ZAMBIA
Vulnerability
Assessment Committee

Multi-Sectoral In-Depth Vulnerability and Needs Assessment




BY
THE ZAMBIA VULNERABILITY ASSESSMENT COMMITTEE (ZVAC)
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LUSAKA

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Acknowledgements

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Acronyms

ANC	Antenatal Care
CBPP	Contagious Bovine Pleuro Pneumonia
CSO	Central Statistical Office
DDMC	District Disaster Management Committee
DMMU	Disaster Management and Mitigation Unit
DHMT	District Health Management Team
DWA	Department of Water Affairs
EmOC	Emergency Obstetric Care
FAO	Food and Agriculture Organization
FSP	Food Security Pack
HIMS	Health Information Management System
IEC	Information, Education and Campaign
IMCI	Integrated Management of Common Childhood Illnesses
ITN	Insecticide Treated Net
LWF	Lutheran World Federation
LCMS	Living Conditions Monitoring Survey
MACO	Ministry of Agriculture and Cooperatives
MWS	Ministry of Works and Supply
MET	Meteorological Department
MOE	Ministry of Education
MT	Metric Tons
NAPS	National Association for the Prevention of Starvation
NFNC	National Food and Nutrition Commission
PAM	Program Against Malnutrition
PTA	Parent Teachers Association
OVP	Office of the Vice President
RTI	Respiratory Tract Infections
RWSS	Rural Water Supply and Sanitation
SanPlat	Sanitation Platform
TBAs	Traditional Birth Attendants
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organisation
WATSAN	Water and Sanitation
WFP	World Food Program
ZAWA	Zambia Wildlife Authority
ZDHS	Zambia Demographic and Health Survey
ZRDF	Zambia Relief Development Foundation
ZVAC	Zambia Vulnerability Assessment Committee

EXECUTIVE SUMMARY

The 2007/08 rainy season started on a good note with the southern half of the country experiencing an early onset while the extreme northern parts had a late onset. From the month of November 2007 to January 2008, the rainfall activity increased substantially in the southern half of the country resulting in widespread heavy rains that caused floods in these areas.

In view of the aforementioned above, the Zambia Vulnerability Assessment Committee (ZVAC) conducted a Rapid Flood Assessment in February 2008 to establish the effects of the floods and /or water logging in various sectors. The assessment established that floods resulted into the destruction of crops, infrastructure such as bridges, culverts, habitations, school buildings and health centres. It was evident from the rapid assessment that in most of the districts where infrastructure damage was prominent, access to basic services such as health, schools and markets had been hampered. This led to the ZVAC to conduct an In-depth Vulnerability and Needs Assessment in order to determine the effects and extent of the floods, water logging and dry spells on crops, livestock and food access, infrastructure and habitation, health, nutrition, water and sanitation, education and child protection. The assessment was conducted in thirty-nine (39) districts.

The In-depth Vulnerability and Needs Assessment employed two survey approaches, that is, the qualitative and quantitative approach. Under quantitative approach, structured household questionnaires were employed in 518 Standard Enumeration Areas (SEAs) targeting a total of 5,180 households in all the 39 districts (fourteen SEAs per district). Furthermore, under the qualitative approach, community interviews were also conducted in all the 518 Standard Enumeration Areas. In each of the sampled SEAs, anthropometric data collection methods were employed to collect nutrition data for the under-five children.

Major findings

The following are the major findings of the assessment:

- A total of **444,624** people **(74,104 Households)** in twenty-one (21) of the thirty-nine (39) assessed districts were found to be in need of food assistance and would require **33,333** metric tons of maize for the period of nine (9) months starting from July 2008 to March 2009.
- Major income sources for most of the rural households were found to be cash/food crop production, casual labour and petty trading.
- Maize grain prices have started falling following the April/May 08 harvest. However maize meal prices have remained high due to the time lag between the harvest and when the new grain is dry enough for milling. The price reductions are generally larger in rural areas than in the urban areas.
- The prevalence of Severe Acute Malnutrition (SAM) was found to be **2.3%** out of which 0.6% had bilateral oedema. Global Acute Malnutrition (GAM) was **7.7%** indicating an increase of 2.1% from the June 2007 In-Depth Assessment findings. These results show no significant differences from

the In-Depth survey of 2007, although the rates of malnutrition showed a slight increase compared to 2007.

- Overall the assessment recorded high immunization coverage in all the eligible children. The measles coverage of 96.2 % was recorded among children aged between 9-59 months, 98.7% was recorded for OPV and DPT immunization while the BCG coverage was found to be at 97.6%. The health card (61.7%) and verbal history provided by the caregiver (34.5%) were the main source of information for child immunization.
- Breastfeeding status was based on maternal recall. At the time of the assessment, **80.1%** of mothers were still breastfeeding. Breastfeeding among children below 6 months of age was very high (98.9) in all the 39 districts.
- For water and sanitation, 44.2% of the communities drew water from unprotected water sources as their main water source. This indicates that majority of the communities affected by the flood will require new water points to be constructed but the need is much higher when you consider communities that drew from unprotected sources but were affected by the dry spells such as those in Northern and Eastern Provinces.
- Of the 28.9% of households that indicated that they treated their water, three quarters of these households use chlorine. The remainder indicated that they actually boil their water.
- About 2% of school going children in the areas assessed dropped out of school because of collapsed school buildings as a result of the floods. In some of the affected areas the school children shifted to the higher and drier lands where they continued with their education while in other areas the learning processes continued in make shift structures and/or other community centres. However, this was not conducive for learning and the quality of education was compromised. Furthermore the relocation to the drier lands and alternative learning environments, took away valuable learning time from the school children.
- A total of 18% of the respondents in the assessed communities reported that there were incidences of violence against women and children during the flooding and post flooding period. The most common cases were; early marriages, assault, sexual exploitation, rape, child defilement and other types of violence. In most of the instances the main perpetrators of these cases were mainly relatives/neighbours, other people and development workers.
- The findings on Human Settlement and Shelter established that a total of 82,662 households (495,972 people) were displaced by the floods. The worst affected provinces were; southern province accounting for 33% of the displaced cases, followed by western province at 28%, northern province at 10% and central province at 7%. In terms of location segregation, 87% of the displaced cases were in the rural areas while 13% were in urban areas.
- The assessment established that 66% of the road infrastructure (roads, bridges and culverts) in the assessed districts were either washed away or severely damaged.
- The floods had adverse effects on the environment and caused soil erosion and the formation of gullies that could lead to further deterioration of the environment.
- Early Warning Systems were effected through various modes of communication including; electronic media, print media and the use of local authorities and government agencies. However,

73% of the respondents in the assessed areas claim that they were not warned, while out of the 27% of those who indicted that they were warned 63% did not heed to these warnings and hence did not take any preventive measures.

CONCLUSIONS

Food Security

The impact of the floods, water logging and prolonged dry spells on crops was particularly pronounced in six (6) provinces namely Central, Copperbelt, Luapula, Lusaka, Southern and Western. Of the thirty-nine (39) districts visited, twenty-one (21) were found to have experienced drastic reduction in their harvest of the main staple and would require some food assistance. A total of **444,624 people (74,104 Households)** were found to be in need of food assistance in the 21 districts and therefore would require **33, 333 Metric tons** of cereal for a period of nine (9) months.

Livestock prices (mainly cattle) in almost all assessed districts rose in December. The fact that prices in most districts rose suggests that there was no desperation for households to sell off their cattle at low prices as they were able to negotiate for higher prices. The highest cattle price increases were recorded in Sinazongwe, Mumbwa, Mazabuka, Namwala and Sesheke. This shows that at the time of the assessment, the impact of the livestock ban movement due to the Foot and Mouth Disease outbreak had not yet started reducing income for farmers.

In the 39 assessed districts maize prices were high, especially in the low producing districts of Sinazongwe, Shang'ombo, Kalabo, Lukulu, Zambezi, Mambwe and Mongu where the prices were above K1, 200/Kg. Sinazongwe particularly reported abnormally high prices even for a low producing district of K1, 900/Kg, an indication of a possible shortage.
Among the high producing districts, only Mumbwa reported high maize prices of K1, 280/Kg, an indication of significant supply reduction.

Health and Nutrition

The prevalence of Severe Acute Malnutrition (SAM) was found to be **2.3%** out of which 0.6% had bilateral oedema. Global Acute Malnutrition (GAM) was **7.7%** indicating an increase of 2.1% from the June 2007 In-Depth Assessment findings.

The assessment established that immunization coverage was high in all the assessed districts. The measles coverage of 96.2 % was recorded among children aged between 9-59 months, 98.7% was recorded for OPV and DPT immunization while the BCG coverage was found to be at 97.6%. A small percentage (0.3%) of the eligible children did not receive vaccines while 3.5% of the child caretakers did not know whether the child had been immunized or not

There was no severe impact of floods on physical health infrastructure in all the assessed districts. However, Mkushi, Mumbwa, Lufwanyama, Masaiti, Mpongwe, Ndola and Mpulungu reported minor damages on some health facilities.

Water and Sanitation

From the findings it is clear that the floods in the 2007/2008 season increased water contamination in unprotected water sources like rivers or lakes, unprotected shallow wells and unprotected springs which accounted for 37.9% of the households. This is evidenced in the occurrence of diarrhoea diseases amongst households that draw water from the unprotected sources which is 30.5% for rivers or lakes being the highest. The impact on water quality was severe during the rainy season in areas that experienced floods and heavy rainfall.

Education

The assessment established that 76% (44% males and 32% females) of the children dropped out because the family could not afford to meet their school requirements, 15% (8% males and 7% females) dropped out because of lack of interest in school and 7% (all females) drop out of school due to pregnancies. The other reasons for dropping out of school such as: work for food/cash; care for sick family member; hunger; and collapsed school were insignificant at 2%.

Protection

Incidences of violence against women and children in the communities and camps during the flooding period were not very common. However some cases were reported by 18% of the respondents. The most common cases in order of ranking were; early marriages (35%), assault (25%), sexual exploitation (14%), rape (11%), child defilement (9%) and other types of violence (1%). In most of the instances the main perpetrators of these cases were relatives/neighbours and other people (94%), while development workers constituted 4% of the perpetrators.

Human Settlement and Shelter

The floods displaced 8% of the total households that were affected by the floods. This translates into a total of 82,662 households (495,972 people). The worst affected provinces were; Southern Province accounting for 33% of the displaced cases, followed by Western Province at 28%, Northern Province at 10% and Central Province at 7%. In terms of location segregation, 87% of the displaced cases were in the rural areas while 13% were in urban areas.

Infrastructure

The damages caused by the floods on infrastructure were mostly on roads, bridges and culverts – 66% of the roads, bridges and culverts in the assessed areas were damaged. The floods also caused damage to school infrastructure on classroom blocks and sanitation facilities. Both basic schools and community schools were affected. The community schools made from pole and mud suffered structural damage due to the poor quality of materials used to construct them. The basic schools with permanent structures had their roofs blown off and their toilets collapsing.

General Findings

The floods had adverse effects on the environment and caused soil erosion and the formation of gullies that could lead to further deterioration of the environment.

The assessment also established that early warning systems were effected through various modes of communication including; electronic media, print media and the use of local authorities and government agencies. However, only a few people received the warning but did not take any preventive measures.

RECOMMENDATIONS

Food Security

Short term

- A total of **444,624 people (74,104 Households)** in 21 districts will need food assistance (maize) amounting to **33,333 metric tons** or the period of nine (9) months starting in July 2008 to March 2009.
- MACO to take a lead in promoting crop diversification to avoid over dependency on maize (e.g. introduction of cassava growing in areas that are predominantly maize consuming).
- Government and its cooperating partners should provide support on small scale irrigation systems for populations with access to wetlands.

Medium to Long-term

- Government to partner with the private sector to establish a laboratory for manufacturing Foot and Mouth Disease (FMD) vaccines.

Health and Nutrition

Short-term

- Continuation of therapeutic and supplementary feeding as well as extension of their coverage
- Strengthen mother and child health activities through health centres by encouraging early accessing of health services, regular attendance of growth monitoring, vaccination and child health screening.
- Strengthen community involvement in prevention activities such as;
    - Breast feeding support groups
    - Peer to peer learning
    - Promotion of balanced diet through introduction and/or strengthening of kitchen gardens

Medium to Long-term

- Strengthen the existing nutrition surveillance system to identify areas of higher acute malnutrition
- Roll out nutrition surveillance through annual surveys.

Water

Short-term

- Intensify community sensitisation and participation in water treatment and protection of water sources through district RWSS Programmes
- Increase availability and affordability of chlorine in collaboration with MOH through the Domestic Water Chlorination Promotion.

Medium to long term

- Construct water facilities (boreholes, hand dug wells and protected springs) to increase access to safe drinking water.
- Promote rain water-harvesting facilities

Sanitation:

Short-term

- Intensify community sensitization and participation in sanitation programmes.
- Promotion and encourage construction of strong and durable sanitary facilities for excreta disposal

Medium to long term

- Increase awareness of personal hygiene and promote behavioural change initiatives at household level
- Strengthen and institutionalize the Rural Water and Sanitation (RWSS) Programmes in all districts using the WASHE concept.
- Formulate and enforce policies that promote construction of durable sanitary facilities

Education:

Short-term

- Rehabilitate school infrastructure that suffered structural damage due to floods (e.g. blown off roofs).

Medium to long term

- Sensitize households on the value of education and the need to send the children to school to improve attendance.
- Construct permanent structures in community schools using pole and mud to forestall future disasters.

Protection:

Short-term

- MCDSS and its partners to introduce livelihood support activities for the child headed households
- Provide psychosocial counselling and support to victims of gender violence and child abuse.

- Provision of Post Exposure Prophylaxis (PEP) Kits to local clinics for victims of rape and defilement.

Medium to long term

- Build capacities of enforcement agencies such as the police and community support groups to monitor gender based violence and child protection activities
- Sensitize traditional and community leaders to be focal points for victims of rape and children's rights

Human Settlement and Shelter:

Medium to long term

- Safer lands to be identified on the uplands and be provided with basic infrastructure such as boreholes, health and educational services for the resettling of the flood displaced persons.
- Sensitize population residing in flood prone areas on the importance of relocating to higher grounds
- Introduce alternative sustainable livelihood sources for the resettled populations such as crop production and bee keeping

Infrastructure:

Short-term

- Refer to the In-Depth Report on the Washed Away and Affected Drainage Structures by the 2007/8 Heavy Rains, RDA, June 2008.

General Recommendations:

- **Short- term**

There is need for ZVAC to carry out a Comprehensive Vulnerability Assessment and Analysis to establish baseline information that will not only help in disaster preparedness but also in designing relief and development interventions. This will help distinguish between the chronic and transitory vulnerable areas.

Medium to Long Term

- Harmonise and strengthen early warning systems for disaster preparedness and response
- Promote environmental conservation and sustainable land use activities such as conservation farming and afforestation.

1.0 INTRODUCTION

1.1 Background and Rationale

The 2007/08 rainy season started on a good note with the southern half of the country experiencing an early onset while the extreme northern parts had a late onset. From the month of November 2007 to January 2008, the rainfall activity increased substantially in the southern half of the country resulting in widespread heavy rains that caused floods in these areas.

In view of the aforementioned above, the Zambia Vulnerability Assessment Committee (ZVAC) conducted a Rapid Flood Assessment in February 2008 to establish the effects of the floods and /or water logging in various sectors. The assessment established that floods resulted into the destruction of crops, infrastructure such as bridges, culverts, habitations, school buildings and health centres. It was evident from the rapid assessment that in most of the districts where infrastructure damage was prominent, access to basic services such as health, schools and markets had been hampered.

This led to the ZVAC to conduct an In-depth Needs and Vulnerability Assessment in order to determine the effects and extent of the floods, water logging and dry spells on crops, livestock and food access, infrastructure and habitation, health, nutrition, water and sanitation, education and child protection. The assessment was conducted in thirty-nine (39) districts.

1.2 Main objective

The assessment was aimed at determining the extent and effects of the floods and/or water logging on Infrastructure and Habitations, Health and Nutrition, Water and Sanitation, Education, Crops, Livestock, and Food Access.

1.2.1 Specific Objectives

The specific objectives of the assessment were;

- To determine the extent and impact of floods and/or water logging on crops and livestock.
- To determine the impact of floods on the main livelihoods of affected communities.
- To determine the extent and impact of floods on Water and Sanitation, Education and Infrastructure.
- To determine the impact of varied rainfall intensity on markets.
- To identify worst affected areas as well as the population affected.
- To determine the effects of varied rainfall on heath and nutrition status of under-five children in the affected areas (children aged between 6-59 months).
- To determine food and non-food needs, if any.
- To determine the extent of violence against women and children in flood affected areas.

1.3 Scope of the In-depth vulnerability and needs assessment

The floods and/or water logging affected people in thirty-nine (39) districts. The floods also affected all sectors of the economy. These include health and nutrition, water and sanitation, education, infrastructure (e.g. habitations, school buildings, health centres), and agriculture. In order to ascertain

the full extent to which people were affected, the assessment employed two approaches that is, the household questionnaire approach and community interviews.

The household questionnaire covered the following topics: -

- Household demographics
- Productive asset ownership
- Household food security and Agriculture
- Health, water and sanitation
- Child nutrition
- Food consumption strategies
- Income and Expenditure strategies

The Focus Group Discussions at community level covered the following topics:

- Rainfall patterns and its effects
- Food security programmes
- Livelihood sources
- Food crop and livestock availability
- Income source
- Health and nutrition
- Water and sanitation
- Education
- Child protection
- Infrastructure and habitations

1.4 Methods and Procedures

1.4.1 Sampling Frame

Zambia is administratively, divided into nine provinces. Each province is in turn subdivided into districts. Each district is further subdivided into constituencies and wards. For statistical purposes each ward is subdivided into Census Supervisory Areas (CSAs) and these are in turn subdivided into Standard Enumeration Areas (SEAs). The 1998-2000 mapping exercise in preparation for the 2000 census of population and housing, demarcated the CSAs within in wards, wards within constituencies and constituencies within districts. In total, Zambia has 72 districts, 150 constituencies, 1,289 wards. Wards are further divided into CSAs, which are in turn divided into Standard Enumeration Areas (SEAs). The SEAs are also stratified by urban and rural strata. The listing of SEAs has information on number of households and the population. However, for the purposes of this survey, SEAs constituted the ultimate Primary Sampling Units (PSUs). Therefore, the sample frame for this survey is the list of SEAs developed from the 2000 Population Census.

1.4.2 Sample Stratification and allocation

In order to have estimates at district level, as well as equal precision in the estimates in the selected districts, the Equal Sample Allocation Method (ESAM), based on the established minimum samples for a district, has been adopted. In view of that, each selected district had a sample of 14 SEAs /PSU's. The allocation of sample points in the selected District was done proportional to their estimated size that is the measure of size of each cluster based on the 2000 population census.

1.4.3 Sample Selection

The In-Depth Vulnerability and Needs Assessment employed a two-stage stratified cluster sample design. In the first stage, 14 SEAs were selected from each of the 39 targeted districts.

1.4.4 First Stage Selection

At the first sampling stage, the sampled SEAs were selected within each district identified to have received above normal rainfall systematically with probability to estimated size (PPES) from the ordered list of SEAs in the In-depth vulnerability sampling frame. The measure of size for each SEA was based on the population size identified in the 2000 Census. The frame of SEAs within each district was sorted by urban/rural variable which provided further implicit stratification. The following first stage sample selection procedures were used:

(1) Sort the SEAs within each district by the following codes: region (rural/urban), constituency, ward, CSA and SEA.
(2) Cumulate the measures of size (population) down the ordered list of SEAs within District. The final cumulated measure of size will be the total population in the frame for the strata or district (*Mds*).
(3) To obtain the sampling interval for district or stratum ds (*Ids*), divide *Mds* by the total number of SEAs to be selected in district ds (*nds*):

$$Ids = Mds/nds$$

The Excel software was used for selecting the sample of the initial 518 sample SEAs for the In-depth Vulnerability Assessment survey following these procedures, based on the allocation of the sample SEAs, described Sample Stratification and allocation section above. Separate excel files per province were used showing the ordered frame of SEAs with the corresponding 2000 Zambia Census information. It documents the first stage systematic selection of sample SEAs with PPS for each district stratum within the province for the selected districts. The selected areas were arranged in a separate excel file used to calculate the weights for each selected HHLD in a district stratum.

1.4.5 Second Stage Selection

The second stage of the sampling procedure involved the selection of households in the SEAs selected at the first stage. Due to time and resource limitations, listing to get the updated number of households was not done. For the purposes of this survey the measure of size (N_{SEA}) for the PSUs was assumed to be that in Census 2000 frame. In each SEA 10 households (n_{SEA}) were selected. The sampling interval *k* was calculated as follows:

$$k = (N_{SEA})/ (n_{SEA}).$$

Every *k*-th household in the selected area was canvassed until all the required 10 households were covered.

1.4.6 Weighting Procedure

In order for the sample estimates from any particular survey to be representative of the population, it was necessary to multiply the data by a sampling weight, or expansion factor. In other words a sample of households that were selected using a known probability, it was necessary to make inference to the population where the sample came from. The raw data was multiplied by a factor which represented the actual population estimates. The basic weight for each sampled household was equal to the inverse of its probability of selection (calculated by multiplying the probabilities at each sampling stage).

Based on the sample design for the In-depth Vulnerability Survey, the probability of selection within each SEA was different for the households depending on which strata it was sampled from i.e. flood, non flood (e.g. dry spell areas). The probability of selection for sample households in each stratum within a selected district was generalized as follows:

$$p_{dsi} = \frac{m_{ds} X N_{dsi}}{N_{ds}} X \frac{n_{dsi}}{N_{dsi}}$$

Were:

p_{dsi} = probability of selection for the sample households within the i-th sample SEA in district or stratum ds

m_{ds}= number of sampled SEAs selected in district ds.

Ndsi = total number of households in the frame for the i-th sample SEA in district ds.

Nds = total number of households in the frame for district ds.

ndsi = number of sample households selected in a district s from the given number of hhlds (2000 census) for the i-th sample SEA in district h

The two terms in p_{dsi} correspond to the first and second stage probabilities of selection; at the first stage the SEAs were selected with probability proportional to size of population (PPS), and at the second stage the households were selected with estimated equal probability within each SEA.

The basic sampling weight was equal to the inverse of the probability of selection. Therefore the corresponding basic weight for the sampled households in each district was calculated as follows:

$$w_{dsi} = \frac{N_{ds}}{m_{ds} X N_{dsi}} X \frac{N_{dsi}}{n_{dsi}},$$

Where:

w_{dsi} = the basic weight for the sample household selected within the i-th sample SEA in each district.

The first and second parts of the equation represents the weights for the two stages of selection i.e. first stage weight and second stage weight, respectively. The excel file with the selected areas was used to calculate these weights. Since listing was not done, the basic weights for this survey represent the situation as at 2000. So the weights had to be adjusted so as to account for population growth to represent the situation for the survey period June 2007. Post stratification adjustment to the weights was done using the racking method as follow:

$$w_{dsi}' = w_{dsi} X \frac{Dp_{2007}}{Dp_{data}}$$

Where:

w_{dis}'=adjusted weight or the final weight.

Dp_{2007}=Projected district population from volume10 of the C.S.O 2000 Census Report

Dp_{data}=initial weighted district population using survey data.

The factor Dp_{2007} over Dp_{data} can be considered as the growth rate for the district. The final weights for calculating the survey estimates used SPSS and STATA software. STATA was also used to calculate variance estimation using the Taylor Series method to build in the software taking into account the complex survey design.

1.4.7 Estimates for Nutrition Component

1.4.7.1 Sample size and sampling process for the household survey

The sample size for the In-Depth Vulnerability survey was not large enough to have estimates at district level. In the calculation for the minimum number of children required for the whole survey for key nutrition indicators, it was found that 900 children would be required to get estimates at 95% confidence level in the entire survey (39 districts) that is the minimum number. Based on the national and NGO

nutrition surveys, assumptions were made that each household would have an average of one child aged 6 to 59 months, a household size of six members and one mother. Prevalence estimates were based on previous surveys carried out by the Government departments in charge of nutrition and other UN and NGO agencies national wide. Due to the two-stage sampling technique that was used, it was necessary to increase the sample size by a factor that would allow for any loss in precision due to departure from simple random sampling. This was estimated using the Rapid Nutrition Survey of 2005 and the targeted nutrition assessment conducted in 2006 by GRZ, UNICEF and WFP. The 5,125 households covered in the in-depth study were more than adequate to meet the minimum sample size. The number of children that were successfully measured in the study was 2,444.

1.4.7.2 Anthropometric measurement

Survey workers measured children's weight, height/length, and assessed the presence of bilateral oedema. Children were weighed to the nearest 100 grams using a digital SECA scale. For children younger than 2 years of age or less than 85 centimetres (cm) long, length was measured to the nearest millimetre in the recumbent position using a standard height board. Children 85 to 110 cm were measured in a standing position. Oedema was assessed by applying thumb pressure to the feet for approximately 3 seconds and then examining for the presence of a shallow print or pit.

1.4.8 Analytical Approach

1.4.8.1 Estimating food production in maize equivalent

To estimate the food production in maize equivalent for the 2007/08 production season, all the food crops other than maize (cereals and tubers) was converted into one common unit of maize kilocalorie. The crop used as a common unit for the conversion due to it being a widely consumed staple was maize. Before computing the total maize equivalent in metric tonnes, each of the other main crops produced (i.e. sorghum, millet, rice and cassava) was converted into maize calorie equivalent. Furthermore, in order to obtain quantities of crops in maize equivalent produced, the quantity of the crop to be converted was multiplied by the ratio of its unit calorie content to maize as illustrated in the formula below;

$$\begin{pmatrix}\text{Quantity of crop } i \text{ in}\\ \text{metric tons of maize}\\ \text{calorie equivalents}\end{pmatrix} = \left(\begin{matrix}\text{Quantity of crop } i\\ \text{in metric tons}\end{matrix}\right) \text{x} \frac{\begin{matrix}\text{Kilo calorie content of}\\ \text{crop } i \text{ per metric ton}\end{matrix}}{\begin{matrix}\text{Kilo calorie content of}\\ \text{maize per metric ton}\end{matrix}}. \quad (1)$$

The calorie contents (nutrition value) of various crop commodities were obtained from WFP/UNHCR Nutval 2006.

1.4.8.2 Identifying Desperate Areas and Persons Affected

In order to identify the food deficit areas as well as the number of affected population in the identified districts, two screening levels were utilised. In the first level, 2006/07 household based production was used as a base to determine a drop and/or increase in cereal production. The 2007/08 production gap and/or surplus were calculated by taking the difference in the household based production with that of 2006/07. It is worth noting that the household based production was computed as the sum of maize, cassava, rice, sorghum and millet all converted into maize calorie equivalent from own production, purchases, barter, remittances, food aid and any other sources that the sampled household.

The other dimension considered to determine the number of food insecure populations was an inventory on the number and types of disposable productive assets sampled households possessed. Using asset lens to determine their ability to offset household level food gap, households were group into three category of asset wealth namely asset poor, asset moderate and asset rich. About thirty percent (30%) of the sampled households were found to be asset poor and could not manage to offset the food gap from August through to the next agricultural season without engaging into destructive response options such as sale of productive assets. Furthermore, all districts which were found with a percentage of households whose food gap derived *as stated in paragraph one of chapter 1.4.8.2* was from 30% to 60%.

The districts which were found to have households who had food gap of 60% from the base year (2006/07 season), asset poor and their response options to be applied during the lean period was over reliance on consumption of vegetables, working too long in other people's fields, selling of assets were classified as severely needy areas.

The maize gap was estimated as the percentage of total maize equivalent in a district as shown in the formula below

$$\text{Maize Gap} = \left(\frac{\left[\text{Quantity of Maize Produced (MT) - 08}\right] - \left[\text{Quantity of Cereal Produced (MT) -07}\right]}{\left[\text{Quantity of Cereal Produced (MT) -07}\right]} \right) \times 100 \quad (2)$$

The number of the affected persons in need of food assistance was derived by averaging the percentage of the persons affected in the identified districts as described above. This was complimented and validated by the percentages estimates derived through the proportional pilling done during the community interviews.

1.4.8.3 Determination of cereal requirements for the affected population in food insecure District

The assessment used the following formula to determine the amount of cereal required by food insecure households:

$$\text{MAIZE REQUIREMENT}^{1} = \frac{\text{STANDARD RATION}^{2} \times \#\ \text{OF MONTHS}^{3} \times \#\ \text{AFFECTED PEOPLE}}{1000}$$

Where,

1 Total maize requirements in Metric Tonnes (MT) refers to total quantity of maize required for the affected population in the needy districts

2 Standard ration = 8.33 kilograms per person per month (278 g/person/day)

3 Number of months = duration of the food assistance

1.4.8.4 Assessing under five nutrition status

The anthropometrical status of young children aged between 6-59 months was taken to reflect the nutritional status of the populations that were affected by floods and/or prolonged dry spells.

This was done within the wider socio-economic and public health context for intervention recommendation in the broader perspective. This implies that in addition to anthropometrical data, the underlying causes of malnutrition and the health risks associated with malnutrition were assessed.

Analysis was done on the EPI-INFO 6.04, SPSS and STATA software to determine the prevalence of severe and moderate acute malnutrition on the basis of W/H Z-scores and % of the Median. W/H Z-scores are used because this is the most reliable statistical measure of malnutrition, and is the nutritional indicator recommended by WHO. Percentage of the median W/H was calculated because this is easily understood. Also, in most feeding programmes children are admitted on the basis of % W/H, hence the prevalence of malnutrition according to % W/H provided a better estimate of the number that can be anticipated for feeding programmes.

Cut-off points for children:

Classification: Indicator

Moderate malnutrition< -2 W/H Z-scores and >-3 Z-scores

Severe malnutrition: <- 3 W/H Z-scores and/or presence of bilateral pitting (oedema) of the feet.

The prevalence of malnutrition in children below <-2 and <-3 Z-scores, and the

confidence intervals were worked on to indicate the precision of the estimate obtained. The age and sex distribution of the population was analysed to see whether there was any abnormality. A high prevalence of malnutrition in children above 36 months is usually an indicator of acute food insecurity.

1.5 Limitations

The In-depth Vulnerability and Needs Assessment faced a few limitations that included the following:

- Information on HIV prevalence could not be collected in this study, although it would have been useful, since HIV plays a key role in issues of food security. The design of this study did not allow for collection of HIV/AIDS prevalence information since such meaningful information can only be done through actual testing of people in the visited households which was outside the scope of this study. However, proxy information on HIV was captured. This included information on chronic illnesses among adults at household level.
- Information on water quality was qualitative based on aesthetic characteristics as the actual scientific tests of water could not be done within the framework of the assessment.
- The small sample size for nutrition does not permit making generalisations at district level.

2.0 CONTEXT

2.1 The Economy

The economy has continued to register positive growth going by the real gross domestic product which increased from 5.8% in 2006 to 6.2% in 2007 though remained below the 7% target for the year 2007. Although the 2007 end of year annual inflation rate at 8.9% was slightly higher than the 8.2% recorded at the end of 2006, it was consistent with the revised target of 9% and generally low with respect to the high rates which prevailed in the year 2005. Reduced domestic borrowing and increased build up of gross international reserves also recorded achievements. The growth rate was largely driven by the construction and transport sectors while, agriculture, tourism, manufacturing and mining also recorded positive growth. However, growth in some of these sectors was slower than what was achieved in 2006 for a number of reasons. In the mining sector for instance, growth was slowed down on account of the flooding which affected some mines in the first half of the year. Interest rates have been gradually falling though still prohibitive for borrowing. This impediment to borrowing has kept private investment in agriculture very low. The low investment in agricultural equipment and early warning/preparedness systems has left the sector highly vulnerable to climatic change.

The growth in the agriculture sector slowed down to 2.8% in 2007 compared to 3 percent achieved in 2006. This reduction was mainly attributed to the poor prices offered for cotton and tobacco which resulted in drastic drop in production of the two crops. Despite the 2006/07 production season being characterised by localised adverse rainfall in the middle of the growing season, surplus maize production of 1.36 was achieved, though marking a marginal reduction of 4% with respect to the 2005/06 production season. The 2007/08 production season was also characterized by adverse rainfall in the southern parts of the country reducing maize production by 11% compared to the 2006/07 season, but average production of 1.2 million tons was achieved ensuring sufficient in country stocks to meet

national demand. Continued support to small scale farmers through programmes such as the fertilizer support programme, food security pack and out grower schemes have to a certain extent helped sustain high production particularly for food crops. As agriculture has remained a key sector in economic growth, Government intends to continue supporting increased crop production with focus on improved cash crop production through programmes such as fertilizer support programme and irrigation development. Other areas of focus include improved livestock and fisheries development. In the livestock sector, the focus will be disease monitoring and control coupled with livestock restocking in an effort to revamp the sector.

2.2 Agriculture and Food Security

2.2.1 Input Distribution

Various Input Distribution Programmes have continued to have a positive impact on the provision inputs to farmers in the past six (6) agricultural seasons. Unfortunately, most farmers remain substantially dependent on inputs distributed by the Government and Non Governmental Organisations without graduating into self sustaining farmers. The major input programmes are GRZ Fertilizer Support Programme (FSP), PAM's Food Security Pack (FSP) and the FAO input programme. All these programmes were necessitated by the need to facilitate farmers' recovery from previous droughts.

Table 2.1: Input Distribution through Support Programmes (2002-2007)

	Main Season Input distribution by agricultural season					
Item	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Number of beneficiaries	305,924	336,000	134,000	186,000	263,292	131,000
Maize Seed (MT)	3,333	3,935	2,545	2,938	4,422	2,500
Fertilizer (MT)	66,600	79,445	45,900	55,930	86,792	50,600

Source: FAO, MACO

Although input support to small scale farmers increased in 2006/07 season, there was general down sizing in the 2007/08 season. This was attributed to the increased cost of fertilizer and Government's inability to increase the funding towards this program after fertilizer prices increased. Fertilizer support dropped substantially by 42 percent in 2007/08 compared to the 2006/07 season. At the same time, the number of beneficiaries reduced by 50 percent. In an effort to support increased production, government has set aside funds for the Fertilizer Support Program targeting 125,000 beneficiaries for 2008/09 main production season.

In view of the 100% increase in the price of fertilizer, Government will need to substantially increase funding to this programme in order to provide the same quantity of inputs as those of the 2007/08 season. The large increase in cost of fertilizer will result in access problems for an increased number of small scale farmers.

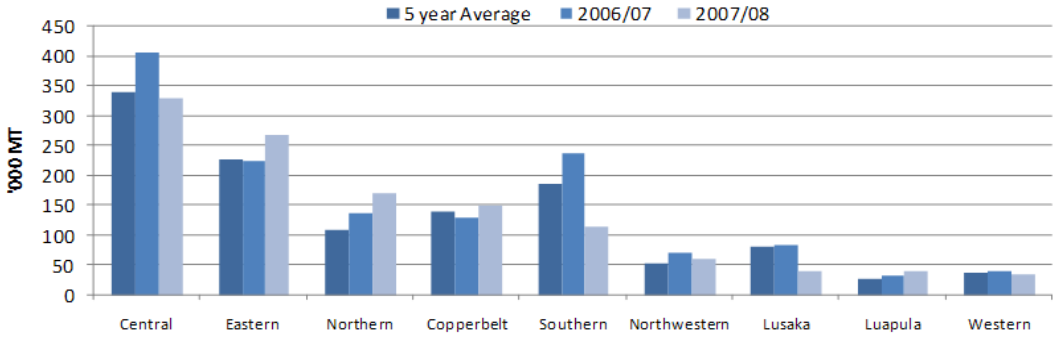
Input support for wetland production which helps farmers practicing recession farming fill the food gap during the lean period (November to February), has significantly dropped in the last few years. Although the EU and DFID have continued to provide support to wetland production through FAO (North western and Western Provinces) and PAM (Central, Northern and Luapula Provinces) there has been poor response to this programme.

2.2.2 Crop production, Food Supply and Access

Among major crops produced, maize and cassava continue to rank high in terms of output. The production levels of other crops have remained significantly low.

The crop estimates released by the Ministry of Agriculture and Cooperatives established that Zambia has produced an average to below average output for major crops with the exception of cassava, wheat and rice whose production estimates were above the recent five-year average.

Figure 2.1. Maize production comparison by province



Source of data: MACO

Maize production dropped by 11 percent, from 1,366,000MT to 1,212,000MT during the 2007/8 production season, but an average harvest was attained despite the adverse impact of excessive rainfall in the southern parts of the country. Cassava output, which is as important as maize for the Northern, Luapula and Western provinces, was 10 percent above average and comparable to the previous season's output at 1,160,853MT. The impact of excessive rainfall on cassava was minimal as the highest producing areas are mostly in the northern parts of the country where impact of adverse rainfall was relatively low.

Although at national level, Zambia has attained average maize production, the situation at sub-national level is mixed. Two of the high maize belt areas have recorded significant drop in production, namely Central Province (19 percent drop) and Southern Province (52 percent drop) with respect to the previous season and are below the five year average. Other provinces with notable drop in maize production are Lusaka (51 percent), North-Western (14 percent) and Western (13 percent). With the exception of North-Western, the reduction in output can mostly be attributed to the adverse rainfall which negatively impacted crop production in the southern half of the country. For North-Western, the drop was partly due to the 26 percent reduction in area put under maize. The reduction in maize output in southern

areas has partly been offset by the increased production in the northern half of the country. Increases were recorded in Eastern (19 percent) Northern (24 percent), Copperbelt (15 percent), and Luapula (24 percent) compared to the 2006/07 production season.

Production of rice and millet increased by 56 percent and 31 percent respectively while wheat production is expected to increase substantially by 56%, implying attaining almost self sufficiency level. Among the small grains, only sorghum has recorded a significant drop in production of 22 percent possibly due to a shift towards more maize production. Cash crops (groundnuts, cotton and burley tobacco) recorded increases in production compared to the previous season, but these levels fell short of the five-year average. The large increase in burley tobacco production could be attributed to high expectations for tobacco prices this season. Production levels of both soybeans and Virginia tobacco remained stable.

2.2.3. National Food Supply for the 2008/09 Marketing Season

Based on data from the Ministry of Agriculture, Zambia has adequate maize stocks to meet its needs for the 2008/09 marketing season with a moderate surplus. The national maize surplus has been estimated at 143,000MT, 43 percent below the 250,000MT attained in 2007/08 season. This suggests that at national level, imports will not be required. This also implies that maize relief needs, in response to the adverse impact of the floods during the 2007/08 agricultural season, can be purchased in-country. Comparatively, there is an estimated 11 percent reduction in maize availability from 1.8 million in 2007/08 marketing season to 1.6 million in 2008/09. With the much reduced national surplus, government has maintained the maize export ban as a precautionary measure to ensure adequate availability of maize in country. During the 2007/08 marketing season, maize in excess of 200,000MT was exported to neighbouring countries with 118,000MT going to Zimbabwe. Comparatively, much more maize was exported during the 2007/08 marketing season than the two previous marketing seasons. Despite the imposed export ban, informal maize and mealie meal exports have continued into Democratic Republic of Congo albeit at a much reduced rate.

Table 2.2. National Maize Balance Situation 2008/09 vs. 2007/08 marketing season

	2008/09 (MT)	2007/08 (MT)
Opening stocks (May 1)	390,350	433,032
Gross production	1,211,566	1,366,158
Total availability	**1,601,916**	**1,799,188**
Human consumption	1,140,560	1,132,880
Strategic grain reserves	157,000	250,000
Industrial requirement	82,268	80,000
Seed	18,510	18,000
Total requirement	1,458,916	1,480,880
Surplus/Deficit	**143,000**	**250,000**

Source: MACO

Although at national level, the food supply situation is good, there are potential problems in some parts of the southern half of the country, such as Southern Province were staple food production has overall been reduced by half due to the excessive rainfall. In Southern Province all high producing districts have registered significant maize production declines (ranging from 35 percent to 73 percent) compared to the 2006/07 season and 32 percent to 64 percent down with respect to the five year average. With

adequate maize in country, redistribution from surplus areas to deficit areas will be key in ensuring that maize prices do not reach exceptionally high levels.

2.2.4. Food Access

Maize prices which were high in April are beginning to drop significantly following the April/May harvest. The price reductions are generally larger in rural areas (Figure 2.1), due to reduced reliance on the market as own food stocks become available. Prices in May 2008 were below the recent five-year average, except in major flood impacted districts of Southern Province such as Mazabuka and Monze, where prices were average.

In urban areas, maize prices have also dropped, but less steeply due to heavy reliance on markets for staple food throughout the year. While maize grain prices have started falling, maize meal prices remained high, due to the time lag between harvest and when the new grain is dry enough for milling. Meal prices are expected to fall but not to the levels of the past two seasons. This is supported by the fact that, available maize stocks are lower this year, fuel prices have increased transport costs while recent power outages have created additional costs for millers.

By September, maize prices are expected to start rising and thereafter will remain at relatively high levels as the supply of maize from small scale producers declines and millers shift towards higher cost maize from commercial farmers.

Figure 2.2. Nominal maize prices in selected districts

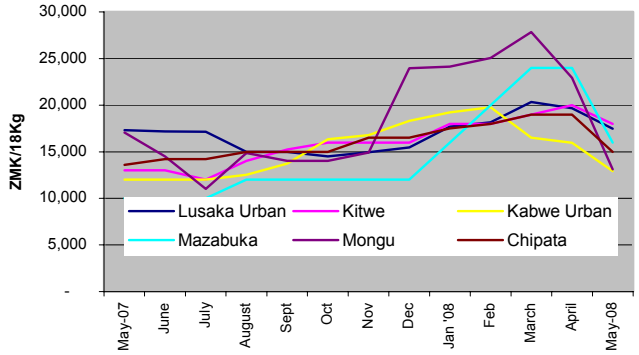
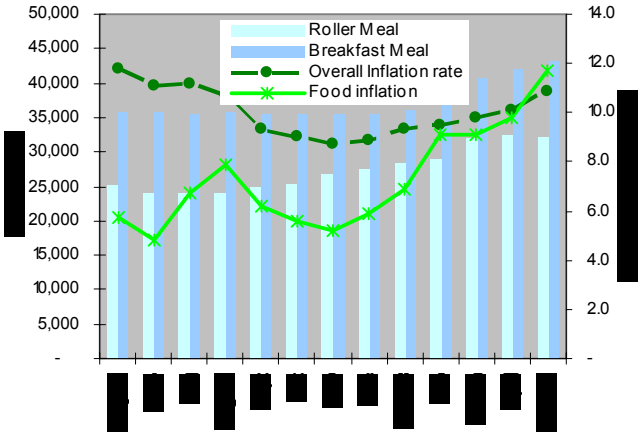


Figure 2.3. Maize meal prices and inflation



source of data : CSO

Anticipated increases in production costs for next year due to high fertilizer cost, will also contribute to keeping prices high. Generally, food prices are on the increase globally and Zambia is not an exception.

While the inflation rate had been declining, falling to 8.7 percent in November 2007 it's now on an upward trend reaching 11.7 percent in May 2008 (Figure 2.1). This trend has resulted, largely from an increase in food costs. Between December 2007 and May 2008, food inflation increased by 5.8 percent, and non-food inflation dropped by 1.8 percent. Cost of living monitoring done by the Jesuit Center for Theological Reflection (JCTR) established that between December 2007 and May 2008, the basic food basket cost rose by 30%. Comparatively, the cost of the essential non-food basket only increased by 12%. Although some of the increase in food costs can be attributed to typical seasonal price fluctuations, continued high fuel costs, and power outages are also factors. With the increased food prices, purchasing power of consumers is being eroded as income is not increasing as prices increase.

This is worsened by the fact that poverty levels in Zambia are already high, estimated at 64 percent by the Central Statistics Office in 2006.

2.2.5 Livestock Situation

Livestock production continues to be a major livelihood activity among small scale farmers in the country. Production of major livestock is concentrated in the three provinces of Central, Southern and Western Provinces with cattle contributing at least 55% share of livestock, goats (35%), pigs (10%) and poultry and other small ruminants contributing 5%. Cattle population was estimated at 2,790,965 at the end of 2006 representing a 16.1% increase from the 2004 estimate.

In the past five years the cattle population has been severely reduced by recurring disease outbreaks, the common ones being Foot and Mouth Disease (FMD), East Coast Fever and Contagious Bovine Pleuropneumonia (CBPP). The FMD is endemic in Sesheke (Western Province), Kazungula (Southern

Province), Mbala and Nakonde (Northern Province), but in 2004 spread to parts of Central and other Southern Province districts. CBPP is endemic in areas of Western Province, North-western, Southern (Kazungula) and part of Northern Province. East Coast Fever areas include Eastern, Southern, Central, Lusaka and Northern Provinces. Most of the areas affected by these diseases are also prone to drought and occasionally floods. Livestock movement bans associated with control measures often disrupt the cattle enterprise associated trade, affecting farmers, beef traders and consumers of cattle products. This often exacerbates farmers' vulnerability to the effects of drought/floods especially in Southern province by taking away the means to cultivate their land (draught power) as well as one of the most reliable income sources (Tembo et al, 2006). Under normal circumstances, in these farming systems, livestock acts as some form of insurance against poor weather and subsequent crop failure.

In the early part of 2008, following the occurrence of floods, FMD broke out in some districts of Southern (Monze, Namwala, Mazabuka and Itezhi tezhi) and Western provinces (Sesheke, Senanga and Mongu). The outbreak of FMD in Mazabuka, Monze and Namwala were attributed to contact between cattle and wild game following the movement of the former from the traditional grazing lands in the plains to the upland forests to escape the flooding that had occurred around February 2008. In order to control FMD and stop it from spreading, government through the Department of Livestock and Veterinary Services imposed a ban on the movement of Livestock from Southern and Western provinces. It also embarked on vaccination of cattle in districts affected by FMD in the two provinces. So far 80,000 cattle have been given the first round of vaccinations in Southern province. A further 25,000 doses of FMD were recently purchased. At least 175,000 doses of the exercise would require to be further timely procured to complete the exercise. Most of the vaccine has to be imported from outside, which results in protracted procurement procedures.

In a bid to compliment government efforts to control economically important Trans-boundary Animal Diseases (TADs), such as CBPP and Anthrax in Western and North western Provinces, FAO with funding from the European Union assisted Government in carrying out effective vaccinations against the diseases from November 2007 to January 2008. As a result of the exercise, there haven't been any new reported cases of these disease incidences after the recent floods. However, FMD outbreak continues to be a problem in parts of Western and Southern Provinces. In order to insure sustained control of FMD, resources should be made available for timely vaccinations, surveillance and diagnostic services.

2.3 Water and Sanitation

Zambia has vast water resources in form of rivers, streams, lakes and ground water. The country generates an estimated 100,000m3 per year of surface water and an estimated annual renewable groundwater potential of 49,600m3 per year (DWA/JICA, 1995). Most of the surface water is poorly distributed while groundwater is fairly well distributed. However, declining rainfall patterns over the years have had a significant adverse impact on the country's water resources. In terms of groundwater, Zambia has favourable geological conditions for accessing groundwater with regards to depth, storage capacity, available yields and exploitation potential.

However, water resource management has not succeeded to substantially improve access to water or prevent the pollution of both surface and groundwater. Similarly, access to sanitation especially in rural areas is still very low.

In view of these, the Government of the Republic of Zambia through its responsible Ministries of Energy and Water Development and Local Government and Housing and stakeholders including private sector, NGOs and Cooperating Partners, has formulated the necessary policies and legal instruments and is implementing strategies and programmes aimed at increasing access to safe water and proper sanitation. The National Water Policy of 1994 (currently under review), Water Supply and Sanitation Act of 1997, the 1994 National Environmental Support Programme, the Water Resources Master Plan (1995 to 2015), National Irrigation Plan and the Water Resources Management Bill give evidence to Government's commitment to improving the quality of life of its people through effective development, use and management of water resources as well as provision of proper sanitation.

Furthermore, the Government has over the years implemented a number of water and sanitation programmes such as the Water Resources Action Programme (WRAP), National Rural Water Supply and Sanitation Programme (NRWSSP).

By 2006, 58% of the population had access to improved water sources. The majority of the rural people access their water from rivers/lakes and unprotected wells, which are not "safe" or "improved".

The Living Conditions Monitoring Survey Report of 2006 states that access to improved sanitation in Zambia is 87%.

2.4 Health and Nutrition

Health is one of the major factors with significant impact on the living conditions of the population. The Government of the Republic of Zambia has committed itself to improving the quality of health for all Zambians through its efforts to improve health care delivery by reforming the health sector. An important component of the health policy reform is the restructured Primary Health Care (PHC) programme, which aims to, among other things; deal with the main health problems in the community including child and maternal health. Government is committed to provide cost effective, quality health services as close to the family as possible in order to ensure equity of access in health service delivery and contribute to the human and socio-economic development of the nation. According to the annual statistical bulletin of 2005 the top ten causes of health facility visitation were malaria, respiratory infection (non pneumonia), diarrhoea (non bloody), trauma, respiratory infections (pneumonia), skin infections, eye infections, ear/nose throat infection, digestive system (non infection) and muscular skeletal and connective tissue.

Overall, Maternal Mortality Rates (MMR) and Under-five Mortality Rates (U-5 MR) in Zambia were among the highest in the region. The major causes of child mortality are malaria, respiratory infection, diarrhoea, malnutrition and anaemia (including HIV and AIDS) while maternal mortality is largely due to obstetric causes such as postpartum haemorrhage, sepsis, obstructed labour, post-abortion complications and eclampsia. Malaria, anaemia and HIV and AIDS also contribute significantly to high MMR.

Other contributing factors include delays in accessing healthcare at community and health center levels. Although 90% of all pregnant women receive some kind of antenatal care, only 43% deliver in health facilities. The Total Fertility Rate (TFR) according to the Zambia Demographic Health Survey (ZDHS) 2001-2002 has been decreasing slowly but still remains high. Access to family planning services is a key determinant for TFR. In this respect, the use of modern contraceptives accessed through the public health sector play a critical role. The literacy levels among women were reported to be low 48.9% in rural areas n urban areas compared to 70%

The national level of malnutrition status is high and is a major public health concern in Zambia. The key attributes being high poverty levels, increase in food insecurity and sub-optimal infant and young child feeding practices.

The pattern of infant feeding has an impact on both the child and mother. Feeding practices are the principal determinants of child's nutritional status. Breast-feeding as one of the child feeding strategies is universal in Zambia, although exclusive Breast-feeding[1] for the first six months is not widely practiced. The Global strategy for infant and young child feeding adapted by Zambia, recommends that the child should be exclusively breastfed for the first six months of life. Exclusive breastfeeding plays an important role in child survival. Poor nutritional status in young children exposes them to greater risks of morbidity and mortality.

HIV prevalence in the general population still remain high although the prevalence rates in the 15-49 years population showed a decrease (14%) in the ZDHS 2007 from 15.6% in 2002. At provincial level, the ZDHS 2007 records Lusaka as the highest with HIV prevalence at 20.8% followed by Central with 18 %. The lowest level of HIV prevalence was recorded in Northern Province with 6.8 percent. HIV prevalence is still high (26 %) among females aged 30-34, while the prevalence in males was high in the age group 40-44 (24.1%).

In response to this situation, various child health interventions/strategies are being implemented to reduce under-five mortality rates. These include infant and young child feeding promotions, growth monitoring promotion, micro nutrient control and management of severe malnutrition, immunization and management of common childhood illnesses. Immunization coverage in Zambia is higher than in most

[1] Exclusive breastfeeding; feeding the baby on breast milk only without giving water or any other foods.

Sub-Saharan African countries, with coverage rates for measles, DPT3 and polio in the range of 80-85% and BCG at above 90% of the eligible populations.

Despite inadequate coverage of such effective interventions and the poor quality of services provided, especially in the rural areas due to the critical shortage of skilled staff, weak infrastructure and inadequate funding for child health interventions, there has been marked downward trend in U-5 MR. It is envisaged that during the life of the strategic action plan, child health and nutrition will be a key agenda item.

The challenge for the health sector is to accelerate and scale up implementation of effective child survival interventions, targeting the high risk areas such as the flood affected districts. Child health and nutrition programs and strategies include immunization, management of childhood infections, and management of the new born, nutrition support and promotion and strengthening of school health programmes.

Several interventions were implemented in this area including, the strengthening of reproductive health services through stronger referral systems e.g. provision of transport, integration of prevention of mother to child transmission (PMTCT) in Reproductive Health, improvements in adolescent health, promotion of positive male involvement, improved co-ordination and collaboration between actors, and procurement of equipment and drug supplies for essential obstetric care in all the 72 districts, integration of management of abortions with infection prevention techniques and family planning counselling and provision. Effective partnerships such as safe motherhood committees at community level and UN agencies, Cooperating Partners and NGOs were established. All these efforts contributed to the increase in the number of supervised deliveries from 44% in 2001 to 55% in 2003, these figures include deliveries supervised by Traditional Birth Attendants (TBAs).

The main constraints affecting integrated reproductive health (IRH) include: the slow pace in developing policies, which limits implementation of some interventions; shortage of appropriate personnel; poor transport and communication facilities; social-cultural factors, such as the belief that seeking care early in labour is a sign of weakness; delays in reaching facilities due to long distances; inadequate infrastructure such as space, lighting, lack of privacy in some facilities; and inadequacy of drugs and other essential equipment and also lack of proper Emergency Obstetric Care (EmOC) facilities. These factors contribute to delays in providing care at the facilities and consequently contribute to problems of unsupervised deliveries.

The challenge for the Ministry is to scale up the delivery of services and the demand for key services among the population within the limited resources that are currently available. There is an acute shortage of skilled births attendants, transport, supplies and data collecting systems, maternity wings that offer EmOC at both primary and referral levels, which adversely affects emergency obstetrics. There is also need to build and strengthen partnership for better coordination to address EmOC issues.

Efforts are needed to change health seeking behaviour, including socio-cultural factors which lead to delays in seeking health care and poor nutrition. The quality of services also needs to improve: constant delays in the provision of care leads to low use of health facilities and results in an increase of unsupervised deliveries and in poor quality of antenatal care.

2.5 Education

The Education system in Zambia consists of academic learning at primary, secondary and tertiary levels. However, the lower levels, i.e. pre-university is currently being reorganized into two levels, namely Basic education, running form grades 1 to 9 and high school running from grade 10 to 12. The Ministry of Education has also been mandated to run Early Childhood Care, Development and Education (ECCDE). The main policy documents guiding the Ministry's education provision are the 1996 policy of "Educating our future" and the Fifth National development Plan, 2006 to 2010.

Zambia has 8,013 schools classified as basic, 583 schools classified as secondary, 14 colleges of education and 3 public universities (Education statistics bulletin 2007).

Additionally there are 2,716 community schools. Community schools are those initiated and run by the community with minimal support from the government. The total school enrolment for grades 1 to 9 in 2006 was 2, 986, 781 while in 2007 it was 3, 166,310 representing an increase of 6%. The enrolment for grades 10 to 12 in 2006 was 193, 843 while in 2007 it was 219,132 representing an increase of 13%. It is important to note that there has been a marked increase in enrolment at grade one level due to the introduction of free primary education and improvement in quality of school buildings. The number of out of school children has been declining since 2000. According to the 2007 Education Statistics bulletin, the number of out of school children in the 7-18 years age group were 65, 185 males and 173, 380 females representing 6.7 % of the total population.

The Ministry of Education has categorized infrastructure in three categories namely permanent structures, temporary and incomplete. The permanent structures are structures built to last, usually at high cost using skilled labour. The temporary structures are temporal in nature built as stop gap measure to provide basic infrastructure. The incomplete structures are designed to be permanent structures but are still under construction.

At basic school level, as of 2007, there were 26,546 permanent and 8,132 temporal classrooms. At secondary level, there were 7,292 permanent and 193 temporal classrooms. The number of temporal classrooms accounted for 23.5 % at basic school level and 2.6% at secondary level. The majority of community schools are made of pole and mud, making them more susceptible to damage from natural induced hazards such as floods.

2.6 Protection

Protection issues during emergency relate largely to sexual and gender based violence, defilement, sodomy, physical and emotional abuse of children and women. These are normally expected to accelerate due to the stress caused as a result of the change in environment as well as systems that guard against abuse. In Zambia, these are all issues that occur during normal periods in families and communities. This is the reason why there is need to maximise protection systems that prevent and deal with protection during emergency situations.

More so, Sexual and Gender Based-Violence, including rape, sodomy and defilement, is a common problem throughout the world. It occurs in every society, country and region. This problem has been identified throughout history but has been a neglected issue in many societies. Without appropriate intervention sexual and gender based violence, particularly sexual assault, continues and escalates in frequency and severity. Many victims may have suffered long-established patterns of abuse by the time the problem is identified. The consequences of sexual assault include infection with Sexually Transmitted Infections (STIs) including infection with the Human Immune Deficiency Virus (HIV). The women survivors may also have unwanted pregnancies which may end up in unsafe abortions if not properly attended to. The survivors may also suffer psychological trauma of varying magnitude. Early intervention may help prevent cases of sexual assault. This can be done through community sensitization, advocacy, legal reform, but above all survivors of sexual assault require appropriate medical management and rehabilitation. Health care providers are better placed to provide survivors with comprehensive care including referral to appropriate community organizations providing support.

Children in Zambia have over the last years been prone to defilement, early marriages, child labour, neglect leading to some children becoming street children. A number of factors have been identified as contributing to lack of respect and fulfilment of the rights of children and women in Zambia. These include inadequate participation of children in the formal school system; inadequate legislation and enforcement on gender violations against children and women; Poverty status of their parents/and or guardians; Lack of clarity on the part of parents and guardians in relation to their legitimate responsibility to discipline a child, and what to define as child abuse and fear of departing from traditional norms, practices and expectations.

Zambia is a signatory to the convention on the rights of the child and has made strides in ensuring the realization of these rights. The country also recognizes the existence of the African Charter on the Rights of a child. Further, in 2004, The UN Secretary General commissioned a Global study on violence against children in which Zambia participated. The study came up with 12 recommendations that are being implemented globally and as expected Zambia recognizes its role in this response. However, despite the many strides that have been made in ensuring that children are protected, Zambia's children continue to experience violations on their rights.

Additionally, Zambia is a signatory to a number of conventions on women's rights such as the convention on elimination against all forms of discrimination against women. Notwithstanding Zambia's commitment to international conventions, there are still high incidences of abuse of women bordering on physical, sexual and reproductive rights, stereotypic gender roles and inheritance rights. Of these abuses sexual exploitation and abuse are the most common.

2.7 Infrastructure

Development of infrastructure is one of the key poverty reduction mechanisms that the government has put in place to contribute towards improving the living conditions of the poor and vulnerable communities. In most of the rural areas government in collaboration with co-operating partners set up institutions such as the Zambia Social Investment Fund and the Micro Projects Unit to undertake community based infrastructure development projects. According to the LCMS 2004 the most widespread infrastructure projects in the rural areas are rehabilitation/resurfacing of roads, provision and improvement of education infrastructure and health facilities.

About 80% of the country depends on gravel and feeder roads connecting districts and wards to each other. This is a vital and strategic link for the supply of goods and services to the communities in various parts of the country.

Government has encouraged the establishment of schools and health centres in the rural areas through community development programmes such as rehabilitation of existing infrastructure. However, most of the infrastructure especially in the educational sector remains in a poor state as most community schools are built from pole and mud.

2.7.1 Human Settlement and shelter

Human settlement plays a crucial role in the country's socio-economic recovery programme aimed at improving the well being of the Zambian people. Although housing is a basic necessity for humans, of the total housing stock in Zambia eighty percent could be classified as informal in nature (Vision 2030, P 10). About 65 percent of Zambian households occupy traditional housing units (LCMS, 2004). In rural areas, 91 percent occupy traditional housing compared with only 22 percent in urban areas.

Further, due to the livelihood patterns of some communities such as fishing, livestock rearing and wetland agriculture, some houses are built along the river banks where such livelihood activities are carried out. Such locations coupled with the inappropriate and weak building materials (chiefly pole, mud and grass) used in building the shelters only worsens the vulnerability of these structures to heavy rains and floods.

3.0 FINDINGS

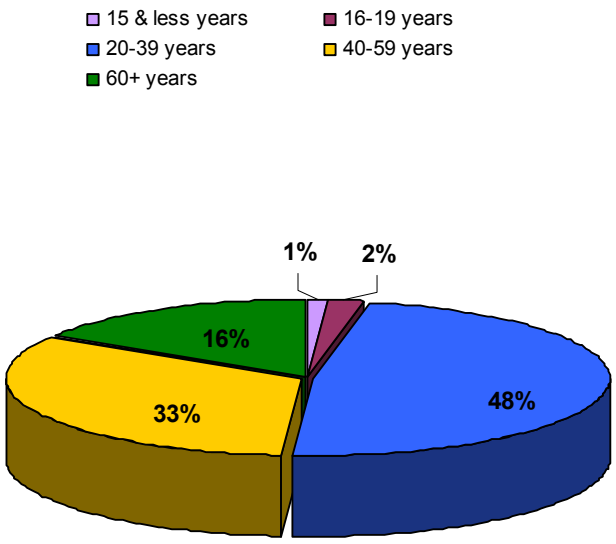
A total of 39 districts were covered during the In-Depth Assessment and of these, 81% were rural. The findings were as follows;

3.1 FOOD SECURITY

3.1.1 Household Characteristics

The majority (76%) of household heads were married while a smaller number (12%) were widowed and the rest were single, separated or divorced. Most of the household heads were in the productive age group of 20 to 39 years (53%) and 40 years to 59 years (33%) respectively.

Figure 3.1.1: Age of Household Head



Source: 2008 In-depth

The elderly headed households (60 years and above) were quite significant representing about 16% of the households and most of whom are widowed (13.6 %), while child headed household were insignificant comprising only 1%. The family size for most households was between 5 to 6 members, which is in line with the findings of the Living Conditions Monitoring Survey (LCMS, 2004) and findings from the 2007 VAC assessment. The assessment also revealed that household heads had diverse educational levels. The majority have primary education (55%). Furthermore, 63% of the spouses had attained primary education. About 14% of the sampled households indicated having an orphan in their households and of these, 98% had one orphan. 72% of the sampled households indicated having at least one under five child.

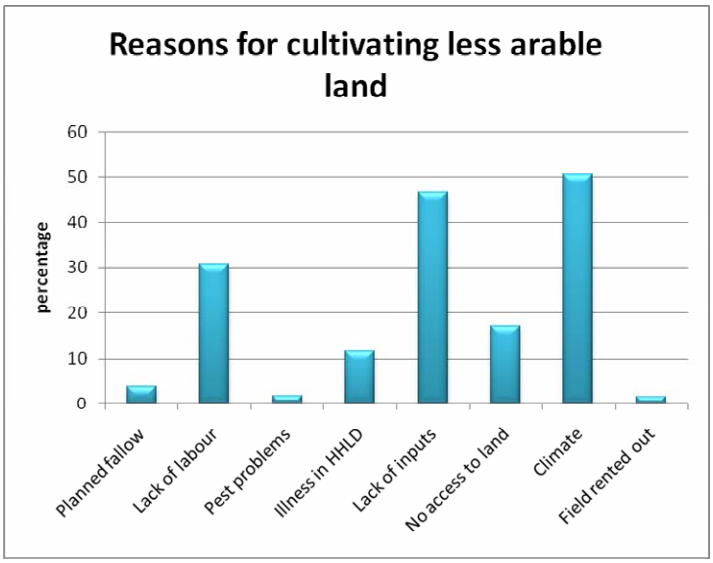
The majority of the households in rural areas use firewood (74%) and charcoal (18%) for cooking while use of electricity is extremely low. Similarly, the use of electricity for lighting is very low with households mostly using kerosene (42%) and candles (33%). This could be attributed to the poor access to electricity in the rural areas.

3.1.2 Household Food Security

The assessment established that Southern and Lusaka Provinces recorded significant decline in maize production. The decline in maize production for Lusaka was averaging about 56.25% as compared to last year's production while that of Southern Province averaged about 48.8%. The declines were attributed to several factors some of which were floods, lack of inputs and inadequate labour.

Excessive rains in December 2007 and January 2008 resulted in floods and water logging which led to extensive leaching of soil nutrients while reducing time for farm operations such as planting, weeding and fertiliser application. Consequently, crop performance was adversely affected resulting in reduced yields.

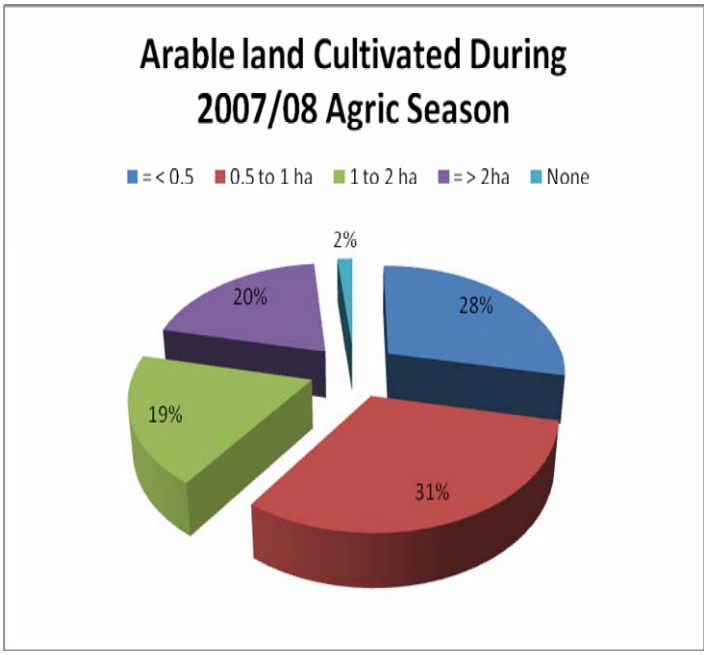
Figure 3.1.2: Reasons for cultivating less area



Source: 2008 In-depth

Most of the households (80.3%) indicated that they had access to arable land (back yard or field). Of these that had indicated having access, a good number had cultivated between 0.5ha and 1ha (31%). A further 28% indicated having had cultivated less than 0.5ha of the arable land, while 20% and 19% cultivated 2ha or more and between 1ha and 2ha respectively.

Figure 3.1.3: Arable Land Cultivated During 2007/8 Season



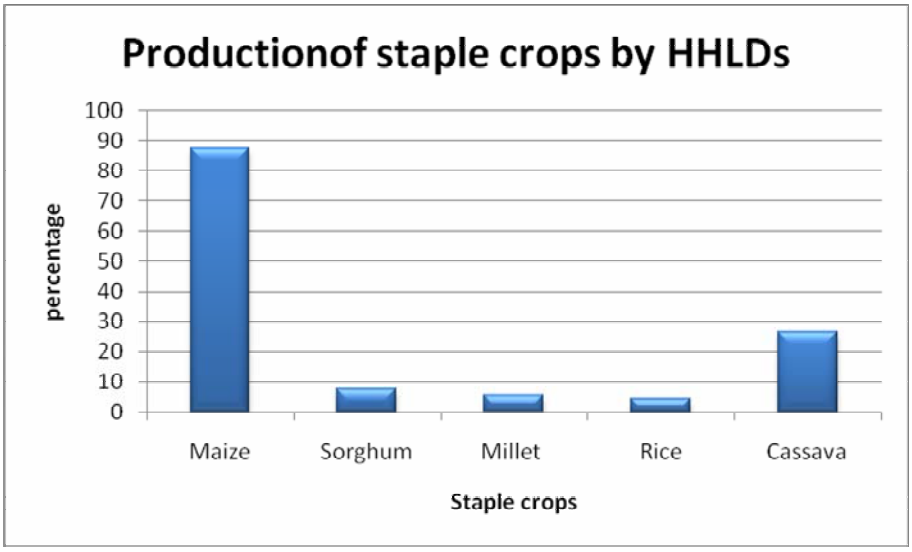
The Assessment indicated that 74,104 households would require some assistance. Most of the affected households (43.2%) are dependent on farming as their main source of livelihood. Loss of crops due to floods therefore entails loss of production capacity, making it difficult for affected households to purchase agricultural inputs such as seed and fertiliser for the coming planting season. These households would require assistance to restore their production capacity. It is expected that the majority of them would be able to benefit from the government supported Fertiliser Support Programme and the Food Security Pack programme.

3.2.1.1 Contribution to Own Production Maize Equivalent and Other Means to Total Maize

Most households had continued to diversify in crop production for purposes of food security and income generation. Results from the in-depth vulnerability assessment indicated that most households continued to grow maize as the major food crop (87.6%) while 26.5% grew cassava (Figure 3.1.4).

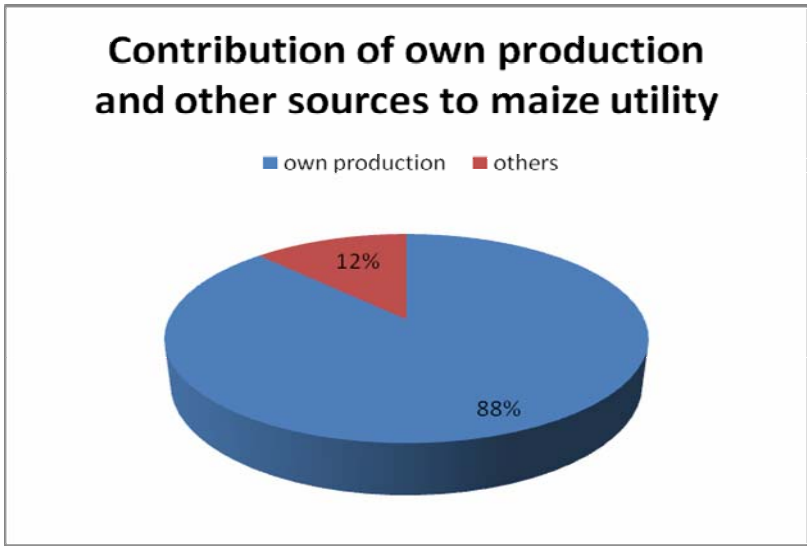
The contribution of own production to household staple consumption stood at 87.6% with the remaining coming from other sources such as purchases, remittances and gifts.

Figure 3.1.4: Production of Staple Crops by Households



The assessment revealed that although the households had diverse livelihoods, own production still remains a dominant source of the staple food. Contribution of own food to household staple consumption made up about 88% while the remaining 12% came from other sources such as purchases, remittances and gifts.

The dominance of own production in most rural households, as was the case in the 2007 assessment, entails that such households are likely to be food insecure emanating from hazards such as floods and droughts. Production in 80% of the assessed districts (30 out of 39) was below that recorded last season with the worst hit districts such as Namwala recording production reduction of 68%.



The reduction in the yields during the 2007/8 season was generally attributed to ponding in the fields in most districts and floods in some parts of Southern Province. The impact of the heavy rains on harvests for most households was considerable implying a reduction in availability and accessibility of the staple to most of these households.

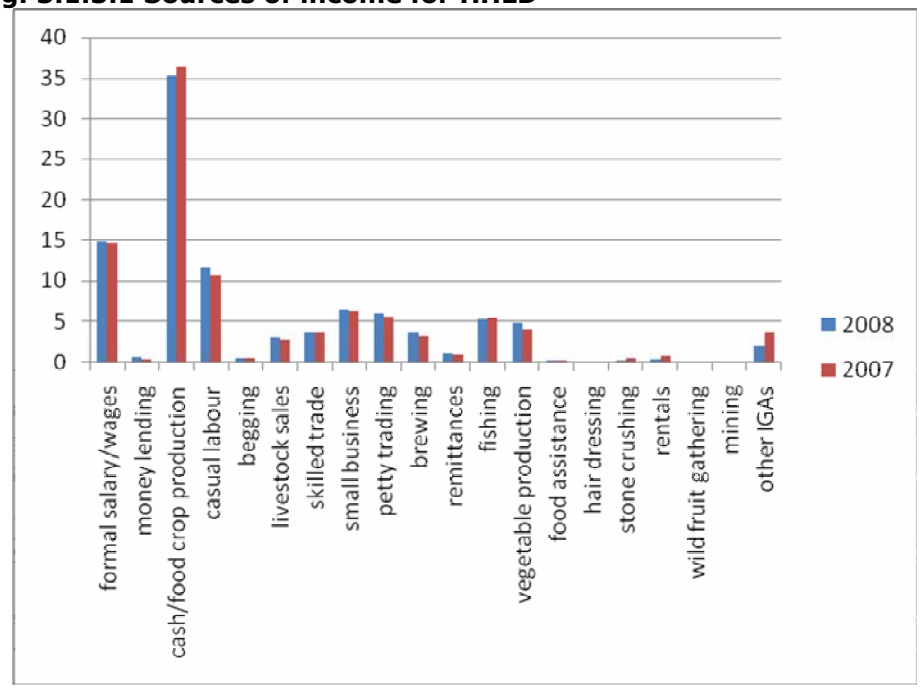
Figure 3.1.5: Contribution of Own Production versus Other Sources

3.1.3 Livelihoods

3.1.3.1 Income Sources

The In-Depth Vulnerability and Needs Assessment revealed that the major income sources for most of the rural households include cash/food crop production, casual labour and petty trading as the three most common activities (figure 3.1.3.1). Other sources of income include casual labour, small business and petty trading.

Fig. 3.1.3.1 Sources of income for HHLD



The results indicated that there has been a minor decline (2%) in cash/food crop production from the previous season which has been compensated for by households moving into small businesses/petty trading. This also showed that many households engaged in agriculture production not only for consumption purposes but for income generation as well. A good number of households (14%) were engaged in some form of salaried/wage employment as a source of income for the household as well. Households have also increased their earnings from casual labour.

Besides the rain-fed production, few households engaged in dry season production to supplement their production. This was represented by only 9.1% of the total households sampled. However, most households (75.1%) indicated intention of engaging in dry season crop production during 2008 dry season.

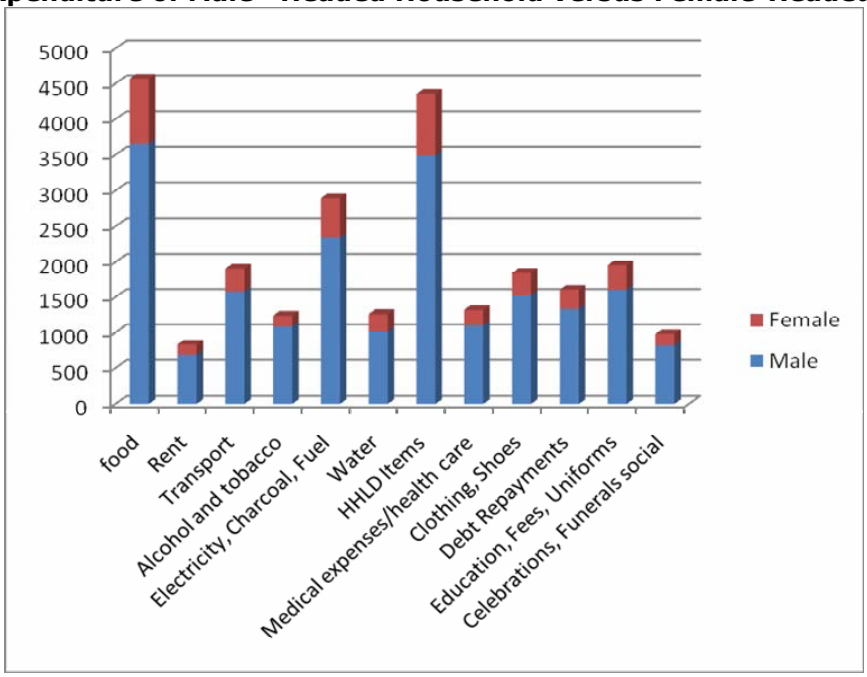
However, the level of production with respect to sex of household head still remained unbalanced with male headed households taking dominance. On average, most male headed households produced more than those that are female headed.

3.1.3.2 Expenditure Pattern

Expenditure on food and household items in the surveyed households was high accounting for about (70%) of the households' earnings. Expenditure on key elements such as education and health remain significantly low standing at 10%.

The assessment further established that the male-headed household dominated the expenditure pattern with an average of over 65% male-headed household spending more than the female headed households (Figure 3.1.3.2).

Figure3.1.3.2: Expenditure of Male –Headed Household versus Female-Headed Household



3.1.3.3 Seasonal Calender

The results obtained from the survey indicate that in terms of the agronomic calendar, the communities surveyed start land preparation around July of every year and stop around September. Planting on the other hand started around November to December and was usually signalled by the on-set of the first rains. Weeding was done starting from December through to January (See Annex 6).

The Food Source calendar revealed that consumption of green food started just at the end of the lean period around February through to March. Harvesting of crops in most of the surveyed communities started in April through to June depending on the variety of crops grown. These findings are rather similar to the findings of the 2007 In-depth Assessment.

The surveyed communities also indicated that consumption of own-production started from the time they started consuming green foods in February until December in a normal year. This year, however,

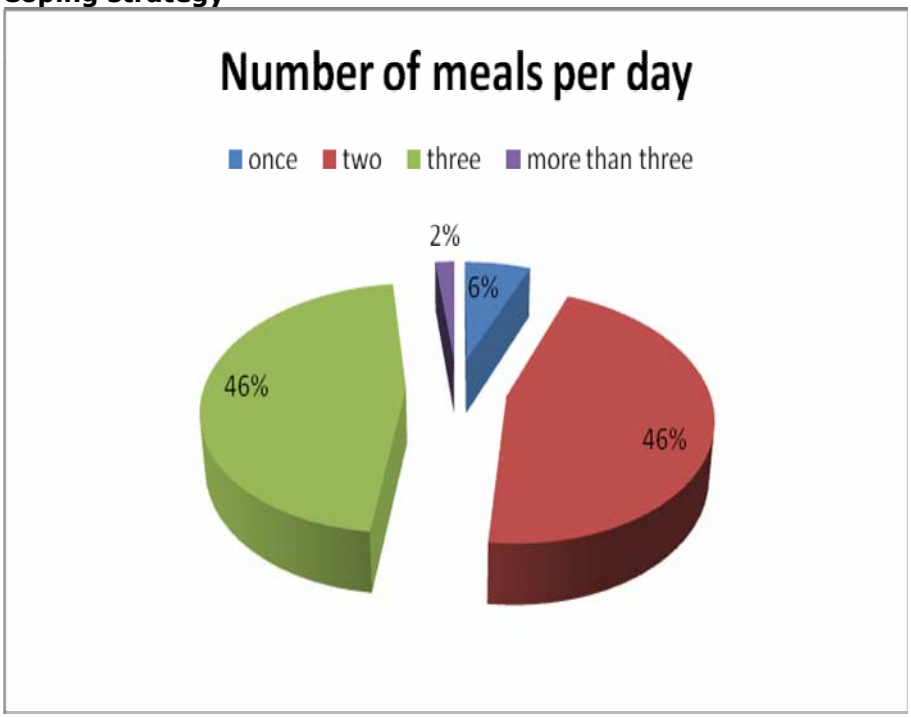
communities indicated that they expected to run out of own-produced foods by August 2008 barely two months after the completion of harvesting.

It was evident from the Income source calendar that the surveyed communities had diverse sources of income. These ranged from petty trading/small businesses to labour exchanges. These activities are intensified just after completion of harvest in June and run until the beginning of land preparations in August/September. In communities that were near big towns, migration of labour was also evident.

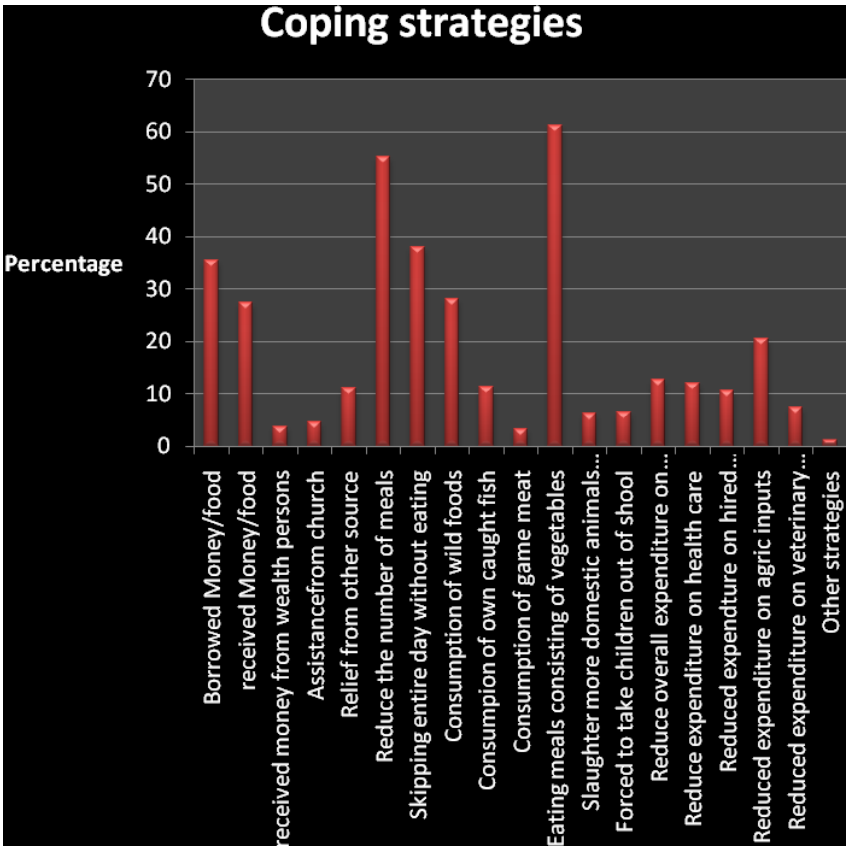
3.1.3.4 Coping Strategies

The assessment findings indicate that most of the households had a maximum of three meals a day (46.4%), while 45.6% reduced their meals per day to two (2) as a coping strategy (Figure3.1.3.4).

Figure 3.1.3.4: Coping strategy



Few households (1.8%) had more than three meals a day while only 6.2% of the households assessed had one meal a day. Another coping strategy employed by households was borrowing food or money to buy food. About 35.5% indicated that they borrowed food or money to sustain their livelihood in the past 6 months. Households (27.4%) had also received food or money to buy food from relatives, friends from outside the household as another coping strategy while others received assistance from wealthy people in the village (3.7%), from the church (4.6%) and or relief from other sources. This is indicated in the table below:-



Households also employed income strategies to supplement consumption and expenditure strategies. It was reviewed that most households (30.9%) had additional household members to find casual work to get food or money to buy food. 17.8% had a member entering the IGA sector for the first time while 12.5% sold more than usual amount of livestock/poultry. Other household (8.6%) sold household assets to buy food with only 4.1% indicating having had to sell productive assets such as hoes and ploughs to buy food.

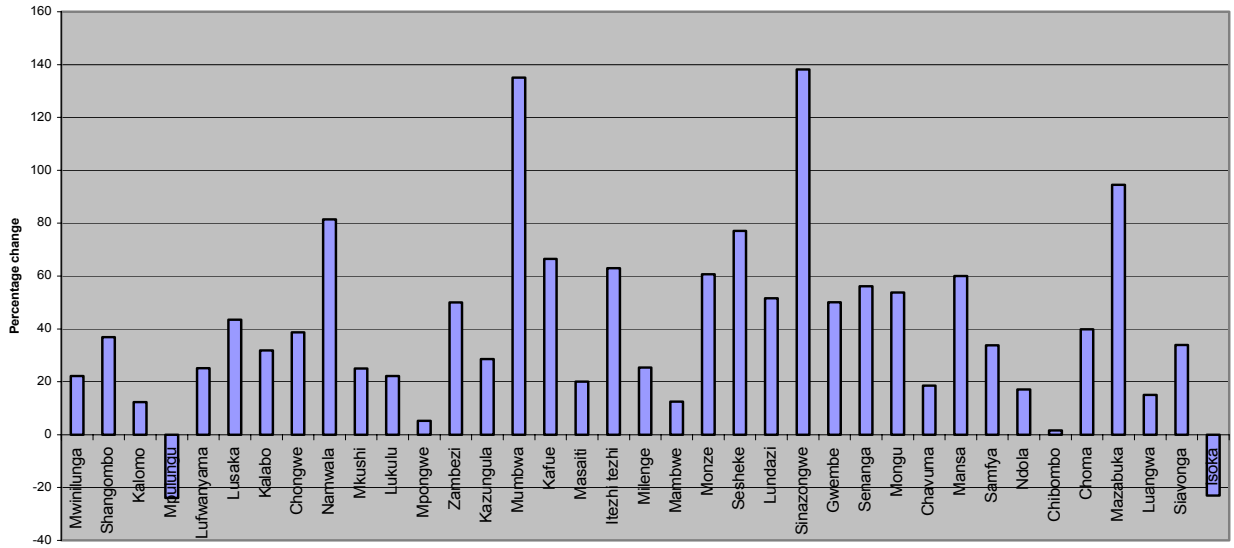
3.1.4 Market Situation

Towards the end of the 2007/08 marketing season (in April), maize prices maintained their high levels in most markets as a result of low supply. In the thirty-nine (39) assessed districts, maize prices were high in the low producing districts of Sinazongwe, Shangombo, Kalabo, Lukulu, Zambezi, Mambwe and Mongu whose prices were above K1,200/Kg. Sinazongwe particularly reported abnormally high prices even for a low producing district of K1,900/Kg, an indication of a possible shortage. Among the high producing districts, only Mumbwa reported high maize prices of K1280/Kg, an indication of significant supply reduction.

Compared to April 2007, almost all assessed districts with the exception of Mpulungu and Isoka recorded price increases with Sinazongwe, Namwala, Mazabuka, Mumbwa and Sesheke recording price increments of over 70%. The prices in Sinazongwe increased exceptionally high, more than twice that of April 2007. Other notable areas with high price increases of at least 60% were in Monze, Itezhi tezhi, Kafue and Mansa. Important to note is that normally, prices in April either remain stable or start decreasing depending on the harvest expectation.

The high price levels in April this year were partly an indication of expectation of reduced harvest, but more so the reflection of the low supply of maize on the market as the new harvest was not yet available. To a certain extent, it also shows that in April there weren't adequate early foods then as to reduce demand for the maize on the market in districts exhibiting very high prices. The true reflection of the maize market situation for the new marketing season is best reflected in May and not the month of April as most harvesting of maize starts end of April into May. April prices best reflects the end of the previous markets stocks on the market and partially extent to which households are accessing early foods.

Figure 3.1.4.1. Cattle price Changes – April 2008 vs. Dec 2007)



Most of the districts whose maize prices rose significantly are also major livestock rearing areas. Cattle prices in almost all assessed districts which are major livestock keeping areas rose significantly with respect to the month of December. Among the assessed districts, only Mpulungu and Isoka registered moderate price drops. The fact that prices in most districts rose suggests that there was no desperation for households to sell off their cattle at low prices as they were able to negotiate for higher prices. The highest cattle price increases were recorded in Sinazongwe, Mumbwa, Mazabuka, Namwala and Sesheke which were among districts with significant increase in maize prices. This also shows that at the time of the assessment in April, the impact of the livestock ban movement for Southern Province due to the foot and mouth disease outbreak had not yet started reducing income for farmers.

Generally, although maize prices have increased in comparison to the same period in 2007, the price levels did not reflect the post harvest situation as the harvesting of most of the maize had not been done. However, it does show that in most of these areas with high prices, early foods may have been reduced due to the flood impact. The cattle prices were also showing significant increases compared to the lean period (December). This shows that at the time of the assessment, there were no desperation sales.

3.1.5 Food Needs

The In-Depth Vulnerability and Needs Assessment findings established that of the 39 districts surveyed, 21 would require food assistance for Nine (9) months (July, 2008 – March, 2009) while seven (7) districts would be placed under monitoring from now until the next harvest (refer to Annex 3). The total cereal requirements for the 21 districts requiring food assistance amount to 33, 333 Metric tonnes (See Annex 4 for the break down).

3.2 HEALTH AND NUTRITION

3.2.1. Nutritional and Health Status of Children:

3.2.1.1. Sample size

Anthropometric measurements were taken from a total of 2,900 children aged between 6-59 months. Table 3.2.1 shows the age distribution of the children by sex.

Table 3.2.1: Distribution of age and sex

Age Group (Months)	Boys		Girls		Total		Ratio
	No.	%	No.	%	No.	%	Boys: Girls
6 – 17	72,427	**55.6**	57,759	**44.4**	130,186	**100**	**1.25**
18- 29	61,993	**51.1**	59,321	**48.9**	121,314	**100**	**1.05**
30 – 41	51,227	**47.5**	56516	**52.5**	107,743	**100**	**0.91**
42 – 53	60,957	**58.4**	43,445	**41.6**	104,402	**100**	**1.40**
54 – 59	4,334	**38.5**	6929	**61.5**	11,263	**100**	**0.72**
Total	250,938	**52.8**	223,970	**47.2**	474,908	**100**	**1.40**

3.2.1.2. Prevalence of Acute Malnutrition

All results are according to weight-for-height Z-scores and/or oedema. The prevalence of Severe Acute Malnutrition (SAM) was found to be **2.3%** out of which 0.6% had bilateral oedema. Global Acute Malnutrition (GAM) was **7.7%** indicating an increase of 2.1% from the June 2007 in-depth findings. **See Table 3.2.2 below:**

Table 3.2.2: Prevalence of Acute malnutrition based on weight-for-height z-scores (and/or oedema)

Malnutrition Type	%	95% CI
Severe Acute Malnutrition (<-3 z-score weight for Height)	**2.3**	**(1.8%- 3.0%)**
Global Acute Malnutrition (2 z-score weight for Height)	**7.7**	**(6.5%- 8.6%)**
Mean weight for height z-score – 0.32		

Out of the 2,900 children aged between 6 to 59 months assessed the survey found 15 cases of bilateral oedema representing 0.6%.

Table 3.2.3: Prevalence of acute malnutrition by age group based on weight-for-height z-scores and/or oedema.

Age Group (Months) Total		Severe wasting (<-3z-score)		Moderate wasting (≥-3and<2zscore)		Mild		Normal (≥ -2 z-score)	
		No.	%	No.	%	No.	%	No.	%
6-17	125,466	2,618	**1.2**	10,540	**8.4**	19,261	**15.4**	93 047	**74.2**
18-29	114,626	1,839	**1.6**	8,116	**7.1**	19,414	**16.9**	85,257	**74.2**
30-41	104,630	390	**0.4**	2,584	**2.5**	13,610	**13.0**	88,046	**84.1**
42-53	101,917	613	**0.6**	3,633	**3.6**	15,293	**15.0**	82,378	**80.8**
54-59	11,055	90	**0.8**	368	**3.3**	919	**8.3**	9,678	**87.5**
Total	**457,694**	**5550**	**1.2**	**25,241**	**5.5**	**68,497**	**15.0**	**358,406**	**78.3**

The analysis of malnutrition prevalence by age group reveals that the **6 to 29 months** present a much higher risk of malnutrition.

3.2.1.3. Chronic malnutrition

The survey also estimated prevalence of stunting (low height-for-age), which reflects chronic malnutrition, and underweight (low weight-for-age) which reflect both acute and chronic malnutrition **(see Table 3.2.4).**

Table 3.2.4: Prevalence of chronic malnutrition amongst children 6-59 months old,

Malnutrition Type	%	95% CI
Global Stunting (<-2 z-score height for age)	56.6	(36.1%, 40.0%)
Mean height for age z-score - 1.28		
Global underweight (<-2 z-score height for age)	20.1	(13.7%, 16.5%)
Mean weight for age z-score – 0.71		

Distribution of prevalence of acute and chronic malnutrition based on weight-for-height (wasting and/or oedema) and weight-for age (underweight) z-scores

Figure.3.2.1.a: Z-score distribution Wasting All children 6-59 months

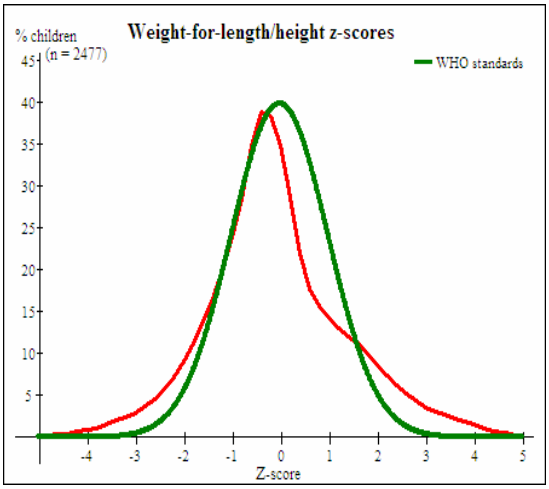


Figure 3.2.1.b: Z-score distribution underweight Children 6-59 months by Sex

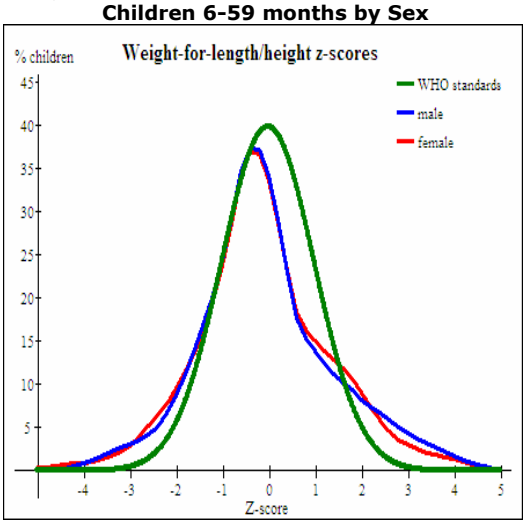


Figure 3.2.1.c: Z-score distribution underweight All children 6-59 months

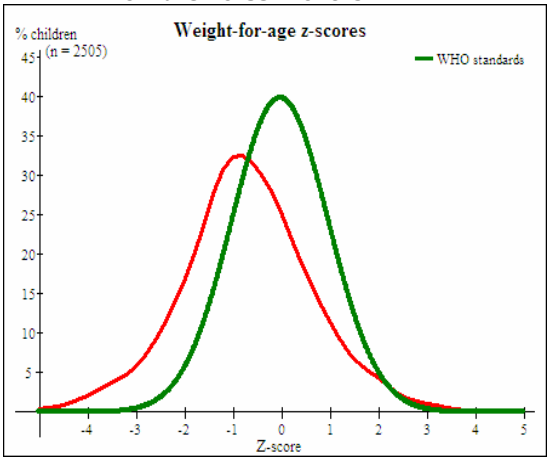
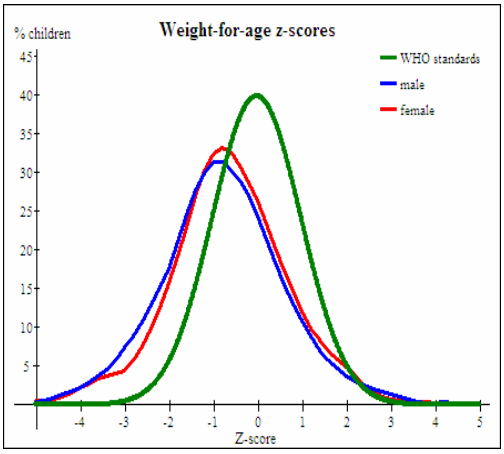


Figure 3.2.1.d: Z-score distribution underweight Children 6-59 months by Sex



Mid upper arm circumference (MUAC)

Table 3.2.5: MUAC distribution according to nutritional status

MUAC (cm)	Height < 74.9 cm		Height between 75 to 89.9 cm		Height > 90 cm		Total	
	No.	%	No.	%	No.	%	No.	%
< 11	782	**24.1**	713	**22**	1,749	**53.9**	3,244	**100**
11 ≤MAUC < 11.9	1,368	**43.1**	851	**26.8**	958	**30.2**	3,177	**100**
12 ≤MAUC < 12.4	5,745	**67.5**	2,235	**26.3**	532	**6.3**	8,512	**100**
12.5 ≤MAUC < 13.5	16,009	**51.8**	13,334	**43.1**	1,588	**5.1**	30,931	**100**
>13.5	70,674	**17.9**	163,343	**41.5**	160,027	**40.6**	394,004	**100**
Total	**94,578**	**21.5**	**180,476**	**41.0**	**164,854**	**37.5**	**439,908**	**100**

Classification for MUAC

MUAC < 11cm **severe malnutrition and high risk of mortality**
MUAC ≥ 11cm and <11.9 cm **moderate malnutrition and moderate risk of mortality**
MUAC ≥ 12cm and <12.4 cm **high risk of malnutrition**
MUAC ≥ 12.5cm and <13.5 cm **moderate risk of malnutrition**
MUAC ≥ 13.5cm **"adequate" nutritional status**

3.2.1.4. Mortality rates

The analysis of mortality rates was based on an individual for whose complete information was recorded. This included children aged between 0 to 59 months and individuals who had moved but alive and/or living elsewhere. The recall period was 6 months, from (1st January 2008). The survey recorded CMR and U5MR as shown in the table below.

Tables 3.2.6 – Mortality Rates

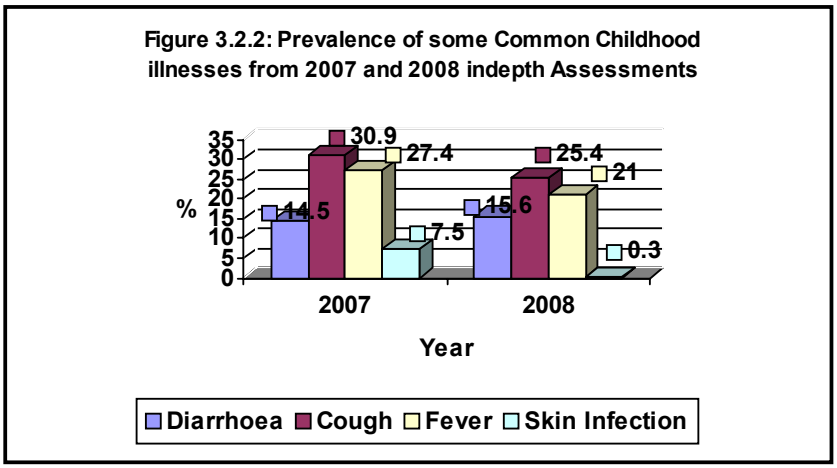
CMR(Total deaths/10,000 people/day:	**0.85 (0.41-1.28) 95% CI**
U5MR(Death in under five/10,000 U5 children / day:	**1.18 (0.02 – 2.34) 95% CI)**

The result is expressed per 10,000-people / day. Both CMR and U5MR were below the emergency thresholds of 1 and 2 respectively.

3.2.2. Health Services, Access and Expenditure

3.2.2.1. Health services coverage and access

Caretakers were asked if any member of the household got sick/ill during the two weeks prior to the survey. Respondents were specifically asked about diarrhoea (watery and/or bloody), cough, fever /suspected malaria and scabies. Fifty-six (56%) percent of the total households visited reported that at least one member of the household got ill two weeks prior to the survey while 44% reported no illness of any household member. Of those who reported illness, 34.2 % had Fever/suspected malaria, Cough affected 26.5% of the households, 12.4% had diarrhoea and 1.9% had



scabies while 25% "other" illnesses. Figure 3.3.1 below shows the prevalence of common childhood illnesses over the same period. The survey found that 62.4% of the under five children had suffered from Fever/suspected malaria, diarrhoea (watery stool), ARI/Cough, or skin infection while 37.6% did not suffer from any illness.

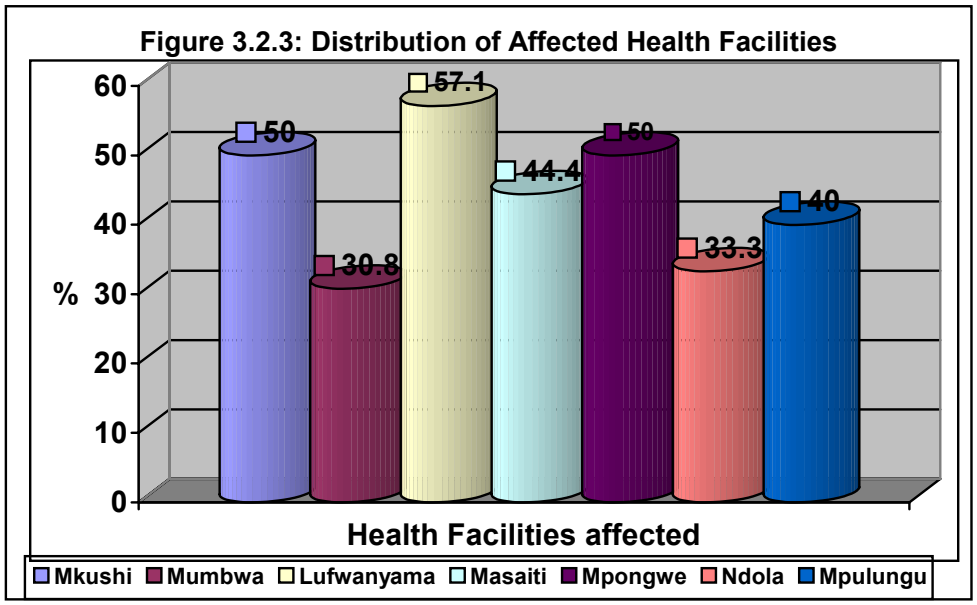
Health facilities were the most commonly (44.4%) used health care services in all the 39 districts, followed by self treatment (7%). The assessment further established that 44.4% of those that report illness did not seek any medical care.

Table 3.2.8: Availability and physical access to health facilities

Health facility most used by the community	%
Did not seek any health care	**41.6**
Traditional Healer	**2.5**
Formal care (Hospital/Clinic/Village health worker)	**44.4**
Private clinic	**4.5**
Own medicine	**7**

3.2.2.2. Health Infrastructure

Generally, there was no severe impact of floods on physical health infrastructure in all the assessed districts. However, Mkushi, Mumbwa, Lufwanyama, Masaiti, Mpongwe, Ndola and Mpulungu reported moderate effects on some health facilities as shown in figure 3.2.3 below:-



3.2.3. Vaccination and micronutrient supplementation

Overall the assessment recorded high immunization coverage among all the eligible children. The measles coverage of 96.2 % was recorded among children aged between 9-59 months, 98.7% was recorded for OPV and DPT immunization while the BCG coverage was found to be at 97.6%. The health card (61.7%) and verbal history provided by the caregiver (34.5%) were the main source of information for child immunization. A small percentage (0.3%) of the eligible children did not receive vaccines while

3.5% of the child caretakers did not know whether the child had been immunized or not. In 2007, the rate of measles vaccination uptake was found to be 73% Vitamin A coverage.

Vitamin A is an essential micronutrient because any deficiency implies that restoration will take several months to be done. The more serious manifestations of vitamin A deficiency include impaired vision that can lead to blindness. The Vitamin A supplementation coverage from this assessment was slightly lower than the coverage recorded from the 2007 in-depth as well as 80% national target. This was attributed to logistical constraints faced by the districts to access some flood affected areas and also inadequate health personnel. The table below shows the overall vitamin A coverage from the assessed areas.

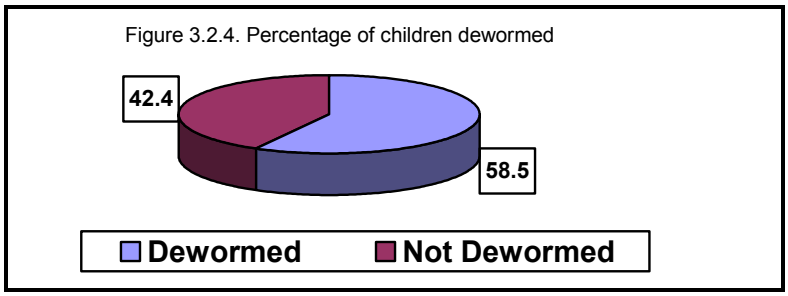
Table 3.2.9: Comparison of Vitamin a coverage between 2007 and 2008 in-depth VAC assessments

	In-depth 2008		Coverage 2007 In-depth
	No.	%	
YES	381,461	74.5	82.5%
NO	126,356	24.7	17.5%
Total	507,817	100	100 %

3.2.4. De-worming

The figure below shows the coverage of de-worming for children aged between 12 to 59 months in the assessed households.

Figure 3.2.4. Percentage of children dewormed



3.2.5. Infant and young child feeding practices

3.2.5.1. Child Caregivers

This survey was not specifically designed to investigate the care and feeding practices of infants and young children. In order to assist in interpreting nutritional findings, questions regarding child care practices for under-five children were included. Overall, the primary caregiver for most of the children under-five in the assessed districts was the mother (83%) The remaining 17 % were cared for by sister/brothers (4%), grandparents (11%) or other family members (2%).Grandmothers serve an important role in caring for the child. There may be traditional practices which might potentially be detrimental to the health and development of the child but nutrition education campaigns may benefit this particular group.

3.2.5.2. Breastfeeding Practices

Breastfeeding status was based on maternal recall. At the time of the assessment, **80.1%** of mothers were still breastfeeding a child. Breastfeeding among children below 6 months of age was very high

(98.9) in all the thirty-nine (39) districts. However, (86.7) % of breastfed children were also receiving fluids and/or semi solid foods.

3.2.5.3. Breastfeeding and micronutrient supplementation of pregnant women

Overall; 133,134 (15.1%) mothers of children 6 to 59 months of age in the sample were pregnant at the time of the survey. Less than half of all mothers (36.5%) were still breastfeeding a child at the time of the survey. Vitamin A supplementation, within 8 weeks following the birth of their last child was reported by 63.2% women.

Iron-folate supplementation during pregnancy was more common and reported by 56.8% of all the surveyed women while 43.2% never took the supplement. Table 3.2.10 Shows the percentage of reasons why Iron-folate was not taken.

Table 3.2.10: Breastfeeding and Micronutrient Supplementation of Pregnant Women

Reason for not taking Iron-folate supplements	N=143,872	
	No.	%
Never received	32,210	59.1
Ran out	8326	15.3
Did not like the pill	1175	2.2
Fell sick after taking pill	1107	2.0
Other	11697	21.5
Total	**45,515**	**100**

Malnourished children were significantly more likely to have been sick during the two weeks prior to the assessment compared to the non-malnourished **p < 0.005.** There was a strong relationship between children suffering from Fever/suspected malaria and being wasted, **33.4%** of the malnourished children had suffered from Fever/suspected malaria in the two weeks prior to the survey (**p<0.005).** However, **21%** of the children in the survey reported Fever/suspected malaria whose association may be a reflection of high prevalence. Fever/suspected malaria was self-reported by the caregiver and not clinically verified as the survey did not record cases of diagnosed malaria separately.

The average weight for height, height for age and weight for age Z-score were significantly associated with having suffered from watery diarrhoea in the two weeks prior to the survey (**p < 0.005), 16.8%** of children who had diarrhoea were acutely malnourished, compared to **83.2%** who had diarrhoea. The same was observed for cough (**p<0.005)** with wasting prevalence of **18.6%** among children who had suffered from cough. Since chronic malnutrition is a long-term process, the recent bout of illness was not directly related to stunting and underweight.

3.2.6. Relationship between nutritional status and source of water

Wasting (mean weight for height Z-score) was significantly associated with the type of drinking water source **(p< 0.005).** Wasting prevalence was 10**.9 %** for those consuming water from a safe source (Borehole, piped water and protected deep well) and **89.1 %** for those using unsafe sources.

3.2.7. Relationship between nutritional status and type of latrine

There was a slight association **(p < 0.005)** between wasting and the type of latrines used by households (significant at based on mean Z-score). The prevalence of wasting in households using traditional latrines was 13% compared to 12% with improved latrines.

3.3 WATER AND SANITATION

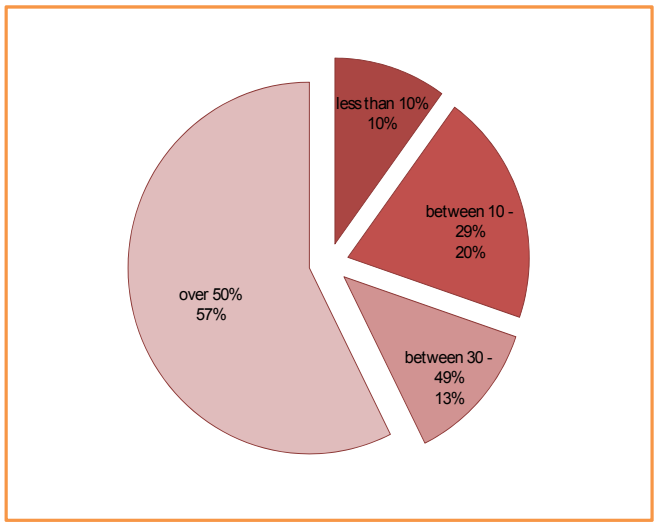
3.3.1. Water

In this survey "access to clean and safe drinking water" was considered the same as "access to an improved water source". Boreholes and protected sources were regarded as safe sources while rivers or lakes and unprotected sources were considered unsafe.

3.3.1.1. Drinking Water at Community level

As the first common source in three, 44.2% of the communities draw water from unprotected water sources as their main water source with 58.7%, 54.3% being second and third respectively. This indicates that majority of the communities affected by the flood will require new water points to be constructed but the need is much higher when you consider communities that draw from unprotected sources but were not affected by the floods. It is therefore expected that these will be catered for within the routine sector plans. 49% of the communities had over 50% of their main water sources affected by the floods with only 8.5% having between 10 to 29% of their main sources being affected. **See figure below 3.3.1.1.**

Figure 3.3.1.1 Percentage of commonly used water sources affected by floods

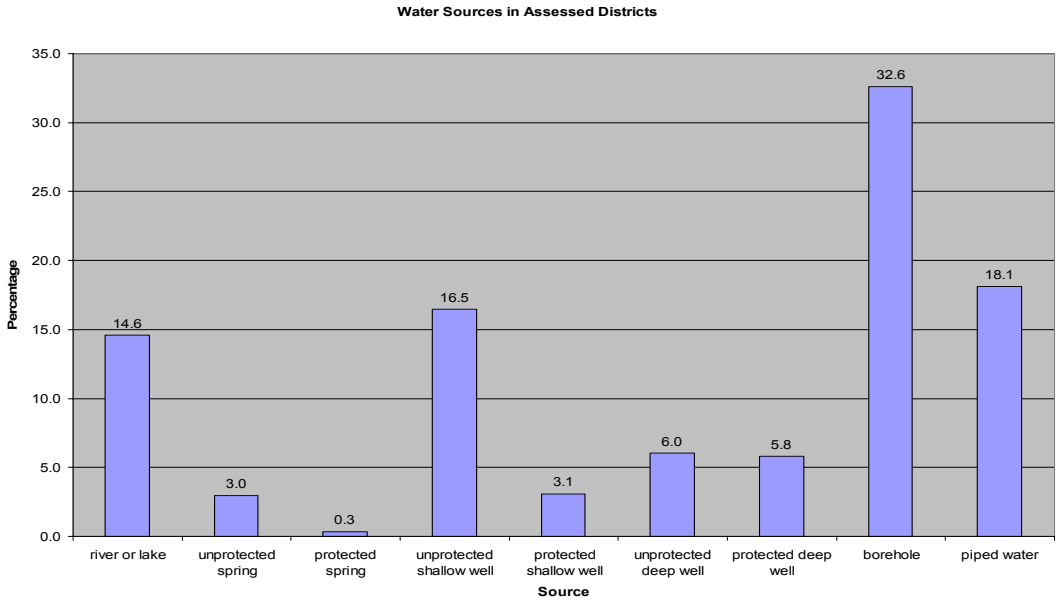


Generally 61.9% of the communities perceive their water quality for domestic purposes to be poor. There is need to provide adequate chlorine as required for the communities that have been affected by the floods.

3.3.1.2. Drinking Water at Household

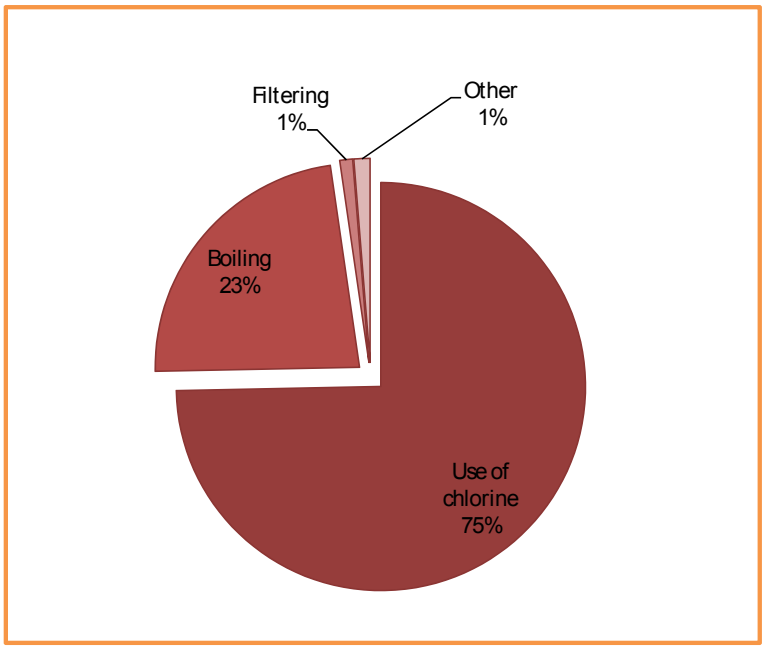
About 38% of households obtain their water from unprotected sources such as unprotected shallow wells and/or rivers/streams that are highly susceptible to faecal contamination as a result of flooding. It was also evident that most of the households used boreholes, piped water and unprotected shallow wells as their main sources of drinking water (see figure below). Boreholes were ranked first in terms of major sources of drinking water (32.6%) and piped water second (18.1). the least prevalent water source is the protected spring (0.3%).

Figure 3.3.1.2 Percentage distribution of households by main drinking water source



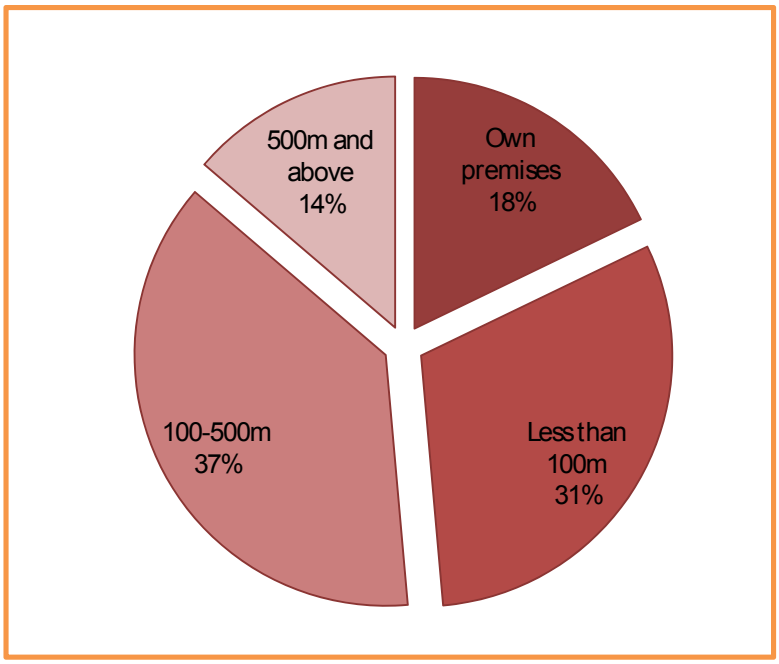
About 28.9% of households treated their water. The major treatment method employed by most households is through the use of chlorine. The use of chlorine is ranked first at 75% and boiling is second at 23%. The treatment of drinking water in the districts is broken down as follows:

Figure 3.3.1.3 Percentage distribution Treatment of Drinking Water



The survey indicated that most households have their water sources within 500m (86.1%). The average distance to water facilities by given ranges is broken down as follows:

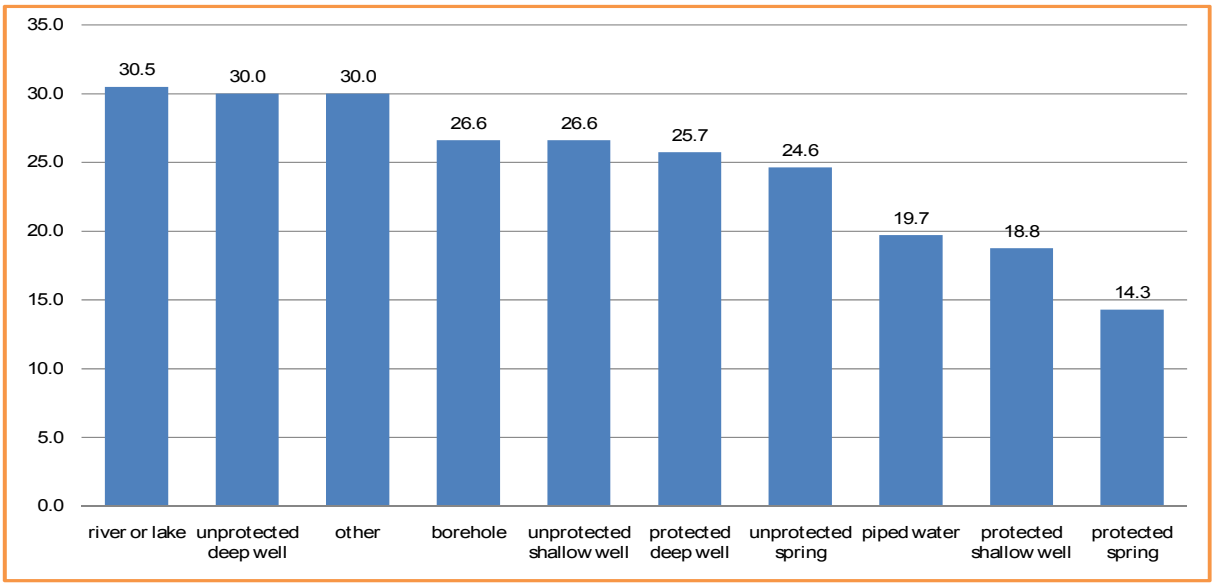
Figure 3.3.1.4 Percentage distribution Average Distance to Water Facilities



3.3.1.3. Comparison of main drinking water source with diarrhoea prevalence

The data shows that households drawing water from rivers or lakes had the highest occurrence of diarrhoea at 30.5% and the least occurrence was amongst households that drew their water from protected springs. See figure 3.3.1.5 below.

Figure 3.3.1.5 Percentage distribution Diarrhoea Prevalence by Water Source Type



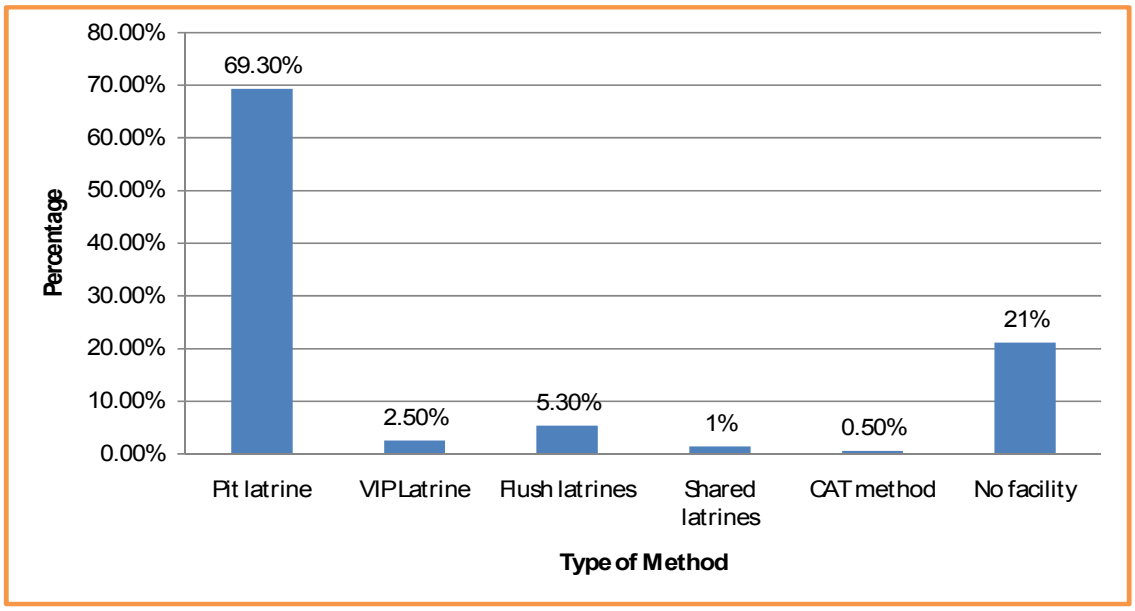
In cases of diarrhoea occurrence in households collecting water from protected sources, and that protected water sources are considered to be relatively clean and safe, the contamination of water could have occurred during handling e.g., through poor hygiene practice at household level.

3.3.2. Sanitation

In this report sanitation access is regarded as access to improved sanitation based on the United Nations (2003) definition of "improved sanitation". This definition assumes that facilities such as septic tank system, pour flush latrines, simple pit or ventilated improved pit latrines are likely to be adequate, provided that they are not public as stated in the Millennium Development Goals Zambia Status Report of 2005. The Living Conditions Monitoring Survey of 2006 indicates that 87% of households have access to proper sanitary facilities in Zambia.

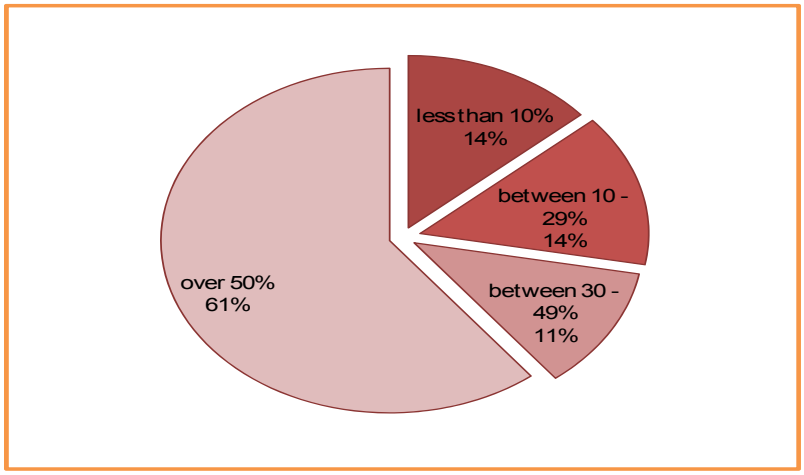
According to the survey, despite water and soap being available in the majority (72.2%) of the households visited, a large number (over 65.6%) of them do not wash their hands with soap before preparing food, eating and after using the toilets/latrine.
21% of the population has no sanitary facilities; while 69.3% of those that have use traditional pit latrines and 5.3% have access to flush toilets. See figure 3.3.2.1 below.

Figure 3.3.2.1 Percentage distribution Faecal Disposal Facilities used by the Households



78.3% of the communities use sanitary facilities. The most commonly used sanitary facility in the communities is the traditional pit latrine (70.6%), followed by communities using flush toilets (4.1%). Of all the communities using adequate sanitary facilities, over 60% of the communities indicated that over 50% of their facilities were affected by the floods and only 13% of the communities indicated less than 10% of the facilities being affected.

Figure 3.3.2.2 Percentage of commonly used sanitary facilities affected by floods

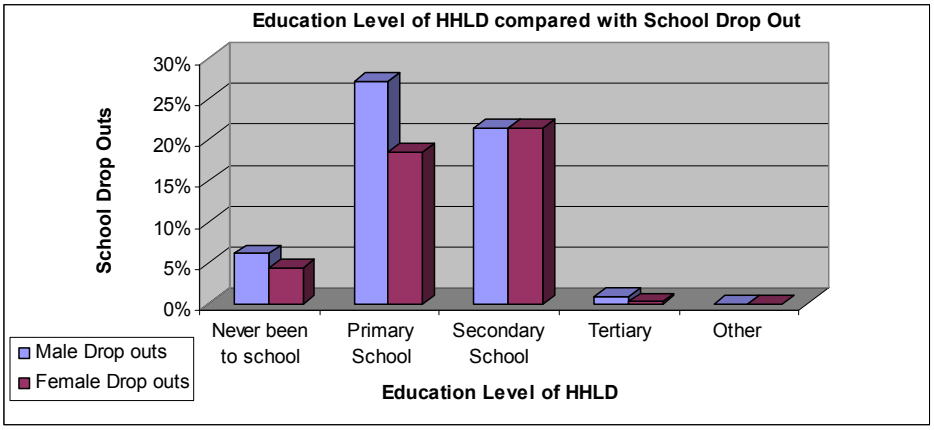


3.4 EDUCATION

3.4.1 Education Levels

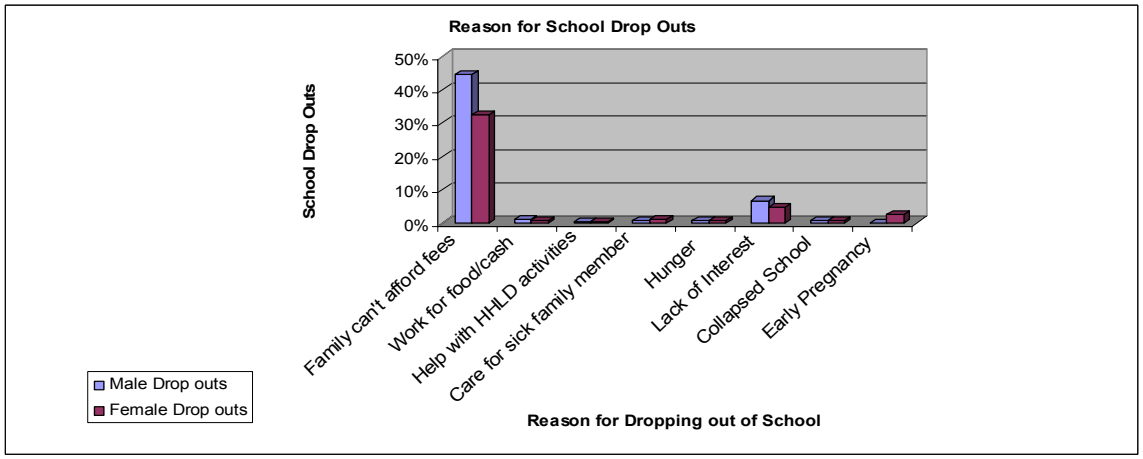
On average about 51% of the household heads have undergone primary school education but the majority failed to make it into secondary school (only 31% attained secondary education) (Figure 22). 12% of the spouses have never been to school whereas 45% have attained primary education. Only 18% of the spouses attained secondary level of education.

Figure 3.4.1.1: Education of Household Head compared with School Drop Out



The level of education of the household head has a bearing on the number of school drop outs as shown in figure 21. The results show that 10% of drop outs (6% males and 4% females) were from households headed by those who had never been to school at all; 46% of the drop outs (27% males and 19 females) were from families headed by someone with primary level of education; 42% (21% males and 21% females) were from families headed by those who attained secondary education and The number of drop outs from households headed by those with tertiary education level was negligible at 1%. This was a very interesting result that needed further investigations because one would expect the group with the highest number of drop outs to appreciate the value of education more than the rest so as to encourage their children to go school.

Figure 3.4.1.2: Reasons for School Drop Outs



3.4.2 School Attendance

The survey established there was a reduction in school attendance due to school drop outs. Incidences of male drop out were 5% while female drop outs were 4%. There were three main reasons for dropping out of school; namely inability of the families to afford school requirements, lack of interest in school and early pregnancies. According to the survey, 76% (44% males and 32% females) of the children dropped

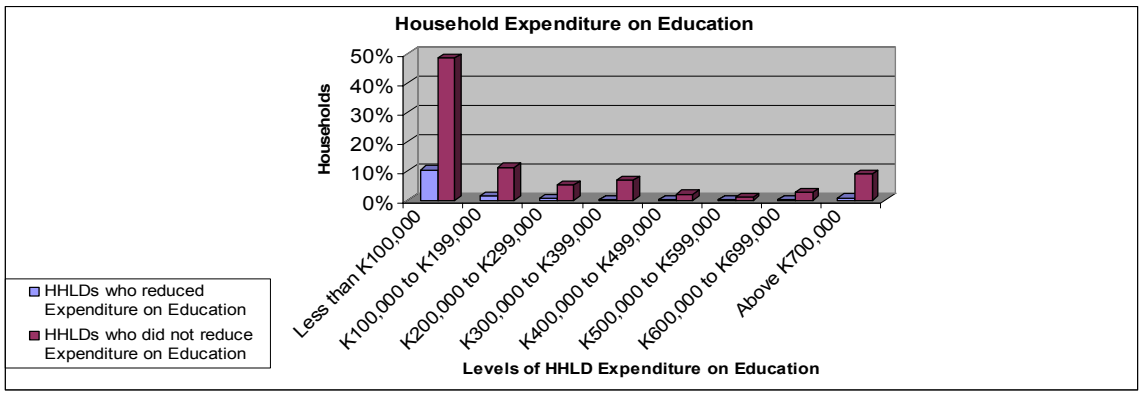
out because the family could not afford to meet their school requirements, 15% (8% males and 7% females) dropped out because of lack of interest in school and 7% (all females) drop out of school due to pregnancies. The other reasons for dropping out of school such as: work for food/cash; care for sick family member; hunger; and collapsed school were insignificant at 2%.

There were more school drop outs due to families not being able to afford school requirements, at secondary level than primary level, because at primary level the free education policy applies. The assessment also established that school attendance reduced from lower to higher education.

The results of assessment further showed that few children (about 2%) dropped out of school because of collapsed school buildings, as a result of the floods experienced. Furthermore, in some of the flood affected areas the school children shifted to the higher and drier lands where they continued with their education.

In other areas the learning process continued in make shift structures and/or other community centres. However, this was not conducive for learning and the quality of education was compromised. Furthermore the relocation to the drier lands and alternative learning environments, took away valuable learning time from the school children.

Figure 3.4.2: Household Expenditure on Education



3.4.3 Household Expenditure on Education

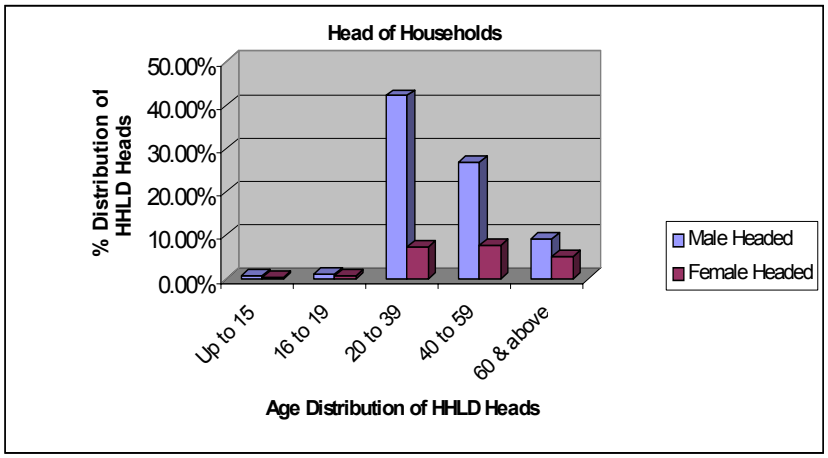
The assessment established that in all the districts surveyed a total of 12% of the households interviewed reported a reduction of overall expenditure on education costs as shown in figure 3.4.2. This shows a reduction of 8% from the figure of 20% reported in the 2007 report. A total of 86% did not reduce expenditure on education. This could still be attributed to households with children attending secondary school because primary education cost did not include school fees.

This is in line with the Ministry of Education's policy of Free Primary Education in the rural areas. The reduction of household expenditures on primary education costs consisted mostly of expenditure on PTA funds, school uniforms and requisite school materials such as books and pens.

3.5. PROTECTION

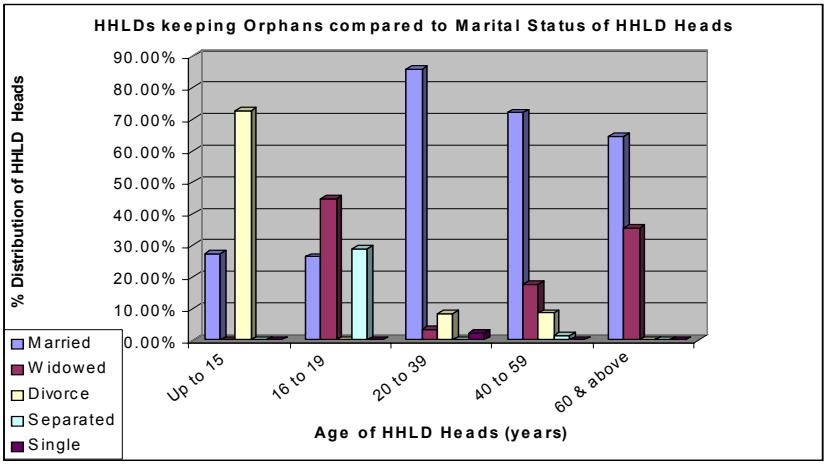
The assessment established that only 1% of the households in the assessed areas were child headed households, and that there were more male child headed households than female child headed households.

Figure 3.5.1. Demographics of Household Heads



The assessment also established that about 27% of household heads from the child headed households were married and that over 70% were divorced indicating incidences of early marriages in these communities. With regards to orphans, in general very few families were found to be keeping orphans.

Figure 3.5.2. Households Keeping Orphans



About 4% of the households were keeping at least one orphan (usually a close relative). These were mostly from household heads within the age groups of 20 to 39 years and 40 to 59 years. It was further established that about 1% of the child headed households were also keeping or hosting at least one orphan.

Incidences of violence against women and children in the communities and camps during the flooding period were not very common. However some cases were reported by 18% of the respondents. The most common cases in order of ranking were; early marriages (35%), assault (25%), sexual exploitation (14%), rape (11%), child defilement (9%) and other types of violence (1%). In most of the instances the main perpetrators of these cases were relatives/neighbours and other people (94%), while development workers constituted 4% of the perpetrators.

There were few cases of missing persons during the flooding period (7%). The assessment also established that there were very few cases of children living together without adults (14%), and cases of individual adults taking care of children where also minimal (18%).

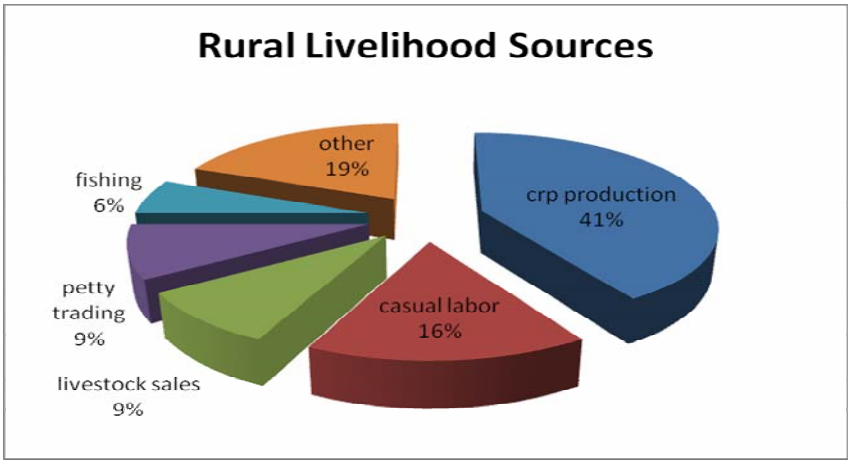
In most of the communities assessed there are HIV prevention activities being undertaken by government agencies, the NGOs and community groups. Government interventions constitute the bulk of the preventive measures at 40%, while NGOs constitute 32% and community measures constitute 28%.

The assessment established that generally reporting mechanism for rights violations do exist in the communities. The reporting mechanisms include; the police (43%), the local authorities (37%), local clinics (15%) and humanitarian actors (15%).

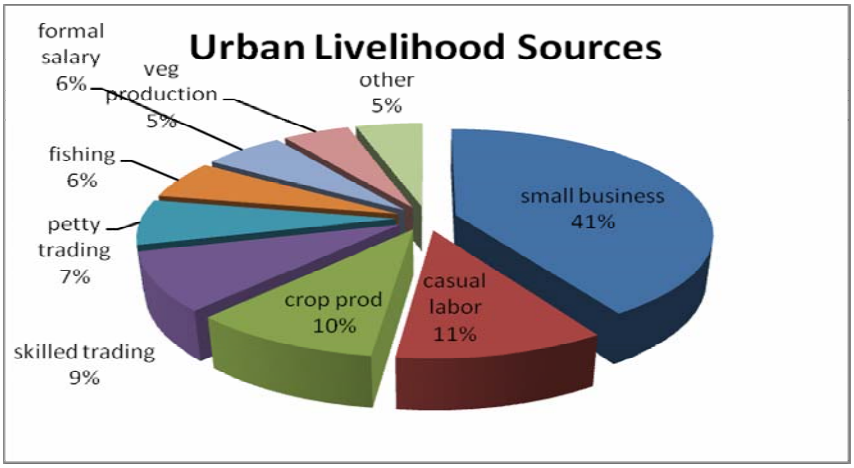
3.6. HUMAN SETTLEMENT AND SHELTER

The findings on Human Settlement and Shelter established that 8% of the total households that were affected by the floods were displaced. This translates into a total of 82,662 households (495,972 people). The worst affected provinces were; southern province accounting for 33% of the displaced cases, followed by western province at 28%, northern province at 10% and central province at 7%. In terms of location segregation, 87% of the displaced cases were in the rural areas while 13% were in urban areas.

For those in the rural areas, 41% depended on crop production as their main livelihood, 16% on casual labour, 9% on livestock sales, 9% on petty trading, 6% on fishing and the remaining 18% on various activities such as gardening, beer brewing, small business and skilled labour.



In the urban areas, 41% of the displaced households depended on small-scale business for their livelihoods, 11% on casual labour and 10% on crop production as shown in the figure below.



The worst affected districts were Shangombo and Sinazongwe at 11% each followed by Mazabuka, Senanga and Mpulungu all at 7%, then Kalabo at 5% while the rest were below 5%.

A bigger proportion of the displaced households were headed by persons in the most productive to less productive age group ranging from 40 to 59 years accounting for 40% of those displaced. This was followed by the most productive age group of 20 to 39 years or 36% while the old and less productive age group for 60 years and older accounted for 18% and the remaining 6% was a mixture of child headed and those headed by young adults ranging from 0 to 19 years old. Furthermore, 76% of the displaced households were male headed while 24% were female headed.

Among the households that were displaced, 69.9% had at least one member of their household falling sick during the time of displacement. The assessment also revealed that over 30% of the displaced households had carry over food stocks from the 2006/7 farming season that confirms the fact that a good proportion of the displaced population are farmers. As such, it is envisaged that there would be no problems regarding livelihood sources once the displaced farming population is relocated to higher, safer grounds with good arable land.

3.7. INFRASTRUCTURE

3.7.1 Roads and Bridges/Culverts

An overview assessment on infrastructure established that 66% of the roads, bridges and culverts in the assessed communities were either washed away or damaged.

A Technical Assessment report has been prepared by the Road Development Agency (RDA) detailing the nature and extent of the damage to the roads and bridges/culverts in the affected districts. The report also provides recommendations for the repairs and cost estimates for the works.

3.7.2 Habitations (Houses)

The impact on habitations was moderate as 52% of respondents reported that houses collapsed. At the time of the assessment the people whose houses had collapsed were rebuilding their houses.

3.7.3 Health Facilities

The floods caused moderate structural damage to health infrastructure but did not disrupt operations at most of the health centres in the areas assessed. Out of the sampled areas 22% reported damage to the health infrastructure. However accessibility to the health centres was difficult due to water logging (44% of the respondents in the assessed areas reported that there was no access to health facilities).

3.7.4 Schools

The damage to school infrastructure was moderate as indicated by an average of 25% of the respondents from the community interviews. The damage was mostly on school toilets and classroom blocks. Collapse of toilets constituted 60% of the reported damages while collapse of school infrastructure made up 30% of the damages. The other damages were on water points and teacher's houses. The floods caused the collapse of 50% of the toilets at the affected schools while 18% of the water points were flooded and contaminated with impurities.

Basic schools were the most affected (82%) compared to community schools (18%). The damage to classroom buildings was low, (27% of the community respondents reported damage to classroom blocks while 73% reported no damage). In the case of damaged classroom buildings, it was established that the damage was mostly on single classrooms and double units (1x2 classrooms blocks) where roofs were blown and the buildings developed cracks and in certain cases collapsed.

The damage to the classroom buildings at Community schools was mostly due to the poor of quality materials that were used to construct the schools and thereby by making them susceptible to flood damage.

Damage to the teachers' houses was also low (20% of the respondents reported damage to teachers' houses while 80% reported that there was no damage to the houses). However 53% of the teachers' houses were generally found to be in a bad state due to lack of maintenance. There was minimal damage to school furniture and sports facilities (sports halls and fields) as a result of the floods.

3.7.5 Boreholes and Water Points

The assessment established that there was no physical damage to the boreholes although there were indications that the quality of water was poor. The other water points such as hand-dug wells were flooded and collapsed.

3.7.6 Other Infrastructure

The impact on **markets** was moderate. This is because the damage to physical structures at the markets at both district and community level was not significant. It was mostly accessibility to the markets that was difficult due to water logging. However informal markets through exchange of commodities (barter system) continued to constitute a major part of the communities' market systems.

3.8. OTHER GENEREAL FINDINGS

3.8.1 Environment

The floods had moderate effect on the environment (52%). This resulted in soil erosion and formation of gullies that will have long-term negative consequences on the state of the environment.

Most of the assessed communities (79%) had waste disposal facilities. The most common facilities were refuse pits. However there was also a high practice of indiscriminate waste disposal.

3.8.2 Early Warning Systems

The assessment established that 73% of the respondents in the assessed areas were not warned about the floods, while out of the 27% of those who indicted that they were warned 63% did not heed to these warnings and hence did not take any preventive measures. The most common sources of early warning information were; radio (79%), followed by the Meteorological Department (64.9%), television (18.2) and the DDMC (I6.7%). Other sources such as the Department of Water Affairs, ZESCO, newspapers and information education and campaign materials were not common.

4.0 CONCLUSIONS

4.1. Food Security

The impact of the floods and water logging on crops was particularly pronounced in six (6) provinces of Zambia namely Central, Copperbelt, Luapula, Lusaka, Southern and Western. Of the thirty seven (39) districts visited, twenty-one (21) were found to have had most households who experienced drastic reduction in their harvest of the main staple and would require food assistance. A total of 444,624 people (74,104 Households) were deemed to be food insecure in the 21 districts and would require 33,333 Metric tons of cereal for a period of nine (9) months staring from July 2008 to March 2009.

Livestock prices (mainly cattle) in almost all assessed districts rose in December 2007. The fact that prices in most districts rose suggests that there was no desperation for households to sell off their cattle at low as they were able to negotiate for higher prices. The highest cattle price increases were recorded in Sinazongwe, Mumbwa, Mazabuka, Namwala and Sesheke. This shows that at the time of the assessment, the impact of the livestock ban movement due to the Foot and Mouth Disease outbreak had not yet started reducing income for farmers.

In the assessed districts maize prices were high, especially in the low producing districts of Sinazongwe, Shangombo, Kalabo, Lukulu, Zambezi, Mambwe and Mongu where the prices were above K1,200/Kg. Sinazongwe particularly reported abnormally high prices even being a low producing district of K1,900/Kg, an indication of a possible shortage. Among the high producing districts, only Mumbwa reported high maize prices of K1,280/Kg, an indication of significant supply reduction.

4.2. Health and Nutrition

The prevalence of Severe Acute Malnutrition (SAM) was found to be **2.3%** out of which 0.6% had bilateral oedema. Global Acute Malnutrition (GAM) was **7.7%** indicating an increase of 2.1% from the June 2007 in-depth findings.

The assessment established that immunization coverage was high in all the assessed districts. The measles coverage of 96.2 % was recorded among children aged between 9-59 months, 98.7% was recorded for OPV and DPT immunization while the BCG coverage was found to be at 97.6%. A small percentage (0.3%) of the eligible children did not receive vaccines while 3.5% of the child caretakers did not know whether the child had been immunized or not. There was no severe impact of floods on physical health infrastructure in all the assessed districts. However, Mkushi, Mumbwa, Lufwanyama, Masaiti, Mpongwe, Ndola and Mpulungu reported minor damages on some health facilities.

4.3. Water and Sanitation

From the findings it is clear that the floods in the 2007/2008 season increased water contamination in unprotected water sources like rivers or lakes, unprotected shallow wells and unprotected springs which accounted for 37.9% of the households. This is evidenced in the occurrence of diarrhoea diseases amongst households that draw water from the unprotected sources which is 30.5% for rivers or lakes being the highest. The impact on water quality was severe during the rainy season in areas that experienced floods and heavy rainfall.

4.4. Education

The assessment established that 76% (44% males and 32% females) of the children dropped out of school because the family could not afford to meet their school requirements, 15% (8% males) dropped out because of lack of interest in school and 7% (all females) drop out of school due to pregnancies. The other reasons for dropping out of school such as: work for food/cash; care for sick family member; hunger; and collapsed school were insignificant at 2%.

4.5. Protection

Incidences of violence against women and children in the communities and camps during the flooding period were not very common. However some cases were reported by 18% of the respondents. The most common cases in order of ranking were; early marriages (35%), assault (25%), sexual exploitation (14%), rape (11%), child defilement (9%) and other types of violence (1%). In most of the instances the main perpetrators of these cases were relatives/neighbours and other people (94%), while development workers constituted 4% of the perpetrators.

4.6. Human Settlement and Shelter

The floods displaced 8% of the total households that were affected by the floods. This translates into a total of 82,662 households (495,972 people). The worst affected provinces were; Southern Province accounting for 33% of the displaced cases, followed by Western Province at 28%, Northern Province at

10% and Central Province at 7%. In terms of location segregation, 87% of the displaced cases were in the rural areas while 13% were in urban areas.

4.7. Infrastructure

The damages caused by the floods on infrastructure were mostly on roads, bridges and culverts – 66% of the roads, bridges and culverts in the assessed areas were damaged. The floods also caused damage to school infrastructure on classroom blocks and sanitation facilities. Both basic schools and community schools were affected. The community schools made from pole and mud suffered structural damage due to the poor quality of materials used to construct them. The basic schools with permanent structures had their roofs blown off and their toilets collapsing.

4.8. General Findings

The floods had adverse effects on the environment and caused soil erosion and the formation of gullies that could lead to further deterioration of the environment.

The assessment also established that early warning systems were effected through various modes of communication including; electronic media, print media and the use of local authorities and government agencies. However, only a few people received the warning but did not take any preventive measures.

5.0 RECOMMENDATIONS

5.1 Food Security

Short term

- A total of 444,624 people (74,104 Households) in 21 districts will need food assistance (maize) amounting to 33,333 metric tons or the period of nine (9) months starting in July 2008 to March 2009.
- MACO to take a lead in promoting crop diversification to avoid over dependency on maize (e.g. introduction of cassava growing in areas that are predominantly maize consuming).
- Government and its cooperating partners should provide support on small scale irrigation systems for populations with access to wetlands.

Medium to Long-term

- Government to partner with the private sector to establish a laboratory for manufacturing Foot and Mouth Disease (FMD) vaccines.

5.2 Health and Nutrition

Short-term

- Continuation of therapeutic and supplementary feeding as well as extension of their coverage
- Strengthen mother and child health activities through health centres by encouraging early accessing of health services, regular attendance of growth monitoring, vaccination and child health screening.
- Strengthen community involvement in prevention activities such as;
    - Breast feeding support groups
    - Peer to peer learning
    - Promotion of balanced diet through introduction and/or strengthening of kitchen garden

Medium to Long-term

- Strengthen the existing nutrition surveillance system to identify areas of higher acute malnutrition
- Roll out nutrition surveillance through annual surveys.

5.3 Water

Short-term

- Intensify community sensitisation and participation in water treatment and protection of water sources through district RWSS Programmes
- Increase availability and affordability of chlorine in collaboration with MOH through the Domestic Water Chlorination Promotion.

Medium to long term

- Construct water facilities (boreholes, hand dug wells and protected springs) to increase access to safe drinking water.
- Promote rain water-harvesting facilities

5.4 Sanitation:

Short-term

- Intensify community sensitization and participation in sanitation programmes.
- Promotion and encourage construction of strong and durable sanitary facilities for excreta disposal

Medium to long term

- Increase awareness of personal hygiene and promote behavioural change initiatives at household level
- Strengthen and institutionalize the Rural Water and Sanitation (RWSS) Programmes in all districts using the WASHE concept.
- Formulate and enforce policies that promote construction of durable sanitary facilities

5.5 Education:

Short-term

- Rehabilitate school infrastructure that suffered structural damage due to floods (e.g. blown off roofs).

Medium to long term

- Sensitize households on the value of education and the need to send the children ot school to improve attendance.
- Construct permanent structures in community schools using pole and mud to forestall future disasters.

5.6 Protection:

Short-term

- MCDSS and its partners to introduce livelihood support activities for the child headed households
- Provide psychosocial counselling and support to victims of gender violence and child abuse.
- Provision of Post Exposure Prophylaxis (PEP) Kits to local clinics for victims of rape and defilement.

Medium to long term

- Build capacities of enforcement agencies such as the police and community support groups to monitor gender based violence and child protection activities
- Sensitize traditional and community leaders to be focal points for victims of rape and children rights

5.7 Human Settlement and Shelter:

Medium to long term

- Safer lands to be identified on the uplands and be provided with basic infrastructure such as boreholes, health and educational services for the resettling of the flood displaced persons.
- Sensitize population residing in flood prone areas on the importance of relocating to higher grounds
- Introduce alternative sustainable livelihood sources for the resettled populations such as crop production and bee keeping

5.8 Infrastructure:

Short-term

- Refer to the In-depth Report on the Washed Away and Affected Drainage Structures by the 2007/8 Heavy Rains, RDA, June 2008

5.9 General Recommendations:

- **Short- term**

There is need for ZVAC to carry out a Comprehensive Vulnerability Assessment and Analysis to establish baseline information that will not only help in disaster preparedness but also in designing relief and development interventions. This will help distinguish between the chronic and transitory vulnerable areas.

Medium to Long Term

- Harmonise and strengthen early warning systems for disaster preparedness and response
- Promote environmental conservation and sustainable land use activities such as conservation farming and afforestation.

REFERENCES

1. Central Statistical Office, Population projections report, 2003.
2. Living Conditions Monitoring Survey, CSO 2006
3. Ministry of Agriculture and Cooperatives 2008 Crop Forecasting Report
4. Ministry of Health, Health Management Information Systems (HMIS), 2000-6.
5. Tembo G. et al, 2006. Contributions of Livestock to Livelihoods in Zambia
6. Zambia Health Demographic Survey, CSO 2006

ANNEXES

Annex 1: Districts Assessed and Team Composition

TEAM	PROVINCE	NO. OF DISTRICTS	NO. OF DAYS	TEAM COMPOSITION
1	North -Western	Chavuma, Zambezi, Mwinilunga	18	**Team leader:** Mr. Lyson Mbewe **Team members:** Claudious Hakaapya Manix Ngabwe Samson Muchumba -
2	Southern	Gwembe, Choma, Siavonga	18	**Team Leader:** Mr. Alfred Daka **Team Members** Trust Hamaleka Anne Mwanamwenge Mercy Mbewe
3	Southern	Mazabuka, Monze, Namwala, Itezhi tezhi	23	**Team Leader:** Mr. Charm Kalimbika **Team Members:** Vincent Mungalu Gift Himunya Choolwe Milambo
4	Southern	Sinazongwe, Kazungula, Kalomo	18	**Team Leader:** Mr. Phillip Siamuyoba **Team Members:** Ndanji Nkole Juliet Mumba Lameck Phiri
5	Eastern	Luangwa, Lundazi, Mambwe	18	**Team Leader:** Ms. Esnart Makwakwa **Team Members:** Goodson Banda Tebubo Tabakamulamu Beauty Shamboko Mbale
6	Central/Lusaka	Chongwe, Chibombo, Kafue, Lusaka	23	**Team Leader:** Mr. Lenganji Sikaona **Team Members: :** Ephraim Mambwe Diana Hambote Emmy Mc Millan

TEAM	PROVINCE	NO. OF DISTRICTS	NO. OF DAYS	TEAM COMPOSITION
7	Copperbelt	Lufwanyama, Masaiti, Mpongwe, Ndola	23	**Team Leader**: Ms. Irene Ngulube **Team Members** Chris Chansa Ms. Dorothy Namuchimba Elvis Silwimba
8	Western/ Central	Mongu, Senanga, Lukulu, Mumbwa	23	**Team leader:** Chizongo Matimba Mwiya **Team members**: Alex Zimba Nicholas Mweemba Juliet Nyirenda
9	Western	Kalabo, Sesheke, Shang'ombo	20	**Team Leader**: Mr. Nchimunya Nchiya **Team Members:** Ryan Mwape Robby Mtonga Mulele Namasiku
10	Central/Northern	Mkushi, Isoka, Mpulungu	18	**Team Leader:** Mr. Bupe Bwalya **Team Members** Christopher Chitembo Augustin Ilunga Maggie Mwape Agness Mweemba
11	Luapula	Mansa, Milenge, Samfya	18	**Team Leader:** Mr. Sibajene Munkombwe **Team Members:** Rita Kakombo (N) Chritopher Mwenda Chilombo Laima

Annex 2.1: Copy of Household Questionnaire

ZVAC In-depth Needs and Vulnerability Multi Sectoral Assessment (May 2008)	
Questionnaire ID |__|__|__|__|__|__|__|	
Province Name:	**Province Code |__|**
District Name:	**District Code |__|__|__|**
Constituency Name:	**Constituency Code |__|__|__|**
Ward Name:	**Ward Code |__|__|**
CSA NAME	**CSA Code |__|__|**
SEA NAME	**SEA Code |__|**
Enumerator Name:	**Livelihood Zone Code |__|__|__|**
Date of Interview:	**Rural = 1 Urban = 2** **|__|**

Household Demographics				
1	**Sex** of household head	**1** = Male **2** = Female		**|__|**
1a	**Sex** of main respondent	**1** = Male **2** = Female		**|__|**
2	**Age** of household head (years)	**|__|** **1=** Up to 15years **2=** 16 to 19 years **3=** 20 to 39 years **4=** 40 to 59 years **5=** 60 years or older		
2a	**Marital** status of household head	**1** = married - *go to 3, else go to 3b* **2** = widowed **3** = divorced 4 = separated **5** = single		**|__|**
3	**Age** of Spouse (years)	**|__|** **1=** Up to 15years **2=** 16 to 19 years **3=** 20 to 39 years **4=** 40 to 59 years **5=** 60 years or older		
3a	What is the education level for the spouse?	**1 =** Never been to school **2 =** Primary **3 =** Secondary **4 =** Tertiary **5 =** Other, specify:_____		**|__|**
3b	What is the education level for the household head?	**1 =** Never been to school **2 =** Primary **3 =** Secondary **4 =** Tertiary **5 =** Other, specify:_____		**|__|**
4	**Household Size** – how many people eat and stay in the household permanently? **verify = sum (questions 5-7a)**	**4a –** males **|__|__|**	**4b** females **|__|__|**	
5	Number of children under 5 years of age (**up to 59 months**)	**5a –** males **|__|__|**	**5b** females **|__|__|**	
6	Number of children **5-14** years of age	**6a –** males **|__|__|**	**6b** females **|__|__|**	
6.1	Number of persons aged **15-19** years	**6c –** males **|__|__|**	**6d** females **|__|__|**	

7	Number of persons **20-59** years of age	**7a –** males |__|__|	**7b** females |__|__|
7a	Number of adults **60** or **older**	**7c –** males |__|__|	**7d** females |__|__|
8	How many of these persons are **chronically unable** to work for **health** reasons?	**8a –** males |__|__|	**8b** females |__|__|
8a	How many of these persons are **chronically unable** to work for **disability** reasons?	**8c –** males |__|__|	**8d** females |__|__|
9	Number of **orphaned children** (defined as "**both** parents lost" and "less than 15 years of age") in the household**.**	**9a –** males |__|__|	**9b** females |__|__|
10	Number of school children who **dropped out** of school in the last 6 months ***go to question 11 if no children dropped out***	**10a –** males |__|__|	**10b** females |__|__|
10c	Three main reason(s) for dropping out of school **boys** *Please make sure you Indicate ✓ where appropriate*	**1=** Family can't afford fees/costs |__| **2=** Work outside home for food or cash |__| **3=** Help with household activities |__| **4=** Care for sick family member |__| **5=** Hunger |__| **6=** Not interested/Bad pupil |__| **7=** Damaged Roads/Bridges |__| **8=** Collapsed School Buildings |__| **9=** Other; _____ |__|	

10d	Three main reason for dropping out of school **girls** *Please make sure you Indicate ✓ where appropriate*	**1=** Family can't afford fees/costs **|__|** **2=** Work outside home for food or cash **|__|** **3=** Help with household activities **|__|** **4=** Care for sick family member **|__|** **5=** Hunger **|__|** **6=** Not interested/Bad pupil **|__|** **7=** Damaged Roads/Bridges **|__|** **8=** Collapsed School Buildings **|__|** **9=** Other; specify_____ **|__|**
11	Main type of cooking fuel used by the household *Please make sure you Indicate ✓ where appropriate*	**1 =** Electricity **2 =** Fire wood **3 =** Charcoal **4 =** Kerosene **5 =** Gas **6 =** Kraal manure **7 =** Other, specify_____ **|__|**
11a	Main type of lighting used by the household	**1 =** Electricity **2 =** Fire wood **3 =** candle **4 =** Kerosene **5 =** Gas **6 =** Kraal manure **7 =** Other, specify **|__|**

11b	Has your household been displaced between December 2007 and February 2008 due to floods?	**1** = Yes **2** = No	**|__|**

PRODUCTIVE ASSET OWNERSHIP					
12	How many of the following productive assets are owned by your household **Indicate** **1** = Yes **2** = No Please do not leave any cell blank!	**Type of Asset**	**Number of Assets Owned Now** (May 08)	**Number of Assets Owned same time last year** (May 07)	**13. Reason for change** 1=Sale 2=Purchase 3=Gift 4=Damaged 5=Stolen 6=Other, specify: _____
		Hoe |__|	**12a**	**12a1**	**13a1** |__|
		Plough |__|	**12b**	**12b1**	**13b1** |__|
		Canoe/Boat |__|	**12c**	**12c1**	**13c1** |__|
		Bicycle |__|	**12d.**	**12d1**	**13d1** |__|
		Ox Cart |__|	**12e.**	**12e1**	**13e1** |__|
		Fishing Net |__|	**12f.**	**12f1**	**13f1** |__|
		Sewing Machine |__|	**12g.**	**12g1**	**13g1** |__|
		Hair drier |__|	**12i.**	**12i1.**	**13i1.** |__|
		Popcorn machine |__|	**12j.**	**12j1.**	**13j1.** |__|
		Telephone Booth |__|	**12k.**	**12k1.**	**13k1.** |__|
		Hammer mill |__|	**12l.**	**12l1.**	**13l1.** |__|
		Hand mill |__|	**12m.**	**12m1.**	**13m1.** |__|

		Cell phone |__|	**12n.** **12n1.**	**13n1.** |__|
		Hair cut (Barber Shop) |__|	**12o** **12o1**	**13o1**
		Other, specify; _____|__|	**12p.** **12p1.**	**13p1.** |__|

14. Does your household own any livestock? **1 =** Yes **2 =** No – go to Question 17	**|__|**

	Number of Livestock Owned Now (May 08)	**Number of Livestock Owned last year** (May 07)	**16. State reasons for change** 1=Sale 2=Purchased 3=Gift Given 4=Stolen 5=Died 6=Reproduction 7=Consumption 8=Other, specify: _____
15 Indicate the number of livestock that household own?	Cattle **|__|__|__|__|**	Cattle **|__|__|__|__|**	**16a** |__| **16a1** |__|
	Goats **|__|__|__|__|**	Goats **|__|__|__|__|**	**16b** |__| **16b1** |__|
	Sheep **|__|__|__|__|**	Sheep **|__|__|__|__|**	**16c** |__| **16c1** |__|
	Donkeys **|__|__|__|__|**	Donkeys **|__|__|__|__|**	**16d** |__| **16d1** |__|
	Poultry **|__|__|__|__|**	Poultry **|__|__|__|__|**	**16e** |__| **16e1** |__|
	Pigs **|__|__|__|__|**	Pigs **|__|__|__|__|**	**16f** |__| **16f1** |__|

C. HOUSEHOLD INCOME SOURCES & EXPENDITURE PATTERNS: – 2007/08 Season

17	What are your household three (3) most important income sources (2007/08 season)?	**17.1** First **|__|__|** **17.2** Second **|__|__|** **17.3** Third **|__|__|**

18	What were your household's three (3) most important income sources last year (2006/07 season)?	**18.1** First |__|__| **18.2** Second |__|__| **18.3** Third |__|__|

Livelihood source codes: *1 = formal salary/wages* *2 = Money lending* *3 = Cash crop production/ Food crop production/sales* *4 = casual labour* *5 = begging*	*6 = livestock/poultry production/sales* *7 = skilled trade/artisan* *8 = small business(cross border, Kantemba, etc)* *9 = petty trade (sale of clothes, charcoal, e.t.c.)* *10 = brewing*	*11 = remittance* *12 = fishing* *13 = vegetable production/sales* *14 = Food assistance* *15 = Hair dressing* *16 = Stone crushing* *17 =Rentals* *18. Other,* *specify*_____

19	What is the percentage contribution of each of the identified livelihood sources to total household income? (*Use proportional pilling to derive the % estimates*)	**19.1** First |__|__|__| **19.2** Second |__|__|__| **19.3** Third |__|__|__|

20	What was the estimated amount of money spent on the following household needs **last month**?	1. Food |__|__|__|__|__|__|__| 2.Rent |__|__|__|__|__|__|__| 3. Transport |__|__|__|__|__|__|__| 4. Alcohol & Tobacco |__|__|__|__|__|__|__| 5. Electricity, Charcoal, Fuel (wood, paraffin, etc.) |__|__|__|__|__|__|__| 6. Water |__|__|__|__|__|__|__| 7. Household items (soap, etc.) |__|__|__|__|__|__|__| 8. Medical expenses/health care |__|__|__|__|__|__|__| 9. Clothing, shoes |__|__|__|__|__|__|__| 10. Debt repayment |__|__|__|__|__|__|__| 11. Education, fees, uniforms |__|__|__|__|__|__|__| 12. Celebrations, funerals, social |__|__|__|__|__|__|__|
Agricultural Production and HOUSEHOLD FOOD SECURITY		
Cereal Production – LAST Year's Harvest 2006/07 (WET SEASON):		
21	Does your household have access to any arable land (back yard or field)	**1** = Yes **2** = No – go to Q26 **|__|**
22	If the household has access to arable land, how much of it was cultivated during the **2007/08** agricultural season?	**1** =<0.5 ha **2** = 0.5 to 1 ha **3** = 1 to 2 ha **4** = > 2 ha **5** = None **|__|**
23	Compared to last season (2006/07), how much of this arable land has been cultivated this season (2007/08).	**1** = Less **2** = Same **3** = Larger **|__|**

24	If response to Q 23 is "Less or Same", what was the main reason for not cultivating part and/or the whole field? *Please make sure you Indicate ✓ where appropriate*	1. Planned Fallow **|__|** 2. Lack of labour **|__|** 3. Pest problems **|__|** 4. Illness in the household **|__|** 5. Lack of inputs (fertilizer and seed) **|__|** 6. Could not access land **|__|** 7. Climate related causes **|__|** 8. Field rented out **|__|**

25 Did you grow any of the following staple crops during the 2006/07 rainy season? ***Indicate (✓) in the boxes provided)***

	Type of crop	**Produced (2007)**	**Quantity Sold (2007)**	**Quantity Given Away (2007)**
	Maize **|____|**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**
	Sorghum **|____|**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**
	Millet **|____|**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**
	Rice (polished) **|____|**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**
	Cassava **|____|**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**	**|__|__|__|. |__|__| 50kgs bags**

Cereal Production – WINTER (DRY SEASON) HARVEST 2007

26	Does your household practice winter maize growing?	**1=** Yes **2=** No – *go to question 27*	**|__|**
26a	Did you cultivate any **winter (dry season) MAIZE** crop during 2007?	**1=** Yes **2=** No – *go to question 26b*	**|__|**
26b	If yes, what was your **TOTAL MAIZE** harvest during last year's dry season?	**|__|__|__|. |__|__| 50kgs bags**	

26c	Do you intend to engage in winter production during 2008 dry season? **1 = Yes** **2 = No**- *go to question 26c*	**26c.** If response to question *26c* is "No", **state the reason why and after go to Question 27** **1** = Insufficient Moisture … **|__|** **2** = Lack of money to buy inputs **|__|** **3** = Limited wet land/Dambo areas **|__|** **4** = Non availability of seeds from the market **|__|** **5** = Other (specify)_____ **|__|**
26d	What is the size of the arable land you intend to cultivate?	**1** =<0.5 ha **2** = 0.5 to 1 ha **3** = 1 to 2 ha **4** = > 2 ha **|__|**
Production – ALL -YEAR TUBER/Root HARVEST 2007/08 Season		
27	Do you grow **cassava** for your **own consumption** and/or for **sale**?	**1=** Yes for **consumption** **3=** Yes for **sale** **2 =** Yes, **both** **4=** No – *go to question 28* **|__|**
27a	Do you eat cassava as a main **staple** food or as a **snack**?	**1=** Staple *go to question 27b* **2=** Snack *go to question 27c* **3=** Both *go to question 27c* **|__|**
27b	For how many months of this past year did you eat **cassava** as main staple?	**1 =** <3 mo **2 =** 3-6 mo **3 =** 6-9 mo **4 =** >9 mo **|__|**
27c	How much **land** did you have under **MATURE CASSAVA** last year (2006/07)?	**1** =<0.5 ha **2** = 0.5 to 1 ha **3** = 1 to 2 ha **4** = > 2 ha **5** = None **|__|**
28	Do you grow **sweet potatoes** for your **own consumption**?	**1=** Yes **2=** No – *go to question 28b* **|__|**
28a	For how many months of this past year did you eat **sweet potatoes**?	**1 =** <3 mo **2 =** 3-6 mo **3 =** 6-9 mo **4 =** >9 mo **|__|**
28b	Do you grow **sweet potatoes** for **sale**?	**1=** Yes **2=** No – *go to question 29* **|__|**

28c	How much **land** did you have under **SWEET POTATOES** last year (2006/07)?	**1** =<0.5 ha **2** = 0.5 to 1 ha **3** = 1 to 2 ha **4** = > 2 ha **5** = None **|__|**

PRODUCTION – CURRENT (WET SEASON) HARVEST 2007/08

29 Did you grow any of the following crops? ***Indicate (√) in the boxes provided) If no to all the crops below, go to Question 31***

	Type of Crop	Production	Sales	Give Away	29a. How does this year's expected harvest (quantities) compare with 2006/07 harvest? **1**=Less **2**=Same **3**=More
	Maize **|____|**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|. |__|__| 50kg bags**	**|__|**
	Millet **|____|**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|. |__|__| 50kg bags**	**|__|**
	Sorghum **|____|**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|. |__|__| 50kg bags**	**|__|**
	Cassava **|____|**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|. |__|__| 50kg bags**	**|__|**
	Rice (polished) **|____|**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|__|. |__|__| 50kg bags**	**|__|__|. |__|__| 50kg bags**	**|__|**

30	For how many months did the household consume green maize?	**|__|__| days**
30a	Has your household had premature MAIZE harvest for its own consumption?	**1** = Yes **2** = No – go to question 31
30b	If yes, **how many 50 kg bags** have you harvested early?	**|__|__|. |__|__| 50kg bags**

Other Direct Sources of Cereal – 2007/08

31	Did the household acquire or earn cereal from **casual labor** from ***January 2008 to date***?	**1=** Yes **2=** No – *go to question 32*	**|__|**
31a	Approximately how many **kilograms** were acquired/earned?	**|__|__|__|__|__|__|. |__|__|** ***Kg***	
32	Did any member of this household **purchase** cereal/meal from ***January 2008 to date***?	**1=** Yes **2=** No – *go to question 33*	**|__|**
32a	Approximately how many **kilograms** were purchased?	**|__|__|__|__|__|__|. |__|__|** ***Kg***	
33	Did any member of this household receive cereal as **gifts** from relatives, neighbours, or friends from ***January 2008 to date***?	**1=** Yes **2=** No – *go to question 34*	**|__|**
33a	Approximately how many **kilograms** were received?	**|__|__|__|__|__|__|. |__|__|** ***Kg***	

34	Do you have carry **over stocks** from 2006/07 production season?	**1 = Yes** **2 = No** – *go to question 34b* **|__|**	
34a	If response in question 34 is yes, specify quantity	**|__|__|__|__|__|__|. |__|__| *Kg***	
34b	State month when food ran out	**|__|__|**	
Food Aid – January 2008 to April 2008			
35	Did any member of this household earn cereal from **Food Aid** from ***January 2008 to date***?	**1=** Yes **2=** No – *go to question 36*	**|__|**
35a	If yes to question 35, under what type of food aid programme was the cereal received?	**1** = Food For Work **2** = Home Based Care **3** = ART **4** = General Food Distribution (Free Food) **5** = Other, specify:_____ **|__|**	
35b	Approximately how many **kilograms** were earned?	**|__|__|__|__|__|__| *Kg***	
36	Did any member of this household receive any **HEPS** as **Food Aid - Supplementary Assistance** from **January 2008 to date**?	**1=** Yes **2=** No – *go to question 37*	**|__|**
36a	Approximately how many **kilograms** were received?	**|__|__|__|__|__|__| *Kg***	
37	Did any primary school children receive any **prepared food** at school?	**1=** Yes **2=** No – *go to question 38*	**|__|**
37a	How frequently did this/these child(ren) receive this food?	**1 =** daily **2 =** once weekly **3 =** irregularly	**|__|**
Food Purchases during the last Consumption Year: 2007/08			
38	Since 2007/08 consumption season until now, have you purchased **CEREAL** for your household consumption?	**1 = Yes** **2 = No –** *go to question 39* **|__|**	
38a	If yes to question 38, indicate the month (√)? If "No" go to question 38, go to question 39	**38a1**. Apr 07 **|__|** **38a11.**Feb 08 **|__|** **38a2**. May 07 **|__|** **38a12** Mar08 **|__|** **38a3**. Jun 07 **|__|** **38a13** Apr08 **|__|** **38a4**. Jul 07 **|__|** **38a5**. Aug 07 **|__|** **38a6**. Sep 07 **|__|** **38a7**. Oct 07 **|__|** **38a8**. Nov 07 **|__|** **38a9**. Dec 07 **|__|** **38a10**.Jan 08 **|__|**	
38b	If yes to *question 38*, how much of cereal have you purchased so far.	**|__|__|__|__|__| KG**	
39	Compared to last consumption year (2007/08), do you expect to purchase **more**, the **same**, or **less** cereals?	**1 =** Less **2 =** Same *(go to question 40)* **3 =** More **4 =** Never purchase cereals *(go to question 40)*	**|__|**

39a	If respondent doesn't expect to purchase the **SAME** amount of cereals: **What is the main reason?**	**1.** Will need **less** cereals: will have **better** harvest than last year **2.** Will need **more** cereals: harvest is **worse** than last year **3.** Will be able to buy **less** cereals: have lower **income** **4.** Will be able to buy **less**: expect less to be **available** **5.** Will be able to buy **more** cereals: **income** higher than last year **6.** Will be able to buy **more**: more is **available** on the market **7.** Rarely/do not eat cereals: consume tubers instead	**|__|**
40	Since 2007/8 marketing season until now, did anyone in your household **purchase CASSAVA** to **eat**?	**1=** Yes **2=** No – *go to question 41* **|__|**	
40a	Do you **normally** buy these every year?	**1=** Yes – *go to question 40c* **2=** No **|__|**	
40b	Why did you buy **tubers/roots** this past year?	**1=** Could not afford to buy cereals **2=** Could afford cereals, but could not find any cereals to buy **3=** Some but not enough cereals available at markets **4=** Cereal crop failure made purchases necessary **5=** Tuber crop failure made purchases necessary **6=** Total crop failure made purchases necessary **7=** Other, specify_____	**|__|**
40c	Is **cassava** your main staple food?	**1=** Yes **2 =** No **|__|**	
Agricultural Inputs (Cereals) – 2007/08 Production Season			
41	State whether this is a farming household or not	**1 =** Farming **2 =** Non Farming – go to Q46	**|__|**
41a	Where did you get your seeds from?	**1 =** Previous harvest **|__|** **2 =** MACO (Fertilizer Support Programme) **|__|** **3 =** MCDSS/PAM (Food Security Pack) **|__|** **4 =** Cooperatives **|__|** **5 =** Purchased **|__|** **6 =** Gifts **|__|** **7 =** Other, specify: _____ **|__|**	
41b	Was the seed for your main **cereal** crop adequate?	**1 =** Yes (*go to question 42)* **2 =** No **3 =** No cereal crops (*go to question 42)*	**|__|**

41c	If not, what was the **main** reason?	**1=** Could not afford to purchase seeds **2=** Could afford, but seeds came late into the market **3=** Could afford, but there were no seeds at the market at any stage **4=** Usually obtain as gifts/remittance, this year didn't get enough **5 =** Not enough own-production of seeds last season **6 =** Could not access seeds due to damaged roads/bridges	**|__|**
42	Did you have access to fertilizer for your main **cereal** crop in the last growing season?	**1 =** Yes (*go to question 44)* **2 =** No	**|__|**
42a	If not, what was the main **reason**?	**1=** Could not afford to purchase **2=** Could afford, but it was not available in the market **3=** Could afford, but came too late to market **4=** Normally given as a gift/loan against harvest, this year none received **5=** Communal consensus not to use fertilizer **6=** Personally afraid/concerned to use fertilizer 7 = Other, specify _____	**|__|**
43	If you could identify the 3 **main limitations** to your last growing season's **cereal** production, what would it be?	**0=** The production was very good – no limitations *(go to question 44)* **1=** Lack of seeds **|__|__|** **2=** Lack of labour power **|__|__|** **3=** Lack of draught power **|__|__|** **4=** Lack of fertilizer and/or manure **|__|__|** **5=** Too little/irregular rainfall **|__|__|** **6=** Excessive rainfall – water logging or flooding **|__|__|** **7=** Too many pests **|__|__|** **8=** Too much fungus infection **|__|__|** **9=** Too many weeds **|__|__|** **10=** Not enough land available/allocated to the household **|__|__|** **11=** Too busy looking after sick family member **|__|__|** **12=** Other, specify _____ **|__|__|**	
44	Did you have adequate seeds for your main **legume** (beans, peas, soya beans groundnut) crop during the last growing season?	**1 =** Yes (*go to question 45)* **2 =** No (*go to question 44a)*	**|__|**

44a	If not, what was the main **reason**?	**1=** Could not afford to purchase seeds **2=** Could afford, but seeds came late into the market **3=** Could afford, but there were no seeds at the market at any stage **4=** Usually obtain as gifts/remittance, this year didn't get enough **5 =** Not enough own-production of seeds last season 6 = Other, specify: _____	**|__|**
45	Did you apply **manure** to any of your field crops during the last growing season?	**1 =** Yes **2 =** No	**|__|**
45a	Did you use conservation farming methods on any of your field crops during the last growing season?	**1 =** Yes **2 =** No	**|__|**

F. Coping Strategies from December 2007 – May 2008		
Consumption Strategies		
46 How many main meals does your household normally have in a day?		**1** = One **2** = Two **3** = Three **4** = More than three **|__|**
46a How many main meals did your household have yesterday?		**1** = Once **2** = Twice **3** = Thrice **4** = More than thrice **|__|**
47	Has the household borrowed food, or money to buy food in the past 6 months?	**1=** Yes **2=** No **|__|**
48	Has the household received food, or money to buy food, from relatives, friends, or neighbours outside the household in the past 6 months ?	**1=** Yes **2=** No **|__|**
49	Has the household received food from a wealthy person in the village in the past 6 months ?	**1=** Yes **2=** No **|__|**
50	Has the household received any food assistance from a Church or other religious institution in the past 6 months?	**1=** Yes **2=** No **|__|**
51	Has the household received food relief from any other source in the past 6 months ?	**1=** Yes **2=** No **|__|**
52	Has the household relied on less preferred foods in the past 6 months ?	**1=** Yes **2=** No **|__|**
53	Have the household members regularly reduced the number of meals eaten per day?	**1=** Yes **2=** No **|__|**
54	Have HH members regularly skipped entire days without eating due to lack of money or food?	**1=** Yes **2=** No **|__|**
55	Has the HH relied on the consumption of wild foods (fruits, vegetables, tubers, cereals) more than normal during this time of the year?	**1=** Yes **2=** No **|__|**
56	Has the HH relied on the consumption of own-caught	**1=** Yes **2=** No

	fish more than normal during this time of the year?	**|__|**
57	Has the HH relied on the consumption of game meat more than normal during this time of the year?	**1=** Yes **2=** No **|__|**
58	Has the household eaten meals consisting only of vegetables?	**1=** Yes **2=** No **|__|**
59	Has the household slaughtered more domestic animals than normal for food?	**1=** Yes **2=** No **|__|**
Expenditure Strategies		
60	Has the HH been forced to take any children **ages 6-15** out of school because of hunger?	**1=** Yes **2=** No **|__|**
61	Has the HH reduced overall expenditures on education due to hunger?	**1=** Yes **2=** No **|__|**
62	Has the HH reduced expenditures on healthcare?	**1=** Yes **2=** No **|__|**
63	Has the HH reduced expenditures on hired labour or draught animals?	**1=** Yes **2=** No **|__|**
64	Has the HH reduced expenditure on purchased agriculture inputs e.g. seeds, fertilizer?	**1=** Yes **2=** No **|__|**
65	Has the HH reduced expenditure on veterinary medicines?	**1=** Yes **2=** No **|__|**
66	Other, specify: ……..	**1=** Yes **2=** No **|__|**
Income Strategies		
67	Has the HH sold more than the usual amount of livestock/poultry?	**1=** Yes **2=** No **|__|**
68	Has the HH sold other HH assets (furniture, electronics) to buy food?	**1=** Yes **2=** No **|__|**
69	Has the HH sold productive assets (hoes, ploughs, draught animals) to buy food?	**1=** Yes **2=** No **|__|**
70	Have additional HH members had to find casual work to get food, or money to buy food?	**1=** Yes **2=** No **|__|**
71	Have additional HH members entered the Income Generating Activity (IGA) sector for the first time e.g. sale of handicrafts, charcoal,?	**1=** Yes **2=** No **|__|**
72	Has the household had crops or livestock stolen?	**1=** Yes **2=** No **|__|**
73	Other, specify: ……..	**1=** Yes **2=** No **|__|**

G. Water and Sanitation			
74	What is the main source of drinking water?	**1=** river or lake **2=** unprotected spring **3=** protected spring **4=** unprotected shallow well **5=** protected shallow well **6=** unprotected deep well **7=** protected deep well **8=** borehole **9=** piped water **10=** Other, specify	**|__|__|**

75	Do you treat the water before drinking? **1=**Yes **2=**No **|__|**	If yes to question 75, State how? **81.1** Use of Chlorine **|__|** **81.2** Boiling **|__|** **81.3** Filtering **|__|** **81.4** Other, specify:_____**|__|**	
76	What is the distance of the water source to your house?	**1 =** On premises **2 =** Less than 100m **3 =** 100 – 500m **4 =** 500m and above **|__|**	
77	Compared to the same period last year (May 2007), how is the quantity of water at your main source?	**1 =** Less **2 =** Same **3 =** More	**|__|**
78	Has your main water source ever dried up?	**1 =** Yes **2 =** No *go to question* 79	**|__|**
78a	Which year did your water source dry up?	**|__|__ |__|__|**	
79	Does your household conduct any irrigation? **1 =** Yes *go to question 79b* **2 =** No *go to question 79a* **|__|**	**79a.** If "No" to question state the reason why? **79a.1** Field too far from water source **|__|** **79a.2** No pumps/pipes **|__|** **79a.3** No manpower to draw water **|__|** **79a.4** Other, specify:_____ _**|__|**	
79b	If yes to question 79, indicate **1** for water source being used for irrigation and **0** for none	**79b1** River **|__|** **79b2** Dam **|__|** **79b3** Shallow well **|__|** **79b4** Hand dug well **|__|** **79b5** Borehole **|__|** **79b6** Lake **|__|** **79b7** Spring **|__|** **79b8** Dambo **|__|** **79b9** Other, specify:_____ **|__|**	

80	What main sanitary disposal facility does your household use?	**1** = Pit Latrines **2** = VIP Latrine **3** = Flash Toilets **4** = Shared Latrines **5** = CAT Method **6** = Bucket **7** = No facility (bush, river e.t.c) **|__|**	
81	Is soap available in your household?	**1 =** Yes **2 =** No	**|__|**
81a	Does the person in charge of preparing food wash his/her hands with soap before preparing food?	**1 =** Yes **2 =** No	**|__|**
82	Do most members of the household wash hands with soap before eating?	**1 =** Yes **2 =** No	**|__|**
83	Do you wash your hands after using latrines/toilets with soap?	**1 =** Yes **2 =** No	**|__|**

	H. HEALTH		
84	Did anyone in the household get sick over the last two (2) weeks?	**1 =** Yes **2 =** No *(go to question 86)*	**|__|**
84a	If yes go to question 84, specify how many(number)?	**|__|**	
84b	What disease(s) did they suffer from? *Please make sure you Indicate ✓ where appropriate*	**84b1.** Fever/Malaria **|__|** **84b2.** Diarrhea **|__|** **84b3.** Cough **|__|** **84b4.** Scabies **|__|** **84b5.** Others, specify: _____ **|__|**	
84c	Where did household members go to seek **health care**? *Please make sure you Indicate ✓ where appropriate*	**Did not seek** any health care **|__|** **Traditional Healer** **|__|** **Formal Care** (clinic/hospital/village health worker) – *go to question 85* **|__|** **Private** (formal health care) – *go to question 85* **|__|** **Pharmacy/dispensary** **|__|** **6. Own medicate** (purchase drugs from *tuntemba*) **|__|** **7. Others, specify:** _____ **|__|**	

84d	What was the main reason for not going to the health facility? *Please make sure you Indicate ✓ where appropriate*	**1. No money** to pay for treatment (fees and drugs) **|__|** **2. No transport**, too far, or too expensive **|__|** **3. Poor quality**/lack of confidence/lack of staff or drugs **|__|** **4.** Prefer not to go – **religious or cultural reasons** **|__|** **5. Too ill** to be moved **|__|** **6. Home Based Care** **|__|** **7. Other, specify:_____** **_____ |__|**

HEALTH Cont'd

List everyone who lived in this household from January 1, 2008 to date. Also ensure children who were born in the same are recorded.

	85. Age (Years)	**85a** Sex **1 =** Male **2 =** Female	**86.** What is the individual's current status? **1 =** Alive & living in the house **2 =** Alive & living elsewhere **3 =** Died **4 =** Don't know	**87.**State the **month** when the individual died or left the household to live elsewhere?	**88.** For the individual that died, state the cause of death? **1 =** Injury: car accident, fall, drowning, poisoning **2 =** Diarrhea: 3 or more loose, watery stools in a 24 hour period **3 =** Bloody Diarrhea: 3 or more loose watery stools with blood in a 24 hour period **4 =** Measles: Any episode of fever accompanied by an eruption/rash accompanied by a runny nose and/or cough and/or runny eyes **5 =** Fever: High temperature with shivering **6 =** Difficulty Breathing: Any episode of difficulty breathing or severe persistent coughing **7 =** Meningitis: **8 =** TB: **9 =** Suspected malaria: **10 =** Other; specify_____	**89** Was the individual that died chronically ill for 3+ months? **1 =** Yes **2 =** No
1	|__|__|	|__|	|__|	|__|__|	|__|	|__|
2	|__|__|	|__|	|__|	|__|__|	|__|	|__|
3	|__|__|	|__|	|__|	|__|__|	|__|	|__|
4	|__|__|	|__|	|__|	|__|__|	|__|	|__|
5	|__|__|	|__|	|__|	|__|__|	|__|	|__|
6	|__|__|	|__|	|__|	|__|__|	|__|	|__|
7	|__|__|	|__|	|__|	|__|__|	|__|	|__|
8	|__|__|	|__|	|__|	|__|__|	|__|	|__|
9	|__|__|	|__|	|__|	|__|__|	|__|	|__|
10	|__|__|	|__|	|__|	|__|__|	|__|	|__|
11	|__|__|	|__|	|__|	|__|__|	|__|	|__|
12	|__|__|	|__|	|__|	|__|__|	|__|	|__|
13	|__|__|	|__|	|__|	|__|__|	|__|	|__|
14	|__|__|	|__|	|__|	|__|__|	|__|	|__|
15	|__|__|	|__|	|__|	|__|__|	|__|	|__|
Newborn	**Month Born**	**Sex (M or F)**	**Current Status (as above)**	**If died, or left, when? (MM/YY)**	**Cause of death (as above)**	**Chronically ill?**
16	|__|__|	|__|	|__|	|__|__|	|__|	|__|
17	|__|__|	|__|	|__|	|__|__|	|__|	|__|

MOTHER AND WOMEN OF CHILD BEARING AGE (15 – 49 YEARS)	
90. How old are you (years)?	|__|__|
91. Do you have children of your own who are under five (5) years of age?	**1 =** Yes **2 =** No–*go to question 93* |__|
92. Do you have children of your own who are under six (6) months of age?	**1 =** Yes **2 =** No *–go to question 93* |__|
92a. Are you breast feeding this child?	**1 =** Yes **2 =** No |__|
93. Have you ever been pregnant?	**1 =** Yes **2 =** No–*go to question 94* |__|
93a. After the birth of your last child, did you receive vitamin A within 8 weeks of delivery? ***Show capsule***	**1 =** Yes **2 =** No **3 =** Don't know |__|
94. Are you currently pregnant?	**1 =** Yes **2 =** No–*go to question 97* |__|
95. Are you currently taking iron and folate tablets?	**1 =** Yes (If yes, go to question 97) **2 =** No **3 =** Don't know |__|
96. If no, state the reason(s) why not? *Please make sure you Indicate ✓ where appropriate*	**1 =** Never received |__| **2 =** Ran out |__| **3 =** Don't like to take pills |__| **4 =** Make me feel sick |__| **5 =** Other, specify_____ |__|
97. Have you been sick in the last two (2) weeks?	**1 =** Yes **2 =** No (If no, go to question 99) |__|
98. If Yes, what illness did you suffer from?	**1 =** Diarrhea waterly |__| **2 =** Bloody Diarrhea |__| **3 =** Fever |__| **4 =** Malaria |__| **5 =** Other, specify_____ |__|
99. Middle Upper Arm Circumference (MUAC)	|__|__|.|__|__|

THIS SECTION ONLY APPLIES TO ALL CHILDREN AGED BETWEEN 6 TO 59 MONTHS LIVING IN THE HOUSEHOLD AND THE MOTHER

100. Who is providing information on the child/children? **1 =** Mother **2 =** Father **3 =** Sister/Brother **4 =** Grand Parents **5 =** Other relatives **|__|**

101 How many children aged between 6 to 59 months live in your household **|__|**

Child Number	Birthday **(DD/MM/YY**)	Age in months	Sex **1** = Male **2** = Female	Is child still breastfeeding **1 =** Yes **2 =** No **3 =** Don't Know	**In the past 2 weeks, has the child had any of these diseases?**					Source of immunization information **1 =** Card **2 =** Recall 3 = No 4 - Unknown	Immunization *(Check on the child health card for immunization* ***Check children's under five cards*** Did the child receive any immunization supplementation (Indicate √ in boxes provided)								
					Fever **1 =** Yes **2 =** No	**ARI/cough** **1 =** Yes **2 =** No	**Diarrhea** **1 =** Yes Watery **2 =** Yes Bloody **3=** No	**Skin Infection** **1 =** Yes **2 =** No	**Measles** **1 =** Yes **2 =** No		**Measles**	OPV0	OPV1	OPV2	OPV3	DPT1	DPT2	DPT3	BCG
1	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|
2	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|
3	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|
4	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|
5	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|
6	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|
7	___/___/___/	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|		|__|	|__|	|__|	|__|	|__|	|__|	|__|	|__|

Child number	**Has the child received a vitamin A capsule in the last 6 months? (Show capsule)** 1 = Yes 2 = No	**Has child been dewormed in the last 6months** **1** = Yes **2** = No	**Number of times fed per day (meals and snacks)**	**Age when started eating other foods** **1** = Below 6 months **2** = After 6 months	**In the last 3 months, has the child been enrolled in any of the following?** **1** = Yes **2** = No **3** = Don't know Supplementary feeding programme	Therapeutic feeding programme	Currently enrolled in Therapeutic feeding programme	**Bilateral Oedema Present** 1 = Yes 2 = No	**Height (if no Oedema)**	**Weight (if no Oedema)**	**Middle Upper Arm Circumference (MUAC) If no oedema**
1	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|
2	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|
3	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|
4	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|
5	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|
6	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|
7	|__|	|__|	|__|__|	|__|	|__|	|__|	|__|	|__|	|__|__|. |__|__|**cm**	|__|__|. |__|__|**kg**	|__|__|__|

CALENDER OF EVENTS

Month	Annual Events	Year Child was born					
		2003	2004	2005	2006	2007	2008
January	New Year.	*Child Too Old*	**49** Months	**37** Months	**25** Months	**13** Months	*Child too Young*
February	Valentine day. Tussling of maize.	*Child Too Old*	**50** Months	**38** Months	**26** Months	**14** Months	*Child too Young*
March	Easter.	*Child Too Old*	**51** Months	**39** Months	**27** Months	**15** Months	*Child too Young*
April	End of rain season. Start of harvest period.	*Child Too Old*	**52** Months	**40** Months	**28** Months	**16** Months	*Child too Young*
May	Drying out of the crops.	*Child Too Old*	**53** Months	**41** Months	**29** Months	**17** Months	*Child too Young*
June	Start of cold season. Winter season and cultivation start. CB agricultural show	*Child Too Old*	**54** Months	**42** Months	**30** Months	**18** Months	**6** Months
July	International trade fair	*Child Too Old*	**55** Months	**43** Months	**31** Months	**19** Months	**7** Months
August	Lusaka Agricultural show. Farmers day	*Child Too Old*	**56** Months	**44** Months	**32** Months	**20** Months	**8** Months
September	Start of hot season.	*Child Too Old*	**57** Months	**45** Months	**33** Months	**21** Months	**9** Months
October	Independence day.	*Child Too Old*	**58** Months	**46** Months	**34** Months	**22** Months	**10** Months
November	Rain season start.	*Child Too Old*	**59** Months	**47** Months	**35** Months	**23** Months	**11** Months
December	Christmas day	*Child Too Old*	Child Too Old	**48** Months	**36** Months	**24** Months	**12** Months

Annex 2.2: Copy of Community Questionnaire

ZVAC In-depth Needs and Vulnerability Multi- Sectoral Assessment (May 2008)
Community Focus Group Discussion

Composition of Interviewees:
The composition of the interviewees should include 8 - 12 key informants. Note that gender balance should be observed. The interviewees must be a mixed group that should at least include any of the following; village headman, elders, teachers, pastors or priests, Ministry of Agriculture Extension workers, local NGO workers, nurse/health workers, representative of women's groups, etc

Province Name:	**Province Code |__|**
District Name:	**District Code |__|__|__|**
Constituency Name:	**Constituency Code |__|__|__|**
Ward Name:	**Ward Code |__|__|**
CSA Name:	**CSA Code |__|__|**
SEA Name:	**SEA Code |__|**
Enumerator Name:	**Livelihood Zone Code |__|__|__|**
Date of Interview:	**Enumerator Code |__|__|__|**
Rural = 1 Urban = 2 |__|	**Questionnaire ID |__|__|__|__|__|__|__|__|**

1. Describe how the rainfall pattern was in this community during the 2007/2008 production season **|__|**

1=Usual (normal) **2**= Unusual (Floods) **3**= Unusual (Prolonged dry spells) **4**=Unusual (Floods and Prolonged dry spells)

2. What was the effect of adverse rainfall performance on the following?

Areas Impacted	Level of Effects 1 = Less **(0 – 29%)** 2 = Moderate **(30-69%)** 3 = Severe (**70-100%)**	Comments/ Reasons
Crop (production)		

Crop (stocks)		
Livestock (disease)		
Livestock (pasture)		
Health facility and Services		
Water (quality i.e. colour, taste & odour & availability)		
Sanitation (access)		
Market Access		
Income source		
Infrastructure (Roads, Bridges)		
Land Degradation		

Note: **Probe for both negative and positive effects**

3. Are there any food **security** programmes (e.g. food aid distribution; input distribution - seeds, fertiliser etc, cash transfer and/or vouchers) currently running in the community? If yes, approximately what **proportion** of households are benefiting from each programme? **What** are people receiving? How long is the programme expected to **last** (months from today)? Which **organisation** is carrying out the programme**? (NOTE: BE SURE TO ENQUIRE ABOUT FOOD AID AS WELL AS OTHER PROGRAMMES.)**

Type of programme	Organisation Implementing	No. of HH benefiting	Total No. of HHs	Percentage of all HH	Quantity received/HH	When Started mm/yy	Expected end mm/yy
food relief distribution							
Home Based Care (HBC)							
ART							
FFW?FFA							
General Food Distribution (GFD)							
Input support (e.g. FSP)							
extension services							
other (specify):							

Use the codes provided below when indicating which organisation/agency is implementing the food security program in the Area;

1= Government **2**= International NGO **3**= National (local) NGO **4**= WFP **5**= FAO **6**= Village Association Committees **7**= District authorities **8**= Church organisation **9**= other (specify)

4. Food Crop and Livestock Availability

4a. What is the current general staple food and livestock availability in the area compared to April 2007? **(1= More, 2= Same 3=Less)**

Food Type	**Own Production**	**Other indirect sources** ***(e.g. Casual work, barter system, Food Aid, inter district etc)***	*Comments (Specify)*
Maize			
Sorghum/Millet			
Cassava (areas under mature cassava)			
Other			
Livestock	**Own Production**	**Other sources**	**Comments (Specify)**
Cattle			
Goats			
Pigs			
Poultry			
Other			

4b. How long does the main staple food from own production usually last in a normal year (indicate month)?.....

4c. How long will the main staple food from own production last in this year (indicate month)?.....

4d. Do you think the community has adequate food? Yes **|__|** No **|__|**

5. Access and Livelihoods

5a Are there functional markets in this community? Yes |**__|** No **|__|**

5b Are these markets easily accessible? Yes |**__|** No **|__|**

5c If No Why |**__|**

1= impassable roads **2** = broken bridges **3** = destruction of market infrastructure **4** = too far

5d Do commodities on the market come from outside the community? Yes |__| No |__|

5e. What are the three (3) major livelihood sources in this community? ***Rank in order of importance***

Rank Order	Major Livelihood
1.	
2.	
3.	

5f. What are the major livelihood sources for households in this community (compare current to April 2007)? Please rank in the order of importance as provided below;

Income Source		
Rank Order	**April 2008**	**April 2007**
1		
2		
3		

5g. Is the staple food readily available on the market in this community? Yes |__| No |__|

5h. **C**ompare the current prices of staple foods to those of April 2007) Please insert price ranges in the table below;

Commodity	Unit of measure	April -07 (price)	April - 08(price)	Reason for price variation
Maize				
Sorghum				
Millet				
Rice				
Cassava				

5i. How have selling prices for livestock (live weight) been in the last five months (Dec 07 – April 08)? Please indicate the price ranges in the table below;

.

Type of Livestock (full grown)	Price Now (April 2008)	Dec 2007 (price)	Reason for price variation
Cattle			
Goats			
Sheep			
Pigs			
Poultry			
Other			

5j. Seasonal Calendar

Steps: 1. Select the most important food and income acquisition strategies from the following list and indicate their timing – by drawing a line – in the table below. Make sure you have covered all the main food and income generating activities of the poor.
2. Note which activities are carried out by men and which by women (in the 'Who?' column).

For crops, indicate the timing of the following: LP (land preparation) P (planting) W (weeding) CG (consumption green) H (harvesting)
Indicate variations in access with arrows: **PA to indicate peak access**

Food source/Income activity		Who?	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Rainfall														
Main Crops for consumption:														
Main Crops for sale:														
Livestock:														
Milk production														
Livestock sales														
Employment:														

- Local labour (e.g. on													
- Off-farm employment (e.g. brick-making)													
Labour migration (where to?)													
Wild foods/Game:													
Collection and consumption, by													
Fishing:													
Food purchases:													
Annual 'hunger' season: - Timing													
Mining													

6.0 Health and Nutrition

6a. What is the total number of under-five (0-59 months) population in the clinic catchment area (To be collected from the DHMT/RHC)?
[ ]

6b. How many under-fives (0-59), were treated for the common childhood illnesses? Please use the table below highlighting the common childhood illnesses;

Childhood Illness	**First Quarter**		
	2006	**2007**	**2008**
Fever/Malaria			
Cough/ARI			
Diarrhoea (non blood)			
Measles			

6c. What was the under weight ratio of under five children in the community

	First Quarter		
	2006	**2007**	**2008**
Under weight ratio			

7.0 Water and Sanitation

7a. What are the three most common water sources in this community? Rank by order of level of use/Utility

a = Protected spring **b** = Unprotected shallow well **c**= Protected shallow well **d** = Unprotected deep well **e** = Protected deep well **f** = Borehole
g = Piped Water **h**= Other; specify _____

1|__| **2|__|** **3|__|**

7b. What percentage of the commonly used water sources for drinking and cooking were affected by floodwaters/prolonged dry spell during 2007/08 rainy-season? (use proportion piling)

[ ]

7c. What percentage of the commonly used water sources for other domestic purposes were affected by floodwaters/prolonged dry spell during 2007/08 rainy-season? (use proportion piling)

[ ]

7d. Is the treatment of drinking water common in the community? **1**=Yes **2**=No [ ] – go to Q 8f

7e. If yes for Q 8c, what is the mode of treatment? Rank by commonly used water treatment

a=Using chlorine **b**=Boiling **c**=Filtering **d**=Decanting **e**=other, specify
1|__| **2|__|** **3|__|** **4 |__|** **5 |__|**

7f. What is the quality of water being used for domestic purposes (Taste, Colour, Suspended particles)? **1**= Good **2** = Poor

7g. What type of sanitary facilities are most commonly used in the community?

1 = VIP **2** = Sanplat **3** = Sewerage System/Flash Toilets **4** = Traditional Latrines **5** = No facility (i.e. Bush, rivers) **6** = CAT Method **7** = Bucket

7h. What percentage of commonly used sanitary facilities were affected by rains, where applicable?

8.0 Floods

8a. What were the main causes of floods?
1= Rainfall **2 =** Bank burst **3 =** Structural failure e.g. dam failure **4 =** Blocked drainage **5 =** other; Specify……..

8b. What was the nature of inundation?
1 = River flow type (water flowing in the direction of the flow of the river) **2 =** Diffusion (water spreading in all directions from main channel)3 = Ponding (water collecting in depressions)

8c. Which part of the community were mostly affected?
1 = Residential **2 =** Crop field **3 =** Access road **4 =** Other; specify…….

8d. What was the maximum depth of inundation?
1= less than 1m **2 =** 1m to 2m **3 =** More than 2m

8e Were you warned about floods? **1=** Yes **2 =** No – go to Q9i

8f. Who warned you?
1 = DWA **2 =** ZESCO **3 =** MET **4 =** DDMC **5 =** other; specify …….

8g. What was the mode of communication?
1 = TV **2 =** Radio **3 =** Newspaper **4 =** Flyers **5 =** other; specify……..

8h. What preventive measures did you take? …….

8i. Have you been evacuated before due to flooding from this area? **1 =** Yes **2 =** No

8j. If yes, why have you returned to this area? …….

9.0 Infra structure

9a. what types of infrastructure are available in the community?

1 = Gravel road **2** = Paved road **3** = Bridge/culverts **4** = Clinics **5** = Schools **6** = Markets **7** = Other specify_____

9b. what was the effect of rainfall performance on the following?

Infrastructure	Level of Effects 1 = None 2 = Moderate 3 = Severe	Describe the current condition of the infrastructure in view of the rainfall intensity during the 2007/08 season (List affected areas by ward)
Gravel Road		
Paved Road		
Bridges/culvert		
Houses		
Clinics		
Schools		
Markets		
Others (specify)		

9c. what type of infrastructure projects are being implemented in this community?

9d. where there any school infrastructure affected due to floods? Please indicate in the table below

School Name:			**School Type:** **1=**Basic, **2=**Community, **3=**High
	1=Yes **2=**No	Number	**Comment**
Class rooms			
Teachers houses			
Water points			
Sanitation facilities (toilets)			
Other facilities (staff room e.t.c)			
School furniture			
School text books			
Recreational areas or sports field			

10. Protection

10a. Are there any reports in the community/camp of violence against women and children since the floods? Please indicate in the options below if any.

Type of violence	**1 =** Yes 2 = No	Frequency of Occurrence	State the main perpetrators? **1 =** Relatives/Neighbours **2 =** Development Workers **3 =** Other; specify ----------	Comments
Rape	|__|	|__|__|	|__|	
Early marriage	|__|	|__|__|	|__|	
Child Defilement	|__|	|__|__|	|__|	
Assault	|__|	|__|__|	|__|	
Sexual Exploitation	|__|	|__|__|	|__|	
Others (specify)	|__|	|__|__|	|__|	

10b.

Child Welfare	**1 =** Yes **2 =** No	Comments
Are there any cases of community members missing due to floods?	|__|	
Are there children living together without adults?	|__|	
Are there individual adults taking care of a large group of children?	|__|	

10c. Are there any specific measures for HIV prevention (PEP kits, condoms)? *Please indicate by inserting* ***(✓)*** *which organisations/institutions intervened…*

a. NGOs |__|
b. Community |__|
c. Government structure |__|

10d. Are there any reporting mechanisms for Rights violations? **1 =** Yes - go to Q 11e **2 =** No |__|

10e. If yes, indicate by inserting (***✓)*** *in appropriate boxes below*

a. police |__|
b. local health clinic |__|
c. local authorities |__|
d. Humanitarian actors |__|

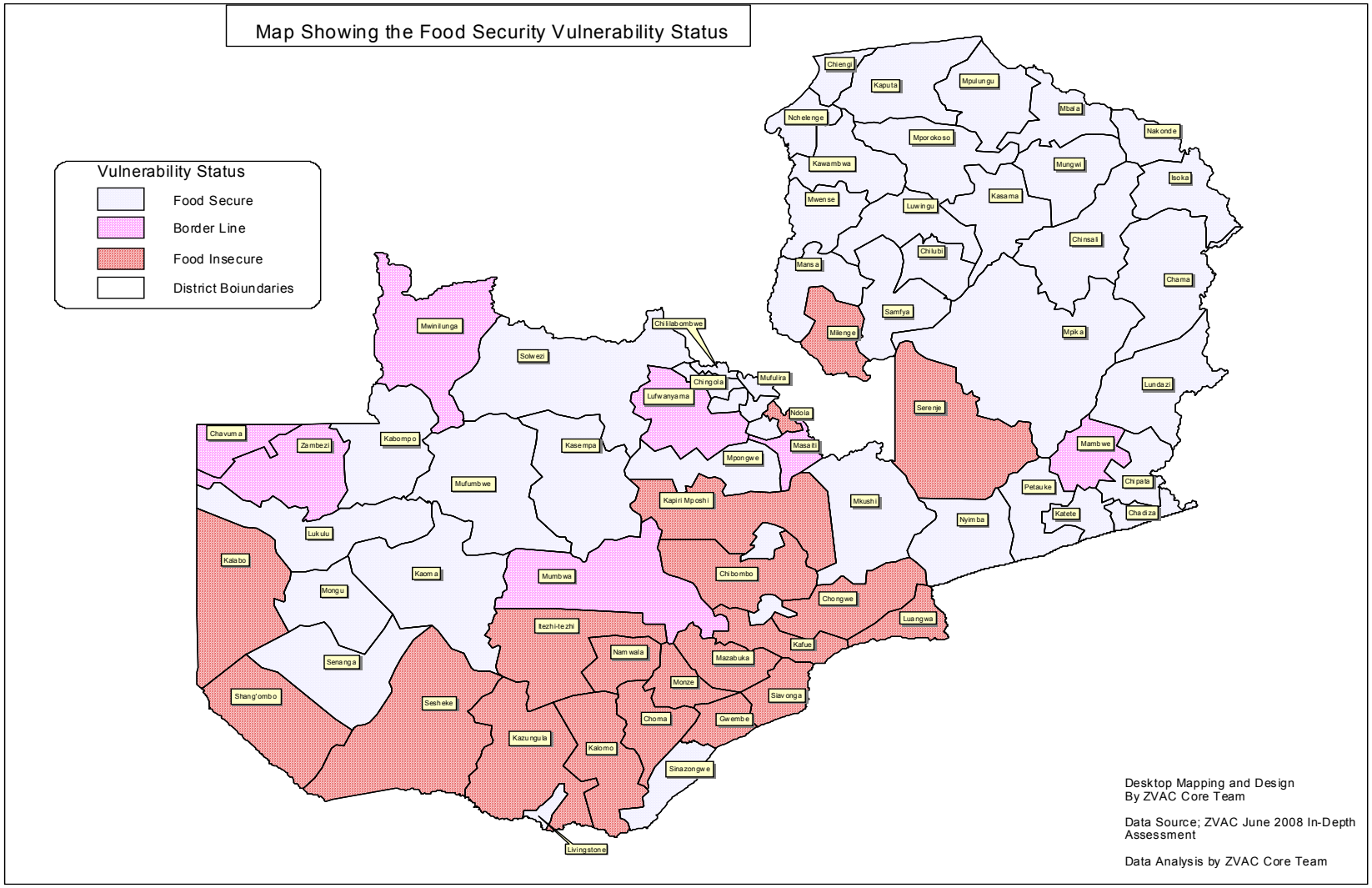
10i. What is the distance between the affected community and the reporting point?

10j. What are the waste disposal facilities used? Indicate by inserting (***✓)*** *in appropriate boxes below*

a. Refuse Pit |__|
b. Refuse Collection Service |__|
c. Indiscriminate Disposal |__|

d. Other, specify_____ |__|

Annex 3: Map showing Food Needs Areas and areas put under Monitoring



Annex 4: Districts targeted for Food Relief Distribution

District Names	Populations Affected	Cereal Requirement
Chibombo	18,802	1,410
Ndola	23,065	1,729
Milenge	10,732	805
Chongwe	34,714	2,602
Kafue	27,934	2,094
Luangwa	5,044	378
Choma	36,170	2,712
Gwembe	13,621	1,021
Itezhi-tezhi	14,504	1,087
Kalomo	33,564	2,516
Kazungula	17,703	1,327
Mazabuka	39,009	2,924
Monze	31,627	2,371
Namwala	28,813	2,160
Siavonga	14,394	1,079
Sinazongwe	21,898	1,642
Kalabo	33,242	2,492
Sesheke	14,134	1,060
Serenje	6,500	487
Kapiri Mposhi	6,200	465
Shang'ombo	12,955	971
TOTAL	**444,624**	**33,333**

Annex 5: Water and Sanitation Needs

			Water	Sanitation			Water quality		
		Affected Population	Water Sources Required	10% of need	ordinary latrines required	10% of need	Chlorine requirement by District (bottles)	Granular Chlorine (HTH) requirement by District (Kg)	20litre Containers
Central	Chibombo	22,860	91	9	4,783	478	13,546	7	22,860
	Mkushi	4,422	18	2	1,843	184	2,620	1	4,422
	Mumbwa	4,950	20	2	5,180	518	2,933	2	4,950
Copperbelt	Lufwanyama	12,900	52	5	1,510	151	7,644	4	12,900
	Masaiti	1,626	7	1	1,919	192	964	1	1,626
	Mpogwe	1,062	4	0	3,614	361	629	0	1,062
	Ndola	7,998	32	3	1,487	149	4,739	3	7,998
Eastern	Lundazi	329,622	1318	132	2,480	248	195,325	107	329,622
	Mambwe	1,656	7	1	2,671	267	981	1	1,656
Luapula	Mansa	3,924	16	2	1,539	154	2,325	1	3,924
	Milenge	2,808	11	1	3,454	345	1,664	1	2,808
	Samfya	2,292	9	1	3,634	363	1,358	1	2,292
Lusaka	Chongwe	2,556	10	1	15,207	1,521	1,515	1	2,556
	Kafue	20,334	81	8	392	39	12,049	7	20,334
	Luangwa	2,082	8	1	924	92	1,234	1	2,082
	Lusaka	185,994	744	74	0	0	110,215	61	185,994
Northern	Isoka	6,426	26	3	513	51	3,808	2	6,426
	Mpulungu	103,800	415	42	1,197	120	61,509	34	103,800
North Western	Chavuma	6,522	26	3	1,774	177	3,865	2	6,522
	Mwinilunga	5,346	21	2	1,111	111	3,168	2	5,346
	Zambezi	2,622	10	1	3,771	377	1,554	1	2,622

			Water	Sanitation			Water quality		
		Affected Population	Water Sources Required	10% of need	ordinary latrines required	10% of need	Chlorine requirement by District (bottles)	Granular Chlorine (HTH) requirement by District (Kg)	20litre Containers
Southern	Choma	16,548	66	7	5,874	587	9,806	5	16,548
	Gwembe	1,134	5	0	13,234	1,323	672	0	1,134
	Itezhi-tezhi	4,182	17	2	7,007	701	2,478	1	4,182
	Kalomo	5,310	21	2	6,674	667	3,147	2	5,310
	Kazungula	2,490	10	1	13,605	1,361	1,476	1	2,490
	Mazabuka	52,080	208	21	2,525	253	30,861	17	52,080
	Monze	14,292	57	6	11,676	1,168	8,469	5	14,292
	Namwala	19,302	77	8	9,817	982	11,438	6	19,302
	Siavonga	7,974	32	3	13,863	1,386	4,725	3	7,974
	Sinazogwe	6,774	27	3	15,202	1,520	4,014	2	6,774
Western	Kalabo	27,708	111	11	12,266	1,227	16,419	9	27,708
	Lukulu	4,014	16	2	23,542	2,354	2,379	1	4,014
	Mongu	13,908	56	6	5,618	562	8,241	5	13,908
	Senanga	16,746	67	7	11,589	1,159	9,923	5	16,746
	Sesheke	9,504	38	4	6,072	607	5,632	3	9,504
	Shangombo	24,714	99	10	15,969	1,597	14,645	8	24,714
Total		**958,482**	**3,834**	**383**	**233,536**	**23,354**	**567,970**	**312**	**958,482**

Annex 6: Seasonal Calender

Agronomic Practices Calendar												
Food crop	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Weed End												
Weed Start												
Plant End												
Plant Start												
Land Prep End												
Land Prep Start												
Rain_End												
Rain_Start												

Cash Crop	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Weed End												
Weed Start												
Plant End												
Plant Start												
Land Prep End												
Land Prep Start												

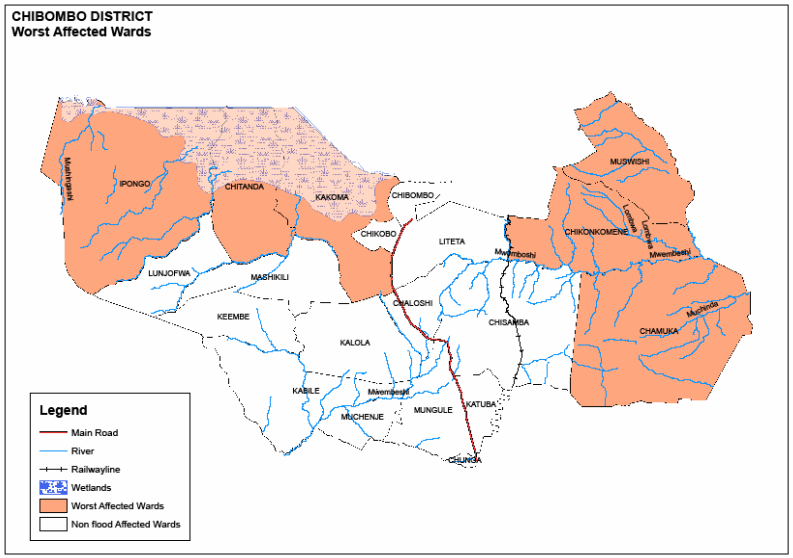
Food Source Calender												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Own Food Avaiablel_End												
Own Food Availaible_Start												
Fishing End												
Fishing Start												
Wild Food Collected_End												
Wild Food Collected_Start												
Harvest End												
Harvest Start												
Green Consumption_End												
Green Consumption_Start												

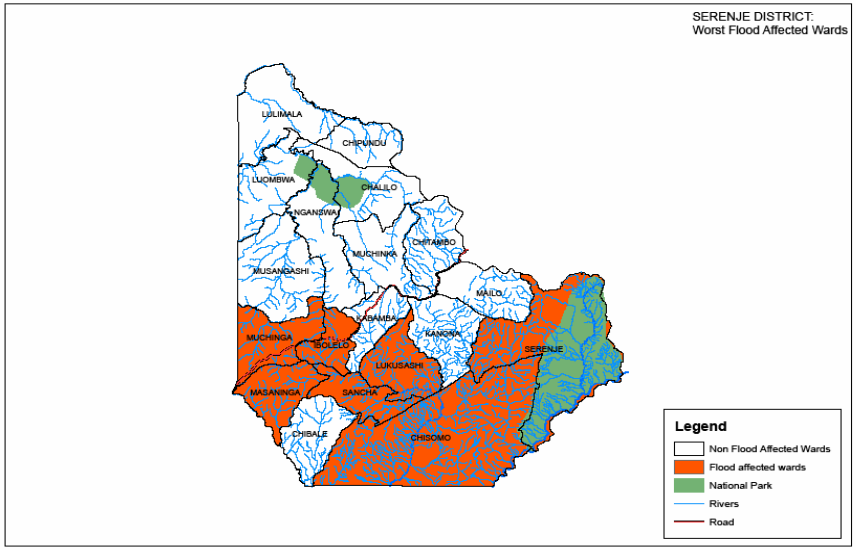
Agronomic Practices - Cassava

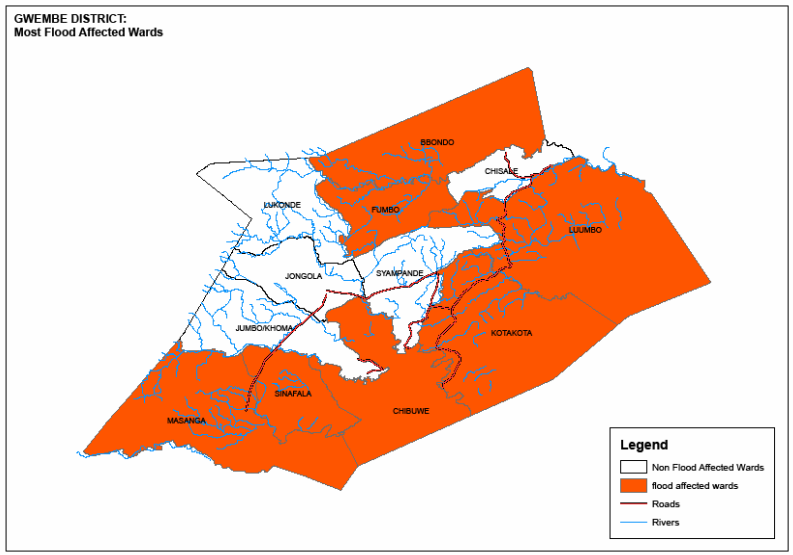
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Harvest End												
Harvest Start												
Green Consumption_End												
Green Consumption_Start												

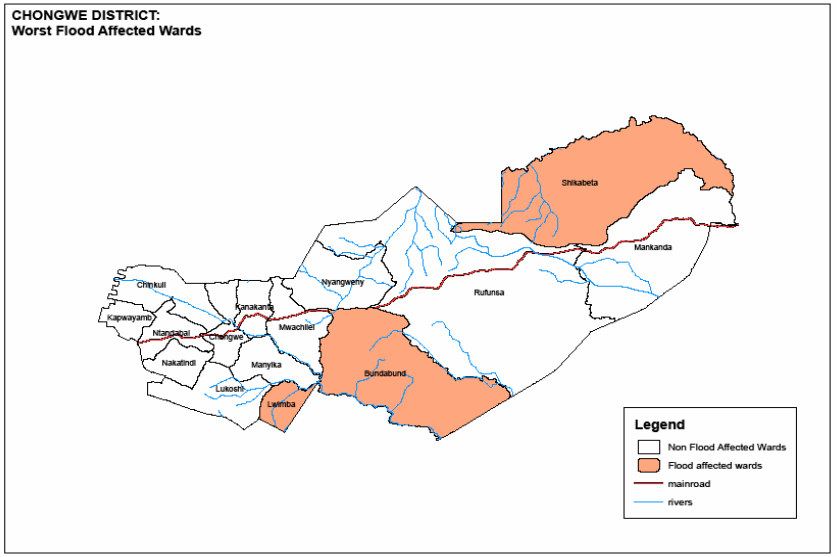
Income Sources Calendar												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Purchasing End												
Purchasing Start												
Migration End												
Migration Start												
Off Farm Labour End												
Off Farm Labour Start												
Farm Labour End												
Farm Labour Start												

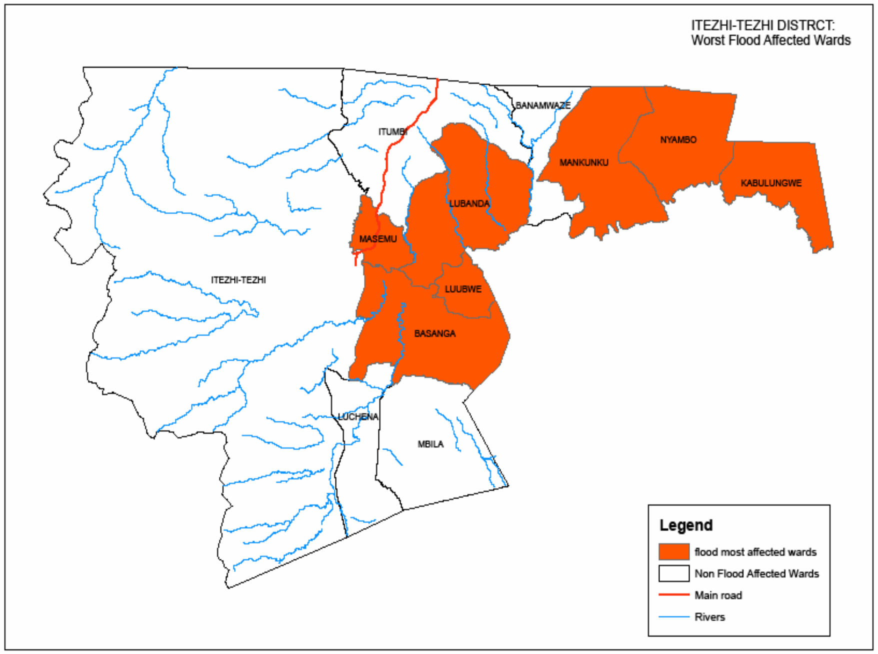
Annex 7: Maps Showing Severely Affected Wards

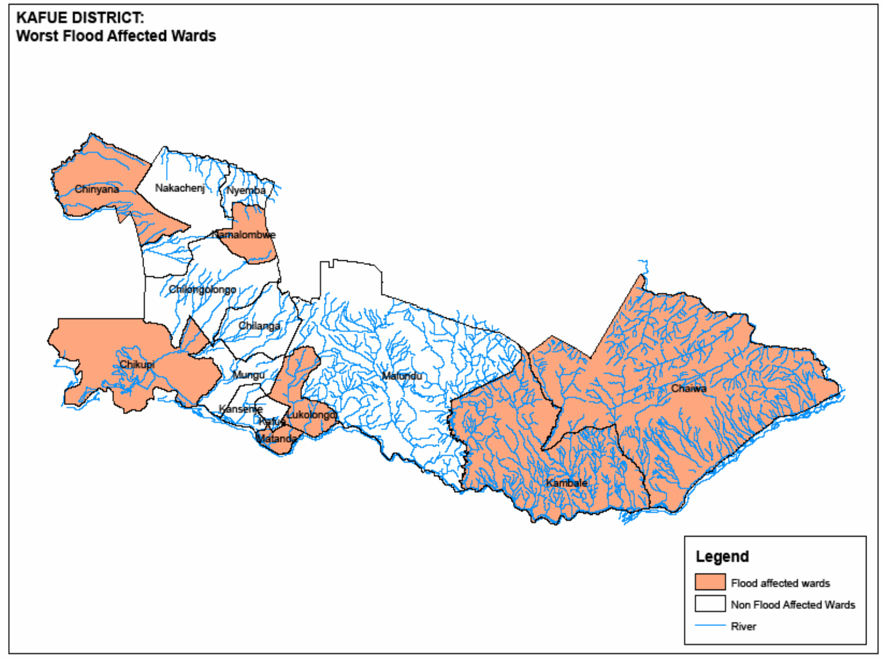


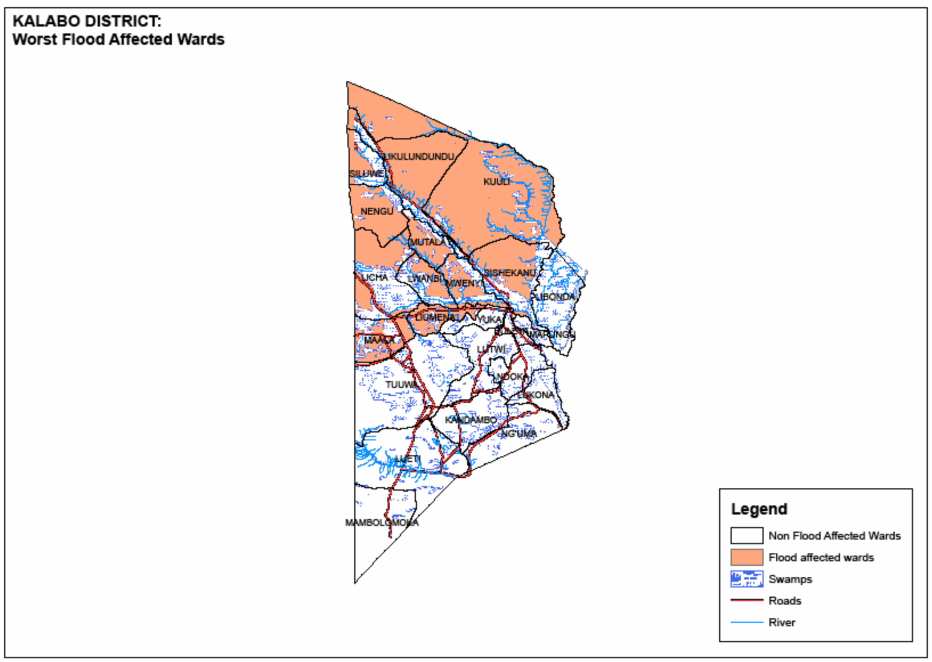


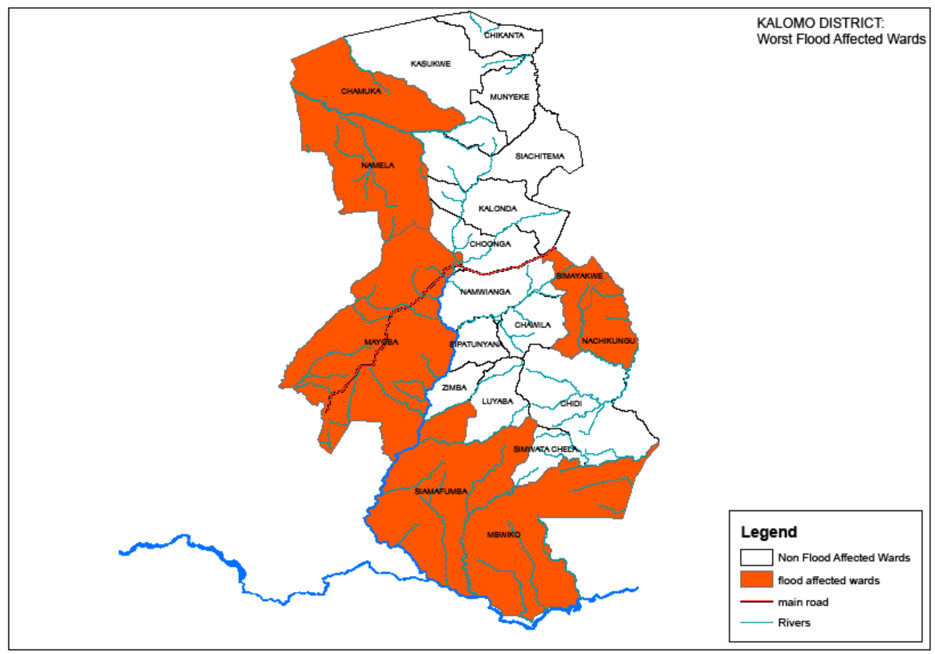


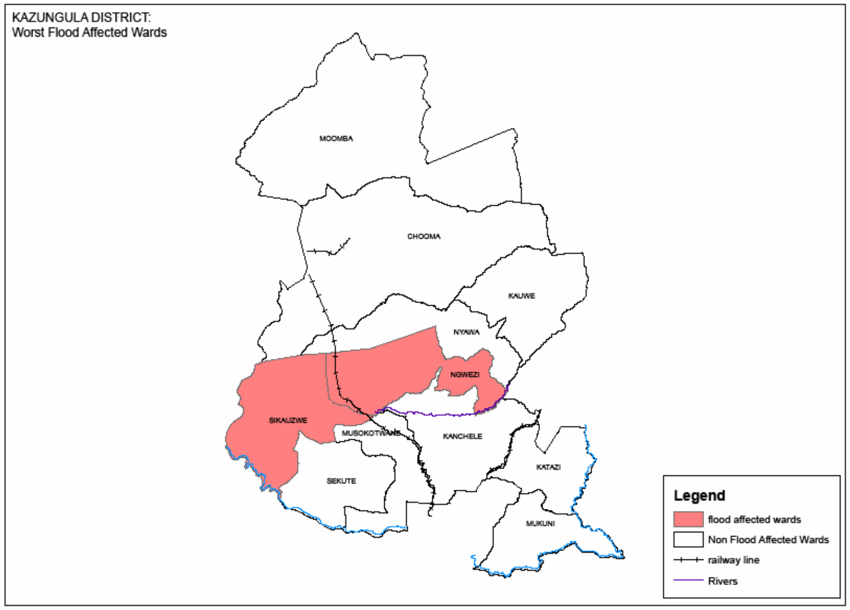


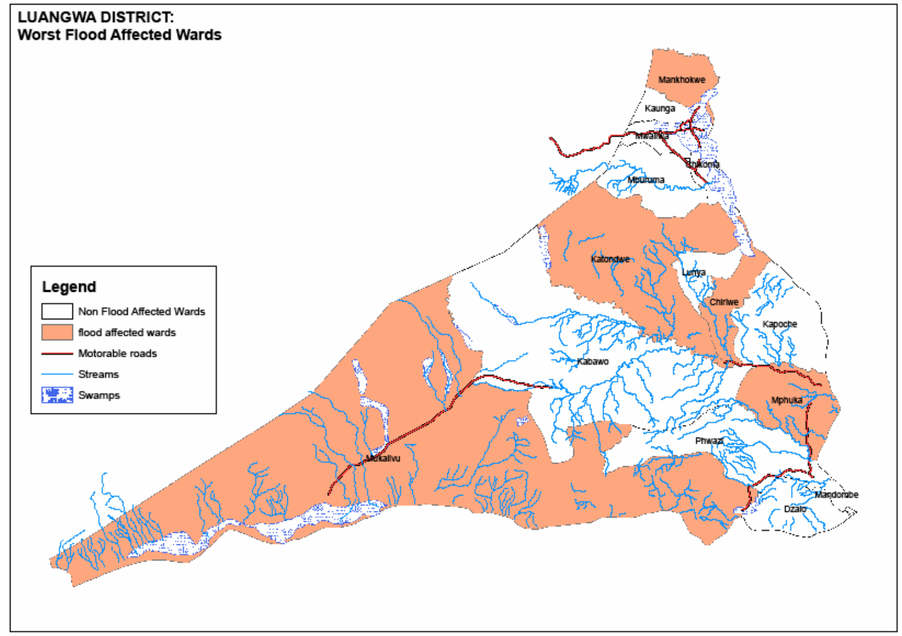

ITEZHI-TEZHI DISTRCT:
Worst Flood Affected Wards
BANAMWAZE
ITUMBI
NYAMBO
MANKUNKU
KABULUNGWE
LUBANDA
MASEMU
ITEZHI-TEZHI
LUUBWE
BASANGA
LUCHENA
MBILA
Legend
flood most affected wards
Non Flood Affected Wards
Main road
Rivers

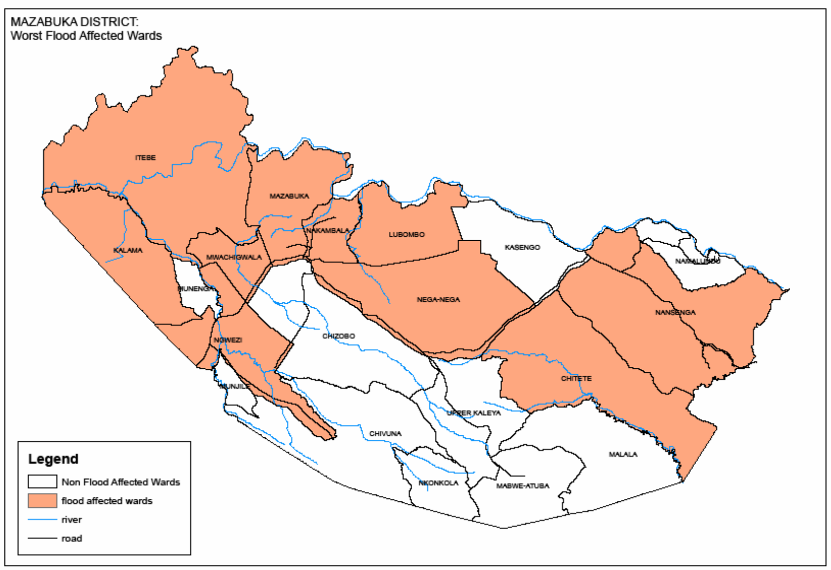

KAFUE DISTRICT:
Worst Flood Affected Wards
Chinyana
Nakachenj
Nyemba
Namalombwe
Chilongolongo
Chilanga
Chikupi
Mungu
Mafundu
Chiawa
Kanseme
Lukolongo
Matanda
Kambale
Legend
Flood affected wards
Non Flood Affected Wards
River

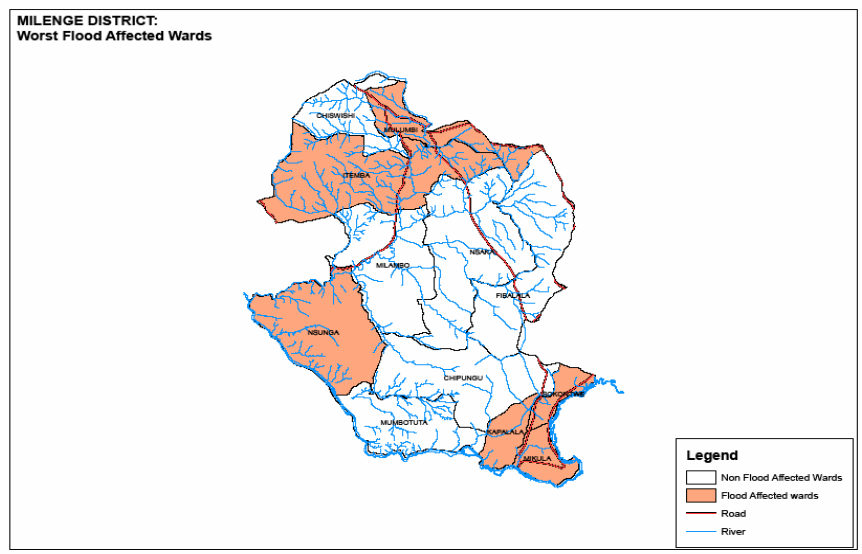

KALABO DISTRICT:
Worst Flood Affected Wards
SIKULUNDUNDU
SILUWE
KUULI
NENGU
MUTALA
SISHEKANU
LICHA
LWANBI
MWENYI
LIBONDA
LIUMENA
YUKA
LUTWI
TUUWA
KANDAMBO
NG'UMA
LIUETI
MAMBOLOMOKA
Legend
Non Flood Affected Wards
Flood affected wards
Swamps
Roads
River

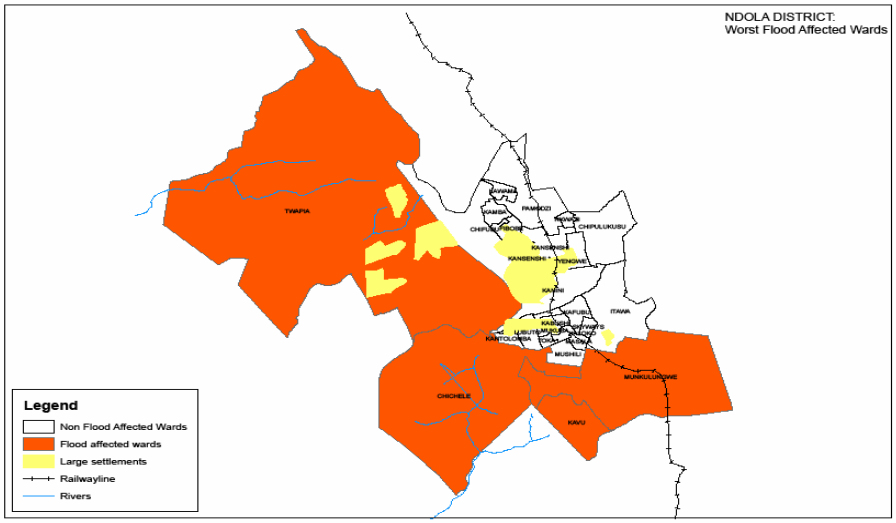

KALOMO DISTRICT:
Worst Flood Affected Wards
CHIKANTA
KASUKWE
CHAMUKA
MUNYEKE
SIACHITEMA
NAMELA
KALONDA
CHOONGA
SIMAYAKWE
NAMWIANGA
CHAMILA
NACHIKUNGU
MAYOBA
SIPATUNYANA
ZIMBA
LUYABA
CHIDI
SIMWATA CHELA
SIAMAFUMBA
MBWIKO
Legend
Non Flood Affected Wards
flood affected wards
main road
Rivers

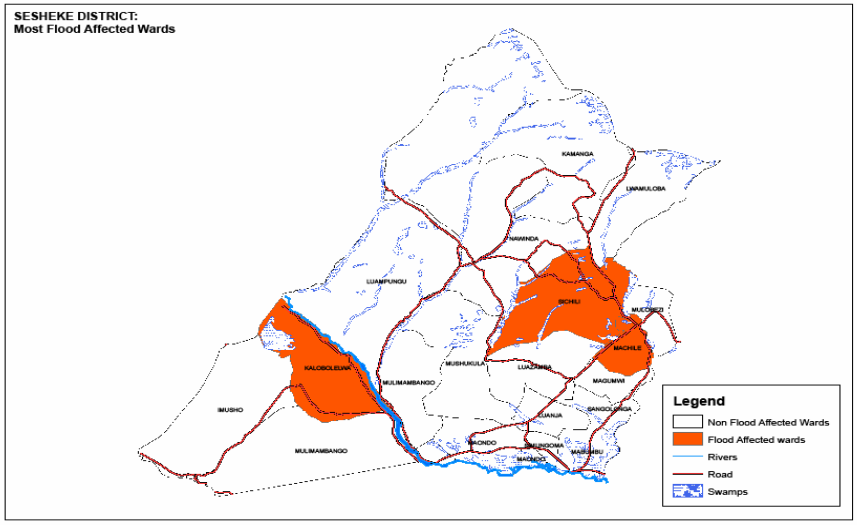

KAZUNGULA DISTRICT:
Worst Flood Affected Wards
MOOMBA
CHOOMA
KAUWE
NYAWA
NGWEZI
SIKAUZWE
MUSOKOTWANE
KANCHELE
KATAZI
SEKUTE
MUKUNI
Legend
flood affected wards
Non Flood Affected Wards
railway line
Rivers

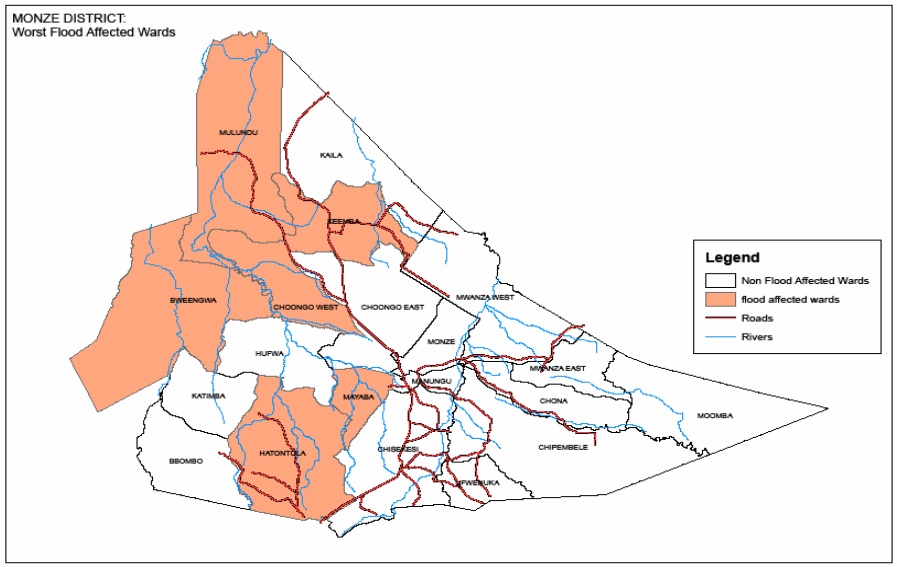

LUANGWA DISTRICT:
Worst Flood Affected Wards
Mankhokwe
Kaunga
Katondwe
Chiriwe
Kapoche
Kabawo
Mphuka
Phwazi
Mandombe
Dzalo
Legend
Non Flood Affected Wards
flood affected wards
Motorable roads
Streams
Swamps

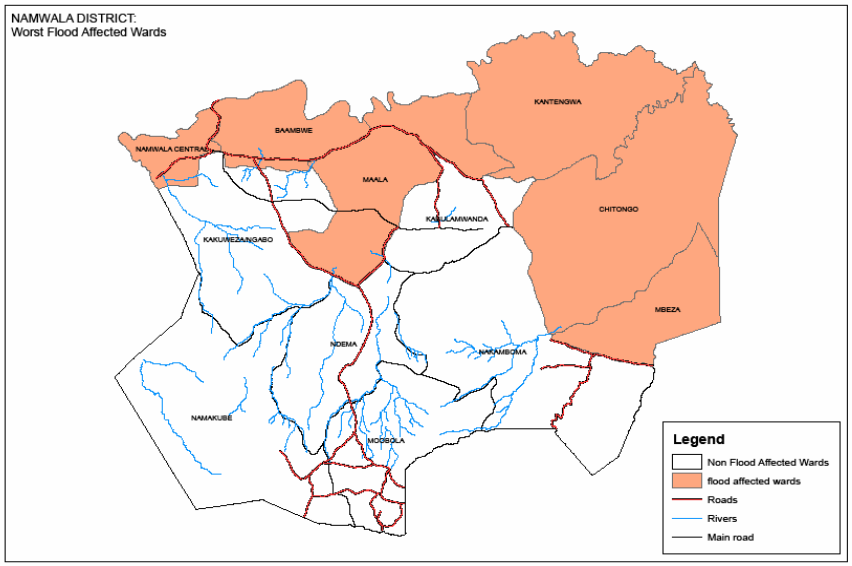

MAZABUKA DISTRICT:
Worst Flood Affected Wards
ITEBE
MAZABUKA
KALAMA
MWACHISWALA
LUBOMBO
KASENGO
NEGA-NEGA
NANSENGA
NGWEZI
CHIZOBO
CHITETE
UPPER KALEYA
CHIVUNA
MALALA
NKONKOLA
MABWE-ATUBA
Legend
Non Flood Affected Wards
flood affected wards
river
road

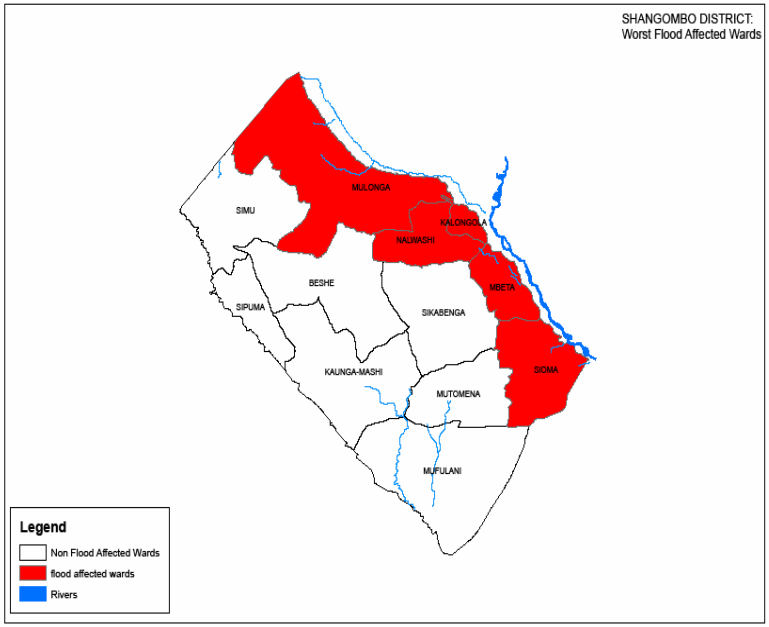

MILENGE DISTRICT:
Worst Flood Affected Wards
CHISWISHI
MULUMBI
TEMBA
MILAMBO
NSAKA
NSUNDA
CHIPUNGU
MUMBOTUTA
KAPALALA
MIKULA
Legend
Non Flood Affected Wards
Flood Affected wards
Road
River

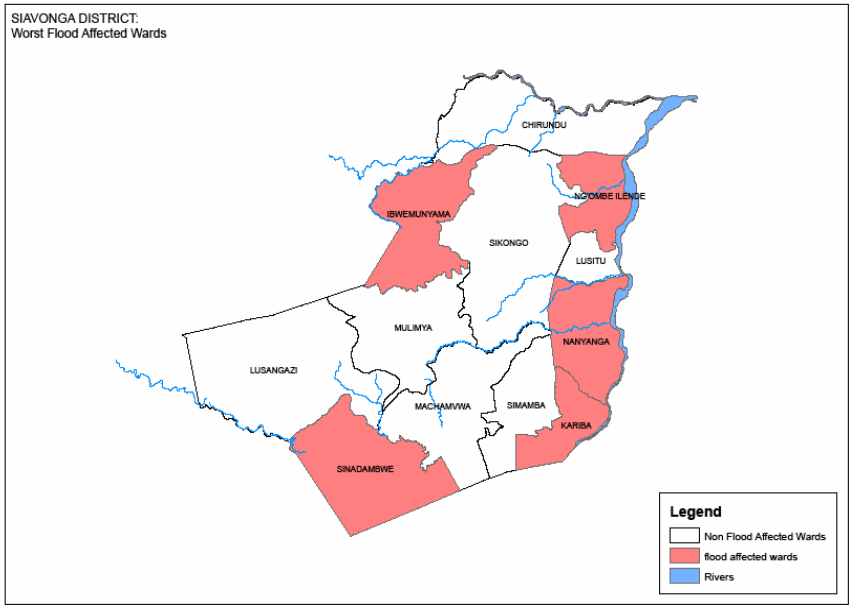

NDOLA DISTRICT:
Worst Flood Affected Wards
TWAPIA
CHIPULUKUSU
KANSENSHI
KAVU
ITAWA
MUSHILI
MUNKULUNGWE
CHICHELE
Legend
Non Flood Affected Wards
Flood affected wards
Large settlements
Railwayline
Rivers

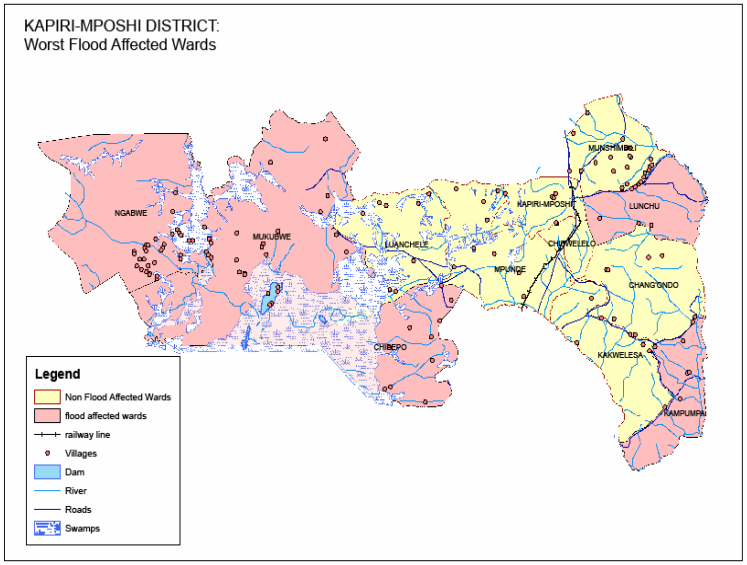

SESHEKE DISTRICT:
Most Flood Affected Wards
KAMANGA
LUAMPUNGU
KALOBOLELWA
MULIMAMBANGO
IMUSHO
SICHILI
MACHILE
MAGUMWI
SANGOLUNGA
Legend
Non Flood Affected Wards
Flood Affected wards
Rivers
Road
Swamps

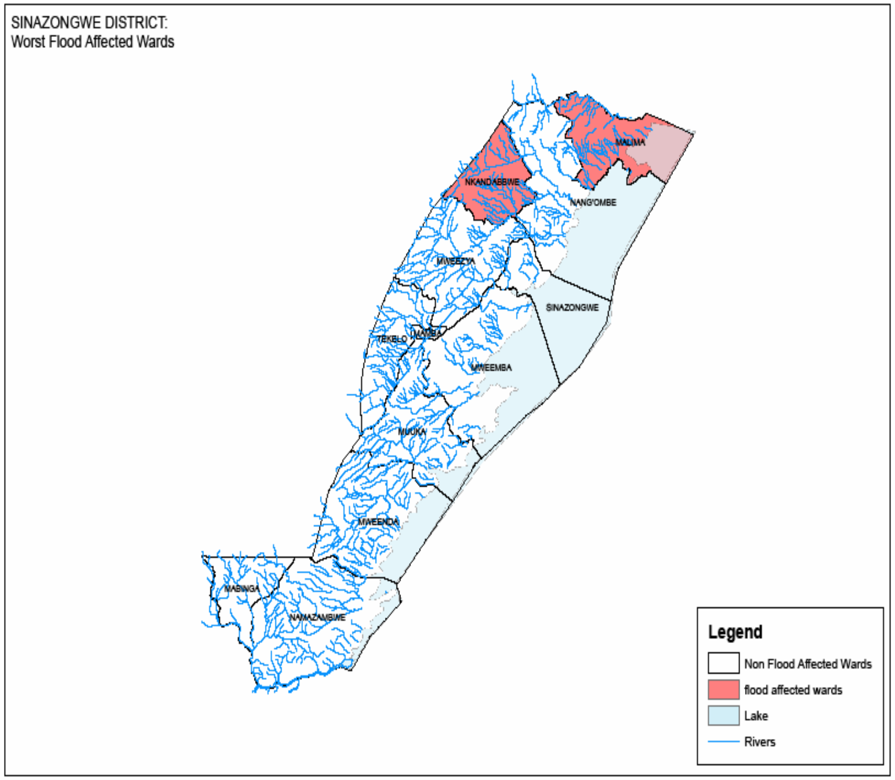

MONZE DISTRICT:
Worst Flood Affected Wards
MULUNDU
KAILA
LEEMBA
SWEENGWA
CHOONGO WEST
CHOONGO EAST
MWANZA WEST
MONZE
HUPWA
MWANZA EAST
MAYABA
CHONA
MOOMBA
KATIMBA
BBOMBO
HATONTOLA
CHIPEMBELE
Legend
Non Flood Affected Wards
flood affected wards
Roads
Rivers

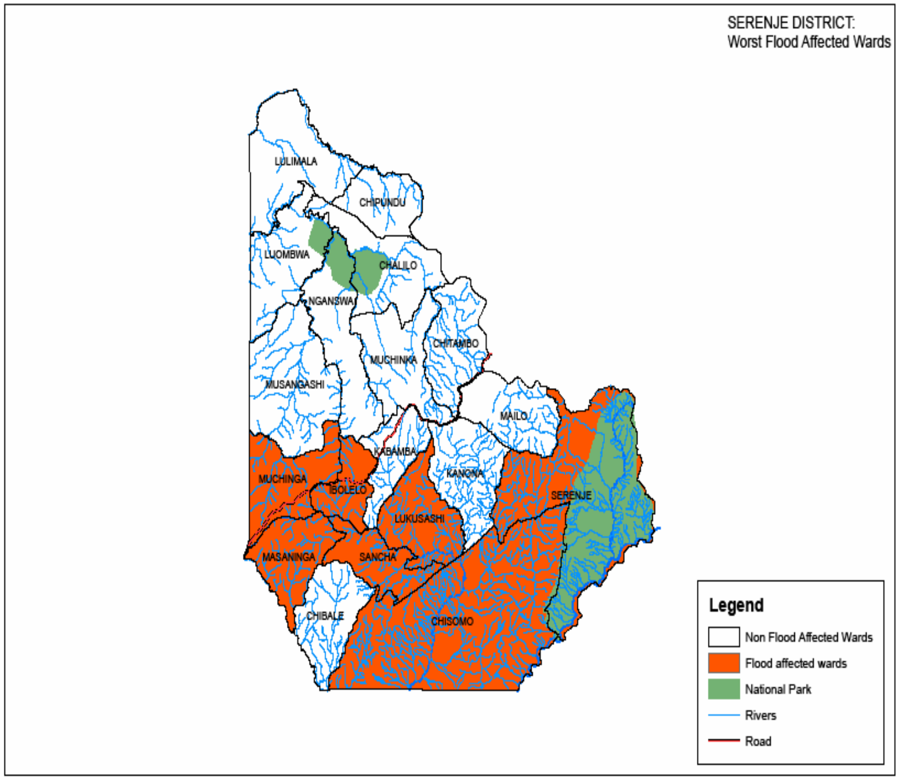

NAMWALA DISTRICT:
Worst Flood Affected Wards
KANTENGWA
BAAMBWE
NAMWALA CENTRAL
MAALA
CHITONGO
KAKUMEZAANGABO
MBEZA
NDEMA
NAMAKUBE
MODBOLA
Legend
Non Flood Affected Wards
flood affected wards
Roads
Rivers
Main road


SHANGOMBO DISTRICT:
Worst Flood Affected Wards
MULONGA
SIMU
KALONGOLA
NALWASHI
BESHE
MBETA
SIPUMA
SIKABENGA
KAUNGA-MASHI
SIOMA
MUTOMENA
MUFULANI
Legend
Non Flood Affected Wards
flood affected wards
Rivers


SIAVONGA DISTRICT:
Worst Flood Affected Wards
CHIRUNDU
IBWEMUNYAMA
NGOMBE ILENDE
SIKONGO
LUSITU
MULIMYA
NANYANGA
LUSANGAZI
MACHAMVWA
SIMAMBA
KARIBA
SINADAMBWE
Legend
Non Flood Affected Wards
flood affected wards
Rivers


KAPIRI-MPOSHI DISTRICT:
Worst Flood Affected Wards
MUNSHIMBILI
NGABWE
KAPIRI-MPOSHI
LUNCHU
MUKUBWE
LUANCHELE
CHIWELELO
MPUNDE
CHANGONDO
CHIBEPO
KAKWELESA
KAMPUMPA
Legend
Non Flood Affected Wards
flood affected wards
railway line
Villages
Dam
River
Roads
Swamps


SINAZONGWE DISTRICT:
Worst Flood Affected Wards
MALIMA
NKANDABBWE
NANG'OMBE
MWEEZYA
SINAZONGWE
TEKELO
MAMBA
MWEEMBA
MUUKA
MWEENDA
MABINGA
NAMAZAMBWE
Legend
Non Flood Affected Wards
flood affected wards
Lake
Rivers


SERENJE DISTRICT:
Worst Flood Affected Wards
LULIMALA
CHIPUNDU
LUOMBWA
CHALILO
NGANSWA
CHITAMBO
MUCHINKA
MUSANGASHI
MAILO
KABAMBA
KANONA
MUCHINGA
IBOLELO
SERENJE
LUKUSASHI
MASANINGA
SANCHA
CHIBALE
CHISOMO
Legend
Non Flood Affected Wards
Flood affected wards
National Park
Rivers
Road

Annex 8: Map Showing Assessed Districts