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United Republic of
Tanzania

Comprehensive
Food Security and
Vulnerability Analysis
(CFSVA)

**Conducted in
December 2005 –January 2006**

**Strengthening Emergency Needs Assessment
Capacity (SENAC)**

Tanzania: Comprehensive Food Security and Vulnerability Analysis (CFSVA)

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Part 1 - Executive Summary

The Comprehensive Food Security and Vulnerability Analysis (CFSVA) is designed to provide data on food security and vulnerability in the countries that lack a recent comprehensive data set of a similar nature. The general assumptions in conducting these assessments are to provide a baseline data set on food security and vulnerability of the population. The study will first look at available secondary data. Then, primary data are collected at household level in order to cover five objectives:

- Who are the food insecure people in Tanzania?
- .How many are they?
- Where are the food insecure?
- What are the causes of food security in Tanzania?
- What are the implications for programming and is food aid the best option?

The need for such data was identified by the Food Security Information Team (FSIT) and technical support was provided by the World Food Programme (WFP). Due to the timing of this study, December 2005/Janurary 2006, the data collected for this study can be used to illustrate the impact of the recent drought on households in Tanzania (Tz). The survey was conducted using a two-stage random sampling technique of the rural population of Tanzania based on the latest population census. 126 households were selected from each of the 21 mainland regions and incorporated the 5 island regions of Zanzibar and Pemba into one single sampling unit (henceforth referred to as Zanzibar/Pemba[i]). The total number of households interviewed during the process was 2772. Data was collected using household questionnaires and community questionnaires that were administered by staff recruited by the National Bureau of Statistics, sub-contracted to conduct the survey. The following highlights the main findings of the report:

- **Food insecurity and vulnerability is highly prevalent in Tanzania.** 15% of households were found food insecure and 15% are highly vulnerable.

- **Food insecurity and vulnerability is present everywhere in Tanzania but varies regionally.** The central band of Tanzania shows the highest proportion of households that are food insecure. This differs from the generally accepted model of food insecurity in Tanzania and is likely to reflect the difference in the components of the assessment in identifying food security. In regions such as Dodoma, Singida and Tabora 45-55% of the households are food insecure. In Mwanza, Manyara and Kagera food insecurity affects between 20 and 30% of households. What is perhaps a surprising finding from this report is that in areas that are traditionally considered as food secure, a large proportion of households are food insecure; specifically Ruvuma and Iringa where 15% of households are classified as food insecure by the Tz CFSVA.

Map 1 - Proportion of Food Insecure Households in Tanzania

- **Food insecurity and vulnerability is present in all livelihood groups but varies greatly by group and location.** The Tz CFSVA identified 5 vulnerable livelihood groups. Poor income, Wage Laborers, Small Farmers, Remittance Dependents and Natural Resource Dependents all have 39-47% households that are food insecure or highly vulnerable. Small Farmers are almost ubiquitous through out Tanzania and although this is the most vulnerable group identified in Tanzania as a whole their vulnerability varies by location. The Poor Income livelihood are less widely spread, found predominately

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[i] This is neither a political nor an economic statement but rather reflects the logistics and survey cost constraints of conducting an additional 4surveys in these islands. It will be referred to as a "region" and not "strata" for ease of reading rather than to unnecessarily confuse the reader with technical jargon.

in Iringa, Ruvuma, Tabora and Mara. Food insecurity also varies greatly by location in this livelihood group. The most food secure groups are Salaried (Government allowance etc.), Traders, Skilled Laborers and Fisherfolk. However even in these groups there are between 13 and 20% households that are food insecure or highly vulnerable.

- **Reliance on "own purchase" for source of food is likely to reflect the situation at the time of the survey.** Own purchase of food was reported by two thirds of the population as the main source of food. This is unusual for a country that depends heavily on agriculture as a source of income. The context of the data collection period should be taken into account when reviewing this data. Drought had affected around 40% of the households and up to 50% of the Crop Farmers. Data was also collected during the traditional hunger period. The effect of this is likely to have decreased the reported reliance on own production and also increased the number of food insecure identified by the analysis. This is important when considering that geographic spread and level of food insecurity indicated by this analysis.

- **Drought is the most important shock experienced in Tanzania.** Covariate shocks are the main source of shocks experienced by households in Tanzania. Drought is experienced by about 45% of households in Tanzania. Few other shocks are significantly felt by the population, were high food prices is the next most reported shock (12%). This varies greatly by region and livelihood; the southern border regions report few households experiencing drought as a shock. The most important idiosyncratic shock is serious illness or accident (8%). The importance of drought to household food security is likely to contribute most significantly in reducing access/availability. The way in which it impacts particular livelihood strategies and its geographic severity is not yet assessed from this analysis.

- **Nutrition status of children varies by location and livelihood strategy and seems to be linked to food access but not food security.** Acute malnutrition, by some paradox, is recorded as Fisherfolk, the most food secure group identified by the Tz CFSVA. Other food secure groups also recorded higher rates of chronic malnutrition. Regional variation of acute and chronic malnutrition also shows higher prevalence of malnutrition in areas tend to be more food secure. This would suggest that, although access can be correlated to nutritional status, food security is not the most significant contributing factor. This can be seen in the fact that education of the caretaker contributes significantly to nutritional status of children. Other factors were explored but none show significant effects.

1 Introduction

As Tanzania is a relatively politically stable country in the African context, food security is defined predominately by developmental issues that face most sub-Saharan African countries. Issues of infrastructure, economic & agricultural policy, governance, education and provision of health care, to name but a few, play pivotal roles in household food security. Having emerged from a socialist regime, Tanzania is still developing its approach to the emerging market economy. In addition to the developmental issues in Tanzania, drought (and flooding in certain locations) poses a reoccurring threat to household and national food security. These threats are heightened by the low productivity by individual farmers. Labor intensive, small scale farming limits the outputs of many of the fertile areas in Tanzania. However, poor infrastructure contributes to post harvest losses and limit the ability to maximize what crops are currently produced, never mind increased production through mechanization or other methods. Generalized poverty throughout the country is a constant threat to household food security. Low household productivity, low levels of education, poor health care, poor market access, HIV/AIDS, disease, poor diet and high levels of chronic malnutrition are only some of the contributing factors to household food insecurity.

Although much data has been collected in Tanzania some gaps have been identified in terms of understanding household food security and vulnerability. The importance of data that considers a broader definition of food security becomes evident during the literature searches. The CFSVA set out to consider food security with a much broader perspective and collect data that would represent the population at large and in the livelihoods that it identified during the course of the analysis. The following report provides general background information on Tanzania, specific information on the study design and results from the data collected.

2 CFSVA objectives

For 2005, nine countries were prioritized to undertake a CFSVA by technical units within WFP Headquarters following discussions with WFP Regional VAM Advisers and Regional Bureau staff and ECHO[ii]. The overall objectives of these studies are to:

- Provide information to WFP decision makers and other actors focusing on food insecurity on how best to programme food/non-food assistance through an analysis of which and how many people are vulnerable to food insecurity, where these people are located, why they are food insecure, and how food or other assistance can make a difference in reducing hunger and supporting their livelihoods; and
- Improve the depth, scope and availability of country reports and datasets (numerical and spatial) for detailed secondary data analysis.

More specifically the CFSVA objectives for Tanzania are to:

- provide information on food security and nutritional status in rural Tanzania;
- document the resources accessible to rural households and resources allocation, including the livelihood and income earning activities pursued at the household level;
- assess rural communities' exposure to crisis and coping mechanisms used by rural communities
- evaluate the context (education, health, social structure) and future risks for food security and livelihoods;
- establish a typology and geographic distribution of households food insecurity and vulnerability to food insecurity and assess their geographic distribution; and
- recommend appropriate food and non food programme interventions to address both contextual and structural problems that affect food security in rural Tanzania

3 Definition, terminology and concepts

Within the CFSVA there are standard concepts and frameworks, developed by WFP/VAM Unit, which will be used for this assessment.

3.1 Food Security

According to the 1996 World Food Summit: *Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life [thus food insecurity is the inverse of this].*

[ii] These are: Angola, Afghanistan, Democratic Republic of Congo (in newly-accessible areas), Madagascar, Nepal, Niger, Southern Sudan, Uganda, Mali and Mauritania.

The food security status of any household or individual is typically determined by the interaction of a broad range of agro-environmental, socioeconomic, and biological factors. Like the concepts of health or social welfare, there is no single, direct measure of food security. However, the complexity of the food security problem can be simplified by focusing on three distinct, but interrelated dimensions of the concept: aggregate food availability, household food access, and individual food utilization.

Achieving food security requires addressing all three of these separate dimensions, ensuring that:

- The aggregate availability of physical supplies of food from domestic production, commercial imports, food aid, and national stocks is sufficient;
- Household livelihoods provide adequate access for all members of the household to those food supplies through home production, through market purchases, or through transfers from other sources; and
- The utilization of those food supplies is appropriate to meet the specific dietary and health needs of all individuals within the household.

3.2   Vulnerability

Vulnerability is another important food security-related concept. It can be defined as:

> *The probability of an acute decline in food access, or consumption, often in reference to some critical value that defines minimum levels of human well being.*

According to Robert Chambers[1], vulnerability represents "defencelessness, insecurity and exposure to risks, shocks and stress ... and difficulty in coping with them." By this definition, vulnerability is a result not only of exposure to hazards—such as drought, conflict, extreme price fluctuations, and others—but also of underlying socioeconomic processes which serve to reduce the capacity of populations to cope with those hazards. As indicated in the following diagram, the vulnerability status of any household or individual may change over time according to a complex combination of factors. Over time, individuals may cross various thresholds of human well being.

Through its emphasis on the implications for basic levels of human well-being, this definition of vulnerability also highlights the important interaction between levels of household food access and the health status of individuals. This interaction ultimately influences the extent of under-nutrition within vulnerable populations and can determine levels of starvation-related mortality. This understanding of vulnerability can be summarized as follows:

Figure 1 - Vulnerability & Food Security Framework

Vulnerability = exposure to risk + ability to cope[2]

From WFP (2000), derived fromWebb, et al (1993)
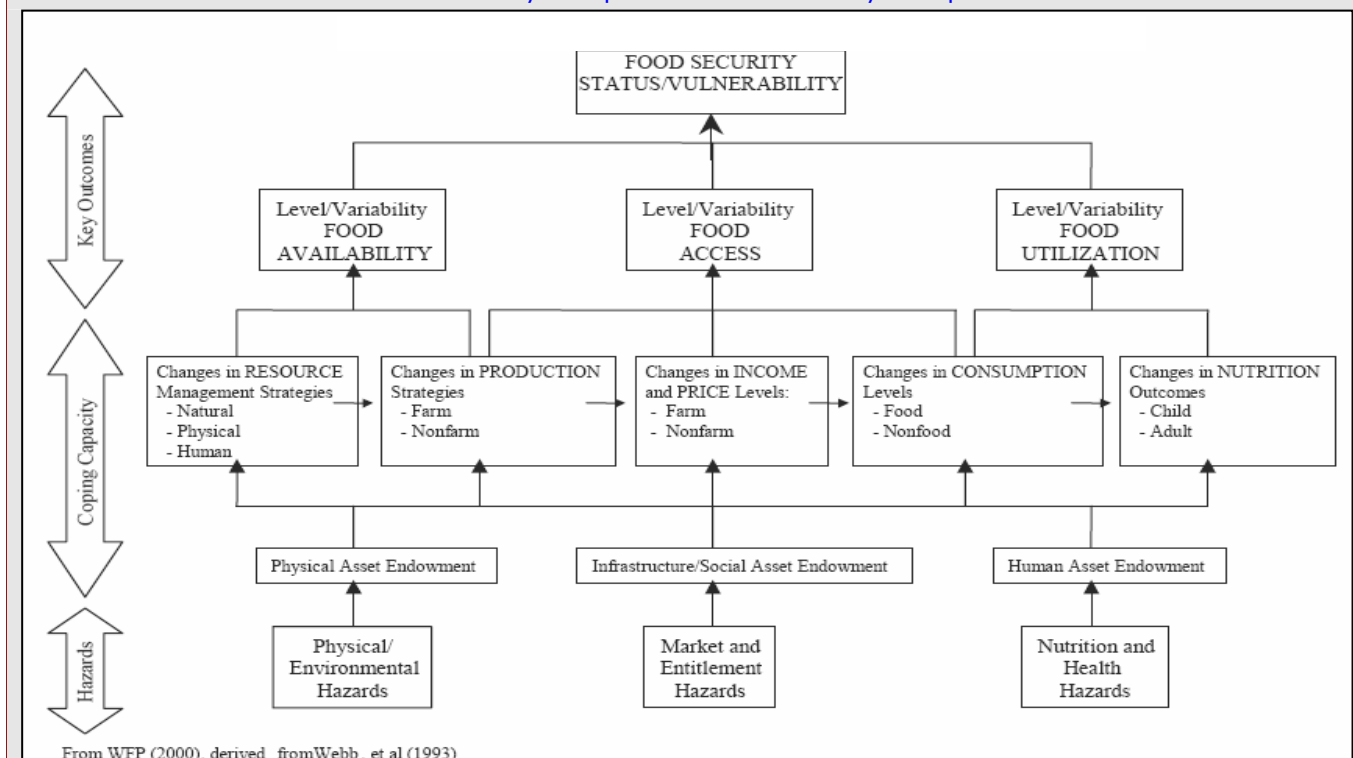
In this framework, exposure to risk is determined by the frequency and the severity of natural and man-made hazards, as well as the socioeconomic and geographic scope of those hazards. The determinants of coping capacity include household levels of natural, physical/economic, and human assets, levels of household production, levels of income and consumption, and, importantly, the ability of households to diversify their sources of income and consumption to effectively mitigate the effects of the risks that they face at any given moment.

The analytical framework used by WFP in the CFSVA is as follows, taking into consideration determinants of food security and vulnerability discussed above.

4 Sources of data

4.1 Secondary data review

There is a wealth of data available in Tanzania. The major data sets come from the measurement of poverty, health & demographics and agriculture. The analyses and reports predominantly focus on poverty and poverty alleviation and go about illustrating the socioeconomic status of the household with respect to poverty alleviation. However data available does not necessarily identify the degree of vulnerability that these households are subject to with quantitative data at the household level.

From the data that is available in Tanzania, risk factors were assessed and potential sources of vulnerability identified as guidance to enhance further primary data collection during the CFSVA process.

4.2 Primary data collection

4.2.1 Survey instruments

From the analysis of secondary data available in Tanzania and experiences in other countries where the CFSVA had been conducted survey tools were drafted for presentation to a technical working group of the Food Security Information Team (FSIT)[3]. From these drafts a number of amendments where made and the tools further contextualised to capture the most appropriate information possible. After finalising the contents of the tools were field tested, translated, repeat-field tested and finalised. The tools used in the assessment were as follows:

- **Household Questionnaire**[iii] – This questionnaire was the focus of the primary data collection and was designed to provide quantitative data in the following nine areas of interest; 1) **Demographics**, 2) **Housing & Facilities**, 3) **Household Assets & Productive Assets**, 4) **Inputs to Livelihood,** 5) **Expenditure**, 6) **Food Sources & Consumption**, 7) **Shocks & Food Security**, 8) **Maternal Health & Nutrition** and 9) **Child Health & Nutrition**. This tool was a structured questionnaire using tested response options for the enumerators to record the most likely and common responses to the questions. An "other - specify" option was used to capture less likely/uncommon responses. Response options were not read to the respondent. For several questions respondents were allowed to provide more than one response.
- **Anthropometric Measurements** – In order to assess the nutritional status of caretakers aged 15-49 years and children aged 6-59 months weight, height and age were recorded. Height was measured using adult/child multi-stage height-boards to the nearest 0.1cm. Weight was measured using Scale 890 – SECA electronic scales to the nearest 0.1 kg. Age was assessed from the caretaker to the nearest year by asking the individual and for the child either the health card was checked or the caretaker was asked to recall the month of birth with the assistance of a local calendar of events.
- **Community Questionnaire**[iv] – This questionnaire was both qualitative and quantitative and designed to provide information that is common to the majority of the sampled village population. This was in order to reduce the duration of the household interview. Qualitative questions helped to provide context to the data provided from the household questionnaires. This questionnaire contained 7 sections; 1) **Demographic Information**, 2) **Transportation**, 3) **Education**, 4) **Health**, 5) **Market Information**, 6) **Assistance & Food Aid** and 7) **Agriculture**.

4.2.2 Survey Teams

The CFSVA was conducted by the Tanzania National Bureau of Statistics, as sub-contracted by WFP. The 22 teams of 4 people were used to conduct surveys in 22 survey zones, as described in the next section. Each team consisted of 1Team Supervisor; 1Community Interviewer; 2 Households Interviewer. The team supervisors had previous experience in conducting food security type surveys and the enumerators also

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[iii] See Annexes
[iv] See Annexes

had prior experience in conducting food security surveys. At least one of the team members had previous experience in taking anthropometric measurements.

Due to the large scale of the Tanzanian CFSVA (22 surveys including 88 enumerators) and time constraints, training for the data collection teams was conducted in two stages. A central training was provided for all the supervisors and facilitated by the WFP CFSVA consultant to ensure that complete and comprehensive training was provided. The enumeration teams[4] were trained at different locations, in small groups to facilitate improved learning, by the supervisors with assistance from senior NBS staff and attended in certain locations by WFP staff.

4.2.3   Sampling procedures

The purpose of the Tz CFSVA was to further understand vulnerability and food insecurity at the household level throughout rural Tanzania at regional level and by livelihood. However Tanzania is a large country and consists of 26 regions (21 mainland and 5 island regions) of numerous livelihood types. Within these 26 regions there are 126 districts. These regions vary greatly in size, some regions the size of districts in other regions, and are heterogeneous in respect to livelihoods. For the Tanzanian CFSVA only rural households were considered. Population data was taken from the 2002 Census[5]. Villages (or Shehia[v]) that were documented in the Census as "Urban" were removed from the list prior to making the village selection.

The analysis of vulnerability and food security at the district level would be the most revealing. However the scale of such an assessment is prohibitive in terms of cost and therefore regions were used as the principle sampling strata for this study. **For the purposes of this study the five island regions were considered as 1 sample strata (henceforth referred to as Zanzibar/Pemba) and therefore a total of 22 surveys were conducted in their corresponding regions.**

The resulting sample will represent the population only at the administrative level of region. Further analysis using district level data collected from the Agricultural census 2002 provided the basis for the livelihood analysis component of the Tz CFSVA (see explanation in **Part 3, Section Part 41.2**). As stated previously the small sample size does not permit interpretation of the results at the district level.

The household sample was taken using a two-stage random sample method. Fourteen villages were randomly selected with probability proportional to size for each Region (an additional 3 villages were selected as replacements incase the village could not be located or was not reachable within the time frame due to extreme logistical and transport constraints; total of 17 villages selected during the randomization process). Upon arrival at each village the supervisor of the team, with the assistance of the village authorities, identified the total number of vitongoji (smallest administrative area). From this list one kitongoji[vi] was randomly selected using a random number table. The purpose of selecting individual kitongoji was to reduce movement around often large expanses of the villages. The assumption is that the villages are relatively homogenous with each kitongoji being representative of the village as a whole.

Once the kitongoii was selected a complete list of households was made with the assistance of the local leaders. From this list 9households were randomly selected using a simple random selection (3 additional households were selected in the event that households selected were not available for survey). The head of the household (at least 15 years or older) was interviewed during the survey. Where a selected household or individual were absent or declined interview this was recorded and one of the additional randomly selected household were interviewed.

The minimum sample size for the whole survey was **2,772 households**. Within each region data was collected from a minimum of 126 households (14 villages x 9 households). The WFP zones that were identified using the PCA had differing numbers of households depending on the size of the zone. The table following shows the selected districts in each zone.

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[v] A Shehia is the terminology used in Zanzibar & Pemba which roughly equates to village on the mainland.
[vi] Singular of vitongoje

Map 2 - Nine Zones of the WFP Strata for Tanzania
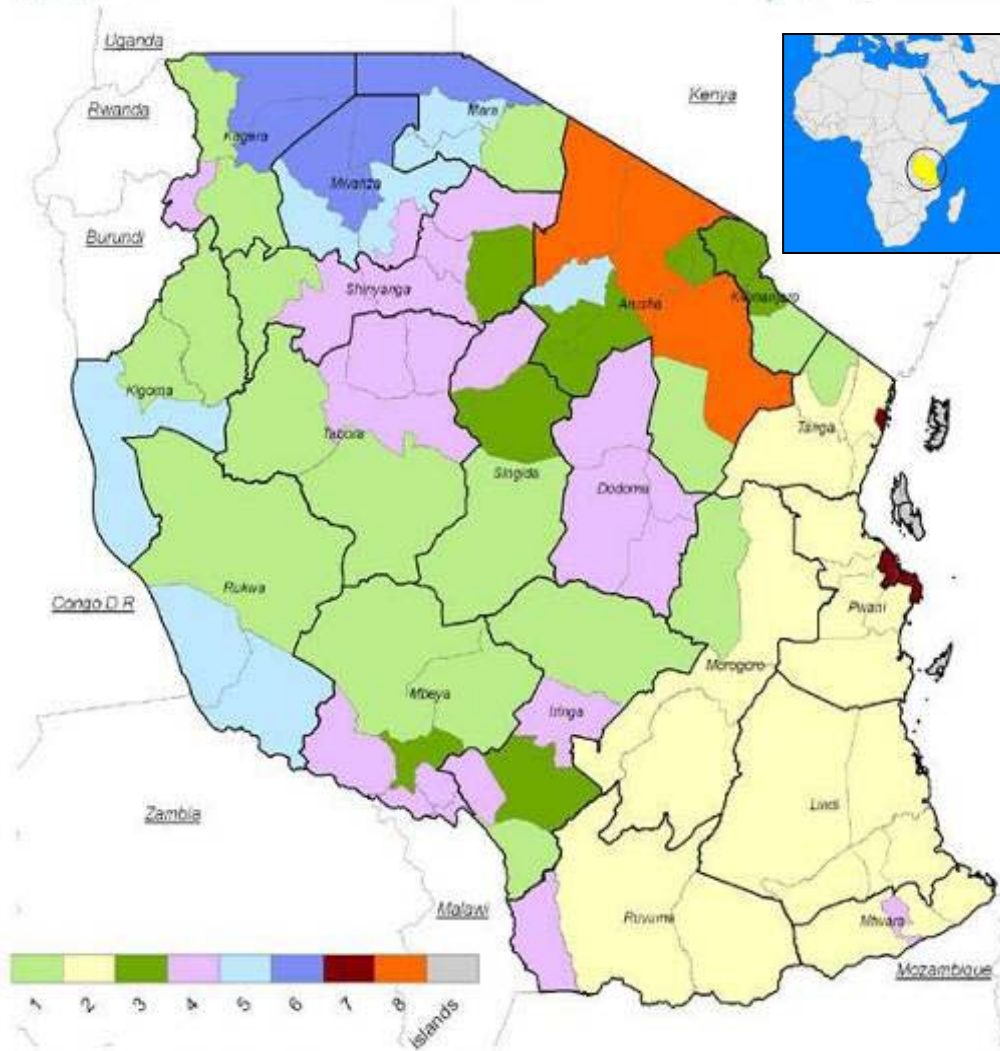
WFP Zone	Regions	Districts	Regions	Districts
1	Iringa	Iringa	Morogoro	Kilosa
	Kagera	Karagwe, Biharamulo	Rukwa	Mpanda
	Kigoma	Kibondo, Kasulu	Shinyanga	Bukombe
	Kilimanjaro	Same	Singida	Manyoni
	Manyara	Kiteto	Tabora	Urambo
	Mara	Serengeti	Tanga	Lushoto
	Mbeya	Chunya, Mbarali		
2	Lindi	Kilwa, Lindi, Nachingwea, Liwale, Ruangwa	Pwani	Bagamoyo, Kibaha, Kisarawe, Mkulanga, Rufiji
	Morogoro	Morogoro, Kilombero, Ulanga	Ruvuma	Tunduru, Songea
	Mtwara	Mtwara, Newala, Masasi, Tandahimba	Tanga	Korogwe, Muheza, Handeni
3	Arusha	Arumeru	Mbeya	Mbeya
	Iringa	Njombe	Shinyanga	Meatu
	Kilimanjaro	Rombo, Mwanga, Moshi, Hai	Singida	Singida
	Manyara	Babati, Hanang, Mbulu		
4	Dodoma	Kondoa, Kongwa, Dodoma	Ruvuma	Mbinga
	Iringa	Mufindi, Makete	Shinyanga	Bariadi, Maswa, Shinyanga, Kahama
	Kagera	Ngara	Singida	Iramba
	Mbeya	Kyela, Mbozi	Tabora	Nzega, Igunga, Tabora
	Mwanza	Kwimba		
5	Arusha	Karatu	Mwanza	Magu, Geita
	Kigoma	Kigoma	Rukwa	Sumbawanga, Nkansi
	Mara	Musoma, Bunda		
6	Kagera	Bukoba, Muleba	Mwanza	Ukerewe
	Mara	Tarime		
7	DSM	Kinondoni, Ilala, Temeke	Tanga	Tanga
8	Arusha	Monduli, Ngorongoro	Manyara	Simanjiro
9 (islands)	N. Pemba	Wete, Micheweni	S. Unguja	Central, South
	N. Unguja	North 'A', North 'B'	Urban West	West
	S. Pemba	Mkoani		

4.2.4 Data entry and statistical analysis

Data entry for the household questionnaire and community questionnaire was operated by National Bureau of Statistics. The data entry tool was developed by NBS and used an in house system. Statistical analysis was conducted by WFP in Tanzania and Rome. SPSS 12.0 and ADDATI 5.2c were used to conduct PCA and clustering analysis. Nutritional indicators were calculated using EpiInfo v6.04d EPINUT. All other analysis was done using SPSS 11.5 & 12.0.

5 Limitations to the study

While the study was conducted in the most rigorous manner possible, some limitations must be acknowledged.

- **Representativeness:** Data were collected to be representative at the regional level (secondary administrative level consisting of a number of districts). Zones were created to achieve relatively homogeneous strata for the livelihood analysis; however variability within these remains high. Data can be used for comparison across strata but not within. One should be cautious about drawing conclusions on an individual's food security and vulnerability from aggregated data. Also, the resolution of livelihood diversity is only possible at regional level and it is not possible to illustrate the likely diversity within each district. Additional research to refine targeting should be conducted before any programs are implemented.

- **Questionnaires:** Both the household and community questionnaire were translated into Swahili to reduce individual variation in how enumerators understood the questions. Intensive training was provided to the supervisors and enumerators in small groups. Despite all efforts to reduce error in understanding of the concepts and individual questions contained in the questionnaires, misinterpretation of the questions contained in the survey tools is possible and may have affected the outcome of the analysis.

- **Data collection:** The random nature of the site selection and the large geographical areas of some of the regions surveyed meant that in some of the regions the distances between the villages sampled was large. This combined with the short period available for data collection resulted in time pressure for some of the survey teams. However the majority of the survey teams were able to complete the data collection in the allocated time without such pressure.

- **Data quality:** Inaccurate recall and quantitative estimates may have affected the quality of the results. The experience of the enumerators and additional training was used to facilitate such recalls and estimates through various methods (e.g. event calendars, proportional piling). In some cases social desirability[vii] and expectations (e.g. food aid) may have affected the responses. During the training the enumerators were briefed on the importance of ensuring that the interviewees understood that there was no direct benefit from participation in the CFSVA nor would the interview process result in inclusion in an intervention.

- **Nutritional data:** The CFSVA collected nutrition data (anthropomorphic measurement). The sampling procedure did not follow the generally accepted standards of collecting data on women and children in a household (i.e. using a 30x30 2stage random sample design). Additionally, although every attempt was made to ensure that there was an enumerator with experience in taking anthropometric measurements in each team and that training was provided to the supervisors, the quality of the measurements are only as reliable as the care taken in making the measurements even given adequate training. Moreover, the CFSVA has a sample size of 1,934 compared to other related surveys (like DHS) with much higher sample size, including the recent TFNC survey done a month before the CFSVA (23,000 individuals). This might result to limitations in the extent some variables can be interpreted to reflect the situation on the ground and also on the extent here can be compared to other surveys of the same nature. Some of the results of the TFNC survey have been included in the text as a matter of comparison.

- **Health data:** Information on diseases and other health problems are self-reported and were not necessarily confirmed by medical diagnostic.

- **Livelihoods:** Due to the sampling framework and the random nature of the sample some livelihoods that are known in Tanzania may not appear as distinct groups in this analysis. The group that will most likely to cause note is pure Pastoralists (as opposed to Agro-Pastoralists that do appear in the analysis). This means that groups that are represented in small, physical, numbers in the total population are likely to be missed in this study. This does not reduce their

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[vii] When a respondent answers in a way that he or she thinks will please the interviewer or result in direct benefits to him or her.

significance in terms of vulnerable groups, it simply means that further work needs to be carried out specifically sampling from these minority populations.

- **Contextual:** The data was collected during late December/early January. At the time of writing it is becoming clear that failed rains have affected a large part of Tanzania resulting in loss of crops in many districts in Tanzania. Consequently the ability of the CFSVA data to reflect a "normal" situation will be hindered as it is likely that those indicators whose recall period were for the recent past or for the current situation may well have altered as a coping mechanism; for example food consumption patterns. Therefore interpretation of the results can not necessarily be interpreted as being "normal" for Tanzania but rather specific to that year.

1   General historical and political context

Mainland Tanganyika and its island neighbor Zanzibar, became independent in December 1961 and December 1963 respectively. In 1964 the two formed a union known as the United Republic of Tanzania. more than four decades of change. Zanzibar has its own parliament and president.

Tanganyika had inherited an economy torn and dilapidated by many years of colonialism. There was a very low level of literacy, a poor infrastructure and a high rate of disease and poverty. In response to this, in 1967, the new leadership made the then famous Arusha Declaration on Socialism and Self-reliance as the country's development blueprint. The cornerstone was Ujamaa, a policy of "villagisation" whereby the rural population was grouped into village communities to cultivate land together and be provided with essential services. The object was that they should be self-sufficient in basic needs and the nationalization of factories, plantations, banks and private companies. But a decade later, despite financial and technical aid from the World Bank and sympathetic countries, this program had failed due to inefficiency, corruption, resistance from within and the rise in the price of imported petroleum. However, although the economic performance of the period was far from satisfactory, standards of living did improve. Access to education and health services was extended and national unity was consolidated.

After Ujamaa's policies of self-reliance, President Nyerere's successor, President Ali Hassan Mwinyi, negotiated an adjustment programme with the Bretton Woods institutions**.** Since 1986 the country has been involved in a series of adjustment programmes following **t**he first agreement with the IMF. Tanzania had effectively no choice and was forced to implement drastic measures in an attempt to create an environment favorable to investment in all the economic sectors. The 1990s have seen an acceleration of the reforms with considerable effort going into the key programme of decentralization.

In the early 1990s the ruling party "Chama Cha Mapinduzi" (CCM) sensed that the democratic movement was gaining ground across Africa. A multiparty system was introduced in July 1992 and the first multiparty elections were run in 1995. Benjamin William Mkapa became President of the United Republic of Tanzania.

The general elections (President, Parliament and Local Government) in 2000 resulted in a 72% majority for the ruling party CCM over the opposition. In 2005, CCM won the elections in both the Mainland and Zanzibar.

The main political tasks facing the government are to maintain good relations with external donors, deal with the large number of refugees in the country, and keep the peace process on Zanzibar moving ahead.

Governance Issues

Tanzania's track record of reform has restored donor confidence and paved the way for the Poverty Reduction Growth Facility (PGRF) support programme from the IMF in 2000 and 2003 and considerable debt relief through the Heavily Indebted Poor Countries initiative (completion point reached by end 2001).

The country also suffers from widespread corruption[6]. Consequently, issues of public funds management, transparency and accountability for the use of public funds have taken a growing importance over the last years. National and ministerial strategies to fight corruption have been developed[7], but no effective legal action against any leader has been concluded. Far-reaching Public Finance Management Reform, Public Sector Reform and Local Government Reform Programmes are being implemented and will have a considerable impact on the management of public funds and on the provision of public services. The Local Government Reform will further promote a stronger participation of the population as increased decentralization takes decision-making closer to the actual beneficiaries.

2   Macro Economic Situation

Since the 1990s, per capita GDP in Tanzania has been on the rise. Yet in 2003 the level of per capita GDP, at 287 USD, remains well below the average of 633 USD for low-income countries of sub-Saharan Africa and ranks 164th of the 177 countries listed on the UNDP Human Development Index[8]. The income disparity is even more striking when measured in purchasing power parity (PPP)[viii] dollars. While Tanzania's per capita GDP in 2003 was 621 PPP dollars, the average for sub-Saharan Africa was three times as high, at 1,856 PPP dollars; for low income countries globally the figure is even higher, at 2,168 PPP dollars.

Figure 2 - GDP growth in Tanzania
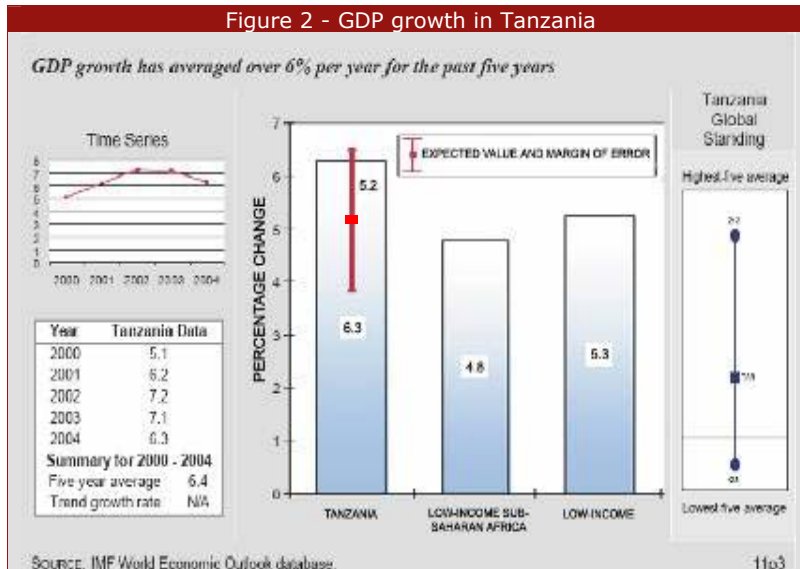
On the other hand, Tanzania's growth trend has been impressive; annual GDP growth has averaged 6.4 percent over the last five years, exceeding seven percent in 2002 and 2003 (Figure 3 above). Tanzania's growth rate of 6.3 percent in 2004 led by good performance of agriculture (+5.1%), in particular sisal and cotton, although subsistence agriculture fared less well because of poor rains, increased activity in mining (+14.1%, gold in particular), construction (+11%). Growth is highly export led, as non traditional exports outperform traditional agricultural exports. Headline inflation went also down from over 30% (1995) to under 6.3% in 2004. This strong growth performance reflects the fruits of responsible monetary and fiscal policy, concerted reforms, rapid export growth, and significant debt relief.

Basic indicators of productivity are signaling excellent growth prospects. Growth in labor force productivity averaged 3.2 percent per year from 1999 to 2003, and exceeded 4.5 percent for the last two years of the period. Current labor productivity growth is more than double the average for sub-Saharan Africa (1.9 percent).

2.1   Trade

The economy is heavily dependent on agriculture (primarily coffee, cotton, cashew nut, tobacco, tea, sisal, and pyrethrum, cloves for exports; maize, rice, wheat, cassava, for local consumption), which accounts for more than 45% of GDP, over 80% of rural employment and 30% of foreign exchange earnings. The Economic Survey, 2004 reports that the export value of grains decreased by 13.0% to USD 106.9 million from USD 122.9 million in 2003. The decline was due to the decrease in export volume of those goods, particularly to the neighboring countries. Tanzania also has reserves of iron ore, gold, diamonds & other gemstones, along with some other mineral ores and natural gas reserves.

2.2   Private Investment

Tanzania is in the midst of pursuing major institutional and sector reforms with a view to solving structural weaknesses in the economy, improving macro-economic management and encouraging private sector development and foreign investment. In 2003 the National Trade Policy and small and Medium Enterprises Policy was launched by the then Vice-President. These two constitute a milestone on the road towards stimulating the development of a robust private sector in the country. However the troubling part of Tanzania's growth performance is the low level of investment. Gross fixed investment averaged only 17.4%[9] of GDP from 1999 to 2003 and remains below the 20% required to sustain rapid economic growth, putting into question Tanzania's ability to maintain the strong performance in recent years. Similarly, the Net foreign direct investment inflows and the other private flows represent 2,6% in 2003[10]. Even if it is slightly higher than other countries in the region (Malawi, 1,3%; Rwanda, 0,3%; Burundi, 1,3%; Uganda, 3,2% and Mozambique 7,8%), it suggests a compelling need to focus donor intervention on improving the business enabling environment.

[viii] A method of measuring the relative purchasing power of different countries' currencies over the same types of goods and services. Because goods and services may cost more in one country than in another, PPP allows us to make more accurate comparisons of standards of living across countries. PPP estimates use price comparisons of comparable items but since not all items can be matched exactly across countries and time, the estimates are not always "robust."

3   Geography, climate and natural resources

The total area of Tanzania is 945,000 km^2 (of which 2,450 sq. km are in Zanzibar), 885,000 km^2 of which is actual land surface, making it the 9th largest country in Sub-Saharan Africa; approximately equivalent to twice the size of France. The climate varies from tropical with relatively high humidity along the coast to semi-arid in the Central region, receiving less that 500mm of rain annually. In contrast, the mountainous area in the north-east and south-west receive over 2000mm of rain annually. Two thirds of this area is dominated by plateau. The Central Plateau comprises of gently undulating country over much of the western half at an elevation of 1200 m. Dissected highlands, up to 2,100 m, flank the deep trough of Lake Tanganyika to the west and extend, with isolated blocks of the Uluguru, Nguru, Usambara and Pare Mts. continuing a line to the northeast border. Tectonic and volcanic activity has produced the Eastern Rift Zone where the highest elevations are found, Kilimanjaro (5,895 m) and Mt. Meru (4,966 m). There are many mountain peaks to the west including the famous Ngorongoro Crater and the still active volcano Ol Donyo Lengai. Lakes Natron, Eyasi and Manyara lie in the rift valley floor. In the south, the Poroto and Rungwe mountains are built up from a smaller area of volcanic activity. The plateau soils on the crests are deep, slightly acidic infertile sandy-loams, changing to dark clay soils in the shallow valleys and extensive interior basins. In the north-east part of the country, the predominating soils are slightly alkaline red-earths, sandy loams and clays. These change to a mosaic of sands, clays and coral along the Coastal Plain and on the off-shore islands.

3.1   Climate

The contribution of the rainfall to transitory shocks in food insecurity in Tanzania is significant. Drought conditions have lead to crop failure consistently within the north central districts of Tanzania over the last 10years and currently (early 2006) Tanzania is experiencing failed rains in many parts of the country.

The majority of the country and most of the high potential areas rely on unimodal rainfall (Figure 4) regimes this increases the susceptibility of Tanzania to inadequate or failure in rainfall during the growing season. The mean annual rainfall varies widely from about 320-2,400mm a year. Although comparatively well watered as a whole, there are considerable annual variations and most of the country has a long dry season with rain practically restricted to November - May period. About half of the country receives less than 750 mm a year, which is generally regarded in East Africa as necessary for any intensive form of agriculture.

Map 3 - Tanzania Rainfall Regimes
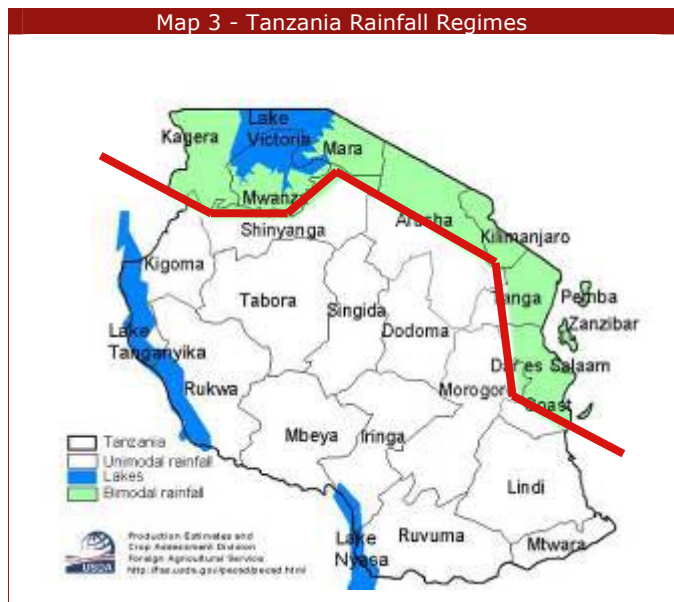
Approximately 60-70% of the cereal production in Tanzania occurs in the unimodal zone and thus Tanzania relies heavily on these rains.

Figure 3 - Rainfall Patterns and Generalized Agricultural Activities in Tanzania

(Adapted from FEWSNET & WFP harvest data; activities vary with crop and region and are represented here as a guideline)
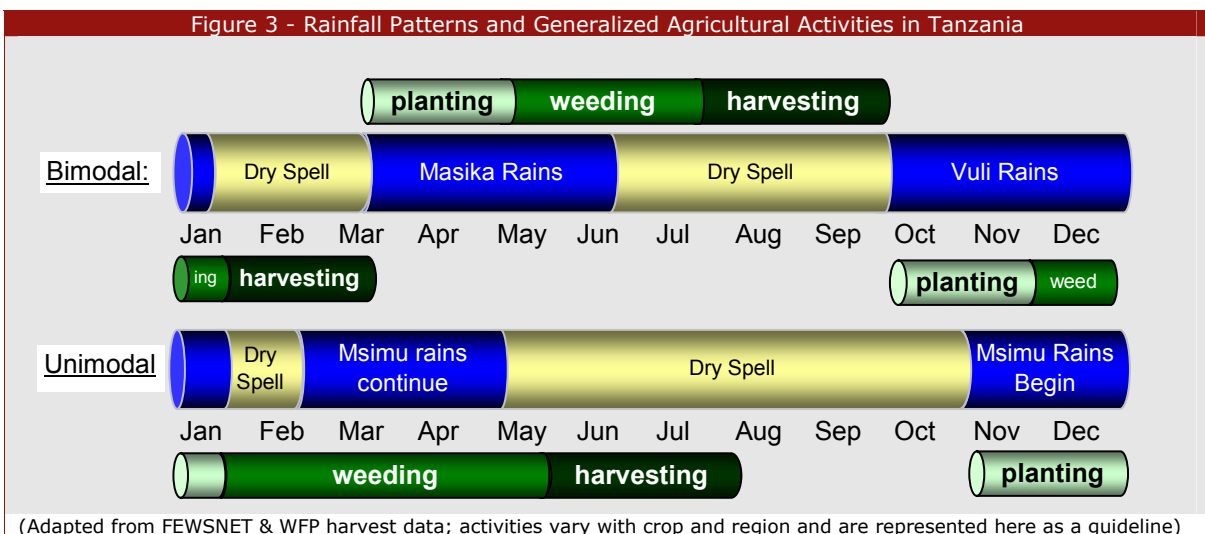
4   Population and livelihoods

4.1   Human capital

Tanzania has a population of approximately 34.5million[11]. Although the population density varies greatly the average is 39 inhabitants per km[2]. The greatest densities are in Dar es Salaam and Zanzibar, medium densities around the shores of Lake Victoria. Approximately 45% of the population is under the age of 15years. The urban population as a percentage of the total has more than doubled in since 1988 to 2002 (18.0% - 23.0%)[12]. The population is growing at around 3.0%[13] (1975-2002) although this is expected to slow according to World Bank projections to 1.8 between 2003 and 2015[14]. The average household size has dropped slightly from 5.2 to 4.9 during the period 1988 – 2002[15] but varies greatly between regions (3.8 – 6.9).

Although there are over 120 ethnic groups in Tanzania but are, with the notable exception of the Masai, unified by the single language of Swahili. English is also an important working language but is not as commonly spoken as in neighboring Kenya. Tanzania is also notable in the region for not having any significant ongoing civil conflict and politically is considered among the most stable countries in Africa[16]. As such, economic and civil development issues are the prominent issues in improving human capital with natural hazards being the prevailing shocks experienced by the population.

Tanzania has a high labor force participation rate (98.3%, although slightly improving), for male is above 100% indicating child labor. This is above average for sub-Saharan Africa and indicates that almost every available person has to work. 85% of the total female labor force is in rural areas and represent a significant vulnerability to food insecurity. 25,000 out-of-school children in countryside are working in hazardous conditions in commercial agriculture, mining and quarrying. Additionally, recruitment of girls from villages for domestic service and prostitution rapidly is increasing. The 2000/01 HBS reports that in rural regions 39 – 84% of children aged 5-14 years reported working.

A recent Demographic & Health Survey (DHS) found that infant & child mortality rates have dropped during the period 2000 – 2005[17]. This dropped form 100 to 68 and 156 to 112 live births per 1000 respectively and reflects a positive improvement in child survival and health care provision. Despite this, life expectancy is low (43years[18], 2004) and reflects a downward trend from 50years in 1990.

5   Literacy/Education

From the national perspective literacy rates have been falling over the last number of years. Recent estimates (UNESCO[19], 2003) suggest that illiteracy rates have improved from 30.8% (1995) to 21.9% (2003). The %GDP spent on education is 2.2% (World Bank, 1998). Primary education is provided by the state with a fee[20] paying system for government run secondary education. The gross primary school enrolment rate is stated at 98.6% (80.7% net) for 2002 and has risen from 77.6% (58.8% net) since 1990 (NSGRP[21], 2005).

Primary school enrolment is free in Tanzania (Although secondary education is not). Despite this, the level of education throughout the country is poor. Rural populations are more likely to be least educated with Lindi (highest, 48%), Dodoma, Tanga, Morogoro, Pwani, Mtwara, Tabora, Rukwa, Shinyanga all with >30% of adults not having completed education above pre-school (Figure 5 on the right) demonstrates the percentage of adult women that have received any education; HBS 2000/01[22]).

Map 4 - Women in Rural Areas having received any Education

Note: No estimate is given for rural Dar es Salaam because of the small sample size there.

Source: HBS 2002
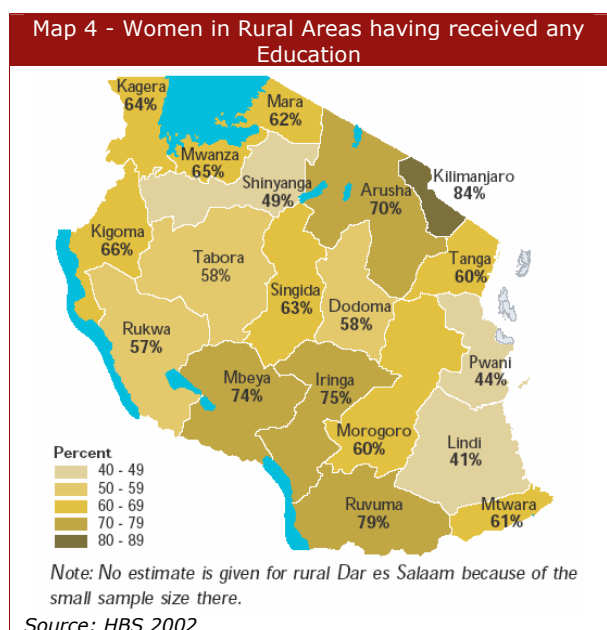
The 2000/01 HBS clearly shows the differences between levels of education in gender and between rural and urban settlements. A rural woman is least likely to have a sufficient level of education. According to the HBS (2000/01) Lindi, Pwani and Shinyanga have the highest levels of women with no formal education (approximately 50% of woman aged 15 years +). Gender inequality remains pronounced in secondary and tertiary education. Vulnerability of girls to cultural beliefs and customs, early pregnancies and sexual abuse remains challenges to enrolment and completion of schooling (NSGRP 2005)[21].

Quality and quantity of primary education is still low in Tanzania (Pupil/teacher ratio: 59, Pupil/desk ratio: 5, Pupil/classroom ratio: 73)[23]. With difficulties in retaining teachers in rural schools, class sizes remain

high and quality of the individuals' education is diminished. A low percentage of those completing primary school continue to secondary due to unaffordable fees. However those that do graduate find an economic environment that does not capitalize on their achievements[24]. According to UNESCO, Tanzania is at serious risk of not achieving the Net Enrolment Rates in primary education (UNESCO[25], 2002) MDG goals.

6   Health

In reviewing the prioritization of the funds allocated to health, when compared to the neighboring countries since independence, Tanzania has been doing better, measured in terms of per capita health expenditure, around 2.7% of the country's GDP[26]. However data from various sources indicate that there has been very little progress towards improved health outcomes - indeed there has been regression in some indicators - and very little improvement in health service provision in Tanzania. Inadequate funds available to make the improvements; poor prioritization; leakages that result in patients not receiving any benefit; or a combination of these have been flagged as the continued poor performance of the health system in Tanzania[37].

According to the 2002/03 PRSP most of the MDG health targets are likely to be achieved, with reduction in child and infant mortality highlighted as being "extremely challenging".

Access to safe water is also low in rural areas. Although this has improved, only 46% use safe water sources and ranges between 20% - 77% in rural regions. Data on sanitation available and it's use is limited. However the 2000/01 HBS indicates that 1% - 19%, on average 10%, do not use a toilet facility with the majority using simple pit latrines.

6.1   Child Health

Malaria is also one of the most important causes of mortality in children under five. This does not differ between urban and rural areas, or between the poverty quintiles, although receiving treatment is higher in richest wealth quintile[27]. Use and ownership of insecticide treated nets is very limited in Tanzania (less than one third of pregnant women and less than 11% of children under 5 years) and significantly increasing the chances of becoming infected with the malaria parasite.

Child mortality is also high in Tanzania. A decrease over the last 5years may be attributable to increased use of insecticide-treated nets, vitamin A supplementation and higher rates of exclusive breastfeeding up to 2 months. Full immunization rates remain low with rural populations having poor coverage.

6.2   Maternal Health

Anaemia has continued to be a major predicament among young children[ix] and pregnant women[x,28]. Causes of anaemia are malaria —which is endemic in most parts of the country— as well as dietary deficiencies and parasitic worm infections. Approximately two-thirds of children 6-59 months are anaemic (75% on Zanzibar). The majority of children who suffer from anaemia are classified as having moderate anaemia (38%) while 3% are severely anaemic. Anaemia is less common among women; 43% show any evidence of anaemia, and the majority of women are mildly anaemic. Anaemia also puts additional burdens on the households in terms of reduce work capability and risk of lower cognitive development and stunting.

Maternal mortality[29] is a serious problem in Tanzania, a country with high fertility rates, an elevated incidence of infectious diseases such as malaria, and limited access to health services. Currently the maternal mortality ratio is at 529/100,000 live births.

Map 5 - Women moderately Anemic (%)

Women (%)
0 - 5
6 - 10
11 - 15
16 - 20
21 - 22
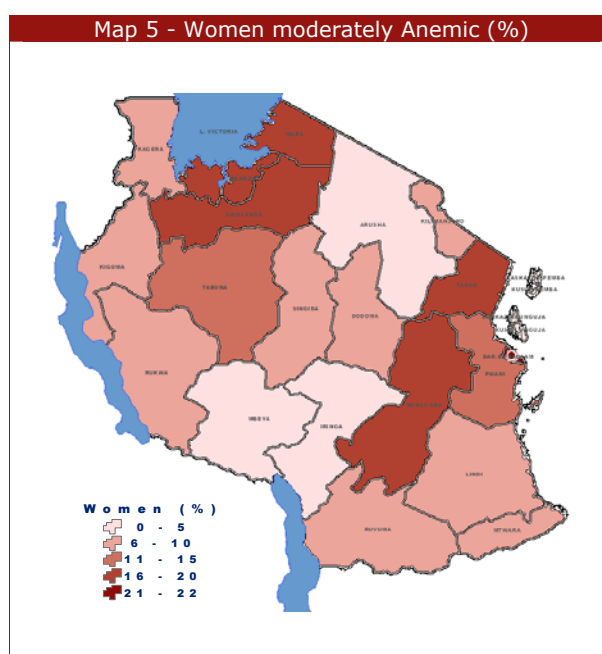
[ix] Anemia in Children; <7.0 g/dl of hemoglobin have severe anemia, children with 7.0-9.9 g/dl have moderate anemia, and children with 10.0-10.9 g/dl have mild anemia
[x] Anemia Women; <7.0 g/dl of hemoglobin have severe anemia, women with 7.0-9.9 g/dl have moderate anemia, and non-pregnant women with 10.0-11.9 g/dl and pregnant women with 10.0-10.9 g/dl have mild anemia

6.3   HIV/AIDS

More than 2 million people are living with HIV/AIDS in Tanzania Mainland with a prevalence rate of approximately 8.8%[30]. Women are significantly more affected than men, with 60% of the new infections reported amongst youth aged 15 –24years. The net effect and impact of the epidemic on per capita GNP growth is substantial and increasingly being felt by many families[31] in Tanzania. The agricultural sector is most likely to feel the biggest impact given that 62% of the population are engaged in this sector and that women are the main contributors to this activity at the household level. This concern is highlighted in Iringa and Mbeya where the highest prevalence can be seen (see Map 5).   These are currently some of the agricultural surplus producing areas of Tanzania were the impact of HIV/AIDS is more likely to be felt at the national level as well as the individual households.

Map 6 - HIV Prevalence
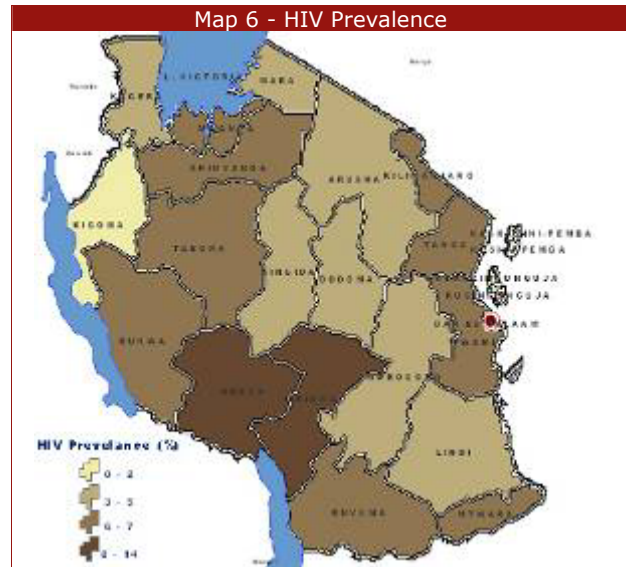
6.4   Nutrition

The main exponents of nutrition in the context of Tanzania are chronic malnutrition[xi] (stunting) and micronutrient deficiencies, predominantly iron deficiency anemia.   From studies available there are potentially 2main sources of these problems; Dietary diversity and Disease. The prevalence of stunting in Tanzania ranges from 14.5% to as high as 54.0% in children under 5 years.   Stunting is not merely a biological adaptation to reduced nutritional resources but is a detrimental condition of such an environment.   The resulting diminutive stature (this can be 20cm shorter than expected in moderate stunting of a 5yr old) has an impact on cognition, susceptibility to disease and labor capacity for the individual and, when prevalence is high, collectively[32]. This in turn has significant impact on household and community food security and is some areas of Tanzania where stunting is very high (e.g. Lindi) places an additional burden of vulnerability on the household.

Acute malnutrition[xii], according to the 2004/05 DHS, is 3.0% prevalence in rural Tanzania. This is much higher in Zanzibar (6.1%[xiii]) according to the same source. This may indicate that there is much more acute problem in these regions. Although not comparable for reasons of seasonality and sampling the outcomes of the 2006 Tz CFSVA show that a number of regions are near the 10% prevalence rate that would indicate situation, nutritionally, which is alarming.

Key contributing factors to stunting in Tanzania are poor dietary diversity, poor breastfeeding practices, disease and poverty. A recent study[33] suggested that price of the commodities played a large part in utilization and diversification of diet. Although not considering the role of cultural choice, the study points towards income generation to improve dietary diversity rather than policy oriented towards change in feeding practice. Exclusive breastfeeding to 6 months of age[xiv] is not commonly practiced by women in Tanzania. Only 13.5% of mothers practice exclusive breastfeeding to 4-5 months and most commonly stop at 2-3 months (approx. 70%). Early introduction of food or liquid other than breast milk increases the chances of infection for young children.

7   Agriculture

Agriculture is the foundation of the Tanzanian economy. The Economic Survey, 2004 reports a 6% growth in 2004 compared to 4% in 2003.   The rise in the growth rate was attributed to favorable climate, especially availability of enough rains in many parts of the country. This has contributed to the increase in the production of different crops, availability of good pastures and water for the livestock. The sector employs about 62% of the employed population[34]; contributed 45% of GDP and about 60% of export earnings in the past three years. Based on area and yield, about 9,002,141 tones of food of which 36% being maize was produced during the 2003/04 cropping season. Though not sufficient, considering the

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[xi] Height-for-Age reference value sometimes written as HAZ. <-2 Standard Deviations from the median denotes children that have moderate or severe chronic malnutrition.
[xii] Also described as wasting and measured by weight and height of the child against a reference. This denotes a recent insufficient amount of energy intake and directly related to disease or lack of food.
[xiii] DHS 2004/05: The sample size for Zanzibar is very small and confidence intervals are not given. Care should be taken when interpreting these results
[xiv] As currently recommended by WHO, even for mothers that are HIV positive

crops used as food security indicators by Tanzania Ministry of Agriculture and Food Security (MAFS) and on the basis of the Self Sufficiency Ratio (SSR), which is percentage of food requirement that is met from domestic production, the national total food SSR is 105% for 2004/05. Sub national distribution still varies with some still experiencing deficits.

Agriculture continues to be adversely affected by lack of competitive markets, high transport and transaction costs leading to low producer prices, post harvest losses of cereals, and a lack of expert advice and technologies suited to the particular environmental situation of different parts of the country. There is also a shortage of credit available to farmers. These factors result in low productivity and incomes.

7.1   Land Distribution / Tenure

The establishment of 12 national parks and 15 game reserves free of human settlements, from 1964 to 1994, resulted in a loss of land in these areas to the local populations[xv]. With economic liberalization, land grabbing in agro-pastoralist rangelands, driven by the allocation of land for investment and the weakness of customary land tenure, became an increasing trend. Pressure was exacerbated by population and economic stress in the highlands leading to migration to semi-arid areas. Transfers of land from local community use to outsiders, whether investors or these migrant farmers, have created further problems in land allocation to individuals in the local community.

Issues of access to land by women and disadvantaged groups are of concern in Tanzania. Additionally there is a need to resolve conflicts between farmers and pastoralists, particularly in Kilosa, Kibaha, Sumbawanga and Urambo Districts. This is being partially addressed through the implementation of the 1999 Land Acts[35].

Access to land by women, misappropriation of land for unsubstantiated commercial and resource management are contributing to sustained household vulnerability in Tanzania. Resource management and resource competition are also significant factors in vulnerability both for households and to vulnerable groups in these households such as women[36].

Cropping Patterns

The main food crops are Maize and Cassava and constitute 53% of the total agricultural production in Tanzania. Other crops of note are banana, sorghum, millets, potatoes, rice, pulses and wheat, which together constitute the remaining 47% of the agricultural production.   Production of these crops is area specific with the highest diversity of cropping patterns occurring in Central districts of the country. The majority of the main crop maize (around 40% of the total maize production) is planted in the unimodal south west of the country and thus has a higher susceptibility to rain failure. Consequently rain failure in the unimodal regime has a major impact on total crop cereal production in Tanzania.

Map 7 - Cropping Patterns in Tanzania

7.2   Market Access

The main constraints relate to the availability of price information, wide marketing margins[xvi] on account of poor infrastructure and weak competition in the markets.
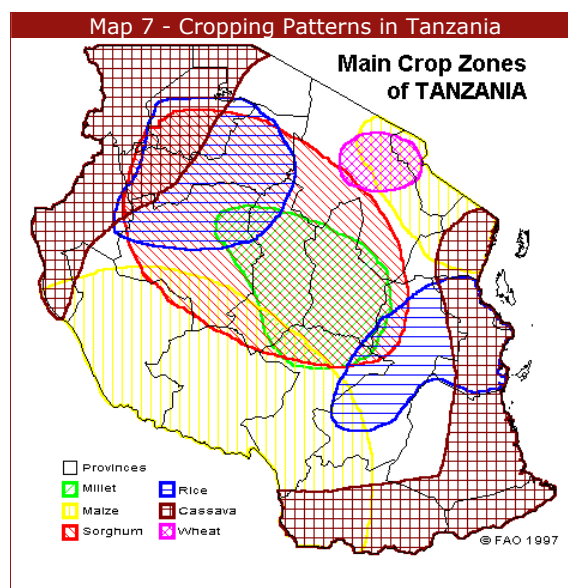
In 1992 the marketing margins were on average 48 percent of prices for exported crops and 25 percent for domestic sales, the difference being explained by the longer distances covered to the export points[37]. Furthermore, there are costs associated with restrictions to crop movements, excessive taxes and their inconsistent application across local governments.

7.3   Post Harvest Losses

The important post-harvest activities include processing, storage, packaging and transportation. The sequence of operation of these activities may differ between commodities, and for a single commodity they may vary depending on the ultimate consumption point or form. Losses in these activities are very

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[xv] Approximately 19% of the total land area of Tanzania is allocated to National Parks and Reserves.
[xvi] A marketing margin is the percentage of the final weighted average selling price taken by each stage of the marketing chain. The margin must cover the costs involved in transferring produce from one stage to the next and provide a reasonable return to those doing the marketing, FAO.

apparent in Tanzania but there is scarcity of data to indicate losses for all the important crops at each post-harvest stage. Almost all the data available refer to cereal grains and grain legumes, where overall losses are estimated at 30-35%[38]. It has been argued that losses in stored maize are the highest and for paddy losses are due to processing[39]. For fruits, losses occur throughout the post-harvest phase with an overall estimate of 40-60%[38,40].

Data on losses of roots and tubers in Tanzania is scarce, but some suggest a figure of about 30%[41]. Apart from the lack of sufficient loss data the overall indication is that post-harvest losses are very high and are therefore the main contributors of food insecurity in Tanzania in addition to the vagaries of weather, poor farming practices and infrastructure shortcomings; intensifying the effect in specific districts and resulting in a nation producing surplus but still regularly classifying a quarter of its Districts food insecure.

8   Poverty reduction & Food security Policies

The Poverty Reduction Strategy (PRS) was implemented from 2000 to 2003 in the context of the Highly Indebted Poor Countries Initiative (HIPC). Resources were allocated to the strategic priority sectors: Education, Public Health, Water Supply, Infrastructure (roads), Agriculture, Judiciary, and HIV/AIDS. The country is also heavily reliant on external assistance (1/3 of total revenues). Approximately US$1 billion annually was allocated between 2002 and 2005 towards poverty reduction and pro-poor growth by donor agencies. The increased allocation of resources to these sectors resulted in improving some poverty indicators, in particular a rapid increase in enrolment in basic education following the abolition of school fees and a significant increase in immunization coverage of children under five. However the current level of delivery of services still requires further improvement in quantity and quality.

The National Strategy for Growth and Reduction of Poverty (NSGRP), a five-year national framework plan, which is now being implemented, has been developed to attain optimal impact on economic growth and poverty reduction. The NSGRP is to contribute to the achievements of the Millennium Development Goals (MDGs).

The NSGRP has adopted an outcome approach, which calls for the allocation of local and foreign resources to all sectors involved in poverty reduction and interventions. It has moved away from the PRS priority sector and is now concentrating on three major clusters of results, which are defined as:

Figure 4 – Income poverty trend in Tanzania

Proportion of pop. under poverty lines (%)
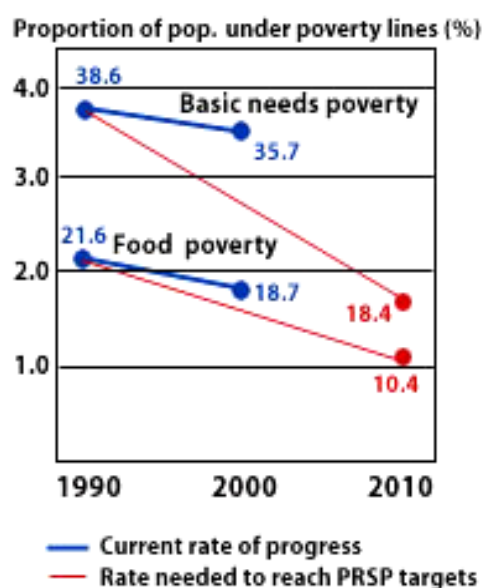
Data source:
2001/02 Household Budget Survey,
National Bureau of Statistics 2002

- Economic growth and reduction of income poverty;
- Improved quality of life and social well-being and
- Good governance and accountability.

One of the key challenges in fighting poverty derives from still-rising numbers of HIV infections. Apart from its direct impact on poverty-related indicators, this also has dire consequences for the productive labor force and for growth. The roll out of anti retroviral treatment was delayed until 2005 with a target of 220,000 people, i.e half the population in need of such a treatment.

Specifically in the area of food security the government has a number of policies by which it intends to address food insecurity[42]:
- Improvement in agricultural production incentives by promoting non-traditional export crops and food crops through liberalization of the whole process.
- Supporting research extension and improving its effectiveness, promotion of private sector participation in production, processing storage input supply and marketing.
- Improving rural infrastructure.
- Promotion of cross – boarder trade with neighboring countries and export.
- Improvement in post – harvest loss.
- Periodic monitoring and assessment of rural food situation on a more systematic basis through Early Warming and Crop Monitoring System.
- Reviewing the legislation that affects private sector participation in the agriculture sector in farming and marketing.

- Removing restrictions on trade at national regional and district levels, and reviewing the tax regime on food movement across districts, regions or national borders.
- Restructuring Strategic Grain Reserve (SGR) to be able to operate efficiently and effectively.

9 Sources of food insecurity and vulnerability

Socio-Political:
- Governance and resource management
- Corruption

Population:
- Demographic growth, high dependence ratio and 0-15 years population
- Education: Poor net enrollment rates and female literacy
- Low life expectancy and worsening
- Health: high infant and maternal mortality rate; poor vaccination rates
- Rising poverty (absolute numbers) and inequality

Social:
- Water Sources: only 46% with access to improved
- Education: access to is poor, both distance to the school and teacher availability
- Health Services: access and attendance are poor
- Markets: poor access due to bad infrastructure; poor market information systems
- Large Urban/Rural differences in health and education access

Economic:
- Macroeconomic policies on agricultural
- Linkages between microeconomic and macroeconomic policies
- Low terms of trade for agriculture
- Lack of competitive markets for agriculture
- Poor credit systems for farming small-holders

Agriculture
- Small scale, hand-hoe cultivation, in rain fed agricultural systems resulting in low productivity
- Poor investment
- Post harvest losses
- High transportation costs
- Lack of small-holder representation
- Low access to extension services; Lack of expert advice & technologies suitable for the diverse environmental situations

Environmental
- Poor Coastal management resulting in diminishing resources
- Rainfall pattern (drought)
- Desertification
- Soil Degradation
- Deforestation

Part 4 - Community and Household Survey Results / Outcomes

1   Circumstances of the households

1.1   Demographics

Interestingly the regions with the largest households are mainly focused around the shores of Lake Victoria (with Pwani and Manyara the exceptions) having, on average, greater than 7people per household.

Table 1 – Demographical characteristics by region

Region	Sample Size	Ave HH Size	Ave Age of HH Head	Female Headed HH	%HH with 6 or more members	% Population <15yrs
Arusha	126	6.1	46.0	21.4	56.3	47.4
Dar es Salaam	126	6.2	49.0	24.6	51.6	34.6
Dodoma	126	5.3	47.1	24.6	37.3	38.1
Iringa	126	4.7	47.2	25.4	34.9	41.0
Kagera	126	6.9	43.4	15.1	62.7	49.2
Kigoma	126	6.3	40.3	12.7	56.3	50.3
Kilimanjaro	126	5.4	53.2	40.5	42.1	38.9
Lindi	126	4.6	49.0	19.8	23.8	36.6
Manyara	126	6.4	43.3	15.1	67.5	48.7
Mara	126	7.0	44.9	21.4	57.9	50.5
Mbeya	126	5.3	47.7	15.9	38.9	40.7
Morogoro	126	5.3	46.7	21.4	41.3	39.6
Mtwara	126	5.3	46.1	15.9	38.9	43.3
Mwanza	126	7.5	46.4	15.1	64.3	45.4
Pwani	126	6.5	51.6	14.3	61.9	43.4
Rukwa	126	5.2	42.8	15.9	41.3	41.5
Ruvuma	126	4.8	44.0	20.6	26.2	38.6
Shinyanga	126	8.2	45.0	15.1	73.8	53.1
Singida	126	5.8	49.3	23.8	50.0	44.4
Tabora	126	6.2	45.8	24.6	51.6	44.8
Tanga	126	5.1	48.2	24.6	41.3	45.4
Zanzibar/Pemba	126	6.1	48.6	19.0	56.3	39.3
Averages	**-**	**5.9**	**46.6**	**20.3**	**48.9**	**43.4**

1.2   Livelihood groups

One of the objectives of the CFSVA is to describe household food insecurity and vulnerability based on household characteristics rather than attempting to rank and cluster geographically different situations of food insecurity. Households' livelihood strategies have a direct impact on food availability, food access, and ultimately food security. The result of this analysis can be seen with some generalizations in Part 5 and in the table below. By using PCA and clustering techniques, households, with similar livelihoods characteristics were grouped together.

Livelihood Group	% of HH in the sample (n=2772)	% of HH in the population (weighted)	Short Description	Geographic Distribution
1. Wage labourers	5.2% (n=143)	5.2%	Wage Laborers main source of income is from agricultural or unskilled labor. However they also acquire a significant source of income from agricultural production.	Mainly Dodoma & Arusha
2. Petty traders	10.9% (n=303)	11.0%	Petty Traders acquire income mainly from petty trading but it is almost as much from food crop production.	Every region; lowest concentration in Mbeya, Rukwa & Iringa
3. Crop farmers	22.7% (n=630)	24.1%	Crop Farmers produce most of their income from food crop production. However it is supplemented with cash crops and livestock.	All regions: highest concentration in Mbeya, Shinyanga & Tabora
4. Traders	4.1% (n=115)	4.0%	Traders also supplement their income with, predominately, food crop production and to a minor degree livestock and petty trading	Sparsely spread across Tz; highest concentration in Kigoma
5. Skilled labourers	3.8% (n=105)	4.0%	Skilled Laborers also rely on agricultural production as a significant contribution to their income. Livestock and petty trading are also aspects of this livelihood.	Sparsely spread across Tz; highest concentrations in Dar es Salaam & Arusha.
6. Natural resource dependents	3.0% (n=84)	2.9%	Natural Resource Dependents rely mainly on food crop production but supplement this significantly with income generated from the sale of natural resources. Additional income comes from unskilled labor, livestock and non-food crops.	Some regions at low concentration. Predominately Pwani & Dodoma
7. Remittances dependents	3.5% (n=97)	3.9%	The livelihoods in this group gain a large proportion of their income from food crop production and remittances – kinship.	Mainly in Tanga & Zanzibar/Pemba
8. Poor income	(n=233) 8.4%	7.5%	The Poor Income livelihood, as with the others derives much of its income from food crop production. However, although this group have small proceeds from a number of sources they are generally small in estimated total value	Widespread but mainly in Manyara and Ruvuma
9. Small farmers	21.5% (n=597)	20.3%	Income is almost overwhelming from food crop production planted in smaller plots of land. Some small contribution comes from unskilled labor, livestock and petty trading.	All regions; least in Pwani, Dar es Salaam, Mwanza Arusha & Zanzibar/Pemba
10. Handicraft	2.5% (n=69)	2.5%	Predominately dependant on food crop production which is significantly and almost only supplemented from handicraft production.	Sparsely in most regions; mainly in Mwtara & Dar es Salaam.
11. Agro-Brewers	3.0% (n=84)	3.1%	High proportion of income from food crop production but significantly supplemented by brewing activities. Few other activities contribute.	Widespread; mainly Iringa
12. Agro-Pastoralists	5.8% (n=161)	5.7%	A livelihood that relies almost equally on income from food crop production as on income generated form livestock.	Widespread; mainly Arusha, none in Morogoro or Pwani
13. Salaried, Gov. allowance and rental beneficiaries	3.0% (n=83)	3.4%	Predominately dependant on regular salary, government allowance, or rental of land or agricultural equipment. Food crop production is still important to this crop.	Widespread; mainly Kigoma, Mwanza, Tanga & Zanzibar/Pemba
14. Fisherfolk	2.5% (n=68)	2.4%	The majority of the income in this group comes from fishing activities. However a significant amount still comes from food crop production.	All regions with a coast or a lake-side shoreline; except Mtwara & Mbeya

Table 2 - Livelihood Groups with Description and General Locations

1.3 Socio-economic characteristics

1.3.1 Education

Education is a key area in the reduction of poverty and vulnerability of individuals and households. During the Tz CFSVA household heads were asked about their level of education, the number of children attending school aged 7-13rs (the official age for primary school) and reasons for children missing school in the previous year.

The general level of education is poor. Heads of household are commonly only educated to primary school level (40% on average). In Zanzibar/Pemba only 14% of the household heads are educated to primary school level or higher. Female headed households are less educated with almost half as many being educated to primary school level and more than twice as many having had no schooling at all. The level of education shows much greater contrast across livelihoods. Skilled Laborers and Salaried/Government Allowance etc. livelihoods show the highest level of household heads that are educated beyond primary education. However this is more so for the male household heads and female household heads tend to peak at completing secondary education.

1.3.1.1 Literacy

Figure 5 - Level of education of heads of households

Male Headed Households

Female Headed Households

Legend:
- No School
- Some Primary (Std 1-6)
- Completed Primary (Std 7)
- Vocational School
- Some Secondary (Form 1-3)
- Completed Secondary
- Completed Advance level
- Some / Completed Tertiary
- Other
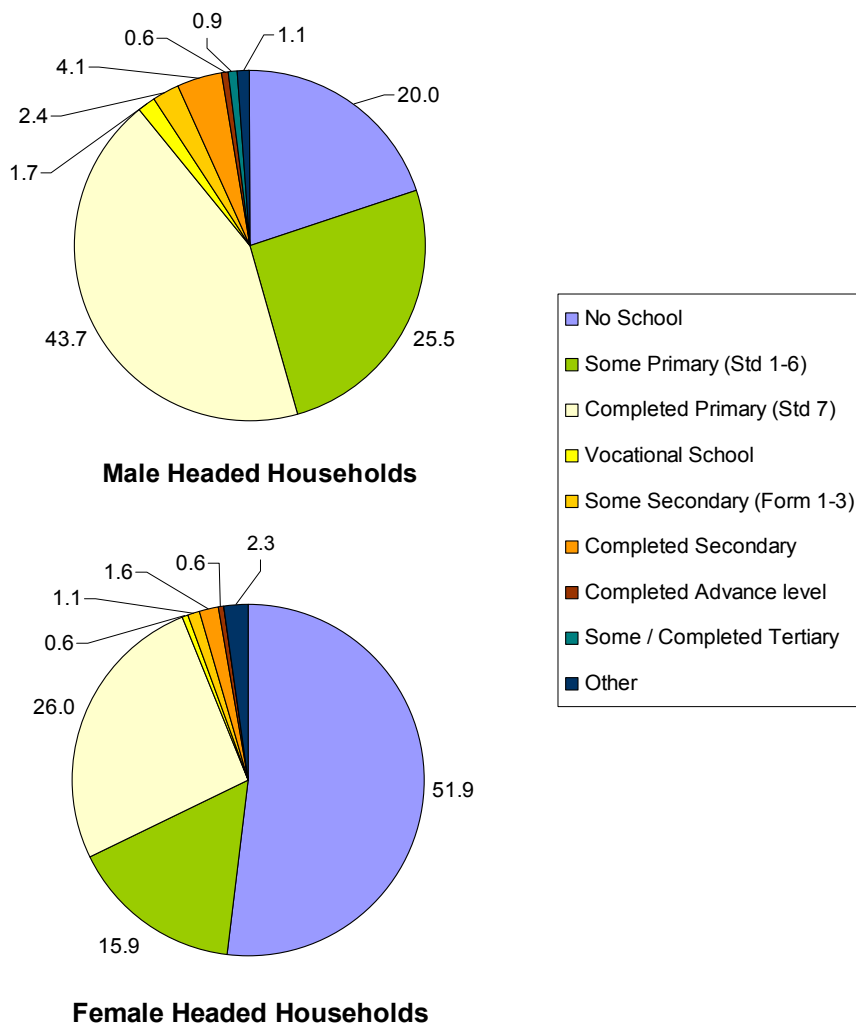
Overall the level of education is low, where 27% of household heads have had no formal education and only 40% have completed primary school.

On average female headed households are much less educated than male headed households. 52% of the female headed households have no schooling which is more than double that of male headed households. On average, only 46% of female headed households are able to read and write a simple message. This varies greatly throughout the country with rates as low as 25% in Zanzibar/Pemba but as a high as 85% in Ruvuma.

Remittance Dependants are least literate (both household head and their spouse; 39% & 43% respectively) and Skilled Laborers are the most literate (>80% for both household head and spouse). The biggest difference between literacy of household head and their spouse is seen in the Agro-Pastoralists (73% and 52% respectively).

1.3.1.2 Women's Literacy and Educational Achievement

The education level of women aged 15-49 years was assessed in the Tz CFSVA. In these women the standard of education reached was generally low. In Shinyanga 96% of women in this age range had either not completed primary school or had no schooling at all. Conversely, Mara and Rukwa showed high

frequencies of women having received vocational training (24% and 28% respectively). Zanzibar/Pemba showed the greatest frequency of women having completed Secondary School (12%).

Levels of literacy range greatly throughout the country. Illiteracy is particularly high in Dodoma, Lindi, Mwanza and Rukwa where more than 40% of women aged 15-49 years are unable to read or write a simple message.

Figure 6 - Level of education in women aged 15-49years by region
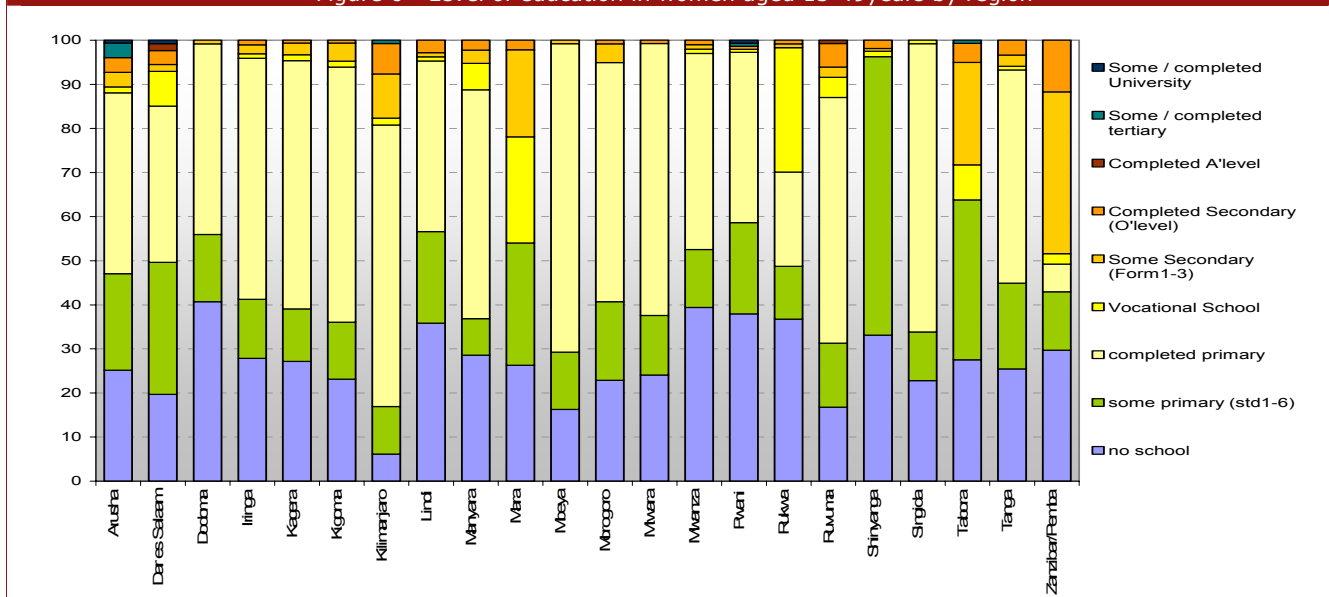
1.3.1.3   School Access, Enrollment & Absenteeism

It was reported that all but 5% of the communities interviewed had a primary school in them. For these communities the school was, on average, 2.5km away and took approximately 30minutes to get there.

School enrolment is predominantly at primary school with only 4% of the adult population having completed secondary school. Primary school officially starts at 7 years of age and finishes at 13 years of age. Net and Gross Enrolment Rates[xvii], nationally recognized as low (56% of the rural population according to the HBS), were calculated for the Tz CFSVA[xviii].

The Net Enrolment Rate, according to the Tz CFSVA was 82% and the Gross Enrolment Rate was 97%. Lindi had the least percentage of children enrolled in school, which is consistent with the HBS.

Of the households that responded 13% reported that children had missed school for at least 1week in the previous year. More than twice as many boys missed school compared to girls. Sickness was the most frequent reason given for both sexes (70% boys; 73% girls). Although other reasons were given "refused to go" (20% boys; 14% girls) and "no money for school fees" (8% boys; 10%girls) were mentioned in any great numbers. Gender differences where apparent when absenteeism was reported for "working for money or food" in boys (3.2%) and "domestic work" for girls (3.4%). Differences between boys and girls were also noted where "refused to go" and "no money for school fees" were recorded as reasons for absenteeism.

Skilled Laborers (18%) and Waged Laborers (16%) had the highest frequency of HH where children had missed school. The main reasons being sickness and that the child refused to go. 16% of Households in the Crop Farmers livelihood reported absence of children from school. Reasons here also included domestic work, long distance from school and having no money for school fees. Petty Traders frequently reported insufficient funds for school fees. Natural Resource Dependants reported boys staying home to take care of siblings and working for cash, with girls staying home for domestic work. Boys staying behind to work was mentioned by Petty Traders, Poor Income, Agro-Brewers, Remittance Dependants, Small Farmers (both sexes) and most frequently by Fisherfolk. Crop Farmers and Fisherfolk stated that long distance to school stopped children attending and all groups expect Skilled and Waged Laborers, Natural Resource Dependants and Handicraft mentioned that money for school fees was the reason for non-attendance.

[xvii] Net Enrolment is calculated here as the total number of children, aged 7-13years, in attendance at primary school divided by the total number of children, aged 7-13years, living in that household. The Gross Enrolment is calculated in the same way except that the attendance of anyone at primary school is used.
[xviii] It should be noted that although the enumerators asked for the age of the children recall of their actual age by the caretakers my not be entirely accurate and therefore effecting the results.

1.3.2 Health

The Tz CFSVA collected data on health in several sections and in both the community and household questionnaires. As none of the enumerators were medically qualified, diagnosis of individuals' health at the time of the survey was not possible nor was it possible to conduct verbal post mortems to establish cause of death (where applicable). Therefore all diseases reported are either self diagnosed or that which was reported by diagnosis of the health facility. Cause of death was not recorded for the reasons mentioned above.

1.3.2.1 Chronic Illness, Disability & Mortality

The extra burden long-term illness or disability on a household, due to medical expenses and decreased physical capacity, have a significant effect on household food security. At the time of the Tz CFSVA was conducted 8% of the household heads were effected by a chronic illness or disability (n = 205). Care should be taken in interpreting the frequencies as the actual occurrences are so few. Of these households many types of diseases were reported. A variety of "Other" diseases were reported and accounted for, on average, 45% of the problems. Iringa and Mara were the only districts to report diagnosed cases of HIV/AIDS affecting the head of the household. A physical disability was the most prominent problem reported overall (25%). In Pwani, Singida, Kigoma, Zanzibar/Pemba and Morogoro physical disability accounted for 50-70% of the medical issues facing the head of the household. Tuberculosis was also by a number of households, on average 17%. Tuberculosis was more prevalent in Mwanza and Dodoma (44% and 57% respectively). Diabetes was also recorded, most frequently in Kigoma and Mbeya. Kagera, Arusha and Mwanza approximately 31% of the households had a member that was chronically ill or had a disability.

By Livelihood, Remittance Dependants are most affected by chronic illness or disability (43%). Also 36% of the household heads in this group suffer from a chronic illness or disability. Of the specific diseases mentioned this is predominately physical disability although other diseases/disabilities contribute a significant amount. Tuberculosis is also a frequently reported chronic illness in this group (as well as the rest of the livelihoods). HIV/AIDS is most frequently mentioned in the Wage Laborer group but is reported in the household members. Least affected are Fisherfolk and Handicraft livelihoods.

Respondents were asked if anyone had died in their household in the previous year. Of those that responded 10.5% said that at least one of their members had died. Less than 1.0% said that more than one person had died. In Kagera, Lindi, Kilimanjaro and Mtwara more than 14% of the households were affected by deaths in the household (18%, 18%, 16% and 14% respectively). Only 2% of the households in Rukwa were affected by deaths in the household. On average 4.2% of households were affected by a death a child under the age of 5years, the worst effected region was Lindi having 9% households affected. Remittance Dependants were also worst affected with approximately 20% of the households having experienced a death in the household (4.1% of these had experienced >1death).

1.3.2.2 Health Concerns in Communities

Community leaders were asked to list and rank the importance of a diseases present in their communities. At the time of the Tz CFSVA malaria was identified as the most important disease for both adults and children in approximately 85% of the communities interviewed. Diarrhea was commonly reported as the second most important disease of concern (approximately 60% of the communities) for children and adults (58% and 63% respectively). Respiratory infections are also a prominent concern (most frequently ranked 3rd most important for children), in both adults and children in the communities interviewed, although it was of greater concern in children than in adults.

Other diseases/conditions of importance reported by the communities were malnutrition (33%) and skin diseases (17%) in children. In Singida and Mara malnutrition was mentioned by practically 100% of all the communities while skin diseases were mentioned most frequently by communities in Singida. In adults HIV/AIDS and tuberculosis are also of prominent concern (27% & 30% of communities reporting, respectively). Interestingly Zanzibar reported neither of these conditions as being of concern in their community, perhaps highlighting the strength of the taboos surrounding HIV/AIDS in this part of Tanzania. HIV/AIDS was not frequently mentioned as an issue in children however in Singida 36% of the communities identified Tuberculosis it as a concern.

1.3.3 Housing & Amenities

Housing and amenities indicators are used as a proxy for household wealth.

1.3.3.1 Building materials/quality of dwelling

The majority of the dwellings in the sample were simple houses with straw (50%) or galvanized zinc (46%) roofs with predominantly mud floors (83%) although 17% had concrete floors. Mud roofs were only recorded in Dodoma (53%), Singida (16%) and Iringa (10%). This is unsurprising given that this was a rural sampling frame and the level of poverty in Tanzania.

Of the reported number of people reported to be sleeping in that household the number of people per room was calculated. On average there were 2.7 people per room in the household and 4% of the households had 6 or more people per room. This ranged from 2.0 in Lindi to 3.8 in Shinyanga. The regions with the highest proportion of the population with 6 or more people per room were concentrated in the lakeside regions of the north-west, as illustrated on map 7. Generally large numbers of people sharing one room are infrequent in Tanzania. Natural Resource Dependants tended to have the poorest type of dwellings with mud floors and sometimes mud roofs. Poor Income and Petty Traders tended to have more people per room and reported marginally higher proportion of households with 6 or more people per room.

Map 8 - Proportions of household with 10 or more people per room

0 - 2.5%
2.6 - 5%
5.1 - 10%
10.1 - 15.1%

1.3.3.2 Energy Sources

Almost without exception all the households interviewed used wood/charcoal for their cooking needs, 98% on average. Kerosene was the only notable exception and was most noted, although infrequently recorded, in Singida where electricity was also recorded more than the rest of the country. For source of lighting kerosene, oil or gas lamp was practically the only energy source for illumination (96%). Notable exceptions to this were Zanzibar/Pemba and Kilimanjaro where 13% of the households reported to use electricity for lighting. In Dodoma 13% of the households reported that they had no lighting at all, although only 1% nationally reported not having lighting.

Skilled Laborers and Salaried/Government Allowance are groups that report the highest frequency of households using electricity (6% and 12% respectively). 4 to 5% of Remittance Dependant and Poor Income households report not having lighting at all. Wood/Charcoal is used by all livelihood groups almost exclusively. The Salaried/Government Allowance group report about 6% households using kerosene.

1.3.3.3 Water

Water access from a variety of sources was assessed for both dry and wet seasons. The use of water from protected sources[xix] was reported in 59% of the sample population for the dry season changing to 51% in the wet season. The use of unprotected water sources[xx] nationally was 41% in the dry and 40% in the wet season. Few of the regions reported more than 15% of the household using rainwater in the wet season. Only in Mtwara did a significant number of households report using this as a source of water (39%).

These figures hide large variation at regional level. In Tabora, Singida and Kagera 75-81% of the population uses water from unprotected sources in the dry season. This is maintained into the wet season except in Kagera where the use of water from unprotected sources decreases to 64% due to increased use of rainwater (13%). In Kilimanjaro and Arusha the use of unprotected water sources is 12-15% in the dry season and 10% in the wet. In Tabora approximately 60% of the population consistently reported using

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[xix] Protected sources include; public tap, tubewell/borehole with pump, protected dug well or spring, vendor or mobile tanker. The use of rainwater was also included in the questionnaire. However as rainwater can be both protected or unprotected depending on the method of collection/storage it will be reported on separately.
[xx] Unprotected sources include; unprotected well or spring, pond, lake, river or stream.

water from unprotected wells or springs. In Kagera approximately 60% and 52% of the population reported using a pond, lake, stream or river as their main water source in the dry and wet season respectively. Other than Mtwara, the reported use of rain water was very limited and tended to be less than 20%. Zanzibar/Pemba, Rukwa, Tabora and Manyara did not report the use of rainwater at all. In Pwani 27% of the households reported using vendors during the dry season and 23% during the wet season. There is little variation between livelihood groups and sources vary only slightly between seasons. Of note is that Natural Resource Dependants report with the highest frequency the use of vendors during both seasons. The greatest use of rain water in the wet season is greatest in Agro-Brewers (19%) and least in Fisherfolk (3%).

On average the households interviewed took about 25 minutes to collect water over a distance of 1.3 km in the dry season. This decreased to 17 minutes and 0.9 km in the wet season. In Shinyanga and Mtwara the households traveled the furthest in the dry season (approximately 3 km) with Shinyanga only reducing to 2 km in the wet season.

1.3.3.4   Sanitation

Access to sanitation is a foremost factor in the reduction of disease, contributing to malnutrition, and a reflection of wealth and civil infrastructure. The most prominent type of sanitation for the sampled households was traditional pit-latrines (85%). Only in Kilimanjaro did the use of ventilated improved pit-latrines feature significantly (21%), nationally 5%. Although not explored in the survey, the use of improved sanitation is often due to the lack of sensitization of alternatives available. Approximately 20% of the households in Kagera, Lindi and Pwani said that although they used pits these were open and without walls. Traders, Skilled Laborers and Salaried/Government Allowance are the most likely to use Ventilated Improved Pit Latrines. Natural Resource Dependants are more likely to use open pits and Remittance Dependants (16%), Agro-Pastoralists (11%) and Fisherfolk (10%) are more likely not to use any form of sanitary structure.

1.3.4   Access to community services

1.3.4.1   Roads and Transportation

Access to roads and transportation was assessed at the community level as it was generally assumed that this would give a generalized picture for all the households in the community. On average the most important type of road to the communities interviewed were community roads (51%). Nationally, the average distance to a feeder road is 2.1 km and 7.8 km to a trunk road, most of which are murram[xxi] (accounting for some 63% of the trunk roads mentioned in the survey), taking about 20 minutes and 1 hour respectively to reach. On the whole it was difficult to tell if the roads had made any improvements in over the previous year as about 50% of the communities reported that there had been no improvements, however over 90% of the communities in Ruvuma and Tabora saw no improvements.

Interestingly communities interviewed from the regions that are recognized as being the main cereal producers (Rukwa, Mbeya, Iringa and Ruvuma), trunk roads are on average between 6 to 11 km away for the community, except Iringa (3 km). Feeder roads in Rukwa are reported to be an average of 14 km away. This poor access does not facilitate the transportation of cereals important to the national food security. Conversely, just over 75% of the communities in Zanzibar/Pemba reported have access to a tarmac road within 0.5 km.

1.3.4.2   Market Access

Of the communities interviewed almost 65% of them said that there was no market in their village. For these villages the average distance to the nearest market was around 10 km taking just over 2 hours to travel to. None of the communities in Singida had markets in them and on average the nearest markets were 25 km away taking over 7 hours to reach. In practically 100% of all the communities in the main cereal producing regions of Tanzania said that selling their produce was a problem. The main reasons given for this are lack of buyers, low price offered, lack of transportation, long distances to selling points and high costs of inputs. Lack of transportation was the most frequently mentioned issue. Every community in Singida mentioned, in addition to the problems above, lack of money and problems with storage.

Approximately 20-30% of communities in Rukwa, Mara and Kagera also mentioned storage as an issue. Theft was mentioned most frequently in communities in Kigoma.

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xxi Murram is the east African name for laterite. Laterite is a naturally occurring gravel material that has been successfully used in road construction as a road base or sub base.

Figure 7 - Issues encountered by communities when accessing markets[xxii]
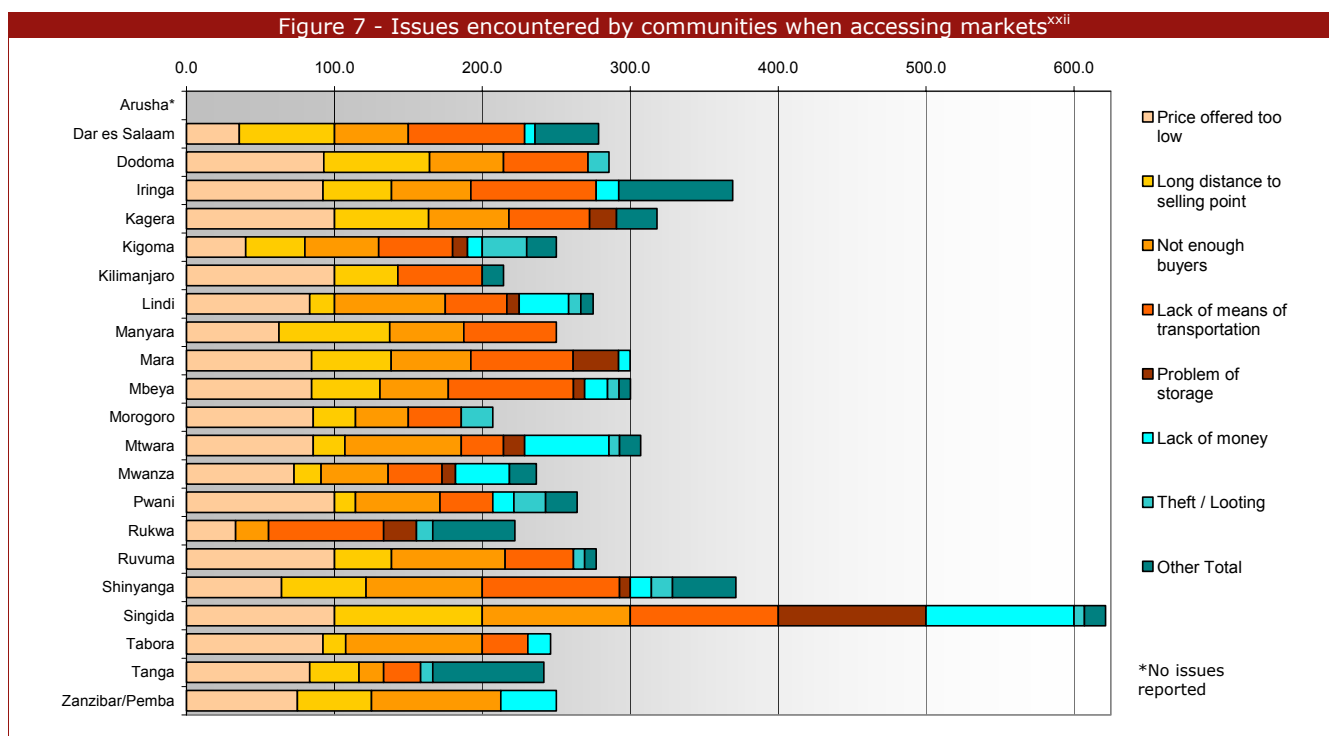
The community survey assessed the when certain items were least and most expensive. Considering the country as whole, maize was recorded most frequently as being at its lowest price in June with the highest prices recorded most frequently in December/January. This is similar to the highest prices of other food items such as rice and cassava. The highest prices for food items are related to the lowest prices for animal stock (such as goats and cattle). This is unsurprising given that most of the country is in the unimodal system and is at the height of the dry season at that time of the year, thus affecting body condition of the animals and availability of food. There is also a slight peak in low prices in livestock between April and June.

1.3.4.3   Health Care Facilities

Access to Health Care Facilities was assessed using the community survey. This revealed that the mean distance to a health care facility was approximately 7.5 km and took on average 100 minutes to reach. 36% of the villages reported that there was a health care facility in the village. For those villages reporting that there was no facility there: On average, 53% of the communities are within 6 km of a health facility and 87% are within 12 km. Singida has the poorest access to health facilities; where 55% of the communities have to travel more than 12 kms; Shinyanga and Tanga also reported larger proportions of communities that had to travel long distances. Between 70 and 80% of the communities in Pwani, Manyara, Mtwara have to travel 6 to 12km spending between 90 and 180 minutes traveling. Most regions reported that the facilities available were functioning properly; however (approximately) 30% of the communities in Ruvuma and Dar es Salaam reported that the facilities were not.

2   Household Food Security and Vulnerability

2.1   Availability and access to food

2.1.1   Productive assets

2.1.1.1   Land

Tanzania is a predominately small-scale agricultural country, like most developing countries. Over 90% of the households interviewed had access to agricultural/farming land of which is mainly Loam soil (65%) or Sandy soil (25%). In Dar es Salaam only 65% of the households had access to land were all other regions had between 75-100%. Even throughout each of the identified livelihoods land access was greater than 80% except Fisherfolk and Poor Income groups where approximately 25% of the households have no access.

[xxii] Cumulative frequency of issues mentioned

2.1.1.2 Animals

The ownership of animals is important for both improving coping mechanisms and improving nutrition in the household. Animals act as a banking system in that they can be sold/exchanged when there are shocks to the household. Improved nutrition comes from using the animals or their products to supplement the existing diet providing (for example) high quality protein and iron that is more difficult to attain from vegetable material and additional energy.

Figure 8 - Percentage of households with access to animals by type
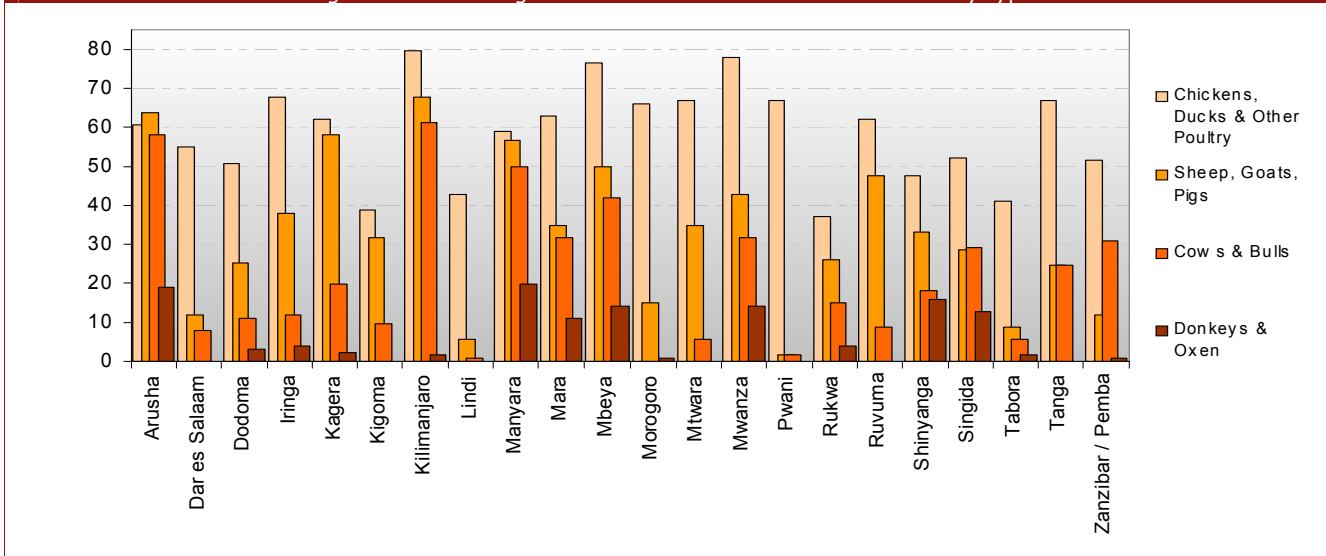
From the data collected there are both regional and livelihood differences in the ownership of animals. Poultry ownership is ubiquitous throughout the country. 60% of the households interviewed said they had poultry of some sort. However in Tabora and Lindi animal ownership was generally poor and is mainly poultry (approximately 40% of households). Pwani also demonstrated that a high reliance on poultry with very few households reporting ownership of livestock.

Geographical distribution of livestock was mainly in northern regions and reflects the patterns of distribution of Pastoralist livelihood, with the exception of the Zanzibar/Pemba. On average 20% of household reported owning livestock of some sort. This was predominantly smaller livestock (sheep, goats or pigs) 32%, with ownership of larger livestock such as cows or bulls being 21% of the households interviewed. Ownership of oxen or donkeys was relatively low nationally (6%) with Agro-Pastoralists being almost the exclusive owners reported in the study. Overall ownership of livestock was reported least in Natural Resource Dependants households (9%).

Diversity of animal ownership was generally fair throughout the livelihoods. Approximately 85% of the households that have animals own chickens, 45% have small livestock, 28% have large livestock and 6% have donkeys or oxen. Those livelihoods that have a poorer diversity of animals are Brewers, Fisherfolk and Natural Resource Dependants having significantly less large livestock. However they do have small livestock.

Figure 9 - Percentage of households with access to animals by type (Livelihoods)
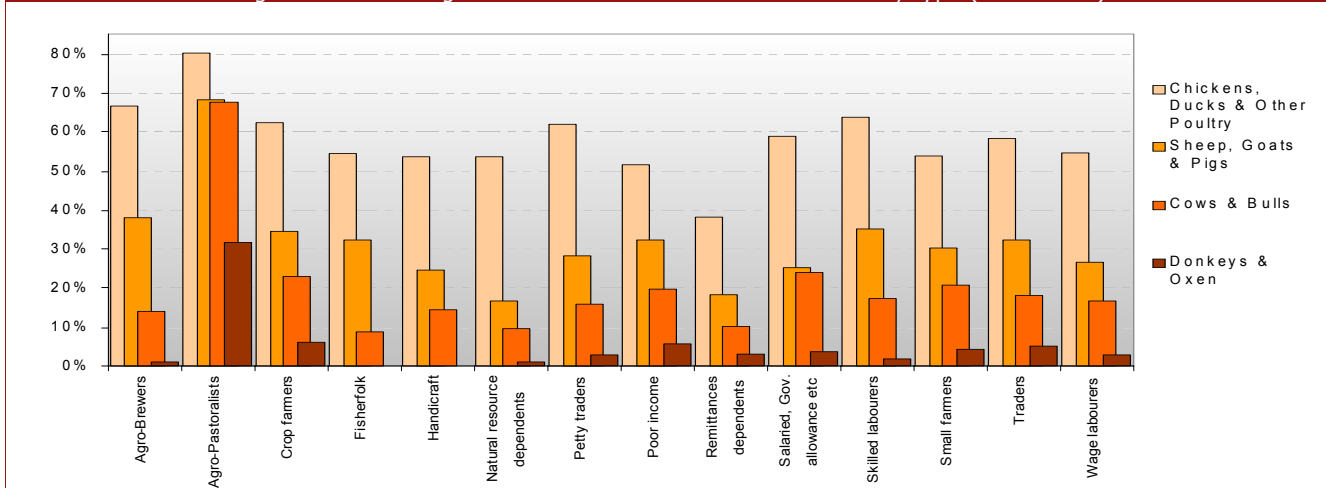
2.1.2 Agricultural production

Crop types & Diversification: The Tz CFSVA collected data on the main crops being grown in different categories. In the household questionnaire the *main* crop in 6 categories were asked. This was to reduce time in data collection. Diversification of crop types is important in both supplying individual dietary needs and reducing reliance on single crop types which are more or less susceptible to environmental changes, therefore protecting the food security of the household. In figures 10 & 11, the primary axis shows the cumulative percentage of households cultivating a crop in the category mentioned. The secondary axis illustrates that the height of each column is related to the average number of crop categories grown in each region, i.e. diversity. From the same figure, other than Dar es Salaam, Arusha and Zanzibar/Pemba, more than 70% of the households that responded produced cereals of some sort. This is predominately Maize (62.5%) but includes Rice (14.4%), Sorghum (5.5%) and Millet (1.7%). This shows a similar pattern when considering livelihoods with all groups, other than a slightly smaller percentage of Fisherfolk, growing cereals with Maize being the predominant crop. Roots & Tubers and Legumes are also an important crop type in households, with an average of 62.5% and 51.3%, respectively, of households growing these types of crops.

Figure 10 - Percentage of households growing at least one crop in each category by region[xxiii]
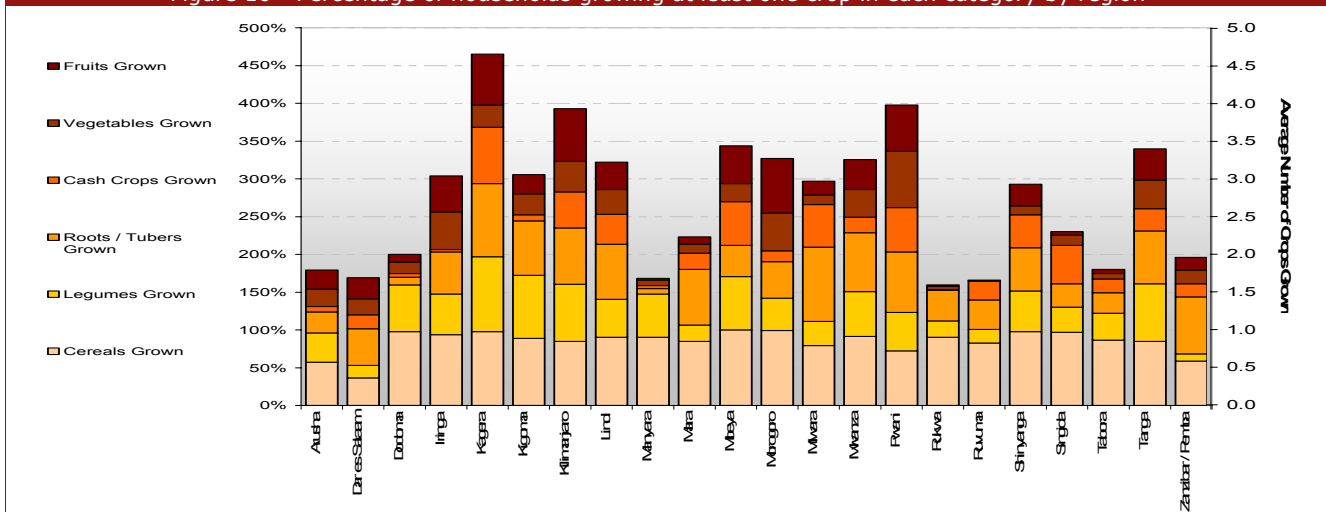
Figure 11 - Percentage of households growing at least one crop in each category by livelihood[xxiv]
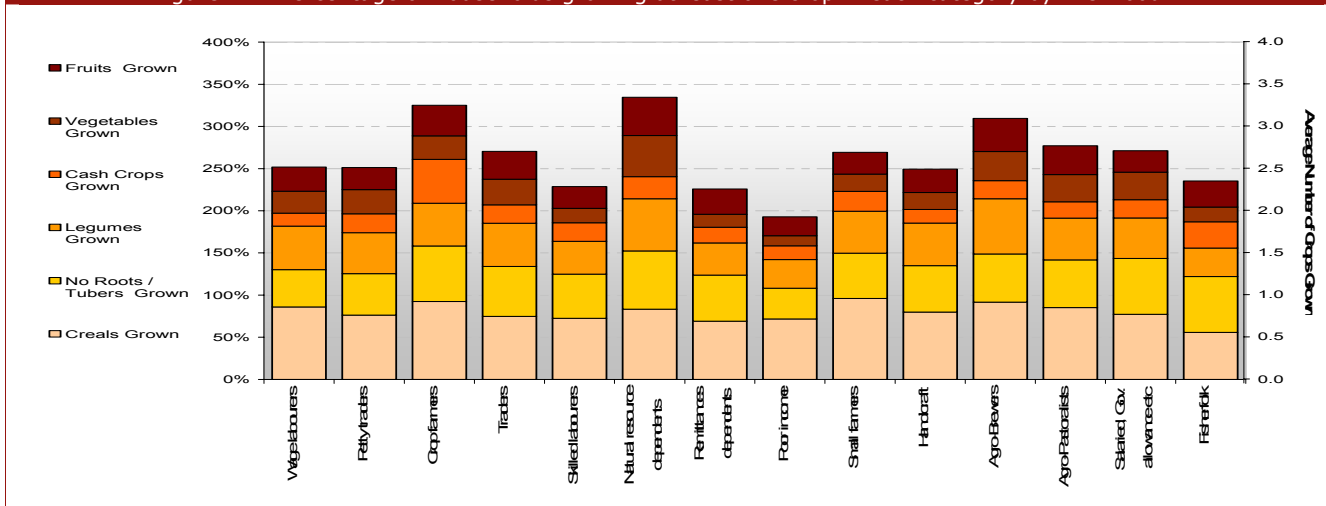
This is seen across Tanzania with the significant exception of Dodoma and Manyara where less than 11% of households grow Roots & Tubers and in Dar es Salaam, Ruvuma and Zanzibar/Pemba where less than 20% of households grow Legumes. These are also regions where there is poor average number of crop type variety. Few households grow any type of fruit of vegetable. In Manyara, Ruvuma, Shinyanga and Tabora less than 10% of households report growing any type of vegetable. These regions, with the addition of Mara and Singida, also see less than 10% of the households growing fruit of any kind. These crops are of importance to dietary diversity as important sources of essential vitamins and minerals. Generally 25.6% of households reported growing vegetables and 31.2% reported growing fruits of any

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kind. There are few significant distinctions between livelihoods other than Poor Income households grow, on average, fewer varieties of crop types.

Kitchen Gardens: On average approximately 30% of the households interviewed had a vegetable plot or kitchen garden. As with most other indicators this shows considerable regional variation. In Pwani 76% of households had kitchen gardens compared to 11% in Shinyanga. Access to kitchen gardens was most reported in Natural Resource Dependants (55%).

Onset of harvesting and Duration of Harvest: In Tanzania there are two rainfall regimes; Unimodal & Bimodal, as discussed in the background section. Although geographically the majority of the country relies on the unimodal pattern a large proportion of the population relies on the bimodal for their cultivation. Understanding of the onset of harvest and the duration of their products from that harvest are important in identifying periods where own production is not meeting the needs of the household. In general, the harvests from both agricultural seasons last, on average, a total of almost 10 months. However this is slightly misleading as there are considerable overlaps where the second harvest, as appropriate, commencing during the period that the products from the first harvest are being utilized. This is best illustrated in **Figure 12** were regions are presented by rainfall regime and then by order of earliest onset of first harvest. The final column illustrates the actual duration that the harvest/s last the household, on average.

There are a number of limitations to this table. Firstly in the Unimodal areas (traditionally known for only one harvest per year) there would appear to be 3regions reporting a second harvest. This could be the interpretation of this question by the enumerators or the household in this region. In order to off-set this, the percentage of HH recorded as cultivating land during the second agricultural season is presented. In these regions there are a significant households reporting this. Duration of harvest is not explored any further so reasons for the duration stated can not be speculated upon. It should also be noted that the data presented here is about duration of harvest not about food availability as purchased food can be an alternative (regardless of the source of the funds). Food access will be explored in a later section.

Figure 12 - Onset and Duration of Harvest by Rainfall Regime

Predominant Rainfall Regime	Region	% of HH Cultivating Land	Harvest	Mean Month Harvest Commences	Mean Duration of Harvest	Month Harvest Finishes	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Actual Mean Duration of Harvest for HH *
Unimodal	Kigoma	100.0	1st Harvest	4.4	5.4	9.8													6.7
		62.8	2nd Harvest	6.5	4.6	11.1													
	Lindi	98.3		4.6	5.0	9.7													7.9
		65.0		7.0	5.5	12.5													
	Morogoro	99.2		5.0	4.3	9.3													6.7
		59.2		7.9	3.7	11.6													
	Tabora	89.6		5.1	5.4	10.5													5.4
	Rukwa	99.2		5.3	6.6	11.9													6.6
	Shinyanga	100.0		5.6	4.3	9.9													4.3
	Singida	99.2		6.0	4.9	10.9													4.9
	Ruvuma	98.3		6.1	7.1	1.3													8.1
	Mtwara	98.4		6.1	5.3	11.3													
	Dodoma	99.2		6.3	4.5	10.8													4.5
	Mbeya	99.2		6.4	7.6	2.0													7.6
	Iringa	98.3		7.4	7.4	2.9													7.5
Mixed	Manyara	95.1		6.0	5.4	11.4													5.7
		17.6		7.0	4.7	11.7													
	Arusha	93.8		7.1	4.9	12.0													5.7
		22.9		7.2	5.6	12.8													
Bimodal	Pwani	99.2		2.9	4.0	6.9													7.6
		100.0		6.7	3.8	10.5													
	Mwanza	99.2		4.3	5.8	10.1													6.7
		19.2		5.7	5.3	11.0													
	Tanga	100.0		4.9	4.2	9.1													6.2
		42.0		7.3	3.8	11.1													
	Mara	100.0		5.1	4.5	9.6													4.5
		87.5		5.1	3.8	8.9													
	Dar es Salaam	93.9		5.2	3.1	8.2													5.3
		48.8		7.2	3.2	10.4													
	Kilimanjaro	98.3		5.4	5.5	10.9													7.4
		55.4		3.5	5.8	9.4													
	Kagera	99.2		5.7	3.7	9.4													3.7
		52.0		5.7	3.2	8.9													
	Zanzibar / Pemba	99.0		7.9	3.9	11.8													4.7
		70.4		7.1	4.4	11.5													

1st Harvest as Reported by the household
2nd Harvest as Reported by the household
Duration of Actual Harvest Products lasts less than 6months
* Actual duration of harvest is calculated from the onset of the initial harvest to the finish of the last harvest

Use of fertilizer chemical/natural: Overall the use of chemical fertilizer (23%) is slightly less than natural fertilizer (30%). Chemical fertilizer is most frequently used in Zanzibar/Pemba, Tanga and Kagera, greater than 50% of the households. Natural fertilizer is used most frequently in Lindi, Zanzibar/Pemba and Mara, greater than 50% of the households.

Seed Acquisition: Depending on seeds from the previous harvest means the household is dependant on a sufficient harvest to supply household consumption needs, which does not mean that they need to dip into the reserve of seeds for the next harvest to meet their consumption requirements; although this is normally only done when purchase is not an option. Use of seed reserves may result in a reduced or severely reduced subsequent harvest and cycling of production problems until an intervention of some kind is found. From the Tz CFSVA the majority (68%) of seeds are obtained by reserving seeds from the previous harvest, although purchase accounts for about 23% of the seed acquisition. This varies by crop type, region and livelihood. Overall and in short, vegetables are as likely to be purchased as reserved from the last harvest; there is a much greater self-reliance for starchy vegetables/tubers, legumes and fruit than other crop types. Those regions that rely heavily on seeds reserved from the previous harvest are; over 80% of households in Dodoma, Iringa, Manyara, Rukwa and Zanzibar/Pemba for cereal crops; over 85% of households in Dodoma, Iringa, Kagera, Pwani and Zanzibar/Pemba for starchy vegetables/tubers; over 90% of households in Dodoma, Kagera, Manyara, Mara, Rukwa and Ruvuma for legumes. Remittance Dependants are more likely to depend on seeds reserved from the previous harvest than other livelihoods for most crop types. Natural Resource Dependants and Poor Income groups also have a higher reliance on reserved seeds.

2.1.3   Main Activities and Income Sources

During the Tz CFSVA, data was collected on livelihood activities used by each household. For each activity further details were asked about how the products of that activity were used (i.e. own consumption or purchase of other food); who participated in the activities; a categorized value of that income; who manages the activity and of the total inputs to the households livelihood what proportion does that activity contribute. The livelihood activities and the proportion of their contribution to that households overall activities where key components in the Livelihood Analysis (the methodology of which is described the earlier section dealing with this.

2.1.3.1   Livelihood Activities

Overall, the most prominent livelihood activities in the households interviewed were found to be; Food crop production (90%); Livestock Production (24%); Petty Trading (17%); Growing Non-Food Crops (14%); and Agricultural Labor (11%). These were reported most frequently throughout the households interviewed there was significant regional variation. This is reflected in the dispersion of Livelihoods, as discussed previously.

Figure 13 shows the percentage of households involved in each activity by region. Crop Production is obviously an important feature in every region with almost 100% of households involved in this activity. Notable exceptions are in Dar es Salaam and Arusha where approximately 50-60% of the households are involved in crop production. Livestock production also shows significant geographical differences. Dar es Salaam, Kigoma, Morogoro, Rukwa, Ruvuma, Tabora and Tanga all reported less than 5% of the households participating in Livestock Production as livelihood activity. Petty Trading occurs much more frequently in Morogoro and Pwani (approximately 30% of households). Growing Non-Food Crops is more frequent in Kagera, Mbeya, Mtwara and Pwani where 30-60% of the households participate in this activity (other regions, such as Kilimanjaro, Ruvuma and Shinyanga, 15-23% of households participate). The remainder of the regions shows few households participating. Agricultural Labor is mainly restricted to Dodoma and Mwanza (approximately 35%) with few other regions reporting between 10-20%. Dodoma and Pwani are home, almost exclusively to households employing Sale of Natural Resources as a livelihood activity (22% and 37% respectively). Iringa is almost exclusively home to Brewers (28% of households).

In the same figure (figure 13) the total height of the columns relate to the diversity of livelihood activities. From this it would appear that Pwani shows the most diverse number of livelihood activities by household, average of 3.4 activities. Rukwa on the other hand shows the least diversity and households there average only 1.3 activities. On average households employed approximately 2 livelihood activities.

Figure 13 - Proportion of households participating in various livelihood activities by region
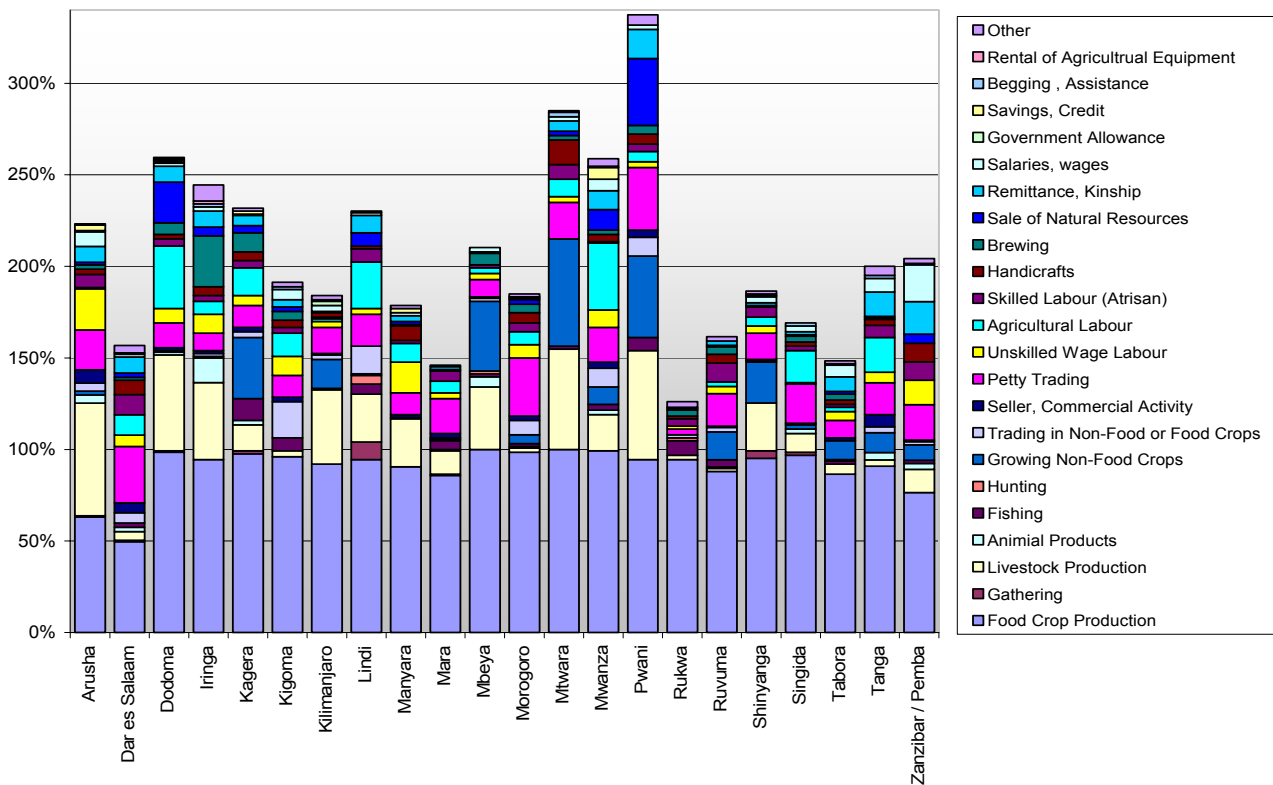
Figure 14 - Proportion of households participating in various livelihood activities by livelihood groups
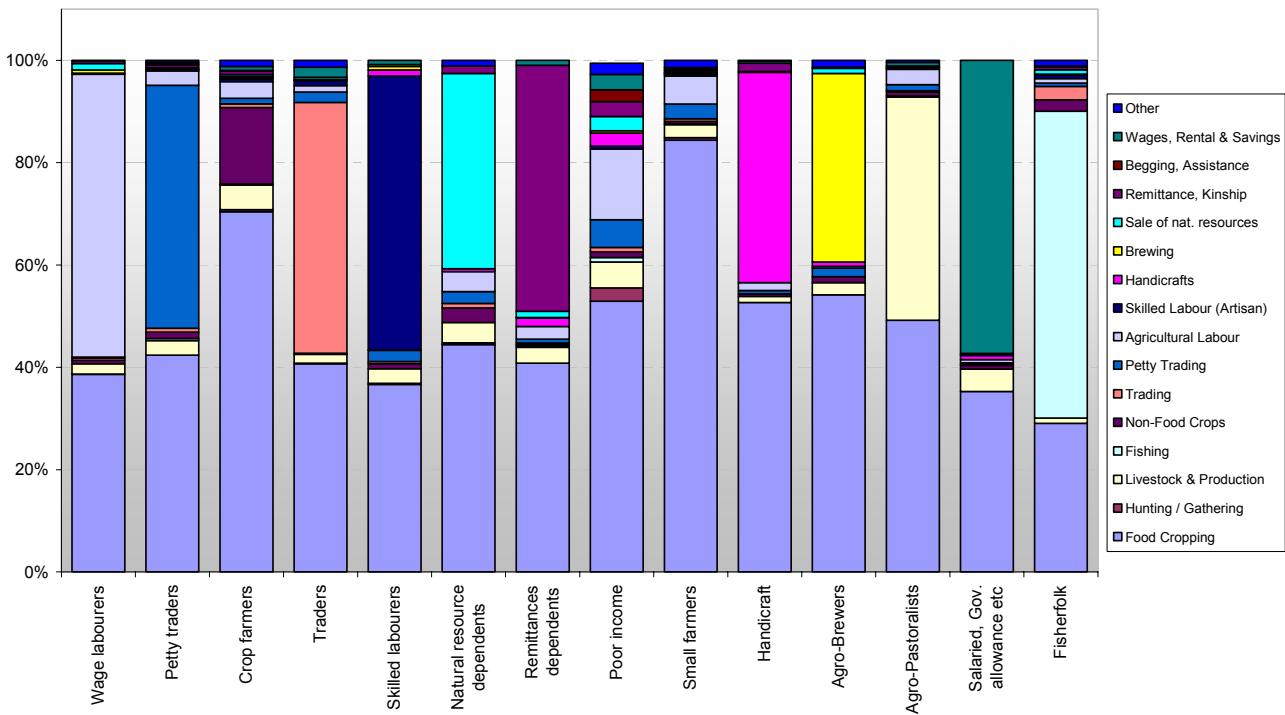
2.1.3.2   Gender Issues

For each activity recorded the interviewee was asked about who participates in the activity and who manages the resources obtained from that activity. Participation in the livelihood activities identified is predominantly by the head of the household. The only activities that involved the spouse of the head of household more then the household head are Food Crop Production and Brewing. Generally the household head and their spouse share the workload of agricultural activities equally, for the most part. Government allowance and Rental of Agricultural Equipment are exclusively activities of the head of household.

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Of the households that responded there were clear differences in those who participated in the activities and who managed the resources from this. Resources generated from agricultural activities are predominately managed by the head of household despite equal participation. Only in Brewing is there some equality in the management of resources from this activity. Overall, in about 75% of the cases the household head is solely responsible for the management of the resources from the activities specified, compared to 14% were the spouse is responsible.

2.1.3.3   Credit

Access to credit facilities is poor within the sample. On average 66.1% of respondents said they had no access to credit. If they did it was predominantly friends or relatives (28.3%) with some small number of households finding credit with local lenders, charity/NGO or local banking system (totaling 7.1%) with an average value of around 107,000TSh[xxv]. Reasons for such poor access were not explored in this survey.

Regionally, less than 20% of respondents in Lindi, Manyara, Mara, Singida and Tabora had access to credit facilities. In Shinyanga and Singida approximately 75% of the households claimed to be in debt with an average value of 112,000TSh. In Mara and Rukwa around 15% of the households were in dept with an average value of 32,000TSh and 13,000TSh respectively. Tabora had the highest level of debt (average of around 600,000TSh), surprising given its low access to credit. Agro-Brewers and Government Allowance/Salary Dependents had the highest average debt (approximately 220,000Tsh).

Figure 15 - Average Consumption of Household Monthly Food & Non-Food Expenditures

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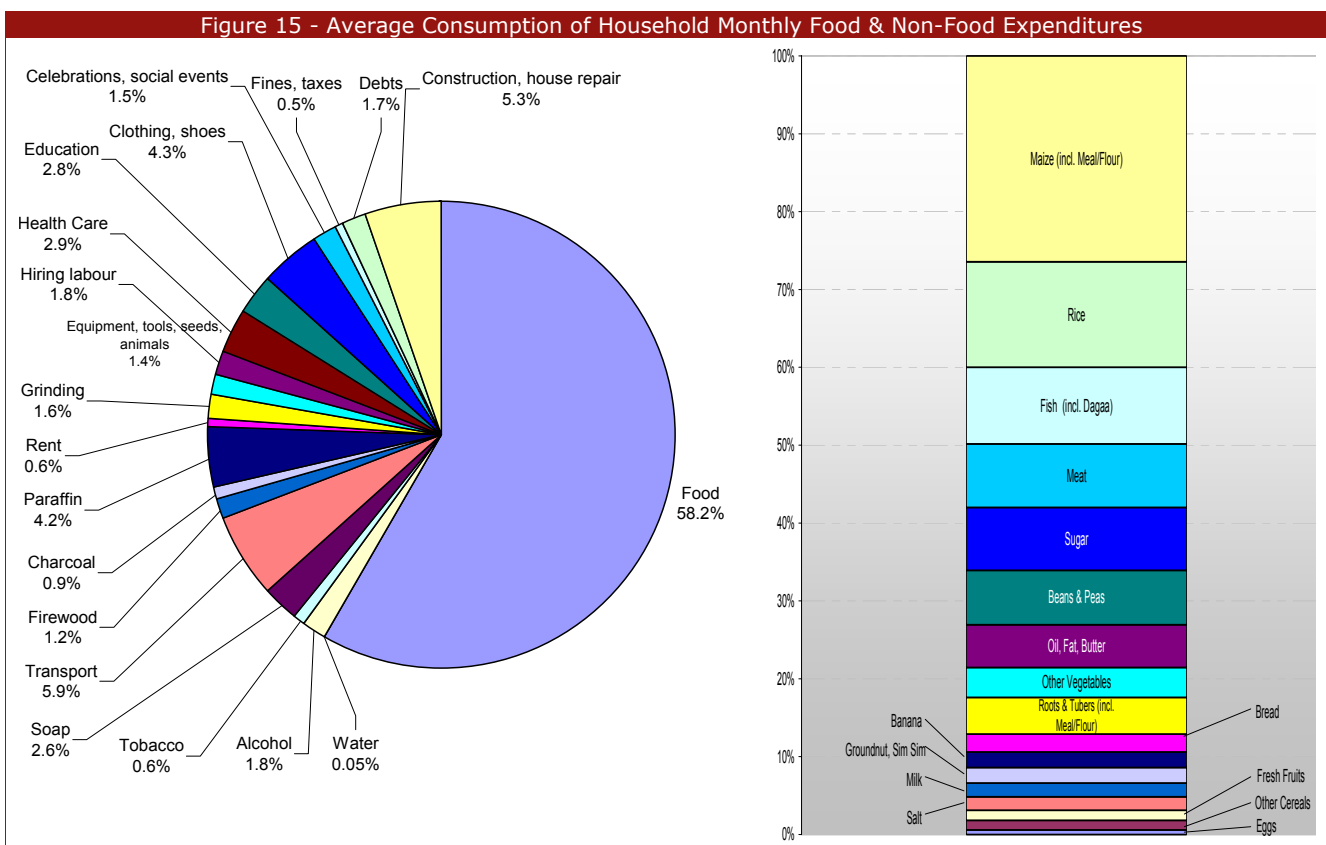
[xxv] As of June 2006, US$1= 1205 Tsh.

2.1.4 Household expenditures

Household expenditure data on food and non-food items were collected from the households interviewed during the course of the Tz CFSVA. The use of this data allows for proxy analysis of food access for these households as well as allocation of resources. Total expenditure is obviously related to the wealth of that household, as is the proportion of that expenditure on food. That is, households with higher expenditures tend to have proportionately lower expenditure on foodstuffs. However the proportion of the total expenditure used for purchase of food is influenced by high reliance on own production, lowering expenditure on foodstuffs, and expenditure on high value foods (e.g. meat), increasing the overall amount spent on food. In this case caution should be used interpreting the results.

In this analysis only cash expenditure was considered as purchases using credit or barter/exchange was infrequent constituting only 5% and 4% of the total expense on average; respective values for frequently purchased items, the highest average value of which being on maize. Recall for expenditure was based on a recall period of 1 month for food items and items of frequent expenditure (e.g. charcoal). This was increased to 1year for less frequent items, such as school fees and celebrations etc, and converted to monthly expenditure for the purposes of the analysis presented here. Total monthly expenditure was calculated from the expenditure data, which obviously doesn't account for miscellaneous items not recorded by the questionnaire.

Figure 17 shows the contribution of food and non-food expenditure to the total expenditure of the average household in the Tz CFSVA. As illustrated, 58% of the total expenditure goes on food items. This is a large proportion (55%) of the total food expenditure and of which it is mainly spent on staple/carbohydrate rich items such as Maize (incl. Meal/Flour) 26% and Rice 14%. Protein rich food constitutes about 29% of the expenditure such as Fish & Dagaa (10%) and Meat (8%). Very little is spent in the way of fruit and vegetables (5%) and a similar amount is spent on Fats & Oils.

Figure 16 - Percentage expenditure of food of calculated total expenditure
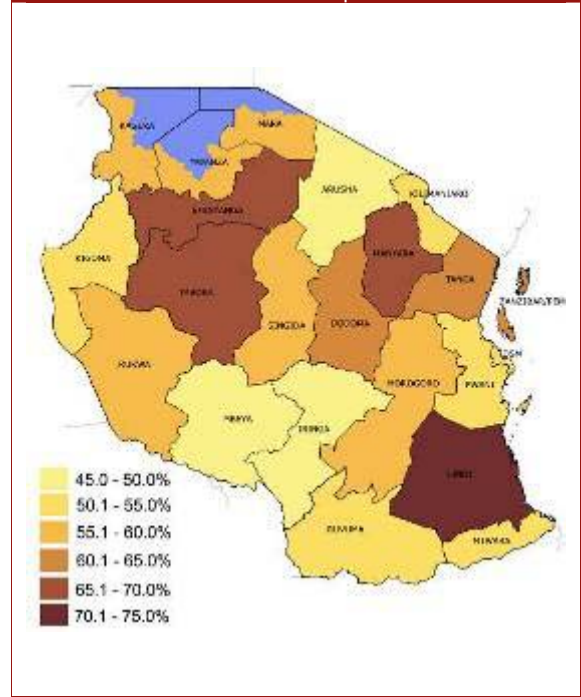
Figure 17 - Proportion of Non-Food and Food Expenditure as Percentage of Estimated Total Expenditure by Region[xxvi]
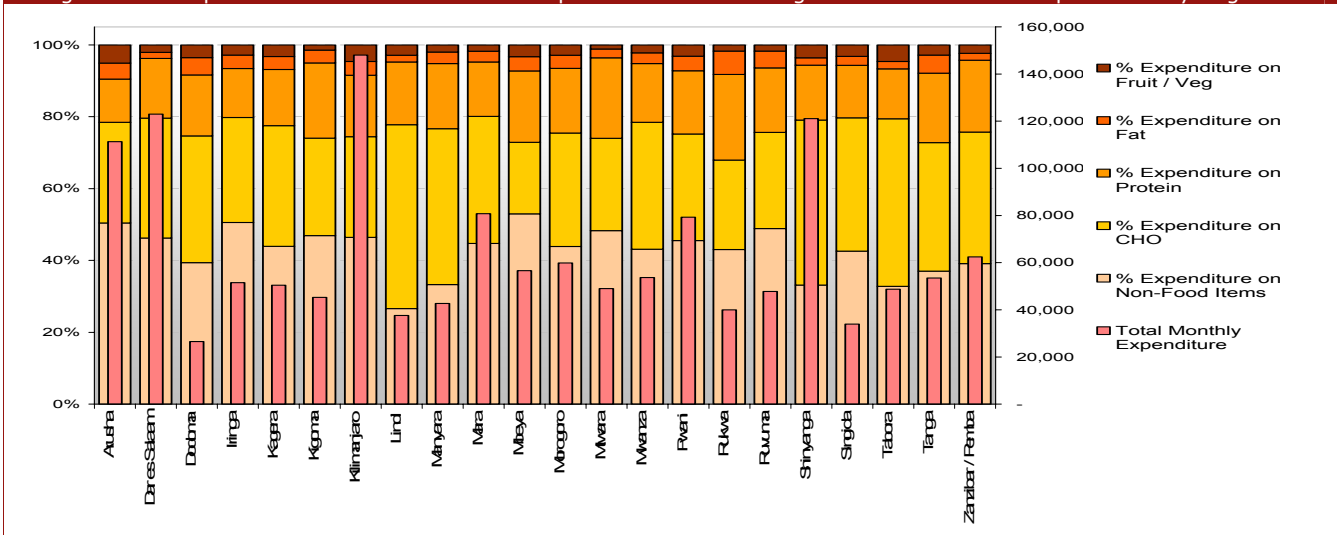
Region expenditure is highly variable and there is no clear pattern other than higher spending proportionately is concentrated around the central belt. For example Lindi: Lindi has one of the lowest total monthly expenditure (37,500TSh, 20 out of 22); the highest proportion of expenditure on starchy/carbohydrate food items (70%); the lowest proportion of expenditure on fats/oils (2.5%). Conversely Mbeya spends around 40% on both starchy/carbohydrate and protein rich foods and has the lowest expenditure on foodstuffs as a proportion of the total monthly expenditure. Expenditure on

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[xxvi] Shown on secondary axis as a separate absolute value

infrequent costs is also lowest in Lindi (6% of the total monthly expenditure) and highest in Arusha (34%). Construction/Repair of Buildings has the highest proportional spending and is greatest in Mtwara (14%), Mara, Dar es Salaam and Arusha were it contributes to about 10% of the monthly expenditure. Fines & Taxes are highest in Kilimanjaro (3%) but vary little by livelihood. Expenditure on Education is generally very low (around 3%) and is virtually nothing in Lindi and Dodoma (<1%) and highest in Arusha (7%). Expenditure on Health Care is equally low and is generally <5%, once again Lindi spends least (<1%).

Figure 18 - Proportion of Non-Food and Food Expenditure as Percentage of Total Expenditure by Livelihood (shown on secondary axis as a separate absolute value
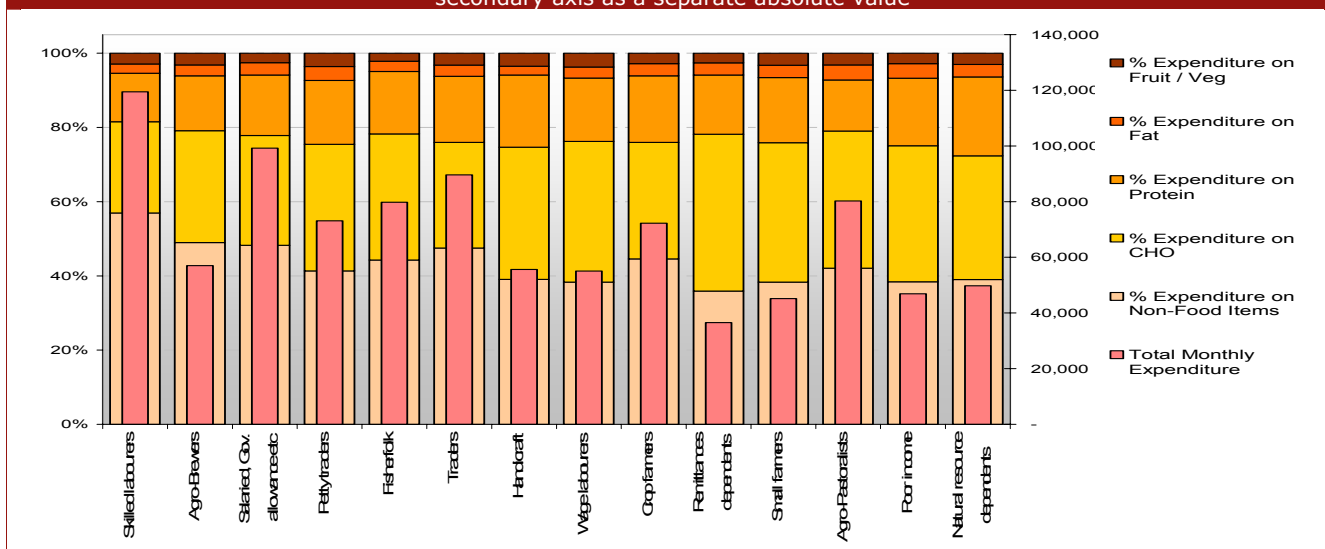
By livelihood there is also considerable variation in total expenditure and expenditure on food items. It would seem that Skilled Laborers spend proportionately more on construction/repair (16%) as well on education (6%) than the other livelihood groups. Those spending least on education are Fisherfolk (1%) and Skilled Laborers on health care (2%).

2.1.5   Household Access Profiling

2.1.5.1   Food Access Profiles Concept and Ranking Methodology

Using a methodology similar to that described for the consumption profiling, the Household Access Profiles are based on information collected at the household level on:Per capita total expenditure (log scale)

- Food expenditure as proportion of total expenditures
- Size of agricultural land accessed (logarithmic scale for normalization)
- Number of months the household harvest (1st season plus 2nd season) normally lasts
- Proportion of consumed food obtained from own production, purchase, hunting/fishing & gathering and gift & food aid.

Those parameters are considered to be good proxies of the access, and also availability, dimension of food security and therefore complement well the consumption profiles. Some doubts rose about the reliability of the expenditure figures, which appeared to be surprisingly low. However, the idea was to differentiate between households with higher and lower cash availability. The absolute figures are relatively unimportant.

With the same exploratory approach used for food consumption profiling, PCA was run on those indicators and lead to 5 principal components that explained more than 81%% of the variance. Cluster analysis was run on the base of those 5 principal components. Again 20 profiles were asked to the software. The analyst scored the obtained clusters from "worst" to "best". Since some clusters in the same category are slightly better and some are worse, a more refined, decimal score was attributed to each cluster to take these small differences into account. On this cluster means were built to calculate the score per each household.

This time, some of the input variables were excluded from the model, being not significant. At the end, the formula to calculate the score for each household in the sample was based only on total per capita expenditure (the higher, the better), share of total expenditure spent on food (the higher, the worse) and the lasting of the agriculture production for the 1st and 2nd season calculated in months (the higher, the better):

Predictor of HH Access = -8.491 + 2.388*log(Total per capita expenditure) - 1.957*(Food expenditure as proportion of total) + 0.084*(Total duration of all harvests reported).

According to their predicted score, households were then grouped into 4 main categories labelled from "Very Weak Access" to "Good Access". Same cut-off points used for food consumption were applied to differentiate households with different level of accessibility to food.

2.1.5.2 Household access to food

Access to food is determined by the household's ability/possibility to obtain food from own production, purchase, gathering, or through transfers (gifts from relatives, exchange labor/items for food, borrowed, food aid/subsidized food (government/NGOs…). The sources of different consumed foods (own production, hunting, fishing or gathering, purchase, gift or borrowing, and food aid) were analyzed as an attempt to understand how reliance on particular sources of food impacts household food security. As part of the survey, each household was asked to report the contribution of the main food sources to their annual food consumption. On average the most predominant food source in the sample was purchase (66.1%) followed by own production (28.2%). Smaller contributions to food in the households come from gifts (2.4%) and hunting, gathering or fishing (1.8%). Borrowing, exchange and food aid/subsidized food accounted for just over 1% of the sample.

Purchase of food is a predominant feature of all consumption groups, livelihoods and regions. In Lindi, Kigoma, Kagera and Iringa (on average 55%) this is less than the national average. Low reliance on food purchase in these regions is off set by own production with the notable exception of Lindi where reliance on food aid/subsidized food (1.2%) and gifts (7.3%) contribute significantly to the source of food. Other regions that rely significantly on sources other than purchase & own production are Tabora and Mtwara where hunting, gathering or fishing account for about 10% of the food sources. Lindi, Mara and Kilimanjaro show about 7% reliance on gifts. Own production is least in Dar es Salaam (7.4%), Arusha (14.7%), Tabora (15.8%) and Singida (18.9%).

Figure 19 - Sources of Food by Food Consumption Group
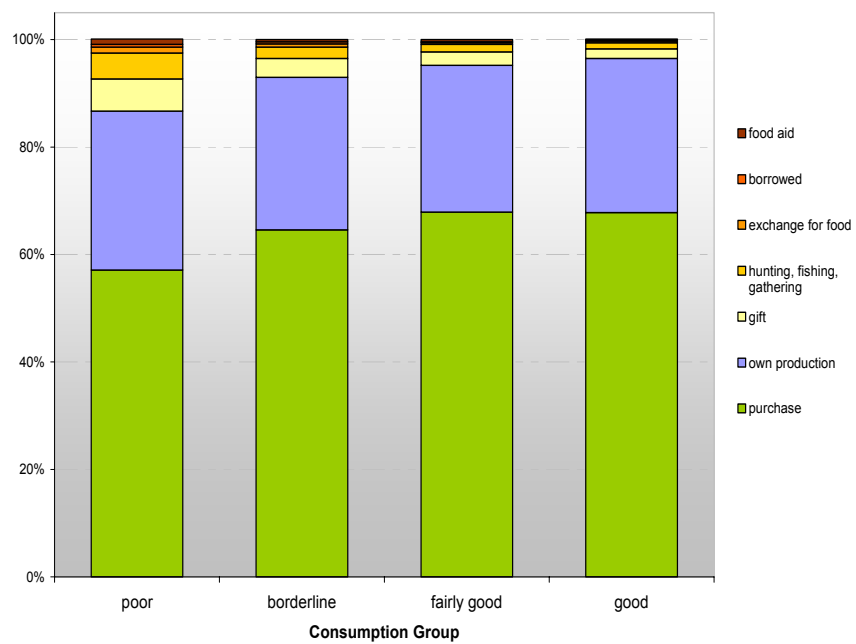
Within the food security profiles Food Insecure households rely more on hunting, gathering or fishing (5.4%), gift (6.0%) and food aid/subsidized food (1.3%) than the other groups. They also rely least on food purchase.

2.1.5.3 Household food access profiles

Based on the methodology described in the previous section 4 main access groups were clustered from the sampled households and are as follows:

Household Access Group	% of HH (weighted)	Ranking cut-off points	Description of Access Group
Very Weak Access The way these households obtain food is very unreliable and insufficient.	10 %	Below / equal 1.50	Characterized by very low purchasing power (28,890 TSh per capita per year), very high share of expenditure spent on food (66%) and short lasting of their harvest (both 1st and 2nd agriculture season) – 3.5 months on average.
Weak Access The way these households acquire food is difficult and unreliable.	30 %	Between 1.51 and 2.50	Better cash availability (71,537 TSh per capita per year), but very high share of expenditure disbursed to buy food (67%). Harvest lasts on average 4.9 months.
Medium Households having fewer difficulties in obtaining food.	36 %	Between 2.51 and 3.50	Households with larger cash availability (139,976 TSh per capita per year), smaller share spent on food (61%) and better harvest, lasting 5.9 months on average.
Good Access Households who can easily obtain sufficient food.	24 %	Above 3.51 (included)	Households with high purchasing power (339,393 TSh per capita per year); less than half of their expenditure on food (48%); and harvest lasting on average 8.1 months.

Table 3 - Household Food Access Groups & Descriptions

2.1.5.4 Geographic distribution of food access profiles

Map 9 - Geographical Distribution of Food Access Profiles
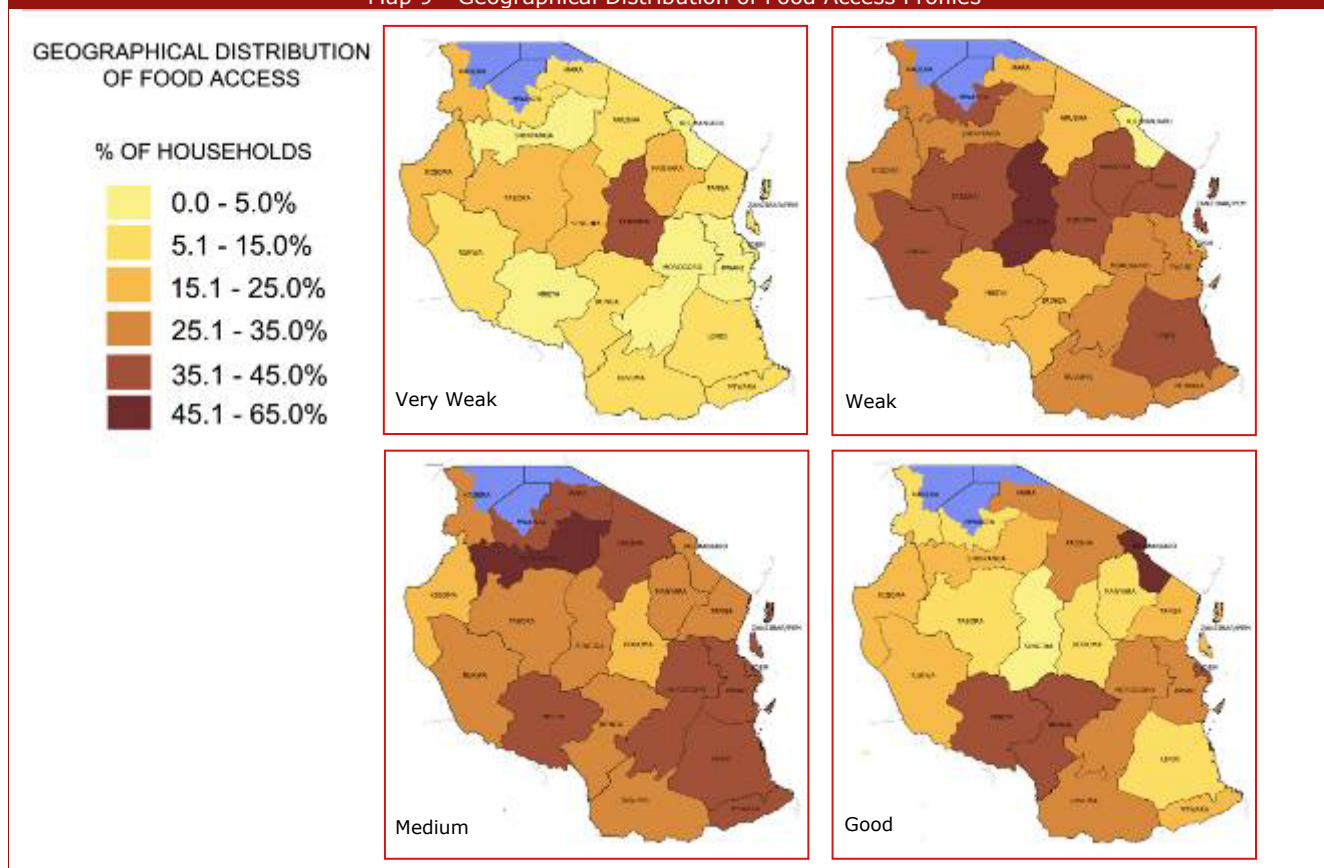
Few regions have more than 15% of the households with very weak food access and nationally only 10.4% of the households have "very weak" food access. Kigoma, Singida, Manyara, Tabora and Kagera all have between 20-25% of households in this profile. Dodoma has the highest proportion of households with "very weak" food access (38%). By far the region with the highest proportion of households with good access to food is Kilimanjaro (64%), Mbeya is second with only 38%.

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2.1.5.5   Distribution of food access profiles among livelihood groups

The Low Income group has the highest proportion of households with "very weak" access to food (26%). Fisherfolk and Skilled Laborers have the least in this profile (3% & 2% respectively). Wage Laborers have the highest proportion of households in the "weak" profile. Handicraft, Small Farmers, Poor Income, Wage Laborers, Natural Resource Dependents and Remittances Dependents have less than 20% of the households with "Good" access to food.

Figure 20 - Distribution of Access Profiles by Livelihood Groups
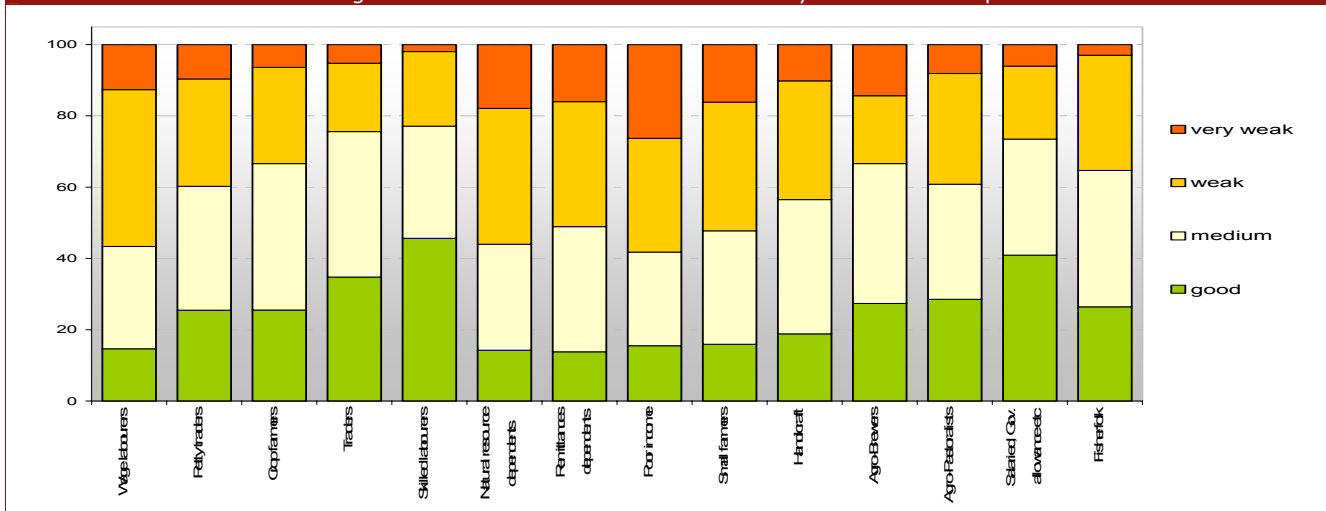
2.2   Food Consumption

2.2.1   Food Sources and Frequency

Nationally the main source of food at the time of the survey was by purchase (66%). This observation should be contextualized as at the time of the data collection the population was experiencing a drought; there are natural depletions of harvest during January; possible contradictions with the observations in Section 2.1.2 Agricultural production could be due to under-reporting of harvest duration from the expectation of receiving food aid/subsidized food. As sources of food change throughout the year the data presented should be interpreted in this manner. Reduced own harvest during the early part of the year is likely to account for the low proportion that own production accounts for. Kigoma, Mbeya, Iringa, Kagera, Rukwa, Lindi, Ruvuma and Mwanza rely on 30-44% of own production (higher than the national average). Arusha (15%) and Dar es Salaam (7%) have the lowest reliance on own production.

Figure 21 - Households Food Sources
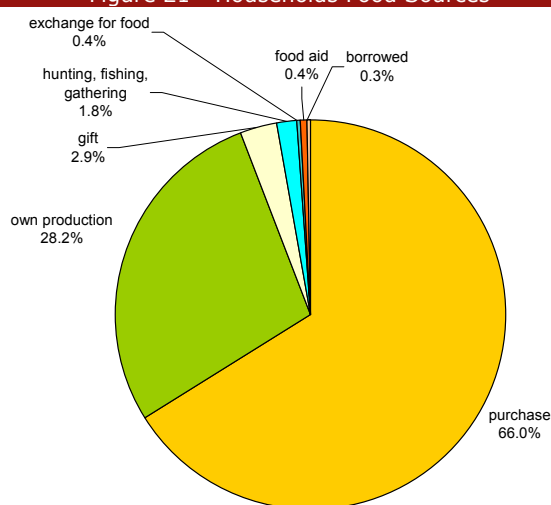
Within livelihood groups there is little variation in reliance on own production and ranges between 21% in Wage Laborers and 33% in Small Farmers. Remittance Dependants rely most heavily on Gifts and Food Aid/Subsidized Food (total of 13%).

Sources of particular food stuffs varies mainly between purchase and own production. Foods that are most frequently recorded as coming from own production are Roots & Tubers (69%), Eggs (56%), Bananas (53%) and Maize (52%). The most frequently purchased items are Sugar, Butter/oil/fat, Bread and Fish (>90%). Fruits and Vegetables are purchased or own produced in almost equal proportions. However they are more like to be collected from the wild or given as a gift than other items (approximately 7% and 4% respectively). Households with poor consumption profiles tended to have higher frequencies of gift and gathering from the wild than the other profiles as did the food insecure group. Food aid/Subsidized food also plays a more important role in the source of food for these two groups.

Meal frequencies were recorded for both adults and children for the day before the questionnaire was conducted. To provide some context to these observations it was asked of the interviewee if this was

normal for the time of year that the survey was conducted. This provides a snap shot as to both food consumption and also to feeding practices of children. The results also need to be considered in the light of the drought context that was being experienced throughout much of the country. The 2figures below show the average number of meals given to both adults and children.

Figure 22 - Distribution of meal frequencies by region
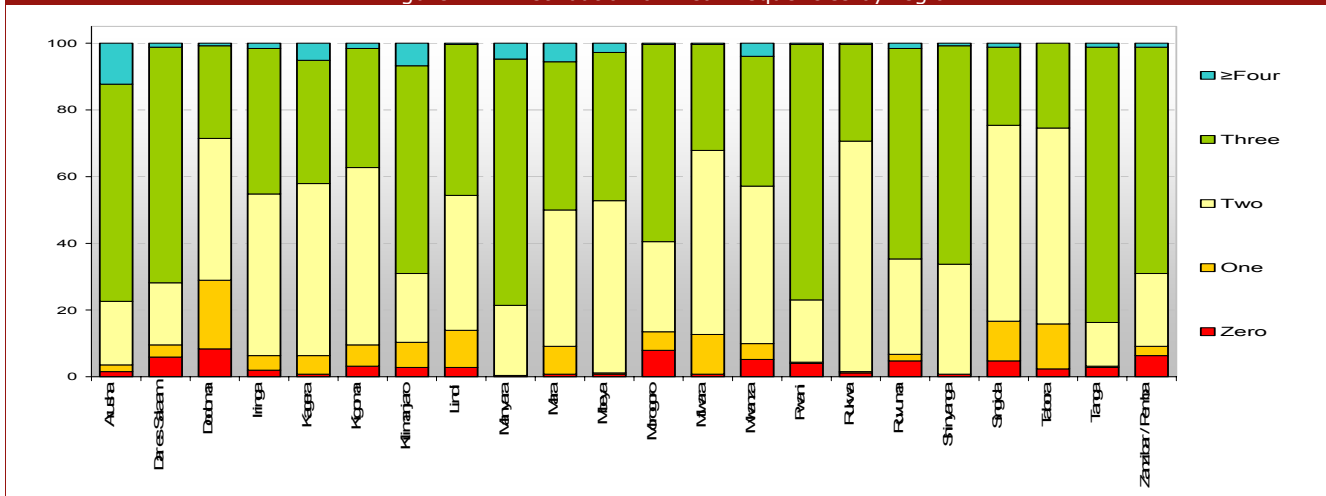
Figure 23 - Distribution of meal frequency by livelihood groups
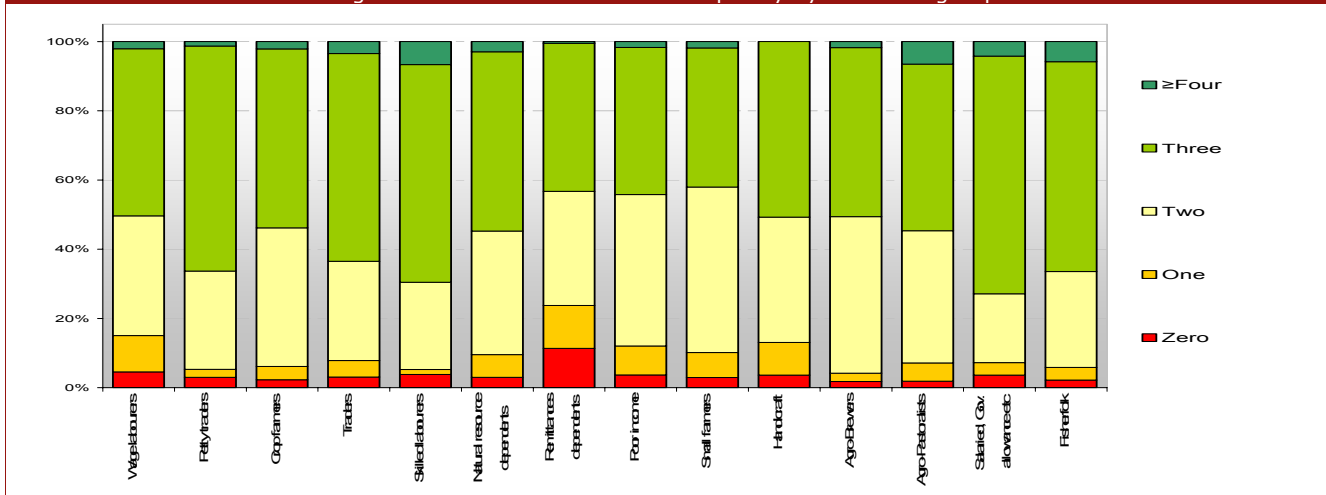
What is alarming is that in a number of regions it is recorded that no meals were given to children in the household during the previous day. This was highest in Dar es Salaam (12%), Dodoma (15%), Morogoro (16%), Mwanza (10%) and Zanzibar/Pemba (12%). Caution should be used in interpreting these results as in all of the regions surveyed <0.3%, on average, had not received a meal the previous day. This goes against common belief that adults sacrifice their food in order to feed their own children when there is a food shortage[xxvii]. Of these regions only Dar es Salaam and Zanzibar/Pemba were these meal frequencies considered abnormal. In Dar es Salaam it was neither typical nor atypical and in Zanzibar/Pemba over 80% of the households considered this normal. It is also worthy noting that during the time of assessment many households were facing food shortage and in were in expectation of government intervention. This might have influenced their response in anticipation of getting more relief food. Sources and food frequency are discussed in further detail in section below.

2.2.2   Household Food Consumption Profiling

2.2.2.1   Frequency of Consumption and Dietary Diversity

The Household Food Consumption Profiling uses groups based on information collected at the household level on dietary diversity and the consumption frequency of staples and non-staple food. Diet diversity, measured by the number of different foods from different food groups consumed in a household, and

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[xxvii] Additionally the high profile nationally of the drought at the time and the almost concurrently running Rapid Vulnerability Assessment lead by the government may have influenced the responses of the households with the thought of the prospect of receiving food despite having been told this was not the case.

frequency of consumption are good proxy indicators of the access dimension of food security and nutrition intake. Research has demonstrated that dietary diversity is highly correlated with caloric and protein adequacy, percentage of protein from animal sources (high quality protein) and household income. Households included in the CFSVA were asked information on the frequency of consumption (0 to 7 days) for nineteen food items or food groups over the last 7 days prior to data collection. Those 16 items were:

- Maize
- Rice
- Other cereals
- Mandazi / Chapatti / Bread

- Roots and tubers
- Banana
- Beans and Peas
- Groundnuts

- Vegetables
- Fresh fruit
- Fish
- Meat

- Eggs
- Milk
- Oil, fat, butter
- Sugar

2.2.2.2 Methodology for Analyzing Food Consumption Data

Theoretically, we would need to assess each household specific consumption pattern, i.e. which combination of food they consumed, and we would need to assign a score indicating how good or bad that pattern is likely to be. Having 2772 households in our sample this is obviously not feasible.

In order to somehow bypass this constraint, households were clustered into food consumption profiles. The cluster analysis was run on the result of a principal component analysis (PCA) [xxviii].

The aim of the analysis is to cluster together households that share a particular consumption pattern. The advantage of running a cluster analysis on principal components and not on the original variables is that we cluster based on relationship among variables. A cluster analysis was run on the basis of 11 principal components obtained by PCA, which accounted for slightly more than 81% of the variance of the original dataset.

As different foods have different nutritional and economic values[xxix], such a high level of consistency with the original complexity of the dataset ensures that variance due to peculiar combination of items are not thrown out just because they account for small part of the total variance. In other words, using a "light" data reduction approach, we avoid smoothing too much our different consumption patterns without knowing what peculiarities we are flattening down. The idea was to obtain a relatively high number of groups which reflect many different consumption patterns. These "summary" consumption patterns were used to create a formula which applied to the entire sample would have permitted to consistently attribute a food consumption score to each household.

Based on the explorative methodology just described, 20 distinct profiles of households characterized by their different food consumption patterns were identified. These resulting profiles were scored from "worst" to "best" on a continuous scale and this scale was iteratively revisited and adjusted through a regression analysis. Using the parameters obtained from the regression formula it was possible to consistently evaluate each sampled household, consistent with the judgment the analyst used to assess the 20 profiles. The formula obtained was the following:

- **Predictor of Food Consumption = -1.067 + 0.189*cereals + 0.095*tubers + 0.201*pulses + 0.289*animal + 0.066*egg/milk + 0.118*oil-fat-butter + 0.077*sugar - 0.026*(animal*pulses)**

As it can be seen, food groups were used in the regression. A combination of animal product and pulses was added to factor their "interchangeability" in the diet as high quality protein providers (provided the simultaneous consumption of cereals and pulses, which was always found in every pulses eater group). In other words, even if household did not frequently consume animal products but they consumed pulses and cereals their score was not negatively affected.

2.2.2.3 Household Food Consumption Groups and Profiles

A predicted ranking value was calculated for each household. Ranking values were between 0.5 and 4.5.

In order to clearly define main food consumption groups, precise cut-off points were used to separate households. The rationale is that households within a certain range of score are very likely to belong to determinate consumption profiles because of the high intra-homogeneity within each sub-group.

Labels of main food consumption groups, short description of different dietary profiles and their defining cut-off points are reported in the table below. Cut-off points were decided after qualitative judgment of the different food consumption profiles.

[xxviii] The software used for multivariate analyses is ADDATI 5.2c, developed by Silvio Griguolo, IUAV Venice, Italy, freely available at http://cidoc.iuav.it/~silvio/addati_en.html

[xxix] Different types of foods (for example, meat versus vegetables) but also different types of items within each food group (maize versus rice).

Household Food Consumption Group	% of HH (weighted)	Number of profiles	Ranking cut-off point	Description of Consumption Group
Poor Food consumption very insufficient, low quality	17.7%	6	Below / equal 1.50	Households in group are characterized by poor diversification in their diet which is mainly based on consumption of staple – cereals, sometimes integrated by tubers. Most likely they lack high quality proteins. Half of those households consumed frequently vegetables; the other half consumed them just 2-3 days per week.
Borderline Rather poor quality but still insufficient	27.0%	7	Between 1.51 and 2.50	Households in this group have a regular food intake of cereals (few largely substitute them with tubers or roots) and vegetables or fruit. Those staples are integrated by only one other food group frequently eaten. Some households consume frequently oil/fat/butter. Some other households consume fish while some others consume sugar. Pulses are seldom eaten, on average 2 days per week.
Fairly Good Just sufficient and acceptable quality	34.4%	3	Between 2.51 and 3.50	Frequency of consumption of eaten foods is regular and also the diversity in each food group is good. Combination of cereals (sometimes integrated by roots and tubers), vegetables and fruit, oil/fat/butter or sugar and animal products or pulses are consumed by households in this group.
Good Clearly sufficient and good quality	20.9%	8	Above 3.51 (included)	Households in this group present good diversity and frequency of consumed food. In particular, Animal products, oil/fat/butter, sugar and vegetables or fruit are daily eaten along with cereals. Most of those households consumed pulses too on a frequent basis.

Table 4 - Household food consumption groups and descriptions

2.2.2.4 *Geographic distribution of consumption profiles*

Map 10 - Geographic distribution of food consumption patterns
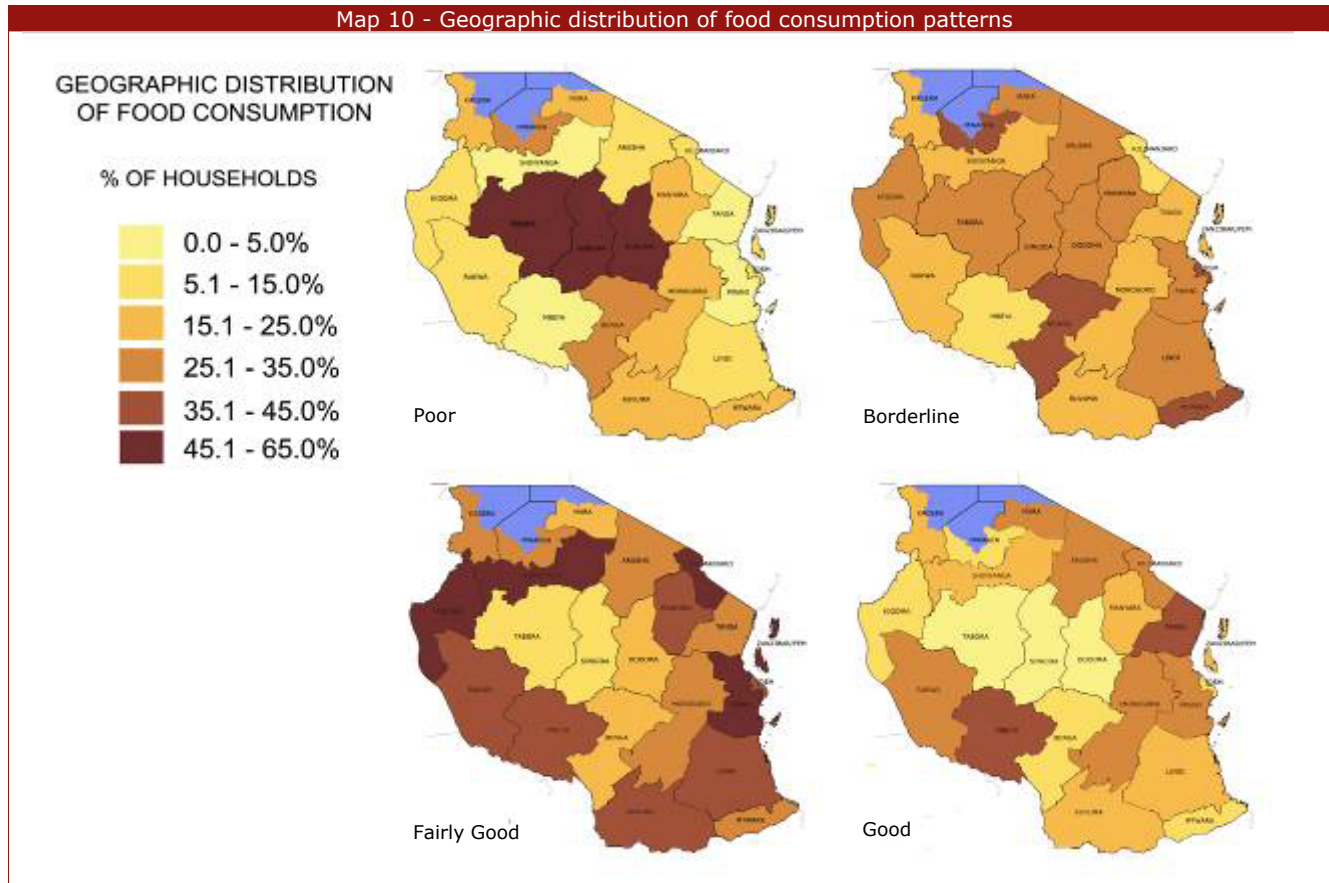
Food Consumption is poorest in the central regions of Tabora (64%), Singida (62%) and Dodoma (48%). Regions in the central belt and most of the coast have high frequency of borderline consumption patterns with Mtwara (42%), Dar es Salaam (39%), Iringa (37%) and Mwanza (36%) with higher levels. Kigoma (78%), Dar es Salaam (78%), Zanzibar/Pemba (75%), Lindi (72%), Shinyanga (72%) and Pwani (72%) have the highest cumulative levels of Borderline and Fairly Good consumption patterns.

2.2.2.5 Distribution of consumption profiles among livelihood groups

Wage Laborers (30%), Poor Income (28%), Small Farmers (27%) and Remittance Dependants (26%) have the highest frequency of households that have poor food consumption patterns. 50-60% of the households in the livelihoods Remittances Dependents, Wage Labourers, Agro-Brewers, Small Farmers, Poor Income and Natural Resource Dependents fall into the categories of "poor" or "borderline". Fisherfolk have the highest proportion of households that fall into the good food consumption pattern.

Figure 24 - Frequency of food consumption patterns in livelihood groups
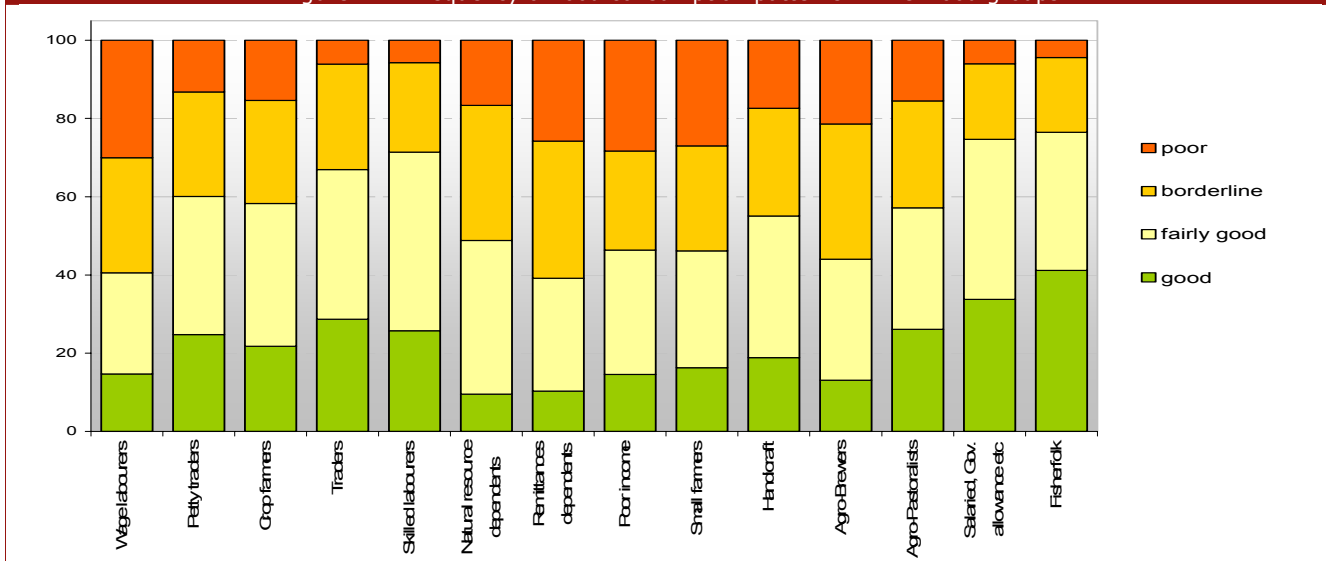
Own production (accounting for, on average, 28%) varies little within livelihoods (ranging between 21% in Wage Laborers and 33% in Small Farmers). On average the groups that have the highest contribution of own production, as a source of food, are Small Farmers, Agro-Pastoralists and Crop Framers (approx. 32%). Fisherfolk rely most on hunting, gathering or fishing (7%). Remittance dependants rely most on gifts (4%) and food aid/subsidized food (10%) as a food source, however generally this is still low.

2.3 Household Food security and vulnerability profiling

2.3.1.1 Household Food Security Scoring Concept and Methodology

The Household Consumption and the Household Food Access groupings are based on proxies of the Food Access dimension of Food Security. As such they can be used as indicators of Food Security and Vulnerability status. The Household Food Security and Vulnerability Ranking constitute the main objective – and result of the Tanzania CFSVA. Every combination of "Food Consumption" and "Food Access" results in a certain Food Security category:

		Food consumption			
		poor	**borderline**	**fairly good**	**good**
Accessibility to food	**very weak**	5%	3%	2%	0%
	weak	7%	11%	9%	4%
	medium	5%	9%	14%	8%
	good	1%	5%	10%	8%

To define the Food Security and Vulnerability level, the sum of Consumption and Access score was calculated for each household obtaining a **Food Security Score**. Cut-off points were used to divide into 4 groups the sampled households, assessing them as Food Insecure, Very Vulnerable, Moderately Vulnerable and Food Secure. Those cut-off points were derived by linear combination of the 2 scores and are reported in the table below.

2.3.1.2 Household Food Security & Vulnerability Profiles

Based on the described methodology, the four Food Security groups are:

Food Security category		% HH	Ranking cut-off points	Category Characteristics
Food Insecure		15.3%	Below/equal 3.50	Households with generally poor or borderline food consumption and very weak food access; or households with weak or very weak access and poor consumption.
Highly vulnerable		15.4%	3.51 – 4.50	Food-access and/or food-consumption are so insufficient that these households are close to being food insecure.
Moderately vulnerable		23.3%	4.51 – 5.50	Food-access and/ or consumption are not good enough to categorize them as food–secure.
Food Secure		49.0%	Above 5.51	Generally: fairly good to good food consumption and medium to good food access, includes also "good access + borderline consumption" and "good consumption + weak access".

2.3.1.3 Geographic distribution of food security and vulnerability profiles

From map 10 it is clear that the regions that have most food insecure households are in the central belt of Tanzania. At the time of the survey Tabora, Singida and Dodoma had few food secure households. Lindi, although not highly food insecure, has many households that are moderately or highly food insecure. This can also be said of Dodoma, Iringa, Kigoma, Manyara, Mara, Mtwara and Mwanza all have vulnerable populations of between 40 – 50% (and varying degrees of food insecure.

Map 11 - Geographic distribution of food security profiles
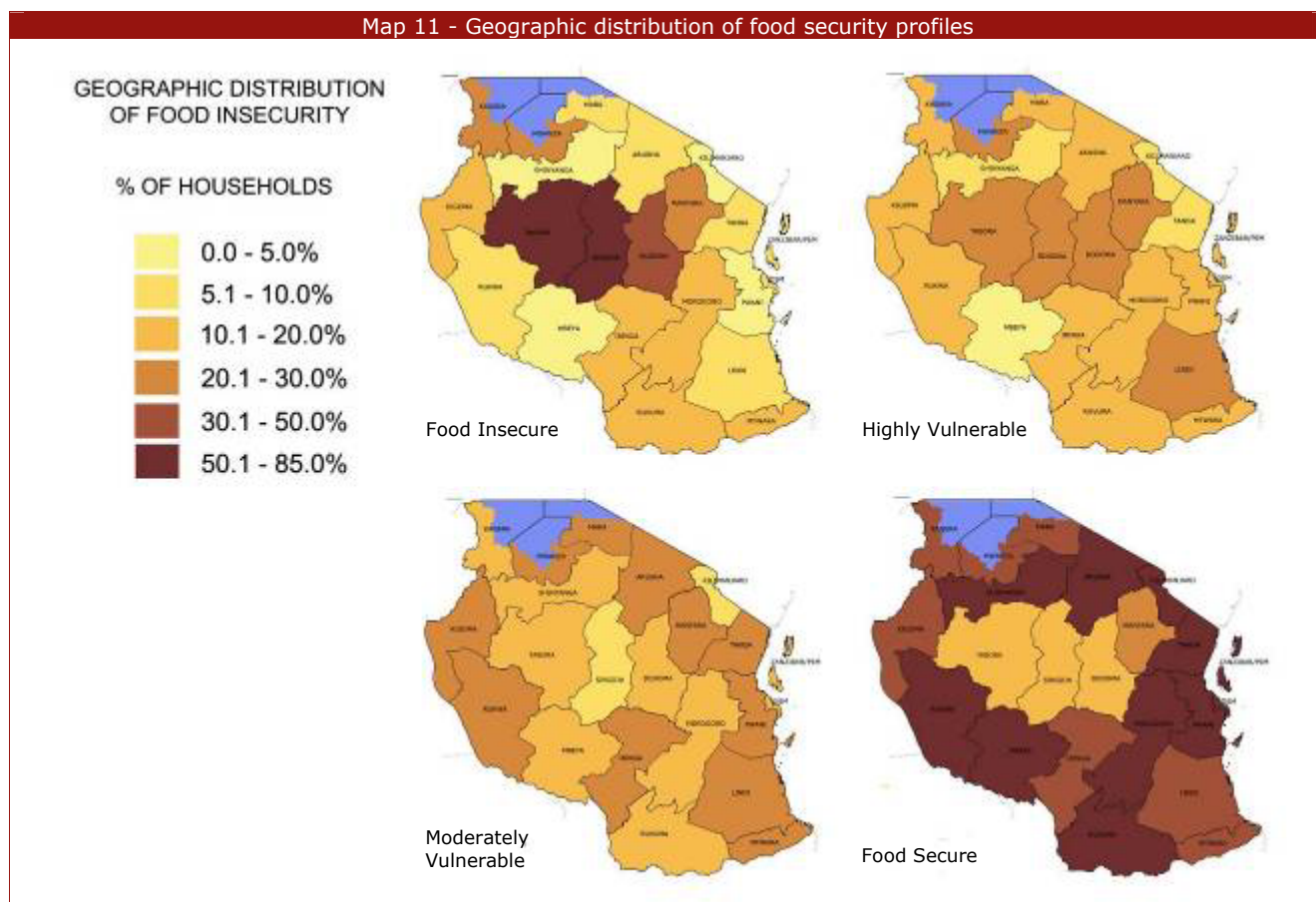
2.3.1.4 Distribution of food security and vulnerability profiles among livelihood groups

The Livelihoods with the highest proportion of Food Insecure households are Poor Income (29%), predominately in Manyara and Ruvuma; Wage labourers (27%), predominately in Arusha and Dodoma; Small farmers (26%), widespread throughout Tanzania; and Remittance dependents (25%) predominately in Tanga. These groups also have the highest proportion of households with food insecure and highly vulnerable profiles. Even in the most food secure groups (and regions) there is still a high percentage of

food insecure and highly vulnerable households. As described earlier, food security is defined by food access and consumption. Although it is not possible to explore the underlying issues for each household, access and/or consumption play greater or lesser roles depending on location or dependant on livelihood. This reflects the complexities of both geographic factors and those that contribute to the livelihood strategies employed by the household. **Part 5** and **Part 6** summaries outlining factors contributing to food insecurity are presented by livelihood and region.

Figure 25 - Food security and livelihood
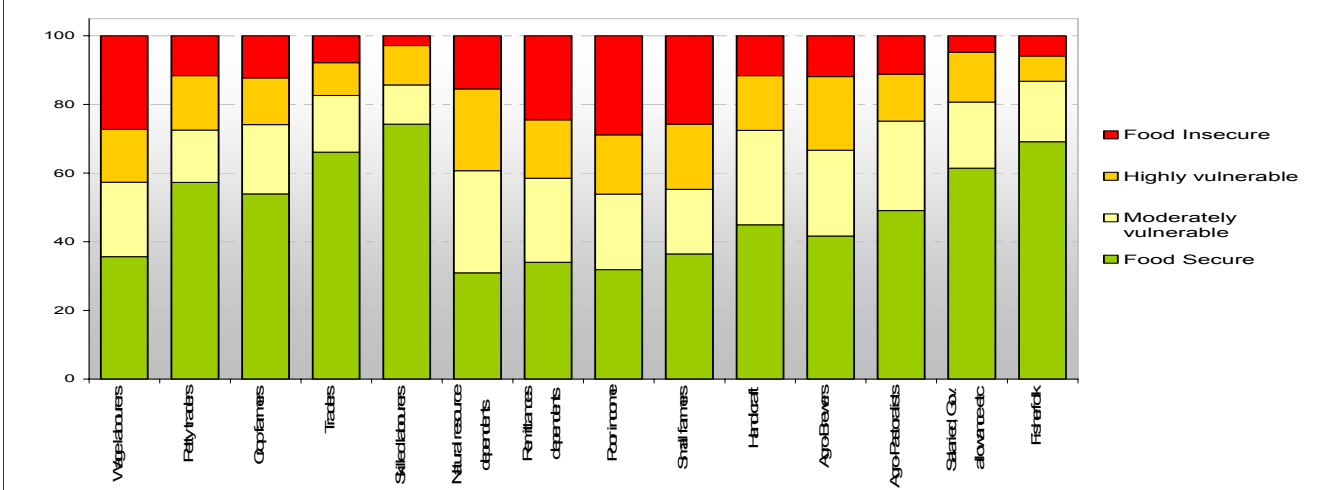
2.4 External shocks and coping strategies

A common distinction made is to divide shocks and hazards into those that are 'co-variant', those that apply to entire communities, regions or even countries as whole – for example price movements in markets; epidemic disease, extreme weather, civil disorder and policy changes; and 'idiosyncratic' hazards that only affect particular households or individuals – for example, accidents (domestic, workplace, transport), fire, crime, addiction, physical disability, etc.

Map 12 - Geographical Distribution of the Most Significant Shocks in Tanzania
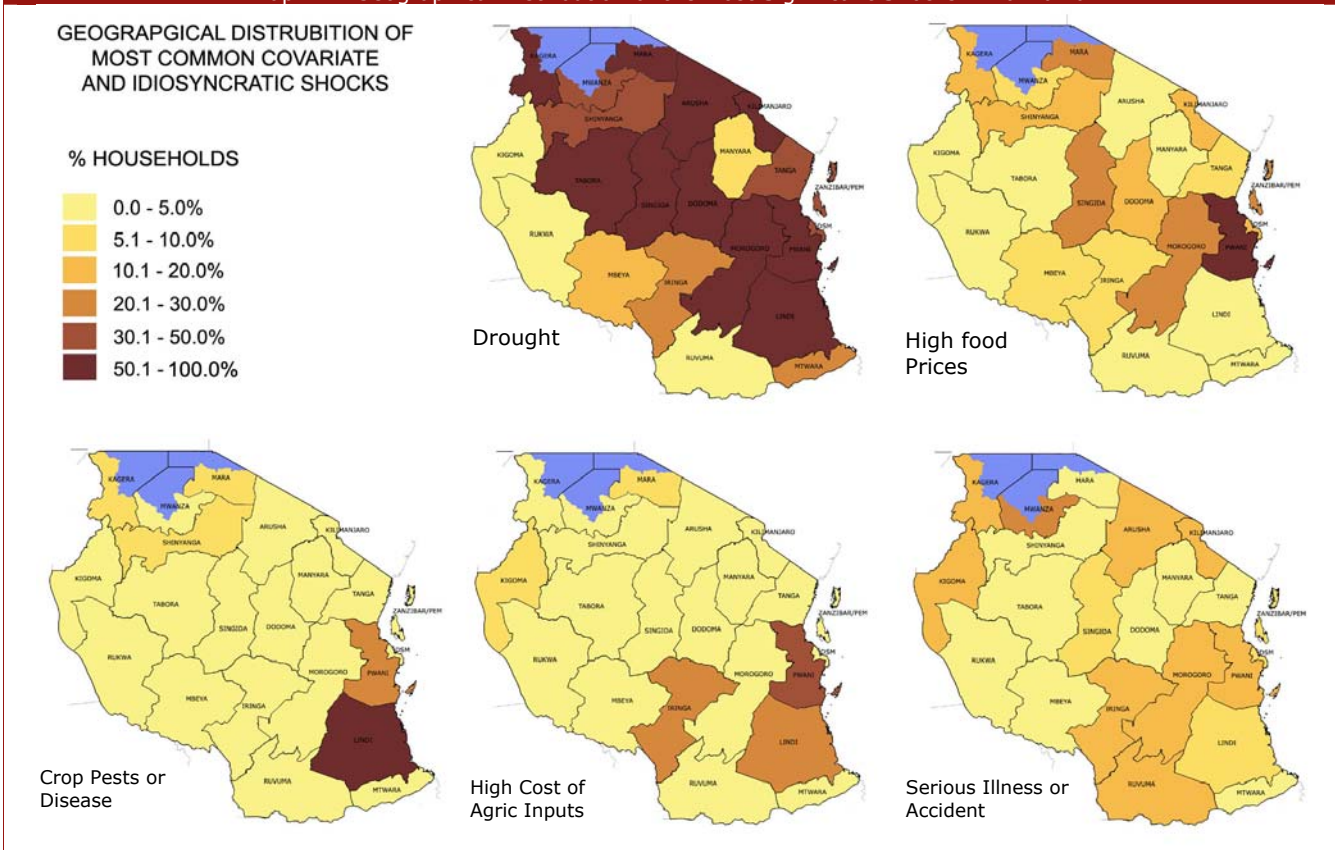
In the Tz CFSVA a number of specific shocks were investigated; 8 Co-variant shocks and 7 Idiosyncratic shocks and households asked if they had experienced these in the previous year and they were asked to rank then in order of importance. The 4 main causes were further investigated for their impact on the household. On average (56%) of the sample population experienced some kind of shock over the previous year. These shocks were primarily Co-Variant shocks, with about 50% of households experiencing one or more. However, only 4 specific covariant shocks appeared as those affecting households in the survey with any significant frequency. Just over 10% of the households sampled experienced one or more idiosyncratic shocks, although this seems to be focused around one type of shock.

The highest frequencies of households facing any type of shock in the previous year were found in Pwani, Dodoma, Lindi, Mara, Singida, Kagera and Morogoro where over 80% of the households were effected. Less than 15% of the households in Manyara and Rukwa reported experiencing any kind of shock. Households in Lindi and Pwani experienced more then one covariant shock with greatest frequency (90% and 68% respectively). In Lindi more than three were reported. By Livelihood, Natural Resource Dependants were most frequently affected by shocks (predominately covariate although they also the highest frequency of idiosyncratic shocks).

More specific details of geographical differences and frequencies of other shocks as well as by different livelihoods are expanded upon in the next sections. A summary of these main shocks are presented by their geographical distribution in Map 11.

2.4.1 Covariate shocks

Nationally, the main shocks experienced were "**Drought**" (44%), "**High Food Prices**" (12%), "**Crop Pests/Disease**" (5%) and "**High cost of Agricultural Inputs**" (5%). Regional distributions of these main shocks are presented in the map above. Over 80% of the households interviewed in Mara (83%), Singida (84%), Dodoma (91%) and Pwani (92%) experienced drought over the previous year.

High levels of crop disease/pests were experienced mostly in Lindi (61%) with few other regions experiencing this kind of shock. High prices of food were also relatively geographically limited. Lindi also experiences other shocks at a higher level than other regions, Flood (19%) and Disease in Livestock (26%) are reported frequently. In Dar es Salaam, Lindi and Kagera other shocks were mentioned in 15-30% of households. Of this the most common co-variant shock was high winds in Kagera. Further explanation of this is not available from the analysis.

Natural Resource Dependants are most affected by co-variant shocks. 78% of these households reported experiencing Drought and High Prices of Food (33%). Small Farmers and Crop Farmers experienced Drought to a lesser degree but was still the most significant shock experienced by these groups in the previous year (49% and 39% respectively).

2.4.2 Idiosyncratic shocks

There are few idiosyncratic shocks mentioned in the Tz CFSVA. The most significant is Serious Illness or Accident (8% nationally). The highest proportion of households experiencing this shock was found in Mwanza (25%). Morogoro also experienced this shock relatively frequently (18%). Of the other idiosyncratic shocks experienced by households in this survey High Levels of Human Disease were the also mentioned with some significance, even though with small frequency. Mara (14%), Lindi (9%), Kigoma (7%) and Tanga (6%) reported this most frequently.

2.4.3 Coping strategies

Overall in the sample practically all the households (99.6%) made use of at least one coping mechanism in response to a shock experienced. Each household was only given the opportunity to provide two responses as to how they compensated or resolved the issues that arose due to the shock. According to the national averages there was no distinct coping mechanisms employed by households. However there is large variation in the coping mechanisms used across the sampled regions. For example Lindi, Mara, Kilimanjaro, Iringa, Singida and Dodoma more than 20 out of the 26 coping mechanisms were mentioned as being used by varying frequencies of households. Even within these regions there is greater emphasis on different coping mechanisms. For example in Lindi the "consumption of seed reserved for next season" (17%) and "reducing meal proportions for all" (15%) were most commonly used. This is different from Mara and Kilimanjaro were the "reduction in the number of meals" (18% and 15% respectively) was more common (Kilimanjaro also relied more on the use of savings; 18%). In Zanzibar/Pemba the main reason coping mechanisms were to reduce meal quantities (reducing the adult meals to provide for children (15%), reducing the number of meals that day (22%) or skipping meals for an entire day - 18%). Map 12 illustrates how the main coping mechanisms differ between regions. Livelihoods also vary greatly in their use of coping mechanisms. There are multiple strategies with no clear preference for one strategy, although Agro-Pastoralists have preference for the sale of animals or poultry.

Overall this may reflect a situation where the majority of households still have a number of options left to them in order to deal with the shocks that arise. Greater preference was given to Reduction of food quality and quantity rather than asset stripping type mechanisms. However some small overall percentage of the households in the survey considered selling animals/poultry to secure additional funds. In the same manner only a small percentage of the households interviewed reduced their own financial reserves or got into debt whether to purchase food or other items. Because the same shock will affect households quite differently in different regions it is not surprising to see different use of coping mechanisms and further contextual information is required for these areas to make further sense of this data.

Map 13 - Geographical distribution of selected coping mechanisms

2.4.4 Impact and Recovery

During the course of the interview the household head was asked about the impact of the shocks experienced and if they were able to recover in terms of acquiring sufficient food resources. It was noted that over 60% of the households interviewed that the shock had reduced or contributed to the loss of both income and assets. 20% saw a loss in assets only and 15% saw a reduction in income only. 96.7% of the households found that they had a reduction in food during the shock. However at the time of the survey 74% of the households had recovered their ability to gain food and 22% had not.

3 Food utilization and Nutritional Status

The HH questionnaire focused its attention on women of productive age (15-49 years) and children aged 0-59 months for additional information on health, nutrition and education. In the case of anthropometric measurements only non-pregnant women were measured and children aged 6-59 months. All women and children in these age groups were interviewed for the CFSVA. If the woman interviewed regarding the child's health etc. was not the mother this was noted and the analysis considered only the answers of the mother as it is generally considered that the response of a woman other than the mother is often inaccurate. Only the anthropometric measurements of the child were considered in the absence of the mother. If there was no one in these age groups the interview was terminated. Most of the results from the CFSVA study are confirmed by the much wider and broad Tanzania Mainland Nutrition Survey 2005 (TMNS) study[xxx]. This study doesn't include the same provinces as the CFSVA (Zanzibar and Manyara are excluded) but results are used in this section to compare findings.

3.1 Women's Maternal Care, Health & Nutrition

Maternal health and nutritional status has a direct consequence on the health and nutritional status of their children. Understanding the health and nutrition status of mothers contributes to the understanding of causes of poor child nutrition and health along with food access, availability, utilization issues.

Table 5 - Sample of Women of Reproductive Age							
Region	Sample Size*	Mean Age of Woman	% Illiterate Women	Region	Sample Size*	Mean Age of Woman	% Illiterate Women
Arusha	151	28.6	25.8	Morogoro	119	28.8	31.1
Dar es Salaam	126	27.4	27.4	Mtwara	133	30.5	33.8
Dodoma	118	30.7	43.2	Mwanza	100	29.5	43.4
Iringa	97	32.1	27.8	Pwani	146	29.3	38.6
Kagera	151	28.1	33.8	Rukwa	117	30.1	40.2
Kigoma	148	27.2	24.5	Ruvuma	131	29.2	21.4
Kilimanjaro	130	29.1	7.7	Shinyanga	160	28.9	35.7
Lindi	106	29.8	40.6	Singida	127	29.5	23.6
Manyara	132	30.5	23.7	Tabora	138	29.3	27.7
Mara	132	30.3	26.5	Tanga	121	31.1	29.2
Mbeya	123	28.2	17.1	Zanzibar/Pemba	128	27.5	29.9
National Averages					**2834**	**29.3**	**29.9**

*Total number of respondents per region. However not every woman responded to all questions therefore the percentages presented vary in their value of N.

The mean age of the sample was just over 29 years. High levels of illiteracy were observed (mean 30%) throughout the country although with considerable regional variation (highest prevalence in Mwanza; 43%). School attendance throughout the country is limited primarily to primary school, although only 39% of these women manage to complete this level of schooling. The highest rates are in Arusha, Dar es Salaam, Dodoma and Iringa where more than 35% of women had not received any schooling. Women aged 40-49 years are most illiterate (44%) and the lowest rate of school attendance (42%).

[xxx] Most of the results are comparable despite a different sampling (TMNS with around 1,000 children in one district of each region and CFSVA with around 100 children per region). Moreover, in view of the sample size, differences between the figures of less than 10 points are statistically acceptable.

Table 6 - Geographic Distribution of Women with Low Body Mass Index (aged 15-49 years) CFSVA and TMNS			
Region	District*	TMNS	CFSVA
Arusha	Mbulu	11%	15,9%
	Ngorongoro	16.1%	15,9%
Dar es salaam	Temeke	7.7%	10,2%
Dodoma	Kondoa	13.1%	19,7%
Iringa	Njombe	1.5%	4,0%
Kagera	Bukoba	6.7%	3,8%
Kigoma	Kasulu	5.1%	8,7%
Kilimanjaro	Moshi	8.1%	4,1%
Lindi	Kilwa	5.0%	9,8%
Mara	Tarime	6.6%	2,4%
Mbeya	Rungwe	4.1%	2,2%
Morogoro	Kilombero	2.9%	3,6%
Mtwara	Masasi	7.1%	15,6%
Mwanza	Geita	3.9%	3,1%
Pwani	Mkulanga	10.5%	16,9%
Rukwa	Sumbawanga	1.4%	8,5%
Ruvuma	Mbinga	5.7%	6,5%
Shinyanga	Bariadi	6.3%	1,3%
Singida	Singida	10.1%	9,4%
Tabora	Sikonge	5.2%	4,1%
Tanga	Lushoto	7.5%	11,3%
Zanzibar/Pemba	non included	-	4,5%
Manyara	non included	-	19,1%
Total		**6.9%**	**8.4%**

*The TMNS study was disaggregated at districts level

3.1.1   Nutritional Status

The height and weight of 2,353 women was taken during the course of the Tz CFSVA. This data was used to calculate the Body Mass Index[xxxi]. The following cut-offs (as accepted by WFP) were used to define the grade of undernourishment:

- Mildly undernourished <18.5 kg m^{-2}
- Moderately undernourished <17 kg m^{-2}
- Severely undernourished <16 kg m^{-2}

Low nutritional status in women that are pregnant is related to children with low birth weight. Therefore good nutritional status of women is important in breaking the cycle of under-nourishment in the population[xxxii]. Energy deficiency is also affected by short-term shocks of inadequate energy consumption.

As seen in table 6, there is a concentration of undernourished women in Arusha, Dodoma and Manyara – which is not covered by the TMNS (and additionally Lindi and Mtwara). This observation could have been heightened by the food shortages experienced in that region during the period of data collection, corresponding to the drought at that time. It was also observed that women in the youngest age group (15-19 years) were also the most malnourished with 19% with a BMI <18.5. Overall, 8.4% of women in the 15-49 year age range had a BMI of less then 18.5 compared to 7% nationally for the TMNS[xxxiii].

3.1.2   Health & Care Practices

Women were asked about their recent health and certain care practices and related habits. There were a number of non respondents for each question and so the denominator varies. General health of the women in the survey was low. In about one third of the regions over 40% of the women interviewed reported being ill. There was little relationship between illness in the previous two weeks and low BMI nor were there any geographic trends. In practically all the regions less than 50% of the women reported sleeping under a mosquito net the previous night. Mtwara, Morogoro and Ruvuma reported less than 25% and showing significant risk of exposure to malaria transmission.

To assess the hand washing habits, mothers were asked on which occasion they washed their hands and were allowed to provide multiple answers. This is summarized in Table. Around 3% of the respondents never washed their hands (with significant variation between regions) showing a significant relationship to the woman being ill in the previous 2 weeks. Although hand washing is commonly practiced there are clear gaps in terms of good practice; i.e. washing hands before meal preparation and after cleaning children who have been to the toilet.

Table 7 - Hand Washing Practises	
	Average %
Wash their hands before preparing meals	48.9
Wash their hands before eating	79.1
Wash their hands after going to the toilet	76.9
Wash their hands after cleaning a child when they have gone to the toilet	38.3
Wash their hands "when they are dirty"	68.8
Never washed their hands	3.3

[xxxi] Calculated as Weight (in kg) / Height (in m)^2 . Although problematic, this index is an accepted measure of chronic energy deficiency in adults, commonly used and relatively simple to assess (UN Standing Committee on Nutrition
[xxxii] Commission on the Nutrition Challenges of the 21st Century (1999). Ending Malnutrition by 2020: An agenda for Change in the Millennium. Final Report to the ACC/SCN
[xxxiii] The margin error for BMI in the various regions varies from ± 4% to ± 10%. The value observed by the TMNS always falls within this margin. The margin error for that rural national average is ± 1.4%

Manyara, Rukwa and Tabora are regions were hand washing practises are particularly poor in relation to other regions. The use of soap is also quite wide spread. 70.6% use either purchased soap or handmade soap / ash to wash their hands were as 27.2% used only water. In Ruvuma, Dar es Salaam, Iringa & Dodoma over 50% of the women interviewed used only water or didn't wash their hands at all. So, although women frequently reported hand washing, a large proportion of them do not clean them effectively.

3.1.3   Pregnancy & Breastfeeding

At the time of the survey 14% of the women respondents were pregnant and 33% were breastfeeding. In the age group of 25-29 years there was the greatest percentage of pregnant women (17%).

Women that had children were asked if they ever breastfed. In all but two of the regions over 92% of the women said that they had.   The notable exceptions are Dodoma and Lindi were 86% and 87%, respectively, had ever breastfed. However this contrasts with the fact that Dodoma has the highest rate of initiation of breastfeeding within one hour (84%).

Figure 26 - Pregnancy and Breastfeeding by Age-Group
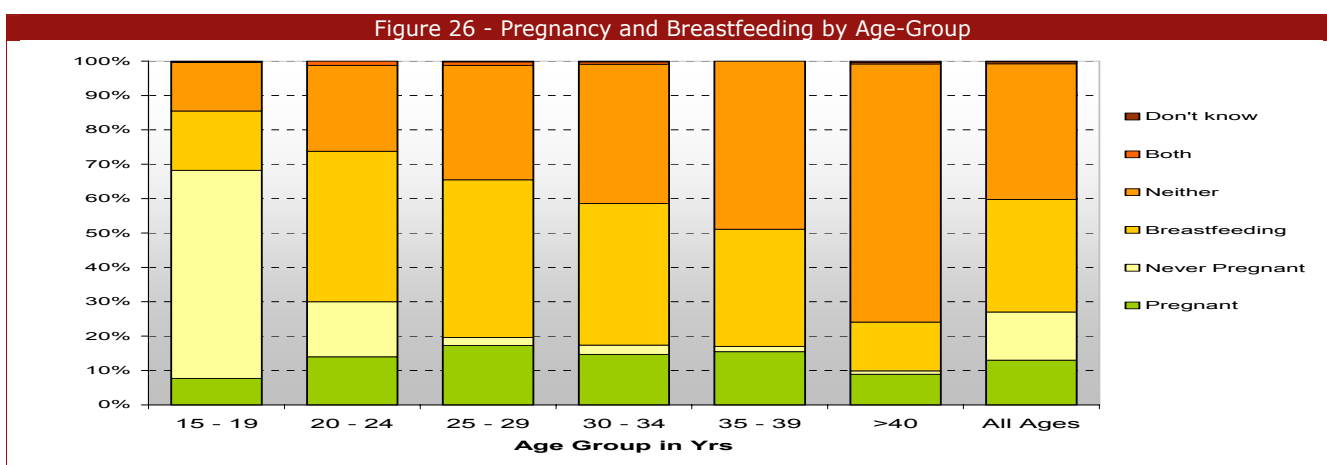
Initiating breastfeeding very early after birth is important for the child in terms of improving mother's milk flow, mother/child bounding, limiting risk of infection and improved transference of protective portion of the mother's milk (colostrum).   On average only 57% of mothers interviewed said they initiated breastfeeding within 1hour, 84.9% initiated within 24hours. In Mwanza and Mtwara only 27.1% & 27.4% of the mothers initiated within one hour and were also the regions with poorest initiation rates within 24hours.

3.1.4   Antenatal Care

The provision of antenatal care is important for both mother and child health. In the survey mothers were asked if they received antenatal care and from whom. Between 83% (Iringa) and 100% of the women respondents claimed to have received antenatal care; average 93%. However some of the indicators for the quality of this care are poor. During their last pregnancy it would appear that only 57% of women received vitamin A and only 79% received Iron/Folate (Fe/Fo) tablets. Regional variation was large with Lindi seeing the poorest distribution of Fe/Fo tablets (61%) and Mbeya with the poorest distribution of Vitamin A capsules (42%).

For each pregnancy the women were asked about the level of antenatal care. Of those who responded over 90% in all regions (with the exception of Zanzibar/Pemba; 90%) said they received antenatal care from health care professionals; on average 98%. In only Singida, Pwani and Lindi did more than 20% of the women receive antenatal care from a qualified midwife; Lindi was bay far the highest (68%). In Zanzibar/Pemba 8% of the respondents received antenatal care from a friend or relative. From the responses given the main providers of antenatal care are nurses. On average 91% of the women interviewed had received anti-tetanus vaccination during their pregnancy. However twelve of the twenty two regions surveyed fell below this average with a minimum of 82% in Tabora.

3.2   Children's Health and Nutrition

3.2.1   Child's Nutritional Status

The nutritional status of a child can be assumed from taking body measurements (better known as anthropometry). These measurements are proxies for the development of the child (linear growth and/or growth monitoring) or if the child is under nutritional stress (measure of thinness). Different body measurements are used in combination to ascertain the nutritional status of the child. The principle measurements used are weight and height which can be combined with age (in months). The following are descriptions of how these measurements are combined and what they represent.

Acute malnutrition (WHZ or wasting) is a result of reduced energy intake over a short period of time due to either food shortage or poor health (in the immediate sense). This is measured by indexing weight and height against NCHS/CDC/WHO reference and the data distance from the median value recorded in z-scores or standard deviations (SD).

Chronic malnutrition (HAZ or stunting) reflects longer term issues of insufficient nutrient intake/utilisation and exposure to disease. This measured by indexing height and age against NCHS/CDC/WHO reference data and the data distance from the median value recorded in z-scores or SD.

Underweight (WAZ) reflects poor development of the child as it grows. As such is a useful tool for growth monitoring in MCH clinics. It is a composite indicator for both acute malnutrition and chronic malnutrition. This measured by indexing weight and age against NCHS/CDC/WHO reference data and the data distance from the median value recorded in z-scores or SD. This indicator is widely used under the term "malnutrition" by WFP and other agencies. However note should be taken as to the definitions outlined here.

The results of the analysis are presented here as the percentage of children that fall into different categories. These are global standards[xxxiv] and are as follows;
- **Normal**: Greater than or equal to -2 standard deviations (SD) from the median.
- **Moderate**: Less than -2 SD or greater than or equal to -3 SD from the median.
- **Severe**: Less than -3 SD from the median

This applies to each of the indices presented previously. An additional term that is frequently used is "**Global**". This is used to describe all the individuals that fall into the "moderate" and "severe" categories (e.g. Global Acute Malnutrition or GAM). The Tz CFSVA analyzed data from 1939 children aged 6-59 months.

3.2.1.1   Acute Malnutrition (Wasting)

In the current context, that of recent drought and food shortage, attention is on the index that represents recent food shocks, namely acute malnutrition (wasting). The regions that demonstrate the highest rates of moderate and severe acute malnutrition are Ruvuma (10%), Arusha (11%) and Zanzibar/Pemba (14%).

As the Tanzania CFSVA uses a purely rural sampling framework it therefore differs from other large data sets collected in Tanzania (e.g. DHS, HBS etc.). The TMNS values are more precise but do not conflict with the CFSVA findings.

It is important to note that, according to UNICEF/WFP criteria, 5.0 – 9.9% GAM is acceptable in the absence of aggravating factors[xxxv]. However, in the presence of aggravating factors, the same prevalence changes to an "Alert" situation. Therefore interpreting the seriousness of the situation in each region should be contextualized to each region. Further analysis of food consumption, health and recent shocks will be considered when defining degrees of vulnerability and food insecurity in these regions in the following sections of the analysis.

Children under 24 months are considered the most vulnerable as this is the time when complementary feeding practices have the greatest impact on child development. It is clear from Figure 27 that this is the case in the children sampled as part of the Tz CFSVA.

Remittance Dependants, Fisherfolk and Skilled Laborers have the highest levels of Global Acute Malnutrition, although it is not clear why this might be in the latter two of the groups. Remittance Dependants are known to have the highest levels of Food Insecure households and it is therefore not so surprising that the children in this group are more malnourished.

[xxxiv] As set by the World Health Organization
[xxxv] Aggravating factors defined as: General Food Ration below the mean energy requirements; Crude mortality rate >1 per 10,000 per day; Epidemic of whooping cough or measles; High prevalence of respiratory disease or diarrhea.

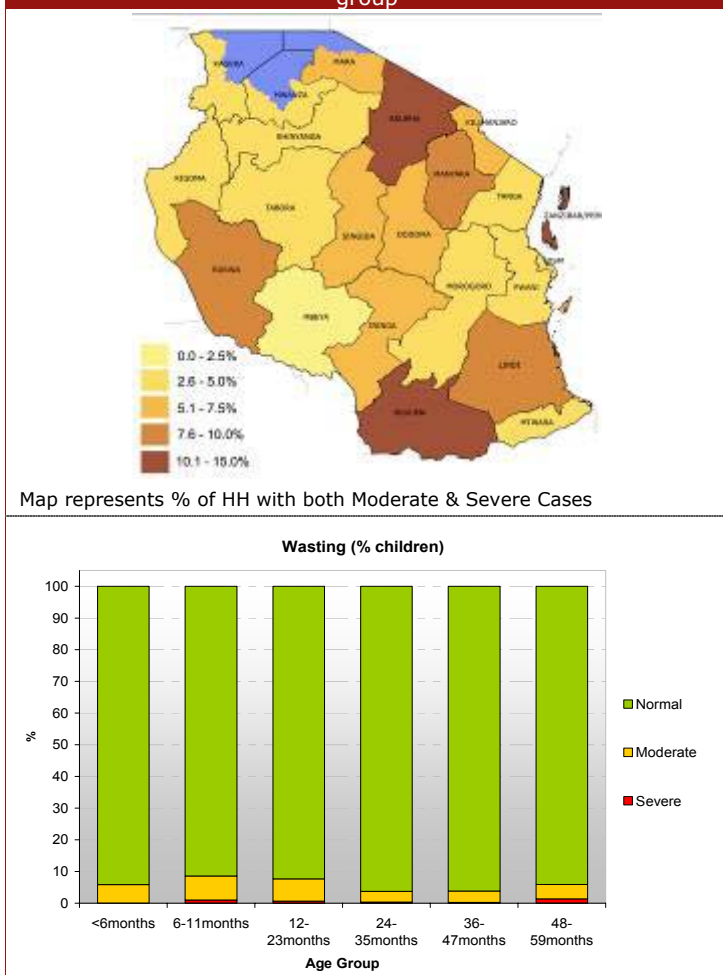| Figure 27 - Wasting – Geographic distribution; According to age group |
|---|

Map represents % of HH with both Moderate & Severe Cases

Table 8 – Wasting - Geographic Distribution of Children (aged 0-59 months) CFSVA and TMNS			
Region	District	TMNS	CFSVA
Arusha	Mbulu	4.2%	11,1%
	Ngorongoro	8.9%	11,1%
Dar es salaam	Temeke	3.3%	4,2%
Dodoma	Kondoa	6.0%	6,6%
Iringa	Njombe	0.7%	6,0%
Kagera	Bukoba	2.9%	2,7%
Kigoma	Kasulu	4.3%	2,9%
Kilimanjaro	Moshi	8.1%	5,3%
Lindi	Kilwa	2.3%	8,5%
Mara	Tarime	1.7%	5,9%
Mbeya	Rungwe	4.2%	1,7%
Morogoro	Kilombero	1.4%	3,1%
Mtwara	Masasi	1.5%	4,4%
Mwanza	Geita	7.0%	4,4%
Pwani	Mkulanga	3.6%	4,8%
Rukwa	Sumbawanga	1.7%	7,7%
Ruvuma	Mbinga	2.3%	10,3%
Shinyanga	Bariadi	4.1%	3,2%
Singida	Singida	3.8%	6,0%
Tabora	Sikonge	2.4%	3,1%
Tanga	Lushoto	3.7%	2,7%
Zanzibar/ Pemba	non included	-	8,0%
Manyara	non included	-	14,1%
Total		**3.8%**	**5,6%**

*The TMNS study was disaggregated at districts level
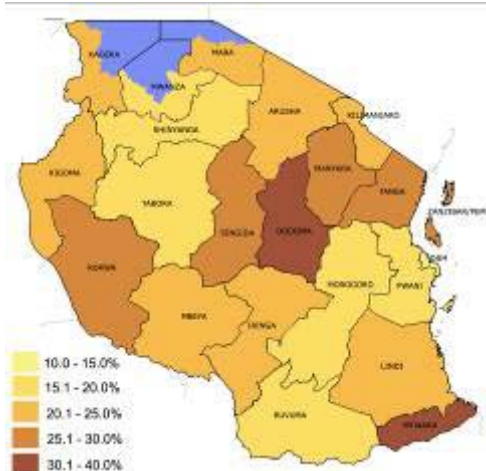
3.2.1.2   Underweight

Using underweight to describe the nutritional status of children is beneficial in that it is an easier less error prone (although not entirely) index. In this case it probably better reflects the nutritional situation in the sample.

Mtwara also has a high percentage of moderately and severely underweight children. Ruvuma has a lower prevalence and possibly better reflecting the nutritional status of the children there than the wasting index (as with these indices generally). The highest prevalence is seen in children aged 24-59 months. This is perhaps due to the fact that this age group is much more stunted (a component of this index). Wage Laborers, Small Farmers and Natural Resource Dependants have the highest prevalence of underweight children (>25%).

It can be seen from Figure 28 that the central belt, from Rukwa (24,7%) to Zanzibar/Pemba with 21% (excluding Tabora), are worst affected. The Tanzania Mainland Nutrition Survey gives similar results including Arusha, Dodoma, Mbeya and Tanga as the worst affected regions as shown below in table 9[xxxvi].

[xxxvi] Margins of error (95 confidence) range between ± 6% to ± 11% for the regions covered by the CFSVA. The rural national average has a margin of error of ± 1%. No results of the TMNS are in conflict with the CFSVA findings, with the exception of the Mtwara region: the CFSVA region are significantly higher than the TMNS results which cover only the district of Masasi.

Figure 28 - Underweight - Geographic Distribution; According to Age Group

10.0 - 15.0%
15.1 - 20.0%
20.1 - 25.0%
25.1 - 30.0%
30.1 - 40.0%

Map represents % of HH with both Moderate & Severe Cases

Underweight (% children)

	Normal
	Moderate
	Severe

%

<6months 6-11months 12-23months 24-35months 36-47months 48-59months

Age Group

Region	District*	TMNS	CFSVA
Arusha	Mbulu	21.8%	25.7%
	Ngorongoro	26.1%	25.7%
Dar es salaam	Temeke	13.1%	11.8%
Dodoma	Kondoa	25.6%	29.5%
Iringa	Njombe	18.5%	20.7%
Kagera	Bukoba	20.4%	17.7%
Kigoma	Kasulu	24.8%	21.3%
Kilimanjaro	Moshi	18.3%	21.0%
Lindi	Kilwa	17.9%	27.7%
Mara	Tarime	13.9%	20.0%
Mbeya	Rungwe	25.5%	19.2%
Morogoro	Kilombero	11.4%	18.3%
Mtwara	Masasi	13.4%	28.3%
Mwanza	Geita	21.0%	15.4%
Pwani	Mkulanga	17.3%	17.8%
Rukwa	Sumba-wanga	12.1%	24.7%
Ruvuma	Mbinga	23.7%	15.2%
Shinyanga	Bariadi	15.2%	13.6%
Singida	Singida	21.6%	26.0%
Tabora	Sikonge	16.1%	19.5%
Tanga	Lushoto	25.7%	24.2%
Zanzibar/ Pemba	non included	-	20.8%
Manyara	non included	-	25.7%
Total		**19.3%**	**21.1%**

Table 9 – Underweight - Geographic Distribution of Children (aged 0-59 months) CFSVA and TMNS

*The TMNS study was disaggregated at districts level

62

3.2.1.3 Chronic Malnutrition (Stunting)

Stunting occurs because the child is not able to acquire adequate nutrition over a long period. Long term exposure to clinical or even sub-clinical disease has also been proposed as a contributing factor[xxxvii].

On average 30% of children (6-59 months) are stunted. Quite different regions show the highest prevalence of chronic malnutrition; Iringa is by far the highest with more than 50% of the rural population being affected. This possibly indicates the different types of underlying issues that affect the children in these regions. Tanga, Kigoma and Rukwa also demonstrate higher prevalence of stunting. The highest prevalence of stunting is seen in Traders and Handicraft livelihoods (>40%).

Figure 29 - Stunting - Geographic Distribution; According to Age Group
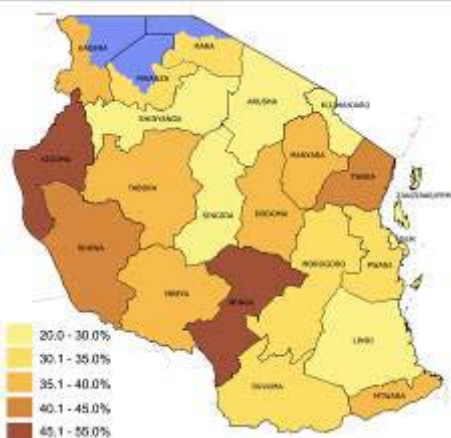
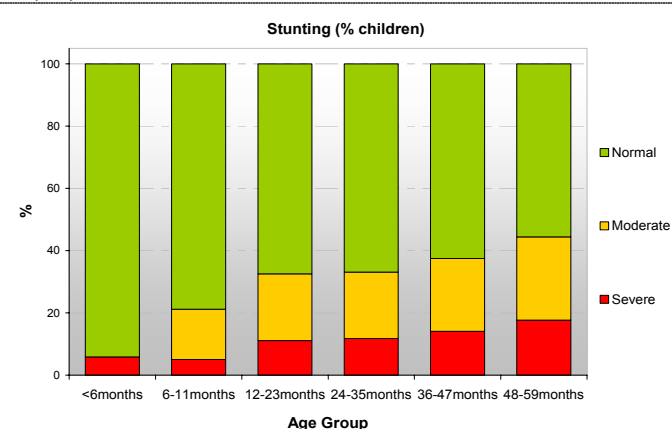Map represents % of HH with both Moderate & Severe Cases

Stunting (% children)

Table 10 – Stunting - Geographic Distribution of Children (aged 0-59 months) CFSVA and TMNS			
Region	District*	TMNS	CFSVA
Arusha	Mbulu	33.5%	24.0%
	Ngorongoro	26.5%	
Dar es salaam	Temeke	21.5%	23.6%
Dodoma	Kondoa	32.0%	39.5%
Iringa	Njombe	50.3%	50.2%
Kagera	Bukoba	34.6%	36.6%
Kigoma	Kasulu	42.4%	45.7%
Kilimanjaro	Moshi	18.3%	21,0%
Lindi	Kilwa	34.0%	28.8%
Mara	Tarime	24.3%	32.7%
Mbeya	Rungwe	39.4%	37.3%
Morogoro	Kilombero	23.8%	32.8%
Mtwara	Masasi	30.9%	38.9%
Mwanza	Geita	27.2%	33.8%
Pwani	Mkulanga	33.0%	32.5%
Rukwa	Sumbawanga	30.2%	43.6%
Ruvuma	Mbinga	38.3%	31.0%
Shinyanga	Bariadi	20.2%	20.8%
Singida	Singida	30.6%	29.8%
Tabora	Sikonge	28.7%	35.4%
Tanga	Lushoto	37.3%	43.2%
Zanzibar/ Pemba	non included	-	26.9%
Manyara	non included	-	39.8%
Total		31.1%	34.3%

*The TMNS study was disaggregated at districts level

3.2.2 Child Health

The caretaker of children aged 0-59 months were asked about the health of the child over the past 2weeks. From the responses of the mother of the child 40% of the children had been ill in the previous 2weeks. This varies greatly across the country with Mbeya reporting the least (16%) and Singida and Kigoma reporting over 50% of their children being sick. The most prominent disease reported was that of a fever (71%) followed by cough (50%) and diarrhea (33%). Of these children that had been ill, only 62% had been to a health facility; ranging from 48% in Mwanza to 86% in Morogoro.

At the community level childhood malaria is also of concern and 87% of the villages interviewed expressed malaria as their top concern. Malaria (91%), diarrhea (62%), respiratory disease (42%), malnutrition (34%) and skin disease (17%) were the top five health concerns of the communities interviewed.

3.2.3 Basic Health Care Provision & Vaccination

On average only 83% of children 0-59 months had ever received a vitamin A capsule. In Tabora as few as 66% of children had ever received a vitamin A capsule, with both Lindi and Mwanza both less than 70%.

[xxxvii] Margins of error (95 confidence) range between ± 7% to ± 13% for the regions covered by the CFSVA. The rural national average has a margin of error of ± 2%. No results of the TMNS are in conflict with the CFSVA findings

Children in Tanzania have a high burden of parasitic worms which effect both short and long term growth. Simple, regular de-worming programs are effective ways of reducing parasitic loads in children. As such the caretakers were asked if their child had received de-worming medication in the previous 6 months. On average 60% of the children had received such medication. 35% of children in Tabora received de-worming tablets with a maximum of 77% of children receiving tablets in Kagera.

With low rates of provision of vitamin A and de-worming tablets, Tabora is highlighted for its' short coming in the provision of medication to children under 5 years.

Vaccination status for Measles was checked during the survey. Of the children included in the survey 92% of children aged 9-59 months (those targeted for this vaccination) had received the vaccine[xxxviii]. This varies greatly between regions and with the North West having, most often, the poorest coverage, <90%. Tabora reported the lowest coverage (only 78%) and falls well below the necessary coverage of 90% required to protect the population from epidemics of the disease.

3.3   FOOD SECURITY AND NUTRITION CAUSALITY ANALYSIS

3.3.1   1. Food security & Nutrition relation

3.3.1.1   Presentation of the model

This analysis aims to determine causes of malnutrition in Tanzania. Mainly it used data from child and mother complemented by household and village data. A Mixed Linear Model (MLM) has been run to explore the relationship between independent and the dependant variable. This provides the ability to see, to a certain degree the effect of one factor while controlling for all the other factors.

Malnutrition has been taken as an dependent variable and was measured by three indicators
- *Acute malnutrition* or wasting (See definition)
- *Chronic malnutrition* or stunting (See definition)
- *Underweight* (See definition)

The model is expressed as below:
Z-score (foot note) = bo + b1v1+ b2v2 + b3v3 + b4v4 + b5v5 + b6v6 + B7v7 + b8v8 + b9v9 + b10v10 + b11v11 + b12v12 + b13v13 + b14v14 + b15v15 + b16v16 + b17v17 + b18v18 + b19v19 + b20v20 + b21v21 + b22v22 + b23v23 + b24v24 + b25v25 + b26v26 + b27v27

The independent variables are indicators of factors causing malnutrition. Below are the selected variables classified into categories mainly based on Unicef conceptual framework.

3.3.1.2   List of independent variables

Food security
    0   Access score
    1   Food consumption score
    2   Distance from market
    3   Source of water
    4   Child has been breastfed

Health variables
    5   Utilisation of boiling water for child
    6   Antenatal care
    7   Child receives measles vaccination
    8   Child had fever during the last two weeks
    9   Child had cough during the last two weeks
    10   Child had diarrhoea during the last 2 weeks
    11   Child received deworming tables during the last 6 month
    12   Distance to the health center
    13   Child went to the health center during the last two weeks while seek

Care
    14   Toilet type used by household
    15   Mother washes hand after toilet

[xxxviii] Checked by checking the health card or asking the caretaker

Household and geographical characteristics
16 Education of the mother
17 Mother's age
18 Sex of child
19 Child age
20 Child age square
21 Dependency rate
22 Region of residence with *1 Arusha, 2 Dar es Salam, 3 Dodoma, 4 Iringa, 5 Kagera, 6 Kigoma, 7 Kilimanjaro, 8 Lindi, 9 Manyara, 10 mara, 11 Mbeya, 12 Morogoro, 13 Mtwara, 14 Mwanza, 15 Pwani, 16 Rukwa, 17 Ruvuma, 18 Shinyanga, 19 Singida, 20 Tabora, 21 Tanga, 22 Zanzibar/Pemba*

Risk exposure
23 Biophysical risks
24 Social risks
25 Economical risks
26 Other risks

3.3.1.3   Steps of the causal analysis

Two adjustments have been performed for the causal analysis. One was the transformation of some variables in order to render them more synthetic and ensure using variables with meaningful frequencies. The second step was to check the multicolinearity to avoid using two variables highly correlated.

Transformation of selected variables
- Source of water has been recoded into two categories based on Unicef classification.
     1 = improved source of water which is a combination of: Public tap, Tubewell/Borehole with Pump, Protected dug well, Rain water,
     2 = Not improved source of water composed by unprotected well or spring, pond/lake, mobile tanker, vendor.

- The same transformation was done for the variable "Toilet type of the household" following Unicef classification.
     1 = Improved toilet type include flush latrine, traditional pit latrine, ventilated improved pit
     2 = Not improved toilet type include open pit latrine, none/bush

- Education of the mother with initially 8 composants was reduced to 4 composants as below:
     1=No school,
     2=primary (Some primary and vocational),
     3=secondary (Some secondary, completed secondary)
     4=superior (Completed advance level, some/completed tertiary and some/completed university)

- The square of the variable "child age" was computed and included in the regression to check how linear is the correlation,
- The dependency ratio determines the proportion of non productive members in each household. The number of dependants was obtained computing "HH member less than 15 years old and above 65 years". The ratio between the number of dependants and the household size results on the dependency rate.

- The biophysical shocks variable has been obtained lamping together :
     ▪   "Drought/irregular rains, prolonged dry spell",
     ▪   "Floods",
     ▪   "Landslides, erosion",
     ▪   "Unusual high crop pest and disease"

-     The social shocks include:
     ▪   Unusually high level of human disease,
     ▪   Death of working household member,
     ▪   Death of other household member,
     ▪   Serious illness or accident.

- The economic shocks is composed by:
  - Prices for food
  - High cost agricultural inputs
  - Loss or reduced employment of a household member
  - Reduced income of a household member
  - Theft of productive resource
- Other shocks include:
  - Insecurity/Violence
  - Other

Multicolinearity

To avoid multicolinearity, Principal Component Analysis (PCA) using rotated factors (varimax) has been undertaken on all the independent variables to explore highly correlated variables.

For variables with missing value an intermediate value has been taken for tendency control of the data.

Many models have been tried and the result reported below is the final model.

3.3.1.4 Results of causal analysis

According to the type of malnutrition in Tanzania, models show different predictors.

- *Chronic malnutrition - HAZ/Stunting*

Depending on the **region of residence**, children have different exposure to chronic malnutrition.

1. Children who has been breastfed are less stunted;
2. Children for which **boiled water** has been used are less stunted;
3. **Use of deworming tablets** during the last six month makes children less stunted.

- *Cause of acute malnutrition - WHZ/Wasting*

1. Children **having diarrhoea** during the last two weeks are more wasted than children without. This is a proxy indicator for being healthy;
2. Children living in households where **social shocks** occurred during the last 6 months are less wasted;

The following variables were not significant but present close correlation to wasting:

3. The **use of boiled water** by children shows a tendency to render them less wasted;
4. Children who have been **breastfeed** are less wasted than children who has never been breastfed;

- *Underweight WAZ* / Composite indice of Wasting & Stunting

1. Children **having diarrhoea** during the last two weeks are more underweight than children without.
2. **Use of deworming tablets** during the last six months makes children less underweight.
3. Children who have been **breastfed** have tendency to be less underweight.

The distance to health was found with less interesting sign which means that:

4. Children living in villages far from a **health center** are less underweight than children living closer.

3.3.2 Food security causal analysis

3.3.2.1 Presentation of the model

This analysis aims to determine causes of food security in Tanzania. Mainly it used household and villages data. A General Linear Model (GLM) has been run to explore the relationship between independent variables and the dependant variable. This provides the ability to see, to a certain degree the effect of one factor while controlling for all the other factors

As dependents variable the food security status score was used. The independents variables are listed below following a certain classification:

3.3.2.2 List of variables

Human capital assets indicators

1. Education of household head
2. Age of the household head

3   Sex of the household head
4   Presence of chronic illness
5   Dependency rate

Productive assets
6   Owning fruits, nuts or spice trees
7   Access to credit
8   Owning vegetable plot/garden
9   Number of chicken, ducks other birds
10 Number of bovine
11 Number of ovine (goat and sheep)
12 Number of pigs
13 Total land access

Livelihood strategies
14 Livelihood group
    1 wage labourers, 2 petty traders, 3 crop farmers, 4 traders, 5 skilled labourers, 6 naturals resources dependents, 7 remittances dependents, 8 poor income, 9 small farmers, 10 handicraft, 11 brewers, 12 pastoralists, 13 salaried/government, 14 fishermen.

Risk exposure indicators
15 Having a drought shock
16 Biophysical shocks
17 High level of crop pest disease
18 High level of human disease
19 Food price
20 Illness
21 Death of working member
22 Death of other household member

Geographical and contextual environment
23 Region with 1 Arusha, 2 Dar es Salam, 3 Dodoma, 4 Iringa, 5 Kagera, 6 Kigoma, 7 Kilimajaro, 8 Lindi, 9 Manyara, 10 mara, 11 Mbeya, 12 Morogoro, 13 Mtwara, 14 Mwanza, 15 Pwani, 16 Rukwa, 17 Ruvuma, 18 Shinyanga, 19 Singida, 20 Tabora, 21 Tanga, 22 Zanzibar/Pemba
24 Primary school in the village
25 Distance to the nearest trunk road
26 Market in the village
27 Distance to the nearest feeder road
28 How often market taking place
29 Soil type
30 Type of most important road

General expression of the model:

Z score = bo + b1v1+ b2v2 + b3v3 + b4v4 + b5v5 + b6v6 + B7v7 + b8v8 + b9v9 + b10v10 + b11v11 + b12v12 + b13v13 + b14v14 + b15v15 + b16v16 + b17v17 + b18v18 + b19v19 + b20v20 + b21v21 + b22v22 + b23v23 + b24v24 + b25v25 + b26v26 + b27v27 + b28v28 + b29v29 + b30v30

3.3.2.3   Steps of analysis

The same process as described above for nutrition causal analysis was performed for the food security causal analysis. First, transformation of variables and second checking multicolinearity between independent variables.

Transformation of selected variables

1. A variable combining the education of household head and the household head capacity to read and   write a simple message has been built and named "Educ2" with :
1=No school can't read, 2=Primary can't read, 3=other can't read, 4=No school can read, 5=Primary can read, 6= other can read, 7= secondary, 8= superior

2. The number of chicken, ducks other birds was computed and transformed into logarithm and named "lnvolail",
3. The number of cows, bull and oxen was also computed and transformed into logarithm "lnbovins",

4. The number of petit betail include number of goat and sheep and has been transformed into logarithm "lnpetitb",
5. Number of pigs was transformed into logarithm "lntotpig"
5 The total land access is the summation of the total land access in rainy and dry season. It was transformed into logarithm "lntotlan".
6 According to the high number of household with risk of droughts, it was included alone while the Floods, Land Erosion, and Livestock disease has been lamped into a single variable "riskbio2".

3.3.2.4   Results of the food security causal analysis

The analysis shows the following variables having significant effects on the Food security status score. The power of explication of the model is given by the R Squared = .343 (see footnote).

1   **Livelihood group** have an effect on the food security specially the traders, skilled labourers and fishermen appear being less food insecure than other categories; worth off are remittance dependents and small farmers;
2   The **presence of chronically ill or disabled family members** has a decreased effect on the food security score;
3   **Owning a vegetable plot/garden** increases household ability to be food secure;
4   Having **access to credit** positively influence food security;
5   Having a **drought shock** increases the household food insecurity;
6   The **region of residence** influences the food security score.
7   Higher **number of bovines** (Bull, Cow, Oxen) in the household has a positive effect on the food security score;
8   Household with more number of pigs are also more food secure than household with less number of pigs;
9   Households having access to more land are more food secure;
10 Having a primary school in the village (which is a proxy for development of the villages), increases households tendency to be food secure;
11 Type of the most important road is a factor of food insecurity. The food security level for villages near trunk a road (Tarmac) is higher than in villages near a community road;
12 The presence of a market in the village increases the food security score.

Variables below have no significant effect on food security status score but present however close relation:

-   higher dependency rate of the household have more tendency to decrease the food security status score;
-   The more number of pigs there is in the household, higher is the household capacity to be food secure.

Part 5 Livelihood Food Security and Vulnerability Profiles

In this section brief summaries of each of the livelihoods are explored highlighting the issues facing each livelihood that contribute may contribute to their food security status or those issues that are significantly different from the other livelihoods. The livelihoods are classified by priority (based on the percentage of food insecure households).

Poor income (7.5%)
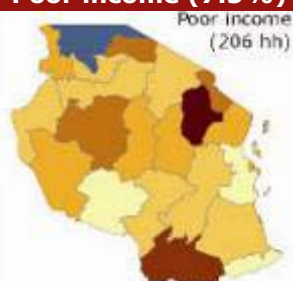
Food Security Profile:			
Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
28.9%	**17.2%**	**22.0%**	**31.9%**
Access Profile:			
Very Weak:	Weak:	Medium:	Good:
26.3%	**31.9%**	**26.3%**	**15.5%**
Consumption Profile:			
Poor:	Borderline:	Fairly good:	Good:
28.3%	**25.3%**	**31.8%**	**14.6%**

Overview:

The Poor Income livelihood, as with the others derives much of its income from food crop production. However, although this group has small inputs from a number of sources they are generally small in estimated total value. This is a prevalent group throughout Tanzania but can be found mainly in Manyara, Ruvuma, Tabora, Mara and Kilimanjaro.

This is the forth of the most vulnerable groups identified by the CFSVA. Around 45% of the households in this group are either food insecure or highly vulnerable. Weak access and poor consumption contribute to this. Crop diversification is the lowest in this group. Meal frequency is also low although is neither normal nor abnormal. Accommodation and facilities are average, although the use of rain water is particularly low in this group. Around 40% of the household heads and their spouses are illiterate in this group. Acute malnutrition in children is high compared to other groups with 6.7% being moderately or severely malnourished at the time of the survey.

Wage Laborers (5%)
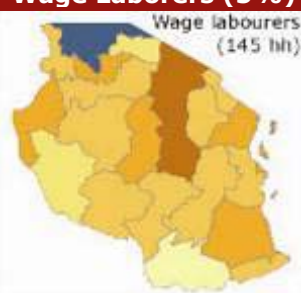
Food Security Profile:			
Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
27%	**15%**	**22%**	**36%**
Access Profile:			
Very Weak:	Weak:	Medium:	Good:
12.6%	**44.1%**	**28.7%**	**14.7%**
Consumption Profile:			
Poor:	Borderline:	Fairly good:	Good:
30.1%	**29.4%**	**25.9%**	**14.7%**

Overview:

Wage Laborers main source of income is from agricultural or unskilled labor. However they also acquire a significant source of income from agricultural production. They are mainly located in Dodoma and Arusha.

This is the first of the most vulnerable groups with over 40% of the households in this group are food insecure or highly vulnerable. This seems to be resultant from poor food consumption but weak access plays an important role. This group had the lowest cumulative harvest duration. 73% of food was acquired by purchase. Around 13% of the households ate only once a day. Animal ownership is predominately poultry and around one third of the households reported not owning any animals. 20% of the household heads were reportedly chronically ill or disabled and had the highest reported proportion of HIV/AIDS affected persons. A relatively large proportion of the households lived in low quality, crowded housing. About one quarter of the male household heads hadn't attended school, were this was about one half of the female headed households. 27% of the children were underweight (WAZ) at the time of the survey. About 16% of the households experienced high food prices as an important shock and almost 60% experienced drought in the past year.

Small farmers (20.3%)
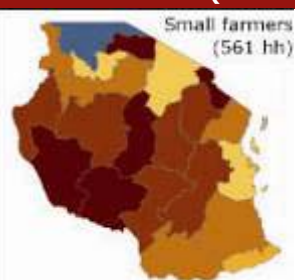
Small farmers (561 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
25.7%	**19.0%**	**18.8%**	**36.5%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
16.1%	**36.1%**	**31.9%**	**15.9%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
27.0%	**26.8%**	**29.9%**	**16.3%**

Overview:

Income is almost overwhelming from food crop production planted in smaller plots of land. Some small contribution comes from unskilled labor, livestock and petty trading. A large livelihood group frequently found by the CFSVA in Tanzania and found widely. Limited numbers found in Mwanza, Arusha, Pwani and Zanzibar/Pemba.

This is the fifth and last of the groups identified as the most vulnerable of the livelihood groups. Again around 45% of the households in this group are food insecure or highly vulnerable. Significantly this group represents 20% of the population, an important way of life and yet is one of the most vulnerable groups. Interestingly this group is relatively average in most of the indicators recorded by the CFSVA. Therefore the most important contributing factors to food insecurity are poor consumption and access issues, along with general poverty and lack of education. Just over 25% of the children, measured for the survey, were underweight.

Remittances dependents (3.9%)
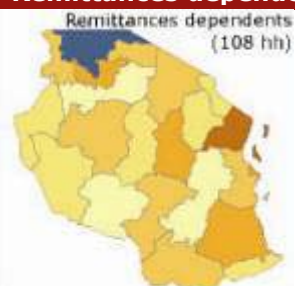
Remittances dependents (108 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
24.5%	**17.0%**	**24.5%**	**34.0%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
16.0%	**35.1%**	**35.1%**	**13.8%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
25.8%	**35.1%**	**28.9%**	**10.3%**

Overview:

A livelihood that although gains a large proportion of its income from food crop production is significantly maintained from remittance – kinship. This group is found mainly in Tanga, and Zanzibar/Pemba.

This group is the third of the most vulnerable groups with over 40% of the households being food insecure or highly vulnerable. Poor consumption plays a greater role in this but weak access and borderline consumption play an important part. This group reported the greatest frequency of households depending on food gifts (10%) and food aid (4%). Crop diversification was low. Average meal frequency was the lowest reported for the previous day being less than 2melas per day. 11% of the households reported not having eaten at all and this was highest in children were it was reported that 20% had not eaten in the previous day. Furthermore this 50% of the households reported that this was no different than normal at that time of year. 54% of households reported not having any animals and 50% owned only poultry. Sanitation was very poor with 15% of the households reporting that they did not use any form of formal or makeshift sanitation. Dwellings were fair in standard and had few people per room and households were small in size. Acute malnutrition was approximately high at 9% with other indices around average. Illiteracy was highest in this group were around 60% of the head of household and their spouses could not read or write. Exposure to shocks is similar to the national averages.

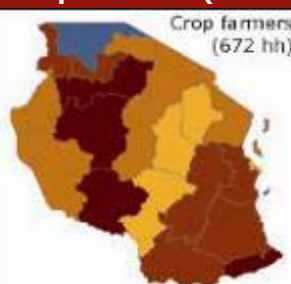## Natural resource dependents (2.9%)

Natural resources dependents (82 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
15.5%	**23.8%**	**29.8%**	**31.0%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
17.9%	**38.1%**	**29.8%**	**14.3%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
16.6%	**34.5%**	**39.3%**	**9.5%**

Overview:

Natural Resource Dependants rely mainly on food crop production but supplement this significantly with income generated from the sale of natural resources. Additional income comes from unskilled labor, livestock and non-food crops. Found predominately in Pwani and Dodoma.

This group is second of the most vulnerable groups identified by the CFSVA. Almost 40% of the households are food insecure or highly vulnerable with access and consumption playing equal roles. Crop diversity in this group is high. Meal frequency is about average although the majority of households report that this is unusual for that time of year. Animal ownership is low with 45% of households not owning any animals at all and of those that do 65% only own poultry. 25% of the household heads were reportedly chronically ill or disabled; physical disability was most frequently reported. Dwellings were of poor quality and contained many members. Illiteracy was high in this group were 30-40% of the head of household and their spouses, respectively, could not read or write. 25% of children were reported to be underweight at the time of the survey. This group reported the greatest number of households experiencing drought as a shock in the previous year (over 75%).
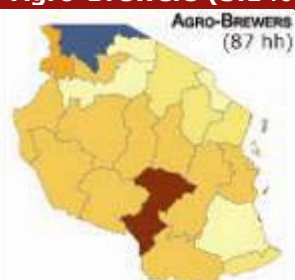
Crop Farmers (24.1%)

Crop farmers (672 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
12.3%	**13.7%**	**20.2**	**54.0%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
6.3%	**27.0%**	**41.1%**	**25.7%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
15.4%	**26.3%**	**36.5%**	**21.7%**

Overview:

Crop Farmers produce most of their income from food crop production. However it is supplemented with cash crops and livestock. This group, the largest of the livelihood groups identified by the CFSVA, is found most frequently in Shinyanga, Tabora, Mbeya and Mtwara.

Approximately 75% of this group are consider to be Food Secure or Moderately vulnerable. About 60% of this group have medium to good access and 70% fit the fairly good to good consumption profiles. Cumulative harvest duration is one of the highest of all the livelihoods but still only 30% of households acquired food from own production in the previous week to the survey. Crop diversity is good by comparison to the other groups. Just over 70% of the households reported owning animals. Housing was of reasonable quality in some households but reasonably crowded. Illiteracy rates between household heads and their spouses show a large difference 20 and 40% respectively. About 23% of the children were reportedly underweight. About 40% of the households had experienced drought in the previous year; other shocks were infrequently mentioned.

Agro-Brewers (3.1%)

Agro-Brewers
(87 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
11.9%	**21.4%**	**25.0%**	**41.7%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
14.3%	**19.0%**	**39.3%**	**27.4%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
21.4%	**34.5%**	**31.0%**	**13.1%**

Overview:

High proportion of income from food crop production but significantly supplemented by brewing activities. Few other activities contribute. This group is mainly found in Iringa but can be found throughout Tanzania.

Agro-Brewers are moderately vulnerable with around 23% of households being food insecure or highly vulnerable. 75% of households owned animals of some sort, good crop diversity but relatively low crop diversity. Fair to poor housing, low use of VIPs for sanitation but high use of rainwater (20%). High reported rates of chronic illness and disability by household heads. 20-25% of the household heads and spouses were illiterate. No acute malnutrition was reported in this group and had the lowest prevalence of underweight children. Few households reported experiencing shocks, with 40% reporting drought and 14% reporting accident or serious illness.

Handicraft (2.5%)

Handicraft
(69 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
11.6%	**15.9%**	**27.5%**	**44.9%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
10.1%	**33.3%**	**37.7%**	**18.8%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
17.4%	**27.5%**	**36.2%**	**18.8%**

Overview:

Predominately dependant on food crop production which is significantly and almost only supplemented from handicraft production. There is few of this group scattered across Tanzania but are slightly more prominent in Dar es Salaam and Mtwara.

A moderately vulnerable group, in the handicraft livelihood group there are around 27% food insecure and highly vulnerable households. This group is heavily reliant on purchase of food at the time of the survey and also reported a low total duration of harvest. However only 30% of households in this group reported abnormal eating patterns. Just over 40% of households did not own animals at all. A fair standard of dwellings, few large households and little crowding was observed. Good access to facilities and better use of rain water. Although only 13% of household heads reported being chronically ill or disabled, 40% of these were disabled. Illiteracy was between 30% and 40%. This group had the highest prevalence of stunting (41%). Shocks were infrequently experienced by this group and only 30% of the households had experienced drought in the previous year.

Petty Traders (11%)
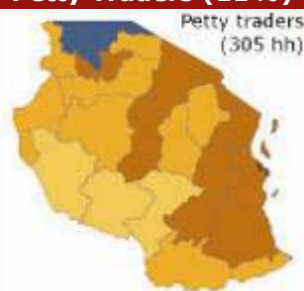
Petty traders
(305 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
11.6%	**15.9%**	**15.2%**	**57.3%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
9.6%	**30.1%**	**34.8%**	**25.5%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
13.2%	**26.7%**	**35.3%**	**24.8%**

Overview:

Petty Traders acquire income mainly from petty trading but it is almost as much from food crop production. Petty Traders are predominately found in Dar es Salaam.

Almost 60% of this group are reportedly food secure, however around one third are food insecure or highly vulnerable. Access and consumption patterns are quite poor with around 40% of the households having very weak or weak access and poor or border-line consumption. Cumulative harvest duration is also poor in this group. Petty Traders are the most reliant on purchase as a source of food of all the groups (just over 73%). Animal ownership was reported in 60% of the households. This was mainly poultry, approximately 90% of these households (50% of all households owned only poultry). Housing was of better quality in more households but crowded. About 20% of the children measured at the time of the survey were underweight. About half of the households experienced Drought as a shock in the previous year. About 16% of households experienced high food prices and 10% experienced an accident or serious illness.

Agro-Pastoralists (5.7%)

AGRO-PASTORALISTS
(160 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
11.2%	**13.7%**	**26.1%**	**49.1%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
8.1%	**31.1%**	**32.2%**	**28.6%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
15.5%	**27.3%**	**31.1%**	**26.1%**

Overview:

A livelihood that relies almost equally on income from food crop production as on income generated form livestock. Although scattered around Tanzania the majority of this group were found in Arusha, Dodoma, and Mwanza.

This group is moderately vulnerable with about 25% of households being food insecure or highly vulnerable. Poor consumption seems to contribute significantly to the food insecure in this group. Just over 30% of the households relied on own production as the main source of food, one of the highest groups. Higher mean number of meals consumed. Poor access to sanitation but relatively good access to other facilities. Housing was fair but many large households were reported. Practically all households had animals of some sort (97%) with many households reporting larger livestock as well as poultry and small livestock. Crop diversification was fair and total duration of harvest was also good. 25% of household heads reported a chronic illness or disability, mainly tuberculosis or physical disability. A large discrepancy between literacy rates of household heads and their spouses. Rates of acute, chronic and underweight children were around average. About 50% of households experienced drought in the previous year.

Traders (4.0%)

Traders (112 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
7.8%	**13.7%**	**20.2%**	**54.0%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
5.2%	**19.1%**	**40.9%**	**34.8%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
6.1%	**27.0%**	**38.3%**	**28.7%**

Overview:

Traders also supplement their income with, predominately, food crop production and to a minor degree livestock and petty trading. Found mainly in Kigoma, the costal regions and Arusha.

Traders are generally more food secure than most other groups. However it still remains that just over 20% of households are food insecure or highly vulnerable. Borderline consumption profiles seem to contribute to this slightly more than access issues. Meal frequency is slightly above average but is still 2-3 times a day with mainly no difference from the norm being reported. About 18% of this group had household heads that were chronically ill or disabled and just over 10% of the households had reported that they had a death in the family in the last year. Sanitation and facilities were generally better in this group, although water use from unprotected sources was still high. Despite being more food secure 23% of the children were underweight at the time of the survey. Levels of stunting were the highest of all the livelihoods, although little wasting was observed. Drought was reported by about 45% of the households interviewed.

Fisherfolk (2.4%)

(66 hh)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
5.9%	**7.4%**	**17.6%**	**69.1%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
2.9%	**32.4%**	**38.2%**	**26.5%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
4.4%	**19.1%**	**35.3%**	**41.2%**

Overview:

The majority of the income in this group comes from fishing activities. However a significant amount still comes from food crop production. Found most frequently in coastal and lakeside regions of Tanzania.

This livelihood is the most food secure of those described in the Tz CFSVA. However, as with the rest of the livelihoods described here, there are still almost 15% of the households that are food insecure or highly insecure. Although lower than the average this is still very high. Harvest duration was average with fair diversification. Mean meal frequencies were above average but still 2-3 times a day. Although income was predominately purchase and own production, around 7% came from fishing. Sanitation is generally poor with about 10% of the households not using any formal sanitation at all. Access to facilities was generally basic and around 40% of households used water from unprotected sources with practically no use of rain water. Dwellings were poor but not overly crowded. Despite being the most food secure group almost 10% of children were acutely malnourished at the time of the survey. It is unclear as to why this might be. Although only 36% of the households had experienced drought as a shock in the previous year, 20% had experienced high food prices as a shock, 13% serious illness or accident and 16% some other shock.

Salaried, Gov. allowance and rental beneficiaries (3.4%)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
4.8%	**14.5%**	**19.3%**	**61.4%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
6.0%	**20.5%**	**32.5%**	**41.0%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
6.0%	**19.3%**	**41.0%**	**33.7%**

Overview:

Predominately dependant on regular salary, government allowance, or rental of land or agricultural equipment. Food crop production is still important to this crop. Found across Tanzania (except for Mara, Ruvuma and Rukwa) this livelihood is found most frequently in Tanga, Kigoma and Zanzibar/Pemba.

This is one of the most food secure groups identified. However still almost 20% of households are food insecure or highly vulnerable. Crop variation is fair with a good total duration of harvest. Average meals per day is higher than most and not considered different from normal. Sanitation was best in this group with the greatest use of flush toilets and VIP latrines. Use of Kerosene and electricity for lighting or cooking was highest in this group. This group was one of the lowest users of rain water during the wet season and still 40% of the households still use water from unprotected sources. Housing was generally of good quality but more, larger households were observed. 20% of all the household heads in this group reported having HIV/AIDS, the highest of any group. Literacy levels were generally high in this group. 88% of the household heads were literate, although much fewer of their spouses were (72%). Nutritional status was similar to the national averages. Only 36% of the households had experienced drought in the previous 1year.

Skilled labourers (4.0%)

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
2.9%	**11.4%**	**11.4%**	**74.3%**

Access Profile:

Very Weak:	Weak:	Medium:	Good:
1.9%	**21.0%**	**31.4%**	**45.7%**

Consumption Profile:

Poor:	Borderline:	Fairly good:	Good:
5.7%	**22.9%**	**45.7%**	**25.7%**

Overview:

Skilled Laborers also rely on agricultural production as a significant contribution to their income. Livestock and petty trading are also aspects of this livelihood. Found mainly in Dar es Salaam, Arusha and Ruvuma.

The majority of this group are food secure. Of the food insecure and highly vulnerable (approx 15%) poor consumption is generally a greater contributor to these profiles. Cumulative duration of harvest is long but purchase still remains an important source of food. Crop diversification is low. Around 17% of the household heads are chronically ill or disabled; around one third reported diabetes. Sanitation is better than most with around 10% using VIPs. Water use is mainly from protected sources. However more than one third still uses unprotected sources. Dwellings are of better quality and are not crowded. The nutritional status of children was somewhat paradoxical. This is the best educated group (both household head and spouse) with less than 20% of the households being illiterate. This group has the lowest stunting and underweight reported at the time of the survey but the highest levels of acute malnutrition (around 10% global acute malnutrition). It is unclear why this may be from the analysis.

Part 6 Geographic Food Security and Vulnerability Profiles

In this part of the report food security, access and consumption profiles are summarized. Livelihood groups in bold are those that have been identified as most vulnerable by the Tz CFSVA. The regions are classified by priority (based on Food Insecure percentages).

REGION – SINGIDA

Pop. size: 1,086,748
Sample size: 126

Main Livelihood Groups: **Small Farmers 44%**; Crop Farmers 13%; Petty Traders 11%
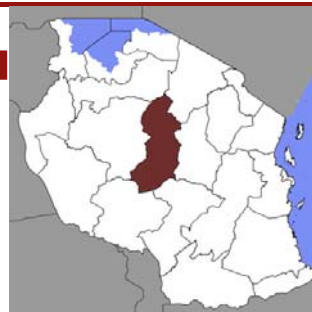
Food Security Profile:

Food Insecure: 55.7%	Highly Vulnerable: 23.9%	Moderately Vulnerable: 8.0%	Food Secure: 12.5%

Access Profile:

Very Weak: 22.2%	Weak: 46.8%	Medium: 26.2%	Good: 4.8%

Consumption Profile:

Poor: 61.9%	Borderline: 27.0%	Fairly good: 8.7%	Good: 2.4%

REGION – TABORA

Pop. size: 1,710,465
Sample size: 126

Main Livelihood Groups: Crop Farmers 34%; **Small Farmers 24%; Poor Income 13%**
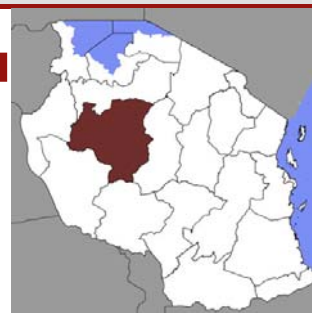
Food Security Profile:

Food Insecure: 50.5%	Highly Vulnerable: 24.8%	Moderately Vulnerable: 14.7%	Food Secure: 10.1%

Access Profile:

Very Weak: 24.2%	Weak: 38.7%	Medium: 31.5%	Good: 5.6%

Consumption Profile:

Poor: 62.7%	Borderline: 26.2%	Fairly good: 8.1%	Good: 2.4%

REGION – DODOMA

Pop. size: 1,692,025
Sample size: 126

Main Livelihood Groups: **Small farmers 21%; Wage Labourers 13%; Natural Resource Dependents 13%**; Agro-Pastoralists 11%; Petty traders 10%
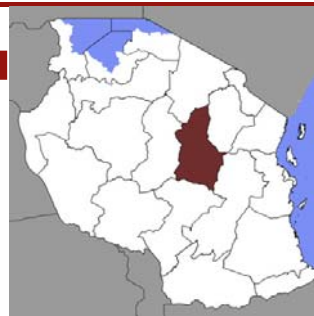
Food Security Profile:

Food Insecure: 45.7%	Highly Vulnerable: 26.7%	Moderately Vulnerable: 16.4%	Food Secure: 11.2%

Access Profile:

Very Weak: 38.4%	Weak: 37.6%	Medium: 16.8%	Good: 7.2%

Consumption Profile:

Poor: 47.6%	Borderline: 26.2%	Fairly good: 21.4%	Good: 4.8%

REGION – KAGERA

Pop. size: 2,028,157
Sample size: 126

Main Livelihood Groups: Crop Farmers 23%; **Small Farmers 18%**
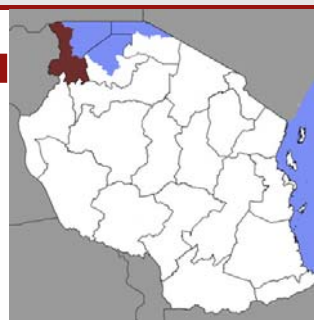
Food Security Profile:

Food Insecure: 29.0%	Highly Vulnerable: 14.0%	Moderately Vulnerable: 17.2%	Food Secure: 39.8%

Access Profile:

Very Weak: 24.6%	Weak: 34.9%	Medium: 26.2%	Good: 14.3%

Consumption Profile:

Poor: 15.9%	Borderline: 29.4%	Fairly good: 31.7%	Good: 23.0%

REGION – MANYARA

Pop. size: 1,037,605
Sample size: 126

Main Livelihood Groups: **Poor Income 37%; Small Farmers 27%**
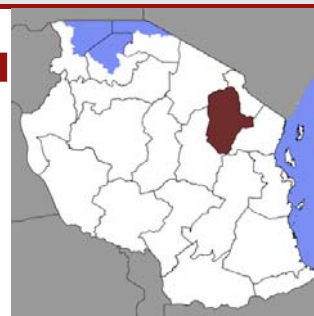
Food Security Profile:

Food Insecure: 24.0%	Highly Vulnerable: 21.3%	Moderately Vulnerable: 26.7%	Food Secure: 28.0%

Access Profile:

Very Weak: 24.0%	Weak: 40.8%	Medium: 28.0%	Good: 7.2%

Consumption Profile:

Poor: 21.4%	Borderline: 27.0%	Fairly good: 35.7%	Good: 15.9%

REGION – MWANZA

Pop. size: 2,929,644
Sample size: 126

Main Livelihood Groups: Crop Farmers 26%; Agro-Pastoralists 13%; Petty Traders 13%
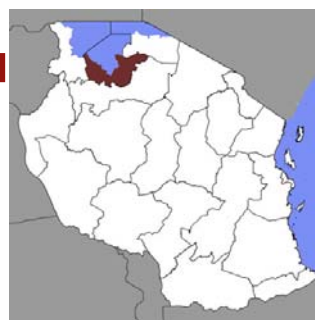
Food Security Profile:

Food Insecure: 20.9%	Highly Vulnerable: 24.6%	Moderately Vulnerable: 21.4%	Food Secure: 33.2%

Access Profile:

Very Weak: 10.3%	Weak: 32.5%	Medium: 37.3%	Good: 19.8%

Consumption Profile:

Poor: 26.2%	Borderline: 35.7%	Fairly good: 26.2%	Good: 11.9%

REGION – MTWARA

Pop. size: 1,124,481
Sample size: 126

Main Livelihood Groups: Crop farmers 53%; Handicraft 10%; **Small Farmers 10%**; Petty Traders 10%
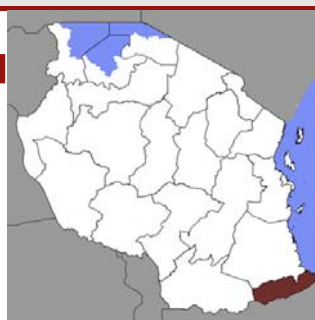
Food Security Profile:

Food Insecure: 17.7%	Highly Vulnerable: 19.0%	Moderately Vulnerable: 29.3%	Food Secure: 34.0%

Access Profile:

Very Weak: 10.3%	Weak: 32.5%	Medium: 37.3%	Good: 19.8%

Consumption Profile:

Poor: 19.8%	Borderline: 41.3%	Fairly good: %	Good: %

REGION – KIGOMA

Pop. size: 1,674,047
Sample size: 126

Main Livelihood Groups: **Small Farmers 22%**; Crop Farmers 20%; Traders 15%
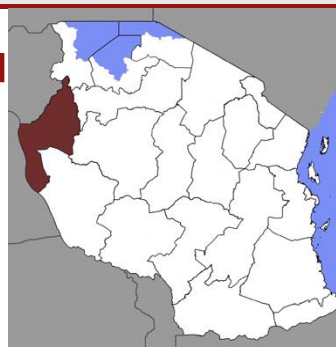
Food Security Profile:

Food Insecure: 15.5%	Highly Vulnerable: 17.9%	Moderately Vulnerable: 26.2%	Food Secure: 40.5%

Access Profile:

Very Weak: 20.6%	Weak: 32.5%	Medium: 23.8%	Good: 23.0%

Consumption Profile:

Poor: 11.1%	Borderline: 32.5%	Fairly good: 45.2%	Good: 11.1%

REGION – RUVUMA

Pop. size: 1,113,715
Sample size: 126

Main Livelihood Groups: Crop Farmers 25%; **Poor Income 23%; Small Farmers 18%**
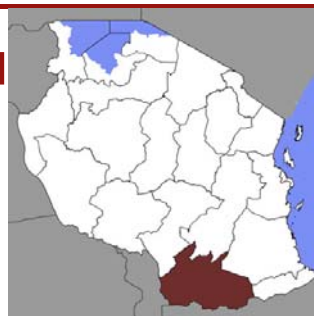
Food Security Profile:

Food Insecure: 14.7%	Highly Vulnerable: 14.7%	Moderately Vulnerable: 19.8%	Food Secure: 50.9%

Access Profile:

Very Weak: 13.5%	Weak: 25.4%	Medium: 32.5%	Good: 28.6%

Consumption Profile:

Poor: 18.3%	Borderline: 21.4%	Fairly good: 38.9%	Good: 21.4%

REGION – IRINGA

Pop. size: 1,490,892
Sample size: 126

Main Livelihood Groups: **Small Farmers 27%**; Agro-Brewers 22%
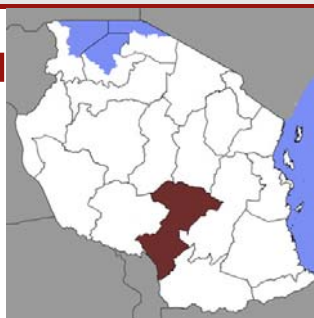
Food Security Profile:

Food Insecure: 14.4%	Highly Vulnerable: 15.7%	Moderately Vulnerable: 25.5%	Food Secure: 44.4%

Access Profile:

Very Weak: 7.1%	Weak: 19.8%	Medium: 33.3%	Good: 39.7%

Consumption Profile:

Poor: 29.4%	Borderline: 37.3%	Fairly good: 21.4%	Good: 11.9%

REGION – MOROGORO

Pop. size: 1,753,362
Sample size: 126

Main Livelihood Groups: **Small Farmers 29%**; Crop Farmers 26%; Petty Traders 13%
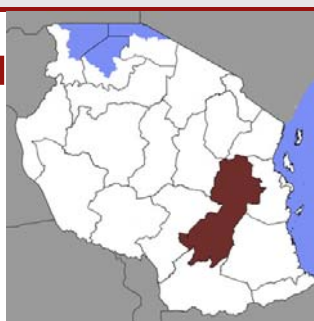
Food Security Profile:

Food Insecure: 14.2%	Highly Vulnerable: 11.8%	Moderately Vulnerable: 18.1%	Food Secure: 55.9%

Access Profile:

Very Weak: 3.2%	Weak: 29.4%	Medium: 37.3%	Good: 30.2%

Consumption Profile:

Poor: 20.6%	Borderline: 17.5%	Fairly good: 34.9%	Good: 27.0%

REGION – LINDI

Pop. size: 787,624
Sample size: 126

Main Livelihood Groups: Crop Farmers 22%; **Small farmers 14%**; Petty Traders 14%; Agro-Pastoralists 10%
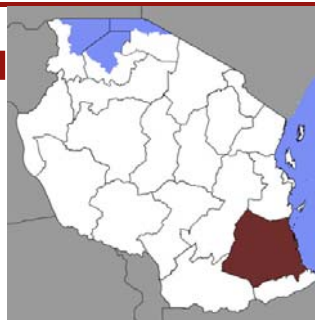
Food Security Profile:

Food Insecure: 9.7%	Highly Vulnerable: 21.4%	Moderately Vulnerable: 21.4%	Food Secure: 47.6%

Access Profile:

Very Weak: 9.5%	Weak: 36.5%	Medium: 42.1%	Good: 11.9%

Consumption Profile:

Poor: 7.1%	Borderline: 31.7%	Fairly good: 40.5%	Good: 20.6%

REGION – ARUSHA

Pop. size: 1,288,088
Sample size: 126

Main Livelihood Groups: Agro- Pastoralists 23%; Petty Traders 20%; Crop farmers 13%; **Wage Labourers** 12%
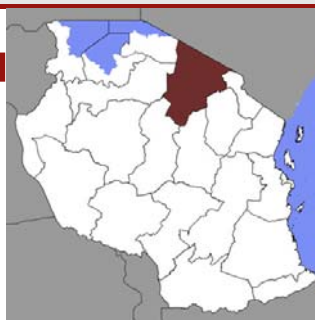
Food Security Profile:

Food Insecure: 9.9%	Highly Vulnerable: 11.0%	Moderately Vulnerable: 20.9%	Food Secure: 58.2%

Access Profile:

Very Weak: 7.9%	Weak: 21.4%	Medium: 36.5%	Good: 34.1%

Consumption Profile:

Poor: 13.5%	Borderline: 27.0%	Fairly good: 31.7%	Good: 27.8%

REGION – MARA

Pop. size: 1,363,397
Sample size: 126

Main Livelihood Groups: **Small Farmers 44%**; Crop Farmers 17%; **Poor Income 11%**; Petty Traders 10%
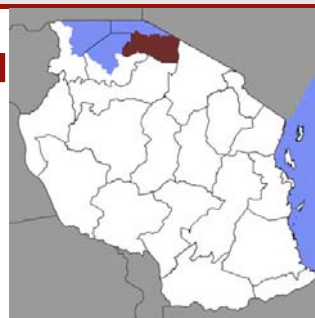
Food Security Profile:

Food Insecure: 8.3%	Highly Vulnerable: 17.4%	Moderately Vulnerable: 24.8%	Food Secure: 49.6%

Access Profile:

Very Weak: 7.9%	Weak: 22.2%	Medium: 43.7%	Good: 26.2%

Consumption Profile:

Poor: 15.9%	Borderline: 31.0%	Fairly good: 23.8%	Good: 29.4%

REGION – RUKWA

Pop. size: 1,136,354
Sample size: 126

Main Livelihood Groups: **Small Farmers 54%**; Crop Farmers 19%
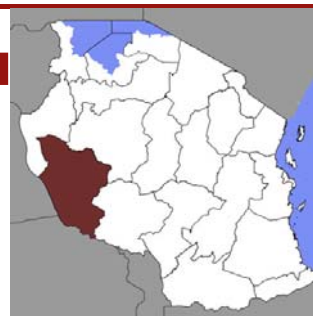
Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
8.2%	16.3%	23.5%	52.0%

Access Profile:

Very Weak: 10.3%	Weak: 38.9%	Medium: 33.3%	Good: 17.5%

Consumption Profile:

Poor: 8.8%	Borderline: 24.8%	Fairly good: 38.4%	Good: 28.0%

REGION – TANGA

Pop. size: 1,636,280
Sample size: 126

Main Livelihood Groups: **Small Farmers 17%**; Crop Farmers 15%; Petty Traders 12%

Food Security Profile:

Food Insecure:	Highly Vulnerable:	Moderately Vulnerable:	Food Secure:
7.3%	7.9%	27.1%	57.6%

Access Profile:

Very Weak: 9.5%	Weak: 41.3%	Medium: 31.0%	Good: 18.3%

Consumption Profile:

Poor: 4.0%	Borderline: 20.6%	Fairly good: 34.9%	Good: 40.5%

REGION – ZANZIBAR/PEMBA

Pop. size: 1,826,869
Sample size: 126

Main Livelihood Groups: Crop Farmers 19%; Salaried, Gov. Allowance etc 16%; Petty Traders 14%; **Remittances Dependents 13%**
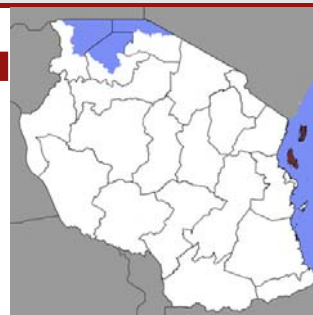
Food Security Profile:

Food Insecure: 7.3%	Highly Vulnerable: 15.8%	Moderately Vulnerable: 19.2%	Food Secure: 57.6%

Access Profile:

Very Weak: 5.6%	Weak: 38.4%	Medium: 35.2%	Good: 20.8%

Consumption Profile:

Poor: 5.6%	Borderline: 23.0%	Fairly good: 51.6%	Good: 19.8%

REGION – DAR ES SALAAM

Pop. size: 2,487,288
Sample size: 126

Main Livelihood Groups: Petty traders 25%; Skilled Labourers 11%; Crop Farmers 10%

Food Security Profile:

Food Insecure: 6.9%	Highly Vulnerable: 11.8%	Moderately Vulnerable: 18.8%	Food Secure: 62.5%

Access Profile:

Very Weak: 1.6%	Weak: 21.4%	Medium: 34.5%	Good: 34.1%

Consumption Profile:

Poor: 8.7%	Borderline: 38.9%	Fairly good: 38.9%	Good: 13.5%

REGION – SHINYANGA

Pop. size: 2,796,630
Sample size: 126

Main Livelihood Groups: Crop Farmers 54%; **Small Farmers 17%**
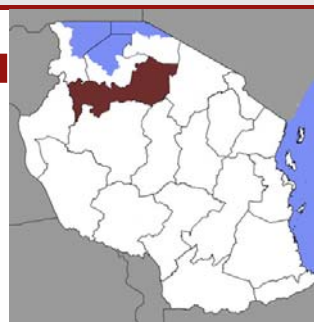
Food Security Profile:

Food Insecure: 4.7%	Highly Vulnerable: 9.4%	Moderately Vulnerable: 19.8%	Food Secure: 50.9%

Access Profile:

Very Weak: 2.4%	Weak: 25.4%	Medium: 53.2%	Good: 19.0%

Consumption Profile:

Poor: 4.8%	Borderline: 23.8%	Fairly good: 48.4%	Good: 23.0%

REGION – KILIMANJARO

Pop. size: 1,376,702
Sample size: 126

Main Livelihood Groups: **Small Farmers 33%; Poor Income 21%**; Crop Farmers 18%
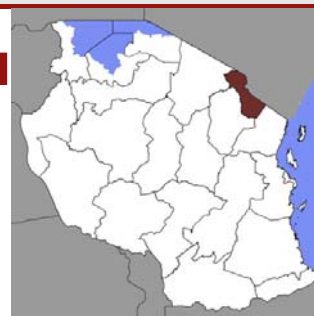
Food Security Profile:

Food Insecure: 3.5%	Highly Vulnerable: 6.2%	Moderately Vulnerable: 6.2%	Food Secure: 84.1%

Access Profile:

Very Weak: 0.0%	Weak: 8.7%	Medium: 27.8%	Good: 63.5%

Consumption Profile:

Poor: 7.9%	Borderline: 12.7%	Fairly good: 49.2%	Good: 30.2%

REGION – PWANI

Pop. size: 885,017
Sample size: 126

Main Livelihood Groups: Crop Farmers 27%; **Natural Resource Dependents 25%**; Petty Traders 20%
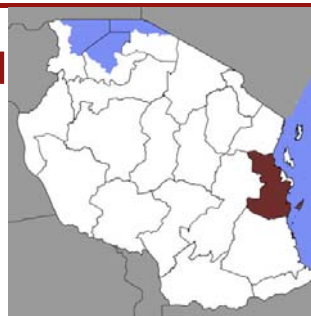
Food Security Profile:			
Food Insecure: 1.9%	Highly Vulnerable: 11.5%	Moderately Vulnerable: 23.1%	Food Secure: 62.5%
Access Profile:			
Very Weak: 1.6%	Weak: 29.4%	Medium: 42.9%	Good: 26.2%
Consumption Profile:			
Poor: 1.6%	Borderline: 27.0%	Fairly good: 45.2%	Good: 26.2%

REGION – MBEYA

Pop. size: 2,063,328
Sample size: 126

Main Livelihood Groups: Crop Farmers 40%; **Small Farmers 33%**
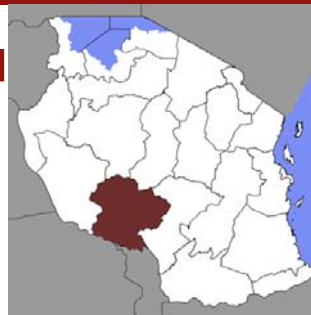
Food Security Profile:			
Food Insecure: 0.7%	Highly Vulnerable: 3.4%	Moderately Vulnerable: 14.1%	Food Secure: 81.9%
Access Profile:			
Very Weak: 0.8%	Weak: 19.0%	Medium: 42.1%	Good: 38.1%
Consumption Profile:			
Poor: 1.6%	Borderline: 11.1%	Fairly good: 42.1%	Good: 45.2%

Part 7 Recommendations for programme interventions

1   Summary of Findings

The Tanzania CFSVA was intended to provide baseline information for food security and vulnerability throughout the country. However, although the data is correct according to the period that it was conducted, many of the findings are subject to shocks (specifically, in this case, drought) and the changes in circumstance that these shocks bring. Therefore the data presented reflects the situation that these households found themselves in during the survey period. Although less prone to changes due to shock, livelihoods and their components are subject to how households adapt during periods of stress in terms of sources of income/food. Consequently the data presented provides a strong basis for assessment of households during the period of drought experienced during the end of 2005 and early part of 2006, but by no means reduces the significance of the findings.

- **Food insecurity and vulnerability is highly prevalent in Tanzania.** 15% of households are food insecure and 15% are highly vulnerable.

- **Food insecurity and vulnerability is present everywhere in Tanzania but varies regionally.** The central band of Tanzania shows the highest proportion of households that are food insecure. This differs from the generally accepted model of food insecurity in Tanzania and is likely to reflect the difference in the components of the assessment in identifying food security. In regions such as Dodoma, Singida and Tabora 45-55% of the households are food insecure. In Mwanza, Manyara and Kagera food insecurity affects between 20 and 30% of households. What is perhaps a surprising finding from this report is that in areas that are traditionally considered as food secure a large proportion of households are food insecure; specifically Ruvuma and Iringa where 15% of households are classified as food insecure by the Tz CFSVA.

- **Food insecurity and vulnerability is present in all livelihood groups but varies greatly by group and location.** The Tz CFSVA identified 5 vulnerable livelihood groups. Poor income, Wage Laborers, Small Farmers, Remittance Dependents and Natural Resource Dependents all have 39-47% households that are food insecure or highly vulnerable. Small Farmers are almost ubiquitous through out Tanzania and although this is the most vulnerable group identified in Tanzania as a whole their vulnerability varies by location. The Poor Income livelihood groups is less widely spread, found predominately in Iringa, Ruvuma, Tabora and Mara. Food insecurity also varies greatly by location in this livelihood group. The most food secure groups are Salaried (Government allowance etc.), Traders, Skilled Laborers and Fisherfolk. However even in these groups there are between 13 and 20% households that are food insecure or highly vulnerable.

- **Reliance on "own purchase" for source of food is likely to reflect the situation at the time of the survey.** Own purchase of food was reported by two thirds of the population as the main source of food. This is unusual for a country that depends heavily on agriculture as a source of income. The context of the data collection period should be taken into account when reviewing this data. Drought had affected around 40% of the households and up to 50% of the Crop Farmers. Data was also collected during the traditional hunger period. The effect of this is likely to have decreased the reported reliance on own production and also increased the number of food insecure identified by the analysis. This is important when considering that geographic spread and level of food insecurity indicated by this analysis.

- **Drought is the most important shock experienced in Tanzania.** Covariate shocks are the main source of shocks experienced by households in Tanzania. Drought is experienced by about 45% of households in Tanzania. Few other shocks are significantly felt by the population, were high food prices is the next most reported shock (12%). This varies greatly region and livelihood; the southern border regions report few households experiencing drought as a shock. The most important idiosyncratic shock is serious illness or accident (8%). The importance of drought to household food security is likely to contribute the most significantly in reducing access/availability. The way in which it impacts particular livelihood strategies and its geographic severity is not yet assessed from this analysis.

- **Nutrition status of children varies by location and livelihood strategy and seems to be linked to food access but not food security.** Acute malnutrition, by some paradox, is recorded as Fisherfolk, the most food secure group identified by the Tz CFSVA. Other food secure groups also recorded higher rates of chronic malnutrition. Regional variation of acute and chronic malnutrition also shows higher prevalence of malnutrition in areas tend to be more food secure. This would suggest that, although access can be correlated to nutritional status, food security is not the most significant contributing factor. This can be seen in the fact that education of the caretaker contributes significantly to nutritional status of children. Other factors were explored but none show significant correlations.

- **The nutritional status of women aged 15-49 years in Tanzania was high at the time of the survey but varies regionally**. The national rate of women in this age range having BMI below 18.5

was 8.4% but varies from 1.3% in Shinyanga to 19.1% in Manyara.Although the national rate was 9.7% of women in this age range having a BMI below 18.5 there was large variation regionally. Up to 21% in Arusha, Dodoma, Manyara, Pwani and Mtwara. The difference in high regional prevalence between adult and child malnutrition would suggest that the underlying causes are quite different. However it was not possible to identify the underlying causes for poor nutritional status from the data collected by the Tz CFSVA.

- **Water & sanitation issues.** Many households use water from unprotected sources. As high as 73% of households (Singida) use water from unsafe water sources exposing them to outbreaks of waterborne diseases. On average 40% of households still use water from these sources and is more associated with geographic location than livelihood strategy. The use of rainwater is low. Less than 10% of households use this as a source of water in the wet season, with the exception of Mtwara where almost 40% of households use rainwater. Sanitation is also notable in that less than 10% of the population use VIP latrines and almost 7% use no formal sanitation at all. This also varies significantly from region to region. Notably in Zanzibar/Pemba almost one third of the population does not use formal sanitation and defecate in the bush or river/stream. With a relatively high population concentration this has significant implications for the spread of disease and poor nutritional status.

- **Education varies greatly by region, livelihood and gender.** It is known that in Tanzania the level of education is low (HBS 2000/2001). This is reflected in the Tz CFSVA. Literacy is poorest in the most vulnerable livelihood groups. There are often large differences between the head of household and their spouses in terms of literacy. The high level of illiteracy is reflected in high prevalence of women (15-49 years) and female headed households not attending school. Poor school attendance is highly variable across and the country. The impact of poor education is reflected in low nutritional status of women (15-49 years) and is likely to increase the risk of these women producing low birth weight children.

- **Health care access was poor throughout Tanzania.** An average of only 35% of villages had a health care facility in them, with the majority of village needing to travel 2-6kms but still over 40% of the villages needing to travel great than 6kms to reach a facility. In Mwanza no village visited had a health facility and Shinyanga and Tabora reporting the largest number of villages traveling long distances. Tabora also showed that it had the poorest measles vaccination coverage and lowest provision of de-worming tablets in Tanzania, partly reflecting the poor access to health facilities. Given that the highest levels of food insecure households are found in Tabora, the lack of good, functioning health facilities should be of concern in this region.

2 Priority Areas

This report concentrates on areas of concern within the remit of the data collected, and issues arising out of the secondary data analysis. Priority areas are also highlighted from significant differences in regional food insecurity from the normal perception when considering a wider range of indicators. From this and consequentially there are a number of areas that should be considered when tackling food insecurity and information in Tanzania for both WFP as an organization but also in the wider context of other stakeholders.

- **Integrated approach to food security and education:** Access, consumption and food security are all related to literacy and school attendance. 15% of the population in Tanzania is food insecure. Lack of education appears to play a pivotal role. Incorporating nutrition and hygiene into the basic curriculum will help to provide a stronger grounding in key areas contributing to food insecurity. Providing basic life skills as well as agricultural knowledge through farmers groups and extension services will assist in improving literacy and capacity in those that have not had the opportunity to attend school. Proper assessment as to the impact and usefulness of school feeding should be conducted.

- **Livelihood Zoning Exercise:** In order to assist in monitoring food insecurity, as well as other indicators, livelihood zoning is a very useful process to identify uniformity in populations. This facility strengthens Early Warning Systems, targeting systems and further studies into all areas of interest.

- **Integrated and Focused Strategy of specific indicators in Food Security & Health Data into an Early Warning System (EWS):** There is currently enough information available in Tanzania to provide the basis for an effective EWS. What is required is a platform for their analysis and dissemination in an effective format to provide early warning data. Particular components in different sectors require strengthening in order to provide information suitable for this type of system but could be incorporated into its development. This type of system should also be based in a suitable ministry or organization. Key components of this system should be climatic information (as a priority), market prices (especially cereal prices) and some indicators that are regionally specific in order to pick up on local reactions to shocks (e.g. livestock body condition). WFP's VAM unit can play a key role in this type of system.

- **Improving Access at the household level:** Poverty plays a key role in food insecurity as well as crop production. The recent drought has inevitably influenced the outcomes of this study, although it cannot be established if the drought had any significant effects on consumption. This is reflected in high reliance on purchase of food and low duration of the products of the previous harvests. Other areas related to access but are not addressed at household level in this study are those of market access. Infrastructure plays a pivotal role in ensuring functional markets. It should be of concern the community level remarks referring to poor market access in areas such as Ruvuma, Mbeya and Rukwa all traditional surplus producing regions of Tanzania.

- **Diet & Crop Diversification** is poor in Tanzania. Almost 50% of the population has poor or borderline consumption profiles and contributes significantly to food insecurity. This may be linked to crop diversification although additional contribution and the role of kitchen gardens are not fully understood from this study. Although large scale production and/or large numbers of small farmers producing crops such as maize contribute significantly to national food security, mono cropping or poor diversification is problematic for household food security. Policy development for national crop production should also consider household needs and food security issues.

- **Drought Response Systems:** As access plays a key role in nutritional status and Drought has apparently reduced access, by reducing duration of harvest, it is important to consider appropriate drought response and rapid response. Although nationally only 12.3% of households reported high food prices as a shock in the previous year up to 50% of households in Pwani and around 20% of households in many other regions reported this as a shock. The nationally low proportion of households reporting this as a shock could be due to an effective subsidy system. This should be further investigated in order to asses it's effectiveness and appropriateness of this strategy. However significantly large regional variation may reflect that subsidies are not effectively targeted. Regardless of this observation food insecurity is high and the drought would still appear to have a significant impact on the population.

- **Childhood & women's nutrition should be addressed in Tanzania:** Although no clear links can be made to nutritional status and socioeconomic indicators, it is clear that nutritional status in Tanzania is poor in both adult women and children and therefore interventions should take this into consideration. Illness is a generally well know factor in poor nutritional status. Poor handing washing practice was associated with illness in women and likely to contribute to an unhealthy environment for children. Fever was also a significantly reported disease in children. Although national interventions are targeting the prevention of diseases such as malaria, the importance of health should not be forgotten when considering household food security and nutritional status.

Part 8 Annexes

1 Results for causal analysis

Type III Tests of Fixed Effects

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1701,317	2,362017	0,124507
AGEMOTH	1	1754,358	0,495359	0,48164
BOILWAT	1	1533,391	3,970099	0,046492
CAREANT	1	1648,571	0,190486	0,66257
SEXCH	1	1833,501	2,626349	0,105275
AGECH	1	1778,891	103,9259	9,31E-24
AGCHILD2	1	1859,305	53,70359	3,46E-13
Q910	1	1883,081	5,946598	0,014838
MEASLES	1	1897,636	0,697924	0,403587
CHILDFVE	1	1898,79	0,001212	0,972236
CHILDCGH	1	1896,741	1,842863	0,174777
DEWRTAB	1	1883,761	9,48342	0,002103
TOILTYP	1	1410,312	0,026358	0,871053
DEPRAT	1	1655,56	1,941322	0,163712
ACCSCORE	1	1346,024	0,881449	0,347974
FCSCOR	1	1398,939	0,774572	0,378958
WASHTOIL	1	1477,86	0,030667	0,861009
DISTCENT	1	1344,058	6,063369	0,013926
RISQBIOP	1	1597,503	0,022525	0,880719
RISQSOC	1	1664,866	0,202863	0,652479
CHLDHCEN	1	1897,696	0,615247	0,432917
DISTMRKT	1	1301,23	0,296329	0,586286
RSKECO	1	1461,182	0,785095	0,375733
AUTRISQU	1	1569,615	0,038486	0,844496
WATSRREC	1	1392,976	4,538272	0,03332
REGION	21	1412,436	1,8125	0,013564
EDUCMOTH	4	1564,014	1,076612	0,366515
a		Dependent Variable: HAZ.		

Type III Tests of Fixed Effects

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1733,537	0,152428	0,696274
AGEMOTH	1	1760,456	0,902863	0,342146
BOILWAT	1	1541,651	1,00603	0,316013
CAREANT	1	1653,253	1,401859	0,236583
SEXCH	1	1824,341	0,190551	0,66251
AGECH	1	1783,015	78,05908	2,34E-18
AGCHILD2	1	1855,026	47,22667	8,6E-12
Q910	1	1886,264	3,911046	0,048115
MEASLES	1	1897,209	0,323238	0,569735
CHILDFVE	1	1897,57	0,282248	0,595294
CHILDCGH	1	1897,698	0,176561	0,674393
DHIARHEA	1	1876,192	6,747932	0,009459
DEWRTAB	1	1886,907	8,498128	0,003597
TOILTYP	1	1415,842	0,062591	0,802482
DEPRAT	1	1668,329	0,009147	0,923817
ACCSCORE	1	1354,924	0,451475	0,50175
FCSCOR	1	1404,917	0,680782	0,409458
WASHTOIL	1	1485,263	0,830146	0,362378
DISTCENT	1	1350,313	8,207631	0,004236
RISQBIOP	1	1604,261	0,783895	0,376085
RISQSOC	1	1670,644	2,827381	0,092856
CHLDHCEN	1	1897,518	0,475537	0,490535
DISTMRKT	1	1311,625	1,372749	0,241553
RSKECO	1	1464,453	0,90117	0,342625
AUTRISQU	1	1571,017	0,252405	0,615457
WATSRREC	1	1398,631	2,474318	0,115946
REGION	21	1419,86	1,275381	0,180641
EDUCMOTH	4	1567,93	1,403387	0,230475
a		Dependent Variable: WAZ.		

Type III Tests of Fixed Effects

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1671,524	0,014538	0,904043
AGEMOTH	1	1646,898	0,568936	0,45079
BOILWAT	1	1414,593	2,889968	0,089353
CAREANT	1	1600,458	0,45956	0,497928
SEXCH	1	1897,778	1,758653	0,184952
AGECH	1	1860,206	1,784216	0,181796
AGCHILD2	1	1898,774	0,752828	0,385692
Q910	1	1703,758	3,048798	0,080977
MEASLES	1	1871,22	2,051744	0,152199
CHILDFVE	1	1814,396	4,22E-05	0,994817
CHILDCGH	1	1796,87	0,020681	0,885668
DHIARHEA	1	1876,722	4,634155	0,031469
DEWRTAB	1	1734,755	0,386555	0,534197
TOILTYP	1	1330,184	0,014245	0,905016
DEPRAT	1	1400,905	0,014897	0,902874
ACCSCORE	1	1226,101	2,63649	0,104691
FCSCOR	1	1305,709	2,291114	0,130358
DISTCENT	1	1303,251	0,161071	0,688238
RISQBIOP	1	1564,355	0,583258	0,445153
RISQSOC	1	1603,509	7,880487	0,005058
CHLDHCEN	1	1800,562	0,301787	0,582833
DISTMRKT	1	1115,788	1,044177	0,307074
RSKECO	1	1478,307	0,091517	0,7623
AUTRISQU	1	1576,568	0,185582	0,666678
WATSRREC	1	1325,436	2,140729	0,143671
REGION	21	1332,545	0,881739	0,615913
EDUCMOTH	4	1524,19	0,330419	0,857637

a   Dependent Variable: WHZ.

Tests of Between-Subjects Effects

Dependent Variable: food security status score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.[xxxix]
Corrected Model	734.9648	69	10.65166	5.783516	1.62214E-36
Intercept	221.5644	1	221.5644	120.3024	4.22225E-26
EDUC2	19.2329	7	2.747557	1.491836	0.166704571
LIVELIHD	101.0542	13	7.773397	4.220708	7.78818E-07
Q13	0.479993	1	0.479993	0.260621	0.609840996
Q12A	3.35824	1	3.35824	1.823418	0.177305798
Q112	8.306725	1	8.306725	4.510288	0.034011442
Q312	1.620643	1	1.620643	0.879958	0.348508981
CREDIT	19.18634	1	19.18634	10.41758	0.001301336
DROUHGTR	10.02473	1	10.02473	5.443109	0.019903666
REGION	245.5071	19	12.92143	7.015926	1.78087E-17
Q314	8.663665	1	8.663665	4.704095	0.03039783
DEPRAT	5.461942	1	5.461942	2.965662	0.085453342
LNVOLAIL	1.501339	1	1.501339	0.815179	0.366877217
LNBOVINS	7.902854	1	7.902854	4.290999	0.03864888
AUTRRISQ	0.515775	1	0.515775	0.28005	0.596821927
LNPETITB	0.250963	1	0.250963	0.136265	0.712124557
LNTOTLAN	12.14907	1	12.14907	6.596562	0.010406004
LNTOTPIG	6.07097	1	6.07097	3.296344	0.069825122
RISKBIO2	0.063831	1	0.063831	0.034658	0.852362675
CROPEST	3.996946	1	3.996946	2.170215	0.141117339
HUMANDIS	0.22155	1	0.22155	0.120295	0.728810443
ILLNESS	0.057313	1	0.057313	0.031119	0.860021431
DEATHWOR	0.429945	1	0.429945	0.233446	0.629118232
DEATHOTH	0.659652	1	0.659652	0.35817	0.549701233
Q31VIL	1.03484	1	1.03484	0.561885	0.453731822
Q24T	0.043385	1	0.043385	0.023557	0.878059165
Q51	7.820226	1	7.820226	4.246135	0.039676901
Q83	13.33387	4	3.333468	1.809968	0.124940456
Q21VIL	24.53803	1	24.53803	13.32337	0.000279916
Q23T	2.370594	1	2.370594	1.287158	0.25692732
Q53	2.431471	1	2.431471	1.320212	0.250912673
Error	1410.764	766	1.841728		
Total	29866.16	836			
Corrected Total	2145.728	835			
a	R Squared = .343 (Adjusted R Squared = .283)				

[xxxix] A variable with coefficient less or equal 0.05 indicate that there is a significant relation with the dependent variables. The lower is the score; the more significant is the relation.

[1] VAM standard Analytical Framework, June 2002, page 2

[2] VAM standard Analytical Framework, June 2002, page 4

[3] Food Security Information Team (FSIT) was composed of WFP (Regional Bureau and Country Office), Save the Children (Heather Kindness, hkindness@scuk.tz), UNDP (Joseph Kaiza, Joseph.Kaiza@undp.org), Tanzania Food and Nutrition Center (TFNC, Saidi Mwikongi, tfnc@muchs.ac.tz), CARITAS (Castor Kalemera, Castorkalemera@yahoo.co.uk), Department of Research & Development (MAFS, Sophia E. Kaduma, dufs@kilimo.got; John Mngodo, jtmngodo@kilimo.go.tz), Tanzania Meteorological Agency (TMA, Mike Mboya, mmboya@metco.go.tz), OXFAM GB (Silas D. Kilasi, sdlikasi@oxfam.org.uk), National Bureau of Statistics (NBS, Aldegunda S. Komba, aldekomba@yahoo.co.uk), FAO (Gerald T. Runyoro, gtrunyoro@yahoo.com), Prime Minister's Office (PMO, C.P. Chondo, J.P. Shiyo, M.H. Bilia), Economic and Social Research Foundation (ESRF, A.S Mlulla, amululla@esrf.or.tz)

[4] Each team was supplied with sufficient data collection material for the survey and anthropometric equipment. Supervisors were given reference material on how to complete the questionnaires and conducting the survey, as supplied by WFP. Each team traveled by road in a rented vehicle to each of the survey locations. On completion of the survey all survey material was returned to the NBS headquarters in Dar es Salaam for data processing.

[5] National Bureau of Statistics

[6] Tanzania is received 2.9 out of 10 (10 being the best score) in the 2005 Transparency International Corruption Perceptions Index (http://www.transparency.org/policy_research/surveys_indices/cpi/2005)

[7] http://www.esrftz.org/anticorruption/corruption_in_tz.htm

[8] http://hdr.undp.org/statistics/data/countries.cfm?c=TZA

[9] CIA World Factbook. Compared to 47% for Mozambique; 22,4% for Uganda; 20% for Rwanda; 14,7% for Kenya; 10% for Burundi,

[10] Human Development Report

[11] 2002 Population & Housing Census (Tanzania)

[12] 2002 Population & Housing Census (Tanzania)

[13] Human Development Report

[14] Medium-Variant projections; World Bank data

[15] 2002 Population & Housing Census (Tanzania)

[16] World Bank

[17] Demographic & Health Survey 2004/05

[18] World Bank

[19] UNESCO website: http://globalis.gvu.unu.edu/country.cfm?Country=TZ

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