo. Only one-third of the sample households in Hhohho owned any goats. About half the households owned any cattle – up to 58% in Shiselweni and Manzini. Quite a few households owned labour animals such as donkeys (7%), bulls (31%) or oxen (32%). Households in Lubombo were least likely to own bulls (26%) or oxen (23%) and most likely to own donkeys (11%).

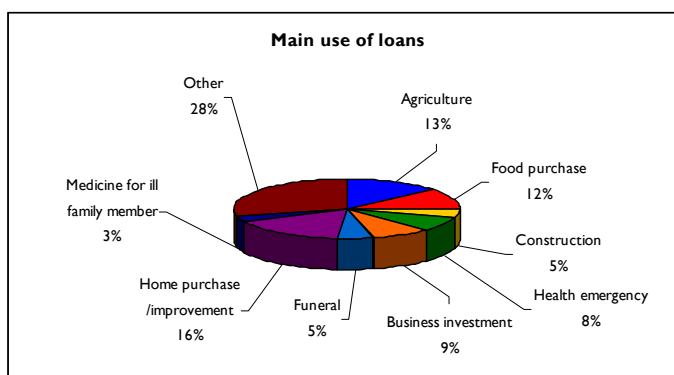
Programmatic recommendations

Agricultural development programmes could benefit many rural households, especially in Lubombo region. These programmes could focus on access to pesticides and storage of harvests and seeds. In addition, crop diversification schemes could have wide spread benefits, especially in Lubombo. Programmes aimed at animal health would also have lasting benefits in the rural areas.

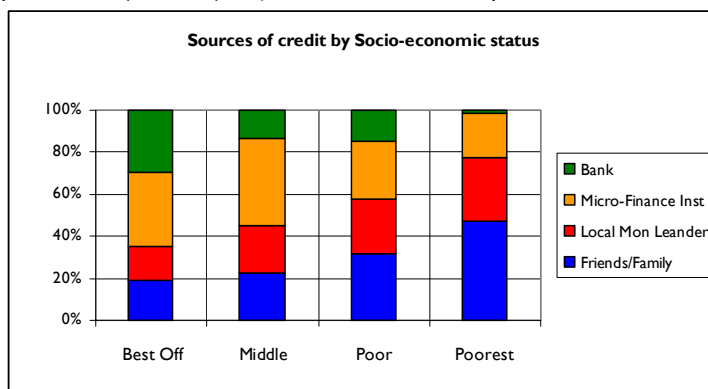
In order to improve the credibility and accuracy of cereal balance sheets, studies aiming to quantify the cereal food requirements in Swaziland should be done during a ‘normal’ agricultural season.

3.2 – Access to credit

It has been widely accepted that lack of access to credit is a main contributing factor to household vulnerability. Therefore, specific questions on access to various types of credit and loans were included in the household survey instrument. On average,



22% of the households had accessed credit of some type in the 12 months prior to the survey. There were no differences between the regions in terms of accessing loans. The three main sources of loans for rural Swazi households are friends and family (30%), micro-finance institutions (30%) and local money lenders (23%). Nearly 30% of the households that received loans used them for non-productive (essential) objectives such as food purchases, health emergencies, funeral expenses and medicines.



These are outlined in the graph above. In terms of productive uses of loans, the main use was home purchase/construction or improvement (16%), followed by agricultural investment or activities (13%). Less than 10% of the

households used loan money for a business investment.

There is widely accepted belief that access to credit can be the 'spark' for the poorest and poor households to break the vicious cycle of poverty. However, when testing this hypothesis with the Swazi VAC data, it appears that the poorest households have the least access to credit for formal institutions, either banks or microfinance. The graph on the left shows that 30% of the 'best off' households who had taken a loan in the past year used a bank as compared to virtually none of the poorest households. For the poorest, more than 40% received their loans from friends or family members. The households in the 'middle' wealth category tend to rely more on loans from micro-finance institutions. In addition, the poorest households tended to use the loans for non-productive³ purposes – almost half as compared to 18% of the better-off and 30% of the middle wealth households.

Programmatic recommendations

Although the analyses presented here mainly illustrate the tip of the iceberg, a few recommendations can be highlighted:

- The need to re-target micro-credit assistance to cater for poorer households.
- Expansion of micro-credit programmes to focus more on productive investments targeting the poorer households. Programmes should also focus on building capacity of borrowers to correctly invest and manage the loan funds.

3.3 – Access to employment/income

Swaziland is currently suffering an unemployment rate of 40% (World Fact Book, 2005 est.) and the situation is exacerbated by the fact that most of the farmers in the country are subsistence farmers with very little hope of improvement in the near future. Therefore the little that they produce does not last through to the next season, so they must resort to purchase as a survival strategy.

The closure of major manufacturing companies in urban areas, retrenchments from South African mines and limited domestic employment opportunities are the main factors in the high unemployment rates. The majority of rural people depend on cash income for survival, especially when prolonged dry spells and erratic rains are experienced.

The data from the Swazi VAC household survey show similar patterns as more than half of the sample households do not have income from formal employment or skilled trade activities. The table below shows that half of the households in Manzini and Lubombo rely on agriculture as a main source of income. Reliance on agriculture is higher amongst sample households in Hhohho and Shiselweni. However, half of the households in the Hhohho sample also appear to be generating income from formal sources or skilled activities as compared to only 35% in Shiselweni. Just less than 10% of the sample households in Shiselweni and Lubombo rely on food assistance only as a livelihood source.

³ Non-productive purposes: food expenditure, health expenditure, funerals, bride

	N	Source of livelihood			
		Agriculture	Formal or skilled	Non-ag, non-formal/skilled	Food assistance only
Hhohho	237	66%	54%	6%	1%
Manzini	240	50%	47%	20%	2%
Shiselweni	231	62%	35%	12%	9%
Lubombo	261	50%	33%	18%	8%
Total	969	56%	42%	14%	5%

Remittances play a large role in supporting livelihoods in rural Swaziland. In total, 30% of the households named remittances as a main source of livelihood, ranging from 27-28% of sample households in Lubombo and Hhohho to 32% in Manzini and 40% in Shiselweni.

3.4 – Education

In Swaziland, around 73% of primary aged children are enrolled in school. However, only 29-36% of

Type of school	Rural		Urban	
	Primary	Secondary	Primary	Secondary
Government school	20,900	18,200	16,900	8,500
Aided school	159,200	31,500	21,200	12,900
Private school	2,700	-	665	-
Total	182,800	49,700	38,765	21,400

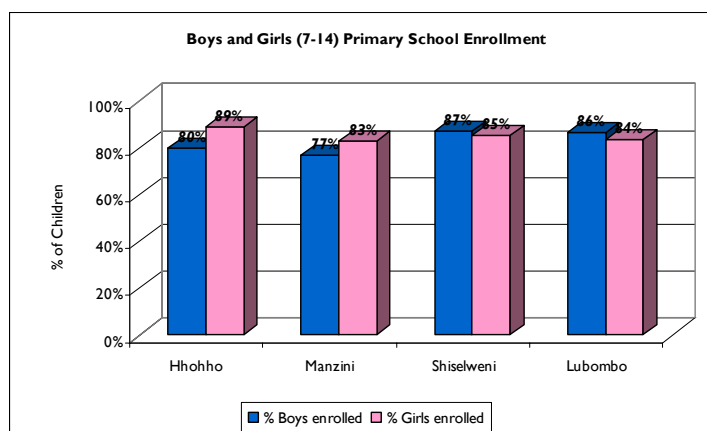
CSO Education Statistics, 2005

secondary school-aged youths are enrolled in secondary school (UNICEF 2004). The table below presents the number of students per type of school, zone of

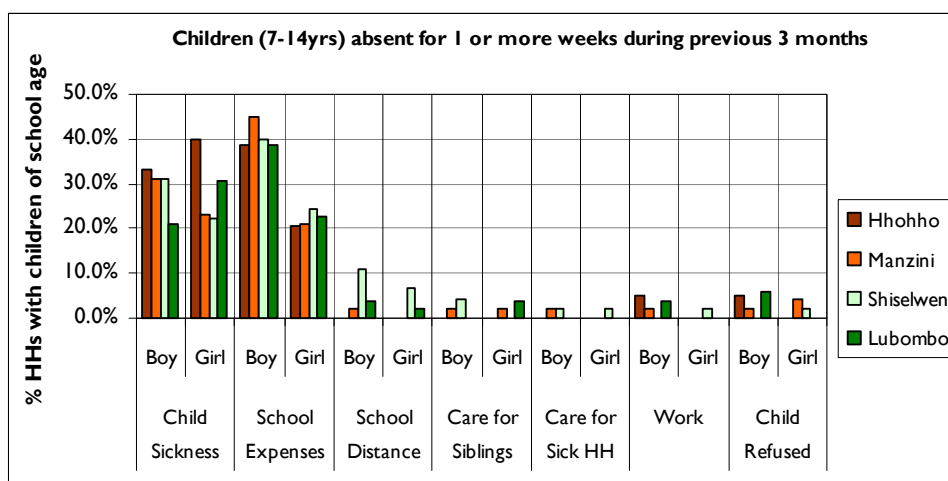
residence and level of schooling. In rural areas, secondary students make up only 20% of the total enrolment while in urban areas, secondary students comprise one-third of the student population.

The Swaziland VAC survey only focused on primary school enrolment. Overall, at least 85% of eligible rural children were enrolled in primary school with no significant differences between regions. However, it is interesting to see that girls had a higher enrolment rate in Hhohho and Manzini while boys had a slightly higher rate in Shiselweni and Lubombo regions. When analysing enrolment by socio-economic status, there were not statistically significant differences found. However, there was a linear relationship between socio-economic status and girls' enrolment – 97% of the girls in the 'better-off' households were enrolled. This decreased steadily to 88% in the poorest households. This relationship was not found for the boys.

From the sample, around 20% of the enrolled children were reported to have missed at least one week of school during the three months prior



to the survey. There were no differences by region. The main reasons were illness and school expenses. Absence due to illness was most common in Hhohho, with girls being ill more often than boys. In general, boys missed school more often than girls due to the costs – this was most common among boys in the Manzini sample. The explanation could be that uniforms for boys cost more than those for girls mainly because boys’ shoes are more expensive. Children in Shiselweni were more likely to miss school due to distance than in the other regions. Lastly, boys were more likely to refuse to go to school when compared to girls, except in Manzini and Shiselweni.



School drop-out rates were similar across Hhohho, Manzini and Lubombo where 10-12% of the sample households reported that at least one child had dropped out of school in the 6 month prior to the survey. However, in Shiselweni, the drop-out rate was higher, at 17% of households with school-aged children.

In the analysis, great effort was made to try and identify the characteristics of households whose children are most likely to have decreased access to primary education. The table below summarizes key findings of this analysis. The results show that households that have either taken a child out of school or had a child missing school were significantly more likely to have experienced an unusual situation in the previous year that affected the household’s ability earn enough income, or resulted in a negative change in eating habits or caused them to sell household assets.

		N	Unusual situation last year	At least one child acutely malnourished	At least one chronically ill HH member	At least one recent death of HH member
Missed school	No	661	63%**	1.4%**	12%	23%*
	Yes	184	74%	4.9%	13%	29%
Dropped out of school	No	703	64%**	1.1%**	11%**	23%**
	Yes	100	77%	8.0%	18%	33%
Total		803	66%	2.0%	12%	24%

** = $p < 0.01$

* = $p < 0.05$

In addition, these households were significantly more likely to have an acutely malnourished child – especially those where a child had dropped out of school. Households with a drop-out are also

significantly more likely to have at least one chronically ill member. Lastly, households with a child who had missed school or dropped out completely are significantly more likely to have experienced a recent death of a household member. These factors link the shocks of chronic illness and death of family members to decreased access to education. There was no significant difference between access to school and socio-economic status, even when controlling for the effects of the shocks.

Programmatic recommendations

There are few recommendations to be made from the analysis of the household survey data. They include:

- A forum for key Government ministries and non-government agencies and civil society to discuss possibilities for improved access to secondary education and free primary education for all.
- Further research on the cause and effect cycle of education, poverty, health and human rights, meaning that education reforms must be accompanied by reforms in the health sector, on poverty alleviation programmes and gender equality.
- Improvements in school attendance through parallel activities that would also improve the quality of the learning experience for all children. This would be to balance the trend of declining access to education for children in response to external shocks to the household.

They may include:

- Economic incentives to send children to school
- Development of school-based health clinics
- Provision of nutritious food in schools
- Awareness campaigns on the importance of investing in both primary and secondary education
- On-site rations for all pupils attending Government and Community schools
- Research on the potential for free lunch programmes in urban schools
- Provision of safe drinking water and sanitation for all schools
- Coordination of food pipelines (NDTF, NERCHA and WFP) through the Ministry of Education

3.5 – Water and sanitation

Access to safe drinking water and adequate sanitation facilities are vital in achieving food security due to their relationship to acute illnesses which in turn impact the body's ability to utilize food. This is especially important for young children (0-5 years) and people with compromised immune systems.

In order to assist in the design of interventions to improve household food security in general and improved access to safe drinking water and sanitation in specific, the Swaziland VAC carried out extensive analyses on household access to water. Access to water from improved sources (UNICEF definition) was problematic in all regions but in Lubombo, it was a serious problem where only 19% of

the households had access to drinking water from an improved source. This was significantly less than the other regions. On the opposite side, more than half the households in Hhohho were using water from improved sources, which was significantly more than the other regional samples.

Not only is the source of water important, but also the distance (or time) to fetch water and bring it back to the house. The analysis shows that again, the

	N	% HH with improved water source ⁴	% within 15 minutes of water during rainy season	% within 15 minutes of water during dry season
Hhohho	237	53%	71%	58%
Manzini	240	41%	66%	59%
Shiselweni	231	35%	46%	30%
Lubombo	261	19%	45%	27%
Total	969	36%	57%	44%

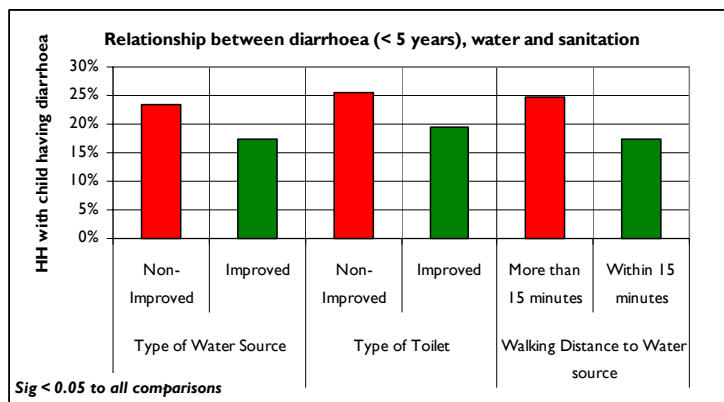
households in Hhohho region have the best access in terms of distance/time – during the rainy season more than 70% are within 15 minutes of their water source. For households in Shiselweni and Lubombo, even during the rainy season, less than half are within 15 minutes of a water source. This decreases to 30% or less during the dry season. When compared to the other regions, these differences are statistically significant.

Access to improved sanitation was better than access to water in all regions. Again, the households in Lubombo region showed the least access with only 53% of the sample using improved sanitation, which was significantly ($p < 0.05$) less than the other regions. More than 80% of the households in the Hhohho sample were using sanitary means of excreta disposal.

Water, sanitation and water-borne diseases

Relationships between unsafe sources of drinking water and diarrhoea are well documented and are supported by the Swazi VAC household survey data. Statistically significant differences between access to water and sanitation and incidence of diarrhoea were found and key results are presented in the graph on the next page.

The findings show that children from households with improved water sources are significantly less likely to have diarrhoea than those with un-improved drinking water sources. The same relationship



exists for children from households with good sanitation as compared to those without proper sanitation. There is also a relationship between distance to drinking water source and incidence of child diarrhoea – this is most likely due to the fact that safe sources tend to

⁴ Public tap, borehole, protected dug well

be taps or wells that are installed near or in the home. Drinking water sources that are far from the home would tend to be rivers, ponds or streams which are not considered safe sources.

When considering the three together (improved water, improved sanitation and water nearby) the likelihood of children having diarrhoea is nearly the same if the household presents all three negative characteristics (32%) or just one or two characteristics (29%). However, if the household has all 'good' characteristics, then the likelihood of their young children having diarrhoea is significantly ($p < 0.05$) lower (19%) than if there were one, two or three negative characteristics.

Programmatic recommendations

Based on these findings the following recommendations should be highlighted:

- Lubombo is in need of interventions for both water and sanitation in terms of infrastructure and possibly hygiene education
- Access to safe drinking water should be improved in all regions as evidence shows that even though toilet type might be reasonable, the likelihood of young children having diarrhoea is elevated if only one factor is lacking.
- The correlations between diarrhoea and water and sanitation show that food security should also consider improvements in access to safe water and sanitation.

3.6 - Household dietary intake

Dietary intake was measured at the household using a 7-day consumption recall for 17 different foods and food groups. In addition, the number of meals consumed in the previous day was collected for children 0-5, adolescents 6-17 and adults. For the analysis, the Swaziland

Weights of foods
Cereals and tubers = 2
Beans and groundnuts = 3
Animal proteins = 4
Oils, fats and sugar = 1

VAC team used the weights and thresholds from the Mozambican Dietary Adequacy Intake approach developed by the Mozambican Ministry of Agriculture⁵. Dietary diversity was calculated based upon this method where the number of times an item was eaten was multiplied by a weight to create a weighted dietary diversity index. The table below summarizes the findings, showing the percentage of households having very inadequate consumption and the mean weighted dietary diversity score. From this table, it is clear that the sample households in Lubombo has a significantly lower ($p < 0.05$) mean weighted dietary diversity score than the other regions and 14% of the sample households have very inadequate food consumption in terms of dietary diversity.

	N	HH with very inadequate consumption	Mean weighted dietary diversity score	Classification
Hhohho	237	3.0%	31.0	Normal
Manzini	240	2.9%	28.8	Normal
Shiselweni	231	3.9%	27.8	Normal
Lubombo	261	13.8%	23.8	Acute food insecurity

⁵ Rose, et. al., 2002

3.7 – Food utilization (nutritional outcomes)

Malnutrition can occur even when access to food and healthcare is sufficient and the environment is reasonably healthy. The social context and care environments within the household and the community also directly influence nutrition. Factors influencing nutritional status include:

- Breastfeeding practices – exclusive breastfeeding up to 6 months of age
- Weaning practices – timely introduction of nutritious weaning foods
- Maternal hygiene behaviours – hand-washing, bathing, etc.
- Relationships between morbidity and water and sanitation
- Pregnancies and antenatal care – birth spacing, tetanus toxoid injections, vitamin A supplementation
- HIV and AIDS

As mentioned earlier, the households were randomly sampled and it was assumed that there would be at least one woman of reproductive age (15-49 years) in each household. If the household had more than one woman of reproductive age, then the woman with children under five years of age was selected and all children in the households (0-59 months) would be included in the child health and nutrition section of the questionnaire.

The age of a child was determined by asking the mother for the date of birth and when possible, using vaccination cards to verify the birth date. If the date was unknown and no documentation was available, a seasonal calendar or calendar of events was used to estimate the age of the child. Children were weighed using UNICEF Mother/child scales while height was measured using a standard measuring board.

In the survey, more than 1200 children 0-59 months of age were weighed and measured and information on health and caring practices were also collected for these children. Of the sample, 46% of the children were girls. Mothers were available for only 69% of the children. By region there were 299 children from Hhohho, 360 from Manzini, 226 from Shiselweni and 334 from Lubombo in the sample.

The table below shows the findings from the analysis of the anthropometric data. Overall, 1.6% (0.8 –

	Wasting ⁶		Underweight ⁷		Stunting ⁸	
	%	95% CI	%	95% CI	%	95% CI
Hhohho	2.7%	(0.7 – 4.6)	8.0%	(4.7 – 11.3)	28.1%	(22.7 – 33.6)
Manzini	1.6%	(0.2 – 2.9)	8.4%	(5.4 – 11.5)	31.3%	(26.1 – 36.4)
Shiselweni	1.0%	(0.0 – 2.4)	9.1%	(5.1 – 13.1)	31.3%	(24.8 – 37.8)
Lubombo	1.0%	(0.0 – 2.2)	11.0%	(7.4 – 14.6)	29.1%	(23.9 – 34.4)

⁶ A **wasted child** has a weight-for-height Z-score that is below -2 SD based on the NCHS/CDC/WHO reference population. Wasting or **acute** malnutrition is the result of a recent failure to receive adequate nutrition and may be affected by acute illness, especially diarrhoea.

⁷ An **underweight child** has a weight-for-age Z-score that is below -2 SD based on the NCHS/CDC/WHO reference population. This condition can result from either chronic or acute malnutrition or a combination of both.

⁸ A **stunted child** has a height-for-age Z-score that is below -2 SD based on the NCHS/CDC/WHO reference population. Stunting or **chronic** malnutrition is the result of an inadequate intake of food over a long period and may be exacerbated by chronic illness.

2.3) children 6-59 months were suffering from acute malnutrition. This is slightly higher than the 2000 MICS survey where 1.0% of children 0-59 were wasted. By region, the highest prevalence of acute malnutrition was found in Hhohho.

Further, 30.0% (27.3 – 32.7) of the children 6-59 months in the sample were suffering from chronic malnutrition, ranging from 28.1% in Hhohho to 31.3% in both Manzini and Shiselweni. These findings are similar to the 2000 MICS survey where 30% of the children 0-59 months were stunted. Lastly, 9.6% (7.9 – 11.4) of the children in the sample were underweight, ranging from 8.0% in Hhohho to 11.0% in Lubombo. In summary, it appears that the nutrition situation is best in Hhohho region in rural Swaziland.

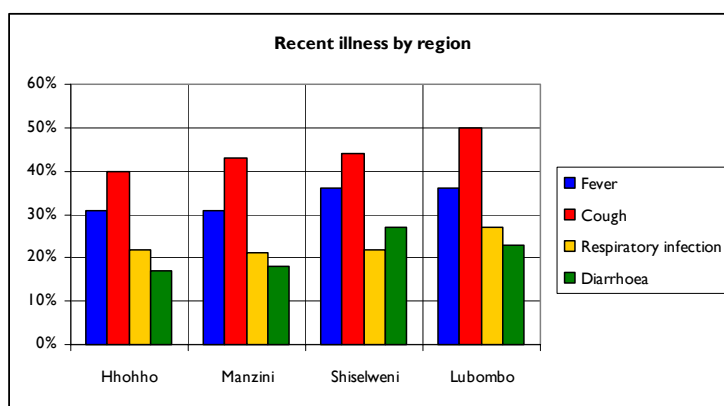
In accordance with WHO standards of malnutrition, all regions were classified as having low acute malnutrition (< 5%). On the other hand, all regions were classified as having medium (10-29%) to high (30-39%) chronic malnutrition prevalence, if the upper ranges of the confidence intervals are considered.

By age group, the findings were as expected in that children 18-23 months are most likely to be undernourished. By gender and caretaker status, the following trends were found:

- Boys were significantly ($p < 0.05$) more likely to be underweight than girls: 12% as compared to 7% for girls.
- Boys were also significantly more likely to be chronically malnourished, or stunted: 32% as compared to 27% for girls.
- Girls were less likely to have had recent fever or diarrhoea.
- Girls were more likely to have been treated for illness at a health centre and more girls were enrolled in a feeding programme.
- Children whose mothers were respondents were less likely to be underweight and stunted.

In most countries, young girls tend to fare better than boys in terms of growth. Although the exact reasons are not known, it could be due to the fact that boys are allowed to move around playing more at a younger age, exposing them more to dirt and germs while girls are usually kept closer to

their caretakers and could even be receiving more food.



The 2-week period prevalence of illness in young children was established for fever, upper respiratory infections and diarrhoea. Overall, illness was more prevalent in children from Shiselweni and Lubombo

regions, as indicated in the chart above. Cough is the most commonly reported illness, followed by

fever. All illnesses are more prevalent in children 12-17 months of age, the usual age for weaning. For most regions, nearly half of all illnesses were treated in a health facility but only 40% for the Manzini sample.

Measles immunization coverage (9-59 months) was around 87% overall, ranging from 83% in the Shiselweni region to 89% in Hhohho. However, more than 90% of the children's mothers had received at least one tetanus toxoid injection during their pregnancies. Vitamin A supplementation coverage was also assessed with two-thirds of all children having ever received a supplement. Coverage was lowest in Shiselweni region (61%) and about the same for the other regions.

Only 36% of the children in the sample had received de-worming tablets in the 6 months prior to the survey. Coverage of de-worming activities was highest in Manzini and Hhohho (39-40%) and lowest in Shiselweni (28%).

Just over 20% of the children were enrolled in a feeding programme. Of those, 40% in wet feeding, 34% receiving take home rations and 26% receiving general food rations. By region, 12% from Hhohho, 15% in Manzini, 26% in Shiselweni and 35% in Lubombo samples were enrolled in feeding programmes.

Relationships between illness and child nutritional status:

- Children with recent fever had significantly lower mean weight-for-height and weight-for-age z-scores than those without.
- 13% of children with recent fever were underweight as compared to 7% of those without.
- Children with recent cough were significantly more likely to be wasted or underweight.
- Children with recent diarrhoea were significantly more likely to be wasted (4% vs. 1%) or underweight (14% vs. 8%).

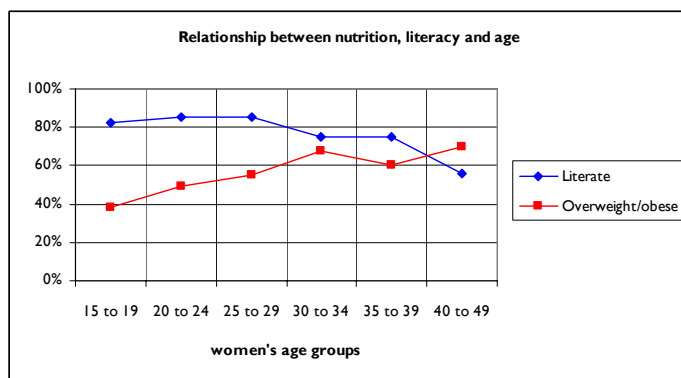
Women's nutrition

The main findings of the household survey for nutrition and health of women of reproductive age (15-49 years) are presented in this section. Around 700 non-pregnant women in the survey were weighed and measured in order to determine their nutritional status. Traditionally, for women of reproductive age (15-49 years) the body-mass index (BMI) is calculated to determine if the weight-to-height ratio is within a normal range. A woman is classified as being malnourished if her BMI is less than 18.5 kg/m². In addition, an adult woman (18 or older) is classified as being pre-obese or obese if her BMI is 25.0 kg/m² or higher.

For the sample of non-pregnant women, there were very few who were undernourished – less than 2% of the total with the most being found the Lubombo (2.8%) and Shiselweni (2.3%) regions.

	Hhohho	Manzini	Shiselweni	Lubombo	Total
Undernourished	1.6%	1.1%	2.3%	2.8%	1.9%
Normal	41.1%	42.5%	40.6%	42.2%	41.7%
Pre-obese	35.4%	34.4%	30.8%	35.0%	34.2%
Obese	21.9%	22.0%	26.3%	20.0%	22.3%

The table above compares the nutritional status of women by region and shows very little variation between regions. In all, more than 55% of women were classified as being pre-obese or obese, with slightly fewer in Lubombo. By zone, the lowest percentage of obese women was found in the Lubombo Plateau. However, when comparing by food economy zone, only 11% of women in the peri-urban corridor and Lomahasha trading and arable land zones were obese as compared to 34% of the women in the Lowveld cattle and cotton zone.



The chart on the left shows the relationship between women's nutrition, literacy and age. Overall literacy is quite high but decreases in women under 30 years. Alternatively, the likelihood of a woman being overweight (pre-obese) or obese increases with age – 70%

of women 40-49 years are overweight or obese.

The survey used some proxy measures to determine approximately the micronutrient situation in rural areas of the country. Only about half the women had received a high dose vitamin A supplement after the birth of their last child. About two-thirds of pregnant women were taking iron supplements. However, the majority of households that were tested were using iodized salt. These findings are summarized in the table below.

	Vitamin A after last birth	Pregnant and taking iron tablets	HH salt not iodized
Hhohho	52%	8 pregnant 50% taking tablets	14%
Manzini	53%	16 pregnant 75%	5%
Shiselweni	50%	13 pregnant 69%	5%
Lubombo	51%	12 pregnant 67%	3%

Assessment of recent illness in the women of reproductive age showed that recent fever was reported most often in women from Shiselweni and Lubombo although few women overall used mosquito nets. Recent episodes of diarrhoea were experienced by only around 10% of the women. There are regional variations on women boiling drinking water for their children with the lowest levels found in Hhohho. However, the likelihood of boiling water could be related to access to water from improved sources.

	Fever	Diarrhoea	Boil drinking water for children	Use mosquito nets
Hhohho	26%	9%	28%	3%
Manzini	27%	13%	38%	2%
Shiselweni	30%	10%	34%	2%
Lubombo	32%	11%	40%	11%

3.8 – HIV and AIDS

In accordance with the UNAIDS Overview of the Global AIDS Epidemic (2006), Swaziland is the country with the highest HIV prevalence rate in the world for adults 15-49 years, at 33.4 percent. Even more shocking is the fact that Swaziland had the sharpest increase in prevalence from 2003 to 2005 when compared to the other 9 countries with the highest prevalence, as indicated in the table below.

Prevalence of HIV in Adults 15-49 years

Rank	Country	2003	2005	% points change
1	Swaziland	32.4	33.4	+1.0
2	Botswana	24.0	24.1	+0.1
3	Lesotho	23.7	23.2	-0.5
4	Zimbabwe	22.1	20.1	-2.0
5	Namibia	19.5	19.6	+0.1
6	South Africa	18.6	18.8	+0.2
7	Zambia	16.9	17.0	+0.1
8	Mozambique	16.0	16.1	+0.1
9	Malawi	14.2	14.1	-0.1
10	Central African Republic	10.7	10.8	+0.1

Source: UNAIDS 2006

The first sentinel site surveillance⁹ surveys were conducted in 1992 and found that 3.9% of pregnant women presenting at clinics were infected with HIV. By 2004

the estimates of infection had increased to 42.6% - nearly 40 percentage points in just 12 years (Socioeconomic Impact of HIV/AIDS in Swaziland, 2006 report). The report went on to show that the most affected age group was 25-29 years (56.3% infection prevalence) and that the most affected administrative regions are Manzini and Shiselweni.

Direct information on infection of individuals cannot be collected in a household survey of this kind. The Swaziland 2006 Demographic and Health Survey (DHS) will do random and confidential testing of adult males and females which will allow for more detailed analyses of the relationships between infection and health and nutrition.

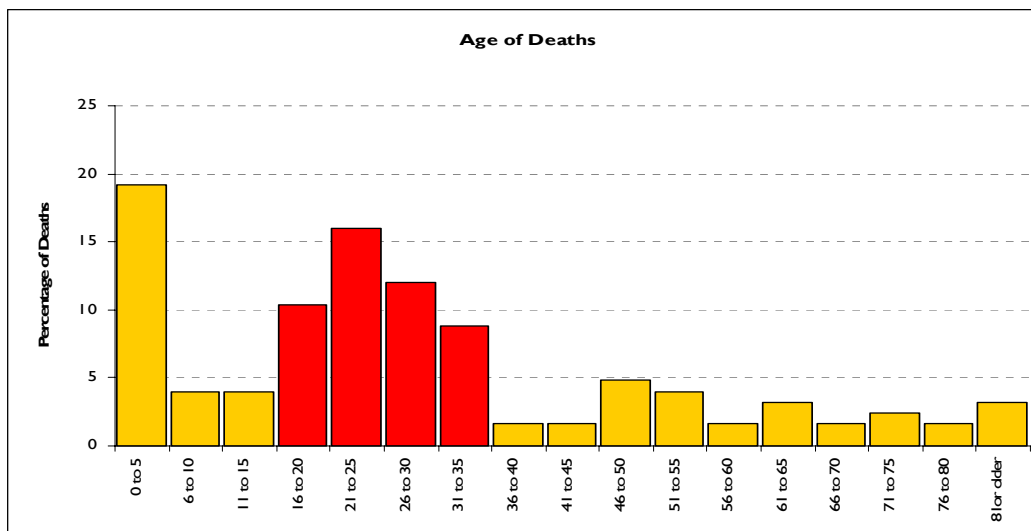
For the Swaziland VAC analysis, five proxy indicators were used to assess the impact of HIV and AIDS on rural households. The proxies were: (i) chronic illness of household member; (ii) deaths among adults 15-49 years; (iii) deaths among adults aged 15-49 years after a chronic illness; (iv) deaths or chronic illness reported as a shock by the household; and (v) presence of orphans in the household. Some of these indicators are summarized by administrative region in the table below.

	N	% Households by HIV Proxy			% households reporting deaths or chronic illness as a shock	% households hosting orphans
		Any deaths from any cause (15-49)	Any deaths from chronic illness (15-49)	Any chronic illness preventing work (15-49)		
Hhohho	237	5.5	3.4	9.7	14.3	38.8
Manzini	240	8.8	5.4	7.1	22.5	43.8
Shiselweni	231	7.4	3.9	16.9*	22.1	51.9**
Lubombo	261	3.8	2.7	12.6	14.6	39.8
Total	969	6.3	3.8	11.6	18.3	43.4

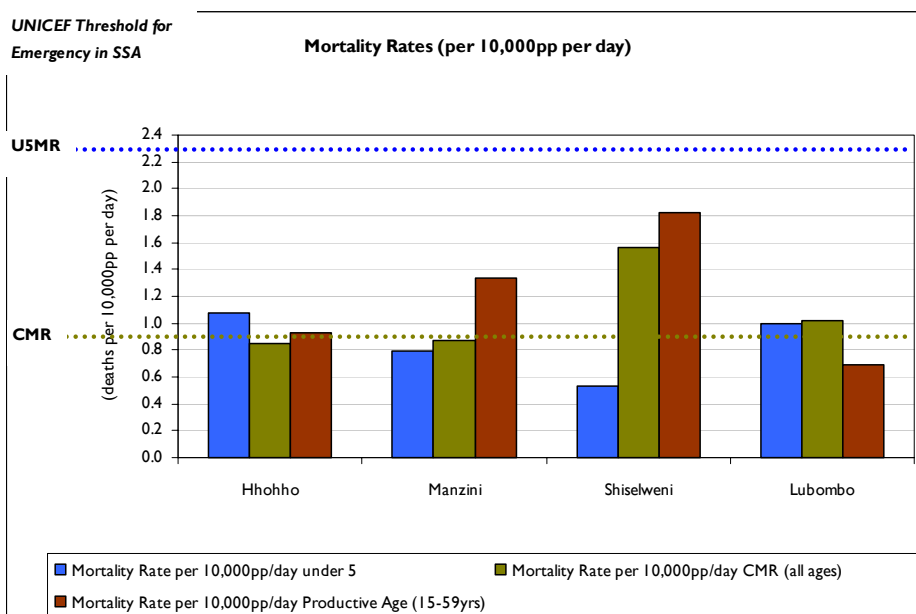
* Shiselweni significantly higher than Manzini ($p < 0.05$) Different ($p < 0.05$) from Shiselweni and Lubombo

⁹ Although UNAIDS bases its analyses on sentinel sites, it controls for the likely over-estimation of the method. The national statistics do not control for this bias and there presents higher estimates.

Analysis of the household data from the survey has been used to create the graph below which illustrates the severity of the pandemic. The histogram of the number of deaths by age group shows the unusual peak of deaths in the prime-age groups between 20 and 40 years of age. The normal histogram of deaths would show the high number in children 0-5 as illustrated in this histogram with a sharp decrease and low levels until the older age groups.



From the data, death rates were also calculated for each administrative region. In order to compare findings with standard thresholds, two types of mortality rates¹⁰ were calculated: (i) under 5 mortality rate and (ii) crude mortality rate. The UNICEF emergency mortality thresholds for Sub-Saharan Africa (SSA) are 0.9 for Crude Mortality Rate (CMR) and 2.3 for Under 5 mortality rate (U5MR).



¹⁰ Mortality per 10,000 persons per day = (# deaths in surveyed households / (# persons in surveyed households * 180 days)) * 10,000

As illustrated in the graph on the previous page, the death rates (CMR and U5MR) were calculated for each administrative area and then compared to the UNICEF standards. For Swaziland, all administrative regions are below the Under 5 mortality rate threshold for humanitarian emergencies in Sub-Saharan Africa which is good.

However, for crude mortality, all regions are just at the threshold or above the emergency levels with Shiselweni being of specific concern. The difference in crude mortality rate between Shiselweni and Manzini is statistically significant ($p < 0.05$). In the Shiselweni sample, 17% of the households had at least one productive member who could not work due to chronic illness. These differences do not necessarily mean that the infection prevalence is higher in Shiselweni – it could mean that they have less access to treatment as well.

Relationships between HIV and AIDS proxy indicators and vulnerability indicators

The table below illustrates the main vulnerability indicators by HIV and AIDS proxy indicators (death of a member 15-49 years, chronic illness of a member 15-49 years, orphans living in the households) and the statistical significance of their relationships.

Type of proxy	Death of HH member (15-49 years)		Chronic illness of HH member (15-49)		Orphans in HH		Total
	None	At least one	None	At least one	None	At least one	
Number of households	743	226	857	112	548	421	969
% household poorest	34.3%	33.8%	35.5%	39.3%	36.1%	31.7%	34.2%
Household has worst coping index (≥ 4)	21.5%*	27.4%	21.5%*	33.9%	19.7%*	27.1%	22.9%
Weighted food diversity	28.15	26.44	27.98	25.99	27.60	28.00	27.75
Household taking loan	21%	25%	21%	28%	21%	23%	22%
Household with orphans	41%*	51%	42%*	55%	-	-	43%
Child dropped out of school	10%	16%	10%*	18%	6%*	18%	11%
Child missed school	18%*	24%	19%	21%	17%*	22%	19%
Mean BMI of mother (kg/m ²)	27.5	26.7	27.3	26.8	27.9*	26.4	27.3
Child (0-5) wasted	2.6%	2.8%	2.8%	1.2%	2.3%	3.0%	2.6%
Child (0-5) stunted	34.6%	38.6%	35.3%	37.7%	36.1%	34.9%	35.6%
Child (0-5) underweight	13.3%	12.9%	13.1%	14.1%	11.6%	15.2%	13.2%

* $p < 0.05$

The following are some of the main findings:

- There is no relationship between the proxy indicators and socio-economic status of the household
- There is a statistically significant relationship between all proxies and a higher level of coping, especially for chronic illness of HH member and presence of orphans in the household.
- Households with a recent death of a member or a member (15-49 years) who is chronically ill have lower dietary diversity and thus are less food secure.
- Households with a chronically ill member are more likely to have borrowed money in the past year.
- Households with the recent death of a member or with a chronically ill member are more likely to be hosting orphans.

- For all proxy measures of an HIV and AIDS affected household, children were significantly more likely to have dropped out of school than those without. Children from households hosting orphans were 3 times more likely to drop out of school than those without. However, only 11% of all children of school age had dropped out of school.
- Rates of missing school were also higher for children from households with recent deaths or those hosting orphans.
- The body-mass index of women was slightly lower in those caring for orphans.
- There appeared to be no significant relationships between child nutritional outcomes and proxy indicators of HIV and AIDS from this survey.

Programmatic recommendations

The links between ill health and poverty are well documented and provide a powerful argument for placing responses to HIV and AIDS at the centre of the international development agenda (WHO, 2001; UNAIDS, 2006). Nevertheless it is important to stress that AIDS mitigation cannot be seen as an alternative to HIV prevention – it is a vital part of a comprehensive global response to AIDS. In cost-benefit terms, any success in preventing infection today represents a huge savings in money and effort in the future (UNAIDS, 2006). Therefore it is necessary to address HIV and AIDS in an integrated manner. A few recommendations are:

Decrease the impact of the pandemic

- Increase antiretroviral therapy coverage. Studies in Sub-Saharan Africa have concluded that access to ART can have a rapid impact not only on the health of someone living with AIDS, but on their social and economic welfare. The study found that within six months of beginning treatment, the likelihood of the patient participating in the labour force increased by 20% and weekly hours worked increased by 35 percent (Thirumurthy et. al. 2005, UNAIDS, 2006).
- Increase social safety nets for households affected by HIV and AIDS. In China, the programmes include free schooling for children orphaned by AIDS and care and economic assistance to the households living with HIV and AIDS. Other options include welfare programmes, child and orphan support, public works to provide employment, state pension systems, destitution allowances and microfinancing. Since people most affected by AIDS are those who are least able to pay for services, specific pro-poor payment strategies such as exemptions and vouchers for people below a certain income level may need to be instituted in places where medical services involve user fees (Onwujekwe and Uzochukwu 2005, UNAIDS 2006). Recently, UNICEF commissioned a massive study of social protection interventions aimed at reaching orphans and other children made vulnerable by AIDS in 15 countries of eastern and southern Africa. These findings can be useful in targeting such programmes.

Decrease infection rates

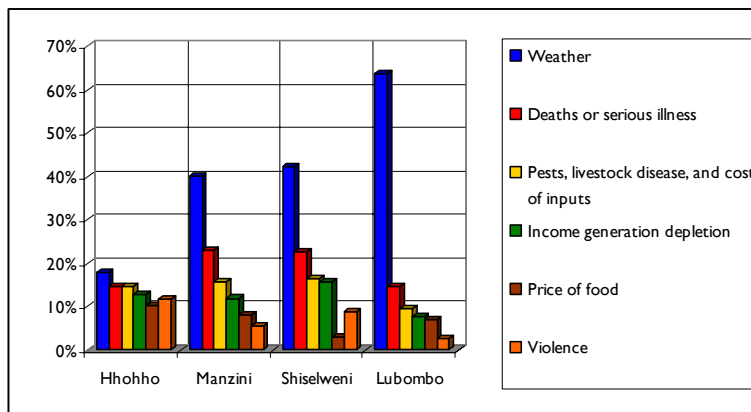
- Free drugs to HIV-infected pregnant women to prevent mother-to-child transmission and free HIV testing of newborn babies

- Increase dissemination of knowledge on prevention and treatment of HIV and AIDS, including free and easy access to condoms
- Set up programmes to decrease vulnerability and poverty

3.9 – Shocks and coping strategies

Nearly two-thirds of the households reported that they had suffered some unusual shock during the previous 12 months that

had limited their ability to eat, live and retain assets in the manner of which they were accustomed to. The reported occurrence of shocks was lowest in the Hhohho sample (51%) and highest in Lubombo

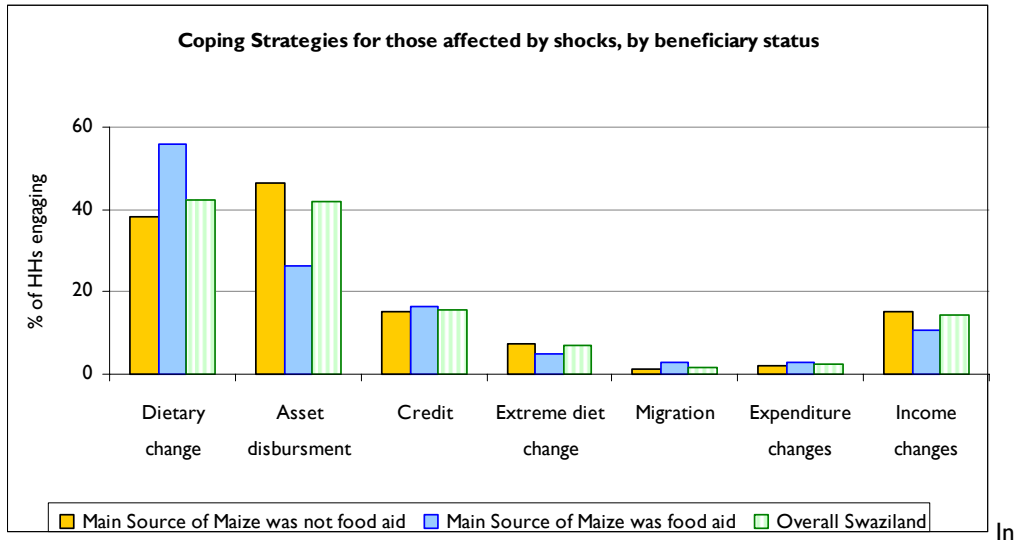


(74%). For the households affected by shocks in Lubombo, more than 60% reported it was a weather-related event, which was much higher than found in Hhohho (18%) and Manzini and Shiselweni (about 40% each). Shocks such as deaths or serious illness of family members were most often reports in households in Manzini and Shiselweni while more than 10% of the households in Hhohho reported that they had experienced a violent shock in the previous year. These occurrences of shocks are summarized in the chart above.

The strategies used by households to manage the shocks can be classified into two main groups:

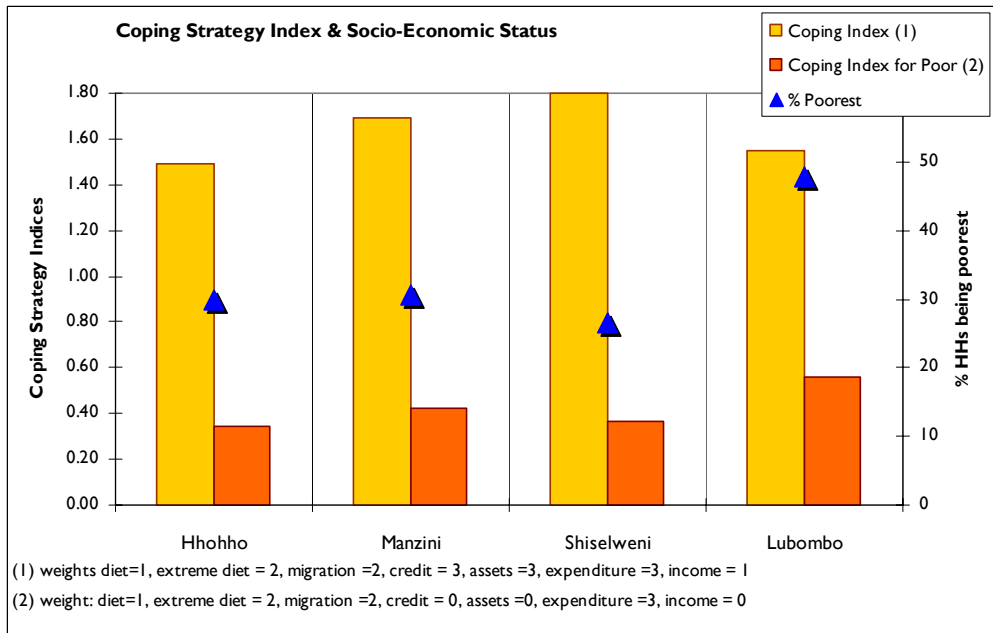
Non-extreme dietary changes (decrease portion sizes, decrease number of meals per day, eat less preferred foods and consume more wild foods) and **asset disbursements** (spending savings; sales of HH assets, agricultural implements, building materials, furniture or livestock). Among the households that suffered shocks, 42% were using changes in diet and another 42% were primarily engaged in asset disbursements to manage shocks. Nearly 20% reported seeking loans or credit or engaged in additional income generating activities in response to shocks.

Although these findings reveal surprisingly similar rates of dietary change and asset disbursement, the distribution of food aid masks great differences for these two groups ($p < 0.01$). While almost 60% of the food assistance beneficiary households engaged in dietary changes, only 26% engaged in asset disbursements. On the other hand, virtually the same number of non-beneficiary households used dietary changes (40%) or asset disbursements (43%) in response to an external shock.



the analysis, two types of coping indices¹¹ were developed for Swaziland. The first followed the recommendations on weighting¹² on all types of coping strategies and the second was tailored to factor in the special situation of poorer households, meaning that they did not include asset and income dependent strategies.

While there was no statistically significant difference in coping strategies index (CSI) between the different regions, the coping index tailored for use among poor households showed statistically significant ($p < 0.05$) differences between the Lubombo sample and the other regions. As was already noted, the households in Lubombo reported the highest exposure to external shocks and are also in the region with the highest percentage of poor. These findings are summarized in the graph below.



¹¹ The Coping Strategies Index (CSI) was developed by CARE and TANGO, Maxwell et. al. 1999

¹² Changes in diet = 1, Extreme changes in diet = 2, migration = 2, credit or loans = 3, asset disbursements = 3, changes in expenditure = 3, and changes in income strategies = 1

IV. Integrated analysis – Food access clusters

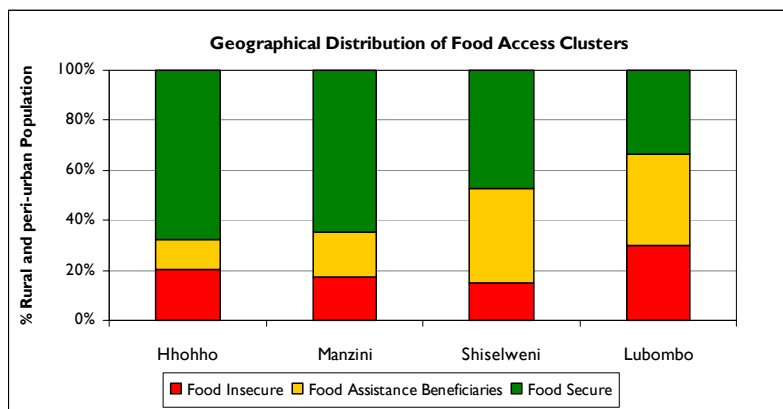
As outlined in the analytical methods section (Part II), two-step cluster analysis¹³ was used to identify the households with poor access to food. The variables used and the main outcomes are described in Part II of this report where four groups were presented:

- Food insecure (in terms of access to food)
- Food assistance beneficiaries
- Moderate to good food access
- Best access to food

The unknown food access situation of food assistance beneficiaries

One main problem faced by the Swaziland VAC in analysing the food access situation of rural households is that a large percentage were recipients of food assistance. This assistance impacts the very indicators used to assess food access, namely dietary intake and expenditure patterns. In addition, the fact that most of these households are located in Shiselweni and Lubombo also adds bias to the interpretation of findings across all regions. In terms of consumption, these households do not have poor dietary intake but do appear more likely to be poor and to use risky coping strategies. The main unanswered question is whether or not these households would be reasonably food secure or not without food assistance. Therefore they are presented as a separate group in this section.

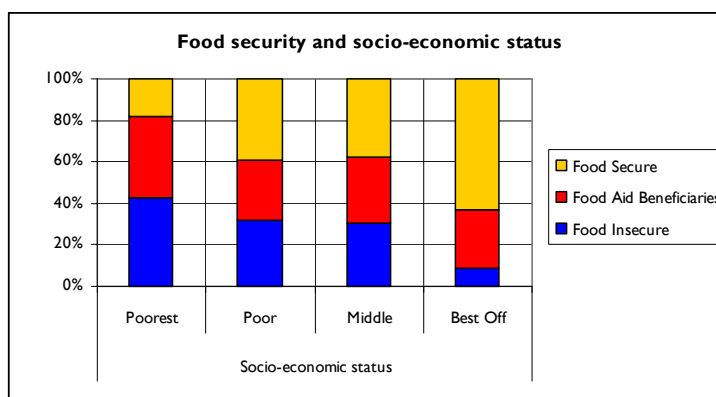
For the rest of this section, the comparative analysis will present findings with ‘moderate to good food access’ and ‘best access to food’ as a single ‘food secure’ group. The graph below shows that



Lubombo has the greatest percentage of food insecure households – around 30% of the total sample. The Hhohho and Manzini samples have the greatest proportion of food secure households –

around 70% of the rural and peri-urban population in those regions. When compared to Lubombo, households in Shiselweni are less likely to be food insecure yet they also have the largest proportion of households receiving food assistance. However, around half of the households in the Shiselweni sample were classified as being food secure.

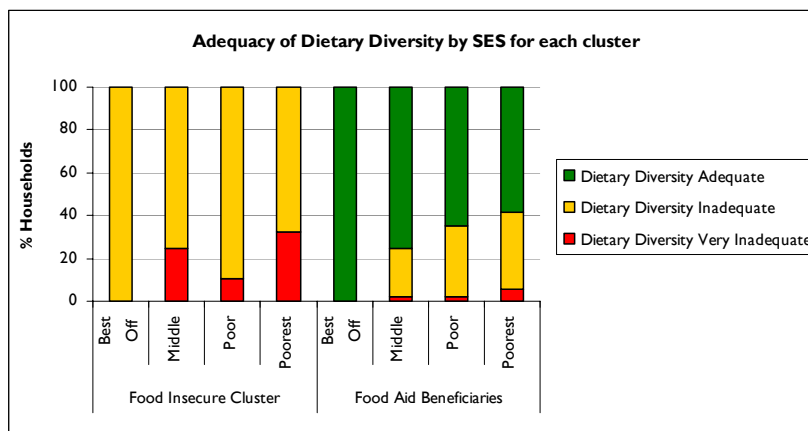
The graph on the right shows the relationship between socio-economic status and food security groups. The highest percentage of food insecure households are found in the



¹³ The Two-Step Cluster Analysis procedure is an exploratory tool designed to reveal natural groupings (or clusters) within a data set that would otherwise not be apparent. The algorithm employed by this procedure allows for inclusion of both continuous and categorical variables and allows for automatic choice of optimal number of clusters (SPSS Help Guide)

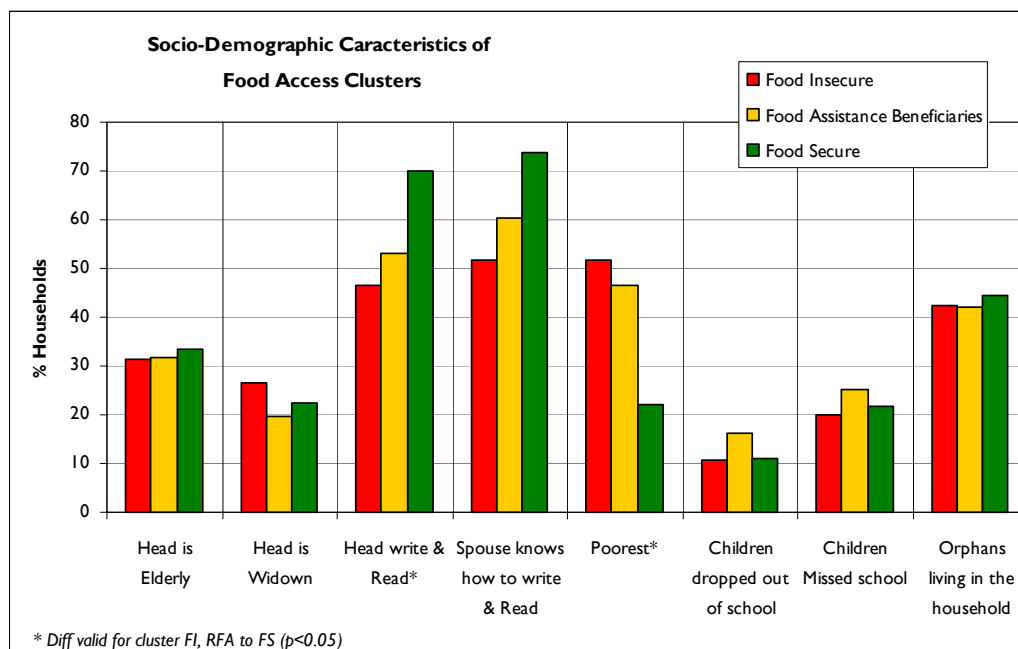
poorest wealth group – more than 40% of the poorest households are food insecure. Around 30% of the poor households are food insecure and about the same percentage of the middle wealth households are food insecure. The lowest percentage of food insecure are found among the best off households. It is important to note that 20% of the poorest households are classified as food secure in this analysis showing that the relationship between poverty and food insecurity is not absolute. Interestingly, there are similar percentages of food assistance beneficiary households in each of the wealth groups except the poorest. Around 40% of the poorest households are receiving food assistance.

Analysis on the food consumption and dietary diversity, controlled for the socio-economic status of the households presents interesting findings. Firstly, there were no households classified as being food secure that had poor dietary consumption. The graph below shows the findings for the two



groups where there was inadequate dietary diversity. It can be noted that there is an apparent relationship between socio-economic status and dietary diversity within

each group where, households identified as best off tended to have better food consumption – all of the best off food assistance beneficiaries had good food consumption. In fact, very few food assistance beneficiaries had very inadequate (poor) dietary diversity.



On the other hand, even the best off of the food insecure households could not achieve good food consumption or adequate dietary diversity. In addition, 30% of the poorest households in the food insecure group had very inadequate consumption.

When investigating the relationships between socio-demographic indicators and food security status, there were very few significant differences. These comparisons are presented in the graph above where the literacy of the head and spouse appear to be determining factors for food security in the rural Swaziland context. As already noted, there is a relationship between poverty and food security as well.

Summary and Recommendations

The way to determine food security status (access) is always controversial. Although many methods are available for analysis of food security, there has been little agreement on the most appropriate method. One key issue is that the most appropriate response to assist food insecure households should be dependent on whether they are suffering from chronic or transitory food insecurity. The main focus on this debate is whether or not relief assistance is an appropriate response to chronic food insecurity.

Presented below is a combination of criteria to allow decision makers to choose their most appropriate programmatic response. First the indicators/criteria are presented and defined and then their distribution is presented by administrative area.

Access to food – Two groups might be of concern to decision makers: the food insecure group and the food assistance beneficiaries. Because it is not possible to know what the situation of current beneficiary households would be without food assistance, two estimates of population in need are presented – one for the food insecure and one for the food assistance beneficiaries.

Socio-economic status – When comparing socio-economic status and food insecurity it is easier to identify those of the poorest households who are also food insecure. The concept behind this comparison is that the households identified as the poorest may need not only immediate relief assistance but also some longer term assistance to help break the cycle of poverty. Furthermore, the identification socio-economic characteristics of households can be useful for prioritizing programmes.

Dietary diversity intake – Research has proven that the dietary diversity of a household is a robust indicator of current food access as it reflects an outcome measure that is not impacted by food utilization and therefore allows for further prioritization of households. Those with very inadequate dietary diversity would need some form of immediate assistance while those with inadequate may need assistance as the lean season approaches. Because the dietary diversity intake of current beneficiaries of food assistance was usually adequate – likely a result of the impact of the food assistance – no analyses for this group is presented here.

Shocks or unusual situations – The comparison of food security status with whether a household had experienced a shock in the past 12 months is useful in determining the household's resilience to external and unexpected shocks and subsequent impact on household food security. This could lead

to the development of programmes to assist households in recovering from negative impacts of such events.

In summary, from the analysis there have emerged 6 different types of vulnerable households which would then require different combinations of interventions yet all would require regular monitoring.

1. **Food insecure and poorest:** These households could be characterized as being chronically poor and food insecure. They would most likely benefit from poverty reduction programmes as their food insecurity is most likely linked to poverty.
2. **Food insecure and poorest with very inadequate food consumption:** These households are not only chronically poor, but also chronically food insecure as determined by their poor dietary intake. They are different from those in Group 1 who do not exhibit very inadequate food consumption. These households would benefit from a combination of longer-term poverty reduction programmes accompanied by short-term targeted food or cash assistance.
3. **Food insecure and poorest with very inadequate food consumption and affected by shocks:** These are the most vulnerable households as they are not only impoverished and don't have enough resources for the most basic consumption, but they are also affected by shocks – most likely drought or HIV and AIDS. They would benefit in the longer-term from poverty reduction programmes, but would require immediate targeted food *and* cash assistance, but over a longer period of time to assist them in recovering from the affects of the shock. Then they could be enrolled into social protection/safety net programmes.
4. **Food insecure and poorest and affected by shocks:** These households are different from those in Group 3 in that their consumption is better yet they are still poor, food insecure and affected by shocks such as drought or HIV and AIDS. They would benefit also from poverty reduction programmes and targeted assistance (cash or food) that would last for the duration of the recovery period. Then they could be enrolled into social protection/safety net programmes.
5. **Current food aid beneficiaries who are poor:** These households are similar to those in Groups 1 assuming that the food assistance has improved their consumption. If the food assistance is stopped, most would probably fall into the Group 2 classification. They would benefit from longer-term poverty reduction strategies plus shorter-term development activities, once the food assistance is terminated.
6. **Current food aid beneficiaries who are poor and affected by shocks:** These households are similar to those in Group 3 and would benefit from poverty reduction programmes and shorter-term development activities that are combined with enrolment in social protection/safety net programmes.

The distributions of these types of households/populations are presented by administrative region and classification in the tables below. Further analyses are necessary to present findings by agro-ecological and livelihood zones and can be presented in a more in-depth technical report in the future.

Percentage of rural population

	Hhohho	Manzini	Shiselweni	Lubombo	Total
Sample size	224	230	211	250	915
Estimated rural population	203,100	284,400	224,400	163,100	875,000
Food insecure & poorest	11%	9%	5%	17%	11%
Food insecure, poorest & very inadequate diet	2%	1%	2%	8%	3%
Food insecure, poorest, very inadequate diet & unusual situation	0	0	2%	6%	2%
Food insecure, poorest and unusual situation	4%	7%	4%	10%	7%
Food aid beneficiaries and poorest	4%	8%	16%	19%	12%
Food aid beneficiaries, poorest and unusual situation	4%	5%	10%	16%	9%

Number of rural people

	Hhohho	Manzini	Shiselweni	Lubombo	Total
Estimated rural population	203,100	284,400	224,400	163,100	875,000
Food insecure & poorest	22,300	25,900	11,600	27,400	87,200
Food insecure, poorest & very inadequate diet	4,100	2,500	5,300	13,700	25,600
Food insecure, poorest, very inadequate diet & unusual situation	900	1,200	4,300	9,800	16,200
Food insecure, poorest and unusual situation	8,200	21,000	9,600	16,900	55,700
Food aid beneficiaries and poorest	9,100	22,200	36,200	31,300	98,800
Food aid beneficiaries, poorest and unusual situation	8,200	14,800	22,400	25,500	70,900

The Swazi VAC would like to conduct further analysis of these data to help determine more clearly the people suffering from chronic food insecurity and those experiencing an acute situation. However, based upon the current analyses, it seems that many households are chronically food insecure but those experiencing shocks would be classified as experiencing both chronic and transitory food insecurity.

The purpose of this study was not to make recommendations on specific interventions but to bring a better understanding of food insecurity, poverty and the effects of HIV and AIDS on rural households (i.e. vulnerability) in Swaziland.