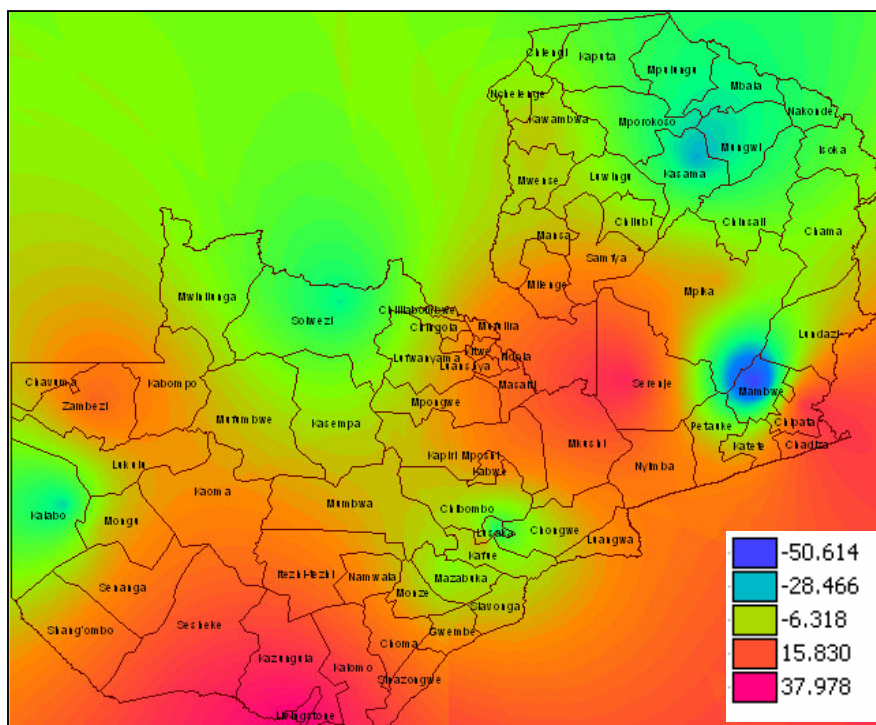




ZAMBIA
Vulnerability
Assessment Committee



January 2006 –Departure from 30yr normal (%)

Rapid Assessment on the Effects of Rainfall on Livelihoods

By

The Zambia Vulnerability Assessment Committee (ZVAC)

June 2006
Lusaka

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- Ministry of Agriculture and Cooperatives (MACO)
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EXECUTIVE SUMMARY

Major findings

The 2005/06 production season was generally good though characterized by excessive rains in some parts of the country which resulted in flooding of some low lying areas. The greatest adverse effect of the rains was on infrastructure especially roads, culverts and bridges. The adverse impact on other livelihoods was mostly moderate.

Most feeder roads became temporarily inaccessible; this coupled with the severely damaged bridges had multiple effects such as disruption of relief distribution in some areas and cutting off access to markets which supply commodities to the affected areas. This resulted in commodity shortage and therefore increased prices.

Excessive rains caused flash floods in low lying areas and a few upland areas while washing away some crops along river banks. However, the upland crop generally performed well. Part of the crop loss in affected areas was due to damage by wild animals (e.g. elephants, monkeys). The few districts (Siavonga, Shang'ombo, Sesheke, Kafue, Livingstone, Luangwa and Kazungula) with deficit staple food are all normal low producing areas with high dependency on neighbouring surplus markets. The steep drop in maize prices in all assessed districts implies an improvement in access to the staple food for those who rely on markets. Increased sale of maize by small scale farmers at very low prices due to lack of alternative competitive markets is a major concern. The season was favourable for livestock due to good pasture and easy access to water. In view of this, few disease incidences were reported. However, foot and mouth disease is of concern in Itezhi-tezhi, Namwala, Shang'ombo and Kazungula Districts.

With the increased food availability and access, meal frequency has substantially improved as most assessed households are currently consuming three meals per day. However, food diversity is still a major problem as most assessed households are still consuming mostly staple food with vegetables at harvest time. Disease incidence was found to be high among assessed households who had under-five children partly due to poor water and sanitation facilities.

Recommendations

- With improved staple food availability and access, the country should move out of the emergency mode. Isolated food problems in some of visited districts should be handled under ongoing developmental programs.
- Input support should be considered for wetland areas to enable farmers whose crops were washed away produce a second crop.
- The FRA purchase program should be enhanced, while WFP should revitalize its local purchase program to provide an alternative market for farmers.
- There is need to strengthen health and nutrition education as it pertains to dietary intake and disease prevention.
- Road rehabilitation as part of developmental projects should be considered while Government road rehabilitation and maintenance should be enhanced.

1. INTRODUCTION

1.1 Background

The 2005/06 agricultural season was generally good with widespread rainfall. Despite the timely onset of rains in most parts of the country, northern parts as well as a few parts of the Eastern Province experienced late onset. By early January 2006, most of the country had received substantial amounts of rainfall which resulted into some low lying areas experiencing flash floods. In view of the possible negative impact of adverse rainfall on general livelihoods and as a follow-up to the recommendations from the VAC Phase down exercise conducted in April 2006 using desk top analysis this, rapid assessment was conducted in 20 districts which were identified as having potential food insecurity problems (see annex 2).

1.2 Justification of the Assessment

The assessment was undertaken in order to ascertain whether the districts (two thirds) which were adversely affected by the drought during the 2004/05 season still have pockets of population vulnerable to livelihood threats such as food insecurity, health problems associated with lack of access to good sanitary facilities as well as clean and safe drinking water. Other livelihood threats considered include economic related one such as market disturbances which was as a result of adverse impact of 2005/06 rainfall on roads leading to main markets.

1.3 General Objective of the Assessment

To establish the effects of varied rainfall on livelihoods

1.3.1 Specific Assessment Objectives

- To determine the effects of varied rainfall on Health and Nutrition, WATSAN, Markets, Infrastructure, Crops and Livestock Production.
- To determine the food and non-food needs.
- To recommend appropriate response options.

1.4 Limitations

Major constraints faced by the assessment teams were;

- Inaccessibility to some target areas due to poor road infrastructure.
- Time constraint that limited the coverage as well as number of discussions with the communities.
- Conflicts in the timing of food distributions versus time of interviews in some districts visited.
- Use of household information for cross tabulation with information coming out of the district and community interviews rather than using weights to blow the samples for adequate district representation.

1.5 Methods and procedures

The assessment was conducted using a combination of qualitative and quantitative approaches. In the qualitative component, key informant interviews were conducted at district level with the District Disaster Management Committee members. During the key informant interviews, worst, moderate and least affected wards in terms of the impact of 2005/06 rainfall on livelihood were identified. In each of the identified wards, a focus group discussion was conducted with community key informants. While conducting the interviews, a judgment based approach (intelligent observations) was employed.

To supplement the key informant and focus group interviews, the household questionnaire approach was conducted in each of the identified wards representing the three categories (worst, moderate and least affected respectively). A total of 932 households were purposively sampled in the twenty visited districts. To avoid bias, the household selection process was done in a circular manner with a household sampling interval of five (5).

To establish the capacity of individual households to meet their dietary needs based on energy immediately available from own production of all cereals, per capita kilocalorie levels based on requirement per person (70% of 2100), was determined using the following formula;

$\frac{(X \text{ MT maize } *3450000/\text{MT}+ X \text{ MT sorghum } *3550000/\text{MT}+ X \text{ MT millet } *3360000/\text{MT}+ X \text{ MT Rice } * 3350000) * 100\%}{1470 \text{ kcal } * \text{district population } * 365 \text{days (annual desirable energy)}}$
--

The analytical framework above was used to determine energy surplus and/or deficiencies from the available cereals from own production.

To determine the incidences of major childhood illnesses which cause mortality, a two week recall on disease incidence among under-fives such as diarrhoea, fever/malaria and cough/difficulties in breathing was given by caretakers from some of the 932 sampled households which had under five children at the time of the assessment. Using the following case definitions, assessment of the incidence of morbidity among children was done;

- ◆ Diarrhoea: 3 or more liquid watery stools per day
- ◆ Fever: temperature, indicative of possible malaria
- ◆ Cough/difficulties in breathing: indicative of lack of access to adequate hygiene practices

2. CONTEXT

2.1 Rainfall

The 2005/06 rainy season started early in most parts of the country with the exception of northern parts (Luapula and Northern Provinces) as well as a few parts of Eastern Province. The first two dekads of November 2005 were relatively dry, however by the third dekad, significant amounts of rain fell over most parts of the country. By the end of December 2005, most parts of the country had already received normal to above normal rainfall which resulted in flooding in some low lying areas and water logging in some plateau areas.

2.2 Input Distribution

The input support program targeting small scale farmers with subsidized inputs has been running since 2000/01 production season with the major implementers being Ministry of Agriculture and Co-operatives (MACO), Program Against Malnutrition (PAM) and FAO. During the 2005/06 season, the number of beneficiaries targeted increased on account of the relatively poor crop performance during the 2004/05 production season-Table 2-1. The MACO Fertiliser Support

Programme targeted 125,000 households with maize seed and fertiliser to cultivate one hectare of maize per household. This represents an increase of 9% with respect to the previous season.

Table 2-1. Input Distribution through Support Programmes (2000-2006)

Item	Quantity by agricultural season					
	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Number of beneficiaries	60,000	135,000	305,924	336,000	134,000	257,776
Maize Seed (MT)	300	675	3,333	3,935	2,545	2,973
Fertilizer (MT)	6,000	13,500	66,600	79,445	45,900	53,143

Source: FAO, PAM, MACO

PAM provided fertiliser and seed such as maize, sorghum, millet and legumes to encourage households to diversify instead of just growing maize. FAO distributed cowpeas, Soya beans and cassava cuttings to 99,776 households in the Eastern, Southern and Western Province. Both the total amount of maize seed and fertilizer distributed increased by 17% and 16% respectively compared to the 2004/05 season.

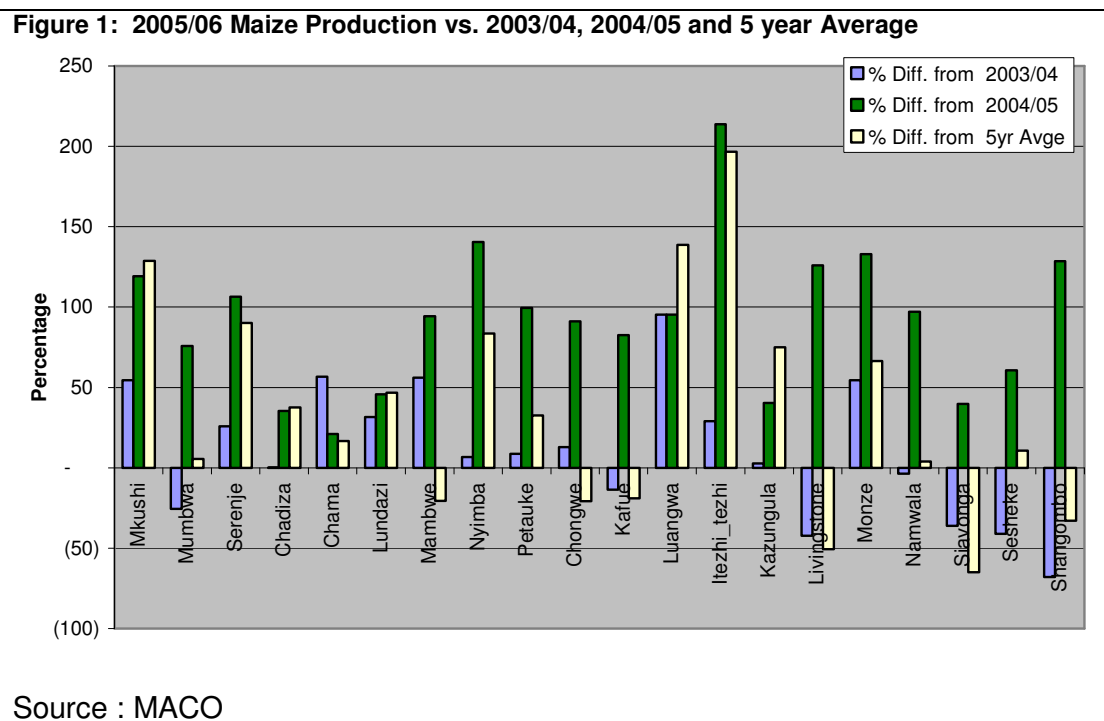
Generally, the input support programs have had a positive impact on small scale farmers' access to inputs despite assisting less than 30% of them. At the same time, small-scale farmers have become increasingly dependent on these programs. Inputs on the market have largely remained inaccessible to most of them due to high cost combined with unavailability in remote areas resulting in widespread use of recycled seeds and therefore relatively low yield.

2.3 Food Supply and Access

Zambia produced a surplus crop during the 2005/06 season with adequate staple food to meet national requirement. Generally, the 2005/06 season was characterized by an increase in food production mostly as a result of increased yield rather than increase in area planted while cash crop production dropped by significant margins as a result of reduced hectareage.

The total maize output was 64% above the previous season having increased from 866,187MT in 2004/05 season to 1,424,439MT in 2005/06 season. Compared to the five year average, the 2005/06 maize output is 53% higher. Millet production increased by 63% during the 2005/06 season compared to the previous season. Slight increases in production were recorded for groundnuts (13%), sorghum (12%) and rice (5%) while cassava remained stable. Major cash crops sharply dropped in output by large margins ranging from 24% for cotton to 41% for tobacco. The significant reductions can be attributed to reduced earnings by farmers during the previous season.

Maize has remained the major cereal in terms of both production and consumption. Using MACO statistics, the 2005/06 maize production in all twenty assessed districts increased significantly (range of 21% for Chama to 214% for Itezhi-tezhi) compared to the 2004/05 season- figure 1.



Compared to the last surplus year (2003/04), only six of the twenty districts recorded reductions in production with the highest being Shang’ombo which had 68% drop. All the districts except six produced above their five year average. Overall, significant reduction in maize output has been recorded in Shang’ombo, Livingstone and Siavonga Districts where the drops in output with respect to the 2003/04 season and five year average are over 30%. However, these three districts are maize deficit producing areas with high dependency on neighbouring district to meet their maize shortfall.

2.4 Health and Nutrition

The Zambia Demographics and Health Survey (ZDHS) conducted in 2001/02 established that only 36% of households in Zambia always have enough food to eat while 45% sometimes have enough to eat. The remaining 19% seldom have enough and are therefore food insecure. Statistics also show a decline in the nutritional status of children below five years. Based on ZDHS statistics, the proportion of stunted under-five children had increased from 40% in 1992 to 42% in 1996 and then to 47% in 2001/2. The proportion of underweight children had also increased from 25% in 1992 to 24% in 1996 and 28% in 2001/2. However the wasting has remained almost static at 5%, 4% and 5% in 1992, 1996 and 2001/2 respectively.

The cross sectional rapid nutrition assessment conducted in 60% of the drought affected districts in November 2005 to ascertain the impact of food deficit on nutrition status of the vulnerable groups also showed generally high malnutrition rates. The wasting prevalence was found to be 7.7% which is higher than the 5% acceptable level and underweight at 24.2% while stunting was very high at 33.3%. The assessment was conducted by UNICEF/WFP in collaboration with Ministry of Health and National Food and Nutrition Commission in 22 selected districts out of the 36 which were adversely affected by 2004/05 drought.

A follow up assessment in selected worst affected areas was conducted in February. The results showed prevalence of wasting of 9.5%, underweight still very high at 28.5%, the acceptable level being 10%. The stunting rate was 33.4% similar to that of the November 2005 rapid assessment.

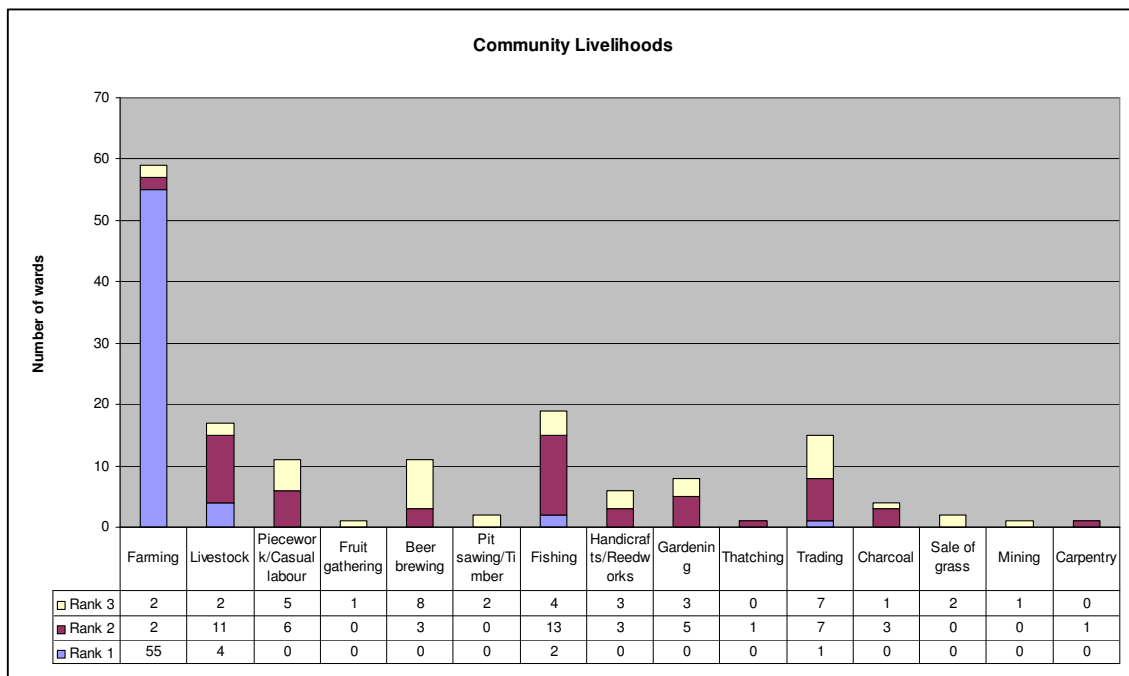
The declining nutritional status calls for action especially in the high food insecurity risk areas where droughts and floods are prevalent.

3. FINDINGS

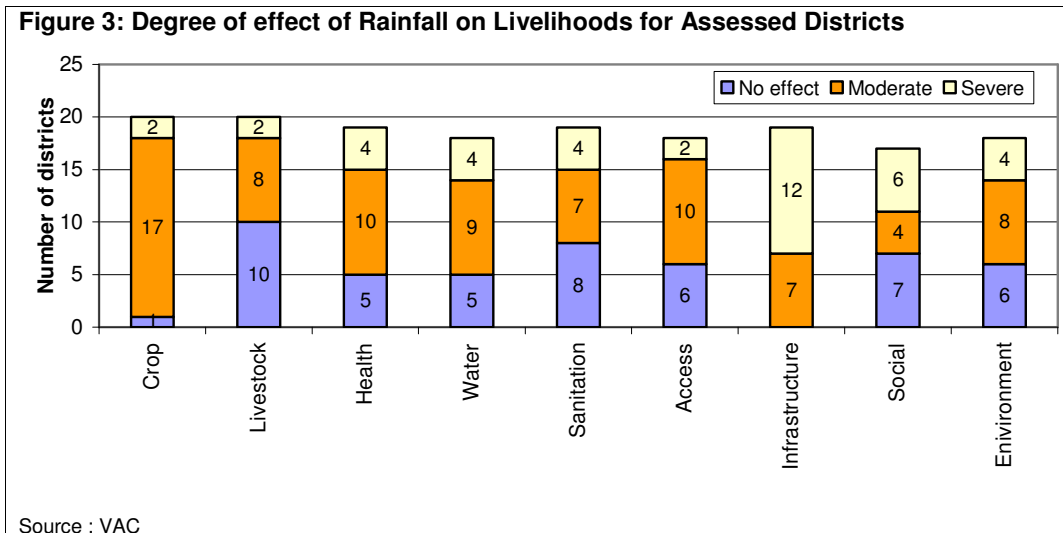
3.1 Main Livelihoods

In the districts visited crop production was found to be the main livelihood for most households. Out of the sixty wards sampled in the twenty (20) districts, fifty-five (55) wards reported crop production as the main livelihood followed by fishing and livestock production (figure 2).

Figure 2: Major Livelihoods in assessed communities



Generally, the findings indicate that the greatest adverse effect of rainfall during the 2005/06 season was on infrastructure, while effect on crops was moderate – figure 3. The effect on health, water, access and environment was also mostly moderate while livestock were least affected. However, at sub district level, there were isolated areas where some of these livelihoods were severely affected.



Among the twenty districts assessed, only Petauke did not report any negative impact on crop performance while Livingstone and Monze reported severe impact as a result of localized flooding, water logging and leaching. For the remaining districts, the effect was moderate. At sub district level, the low lying areas did experience flash floods as water collected from the upland and some crops along river banks were washed away. However, upland crop did well. Part of the crop loss in these areas was also due to damage by wild animals (e.g. elephants, monkey's e.t.c.).

The season was favourable for livestock due to good water supply and pasture. Most areas reported no major disease incidences and the common diseases reported were lumpy skin and foot rot in cattle, and new castle in chickens. The reports of Foot and Mouth Disease in Itezhi-tezhi, Namwala, Shang'ombo and Kazungula were not as a result of high rainfall intensity.

3.2 Own Production

The findings show that more households in the worst affected areas had low maize production compared to the moderate and least affected groups. Out of the 932 households interviewed, 43% of the households in the worst affected category produced less than 100Kg of maize while 40% were in the moderate group and only 18% in the least affected group. For those who produced above 1000Kg of maize, only 25% were in the worst affected group while 52% were from the least affected group. The post harvest survey data has established that at least one third of rural households are net maize purchasers in any given year. The low producing households meet part of their maize needs through purchase from income earned through various activities

At least 60% of the assessed districts practice wetland production. Households that have access to these wetlands plant their second crop (winter) some time in July/August and harvest in November/December when the lean period is just starting. For those households accessing wetlands in the valleys, planting is done sometime in April/May making it possible to do three plantings a year. This implies that although the worst affected category may have lost part of their crop due to negative impact of rainfall, most of them still have an opportunity to produce another crop. Currently PAM which supports wetland production will only provide input support to three districts namely; Kazungula, Sesheke and Mambwe with funding from DIFID. Additional support will be needed for other areas.

3.3 Sale of crops

Out of 932 households, 37% of the worst affected category's main source of income was sale of cereal crops, compared to 24% in moderately affected areas and 39% in least affected areas. At least 53% of households in worst affected areas obtained most of their income from sale of cotton compared to only 21% and 26% for moderately and least affected categories respectively. Few household in the worst affected categories rely on tobacco production while this is a major income source for the other two categories. Tobacco is grown more in the plateau areas than in the valley areas and most of the worst affected live in the valley area. More households in least affected areas reported sales of other crops as a major source of income compared to those in the other two categories. Generally, reliance on cereal sales is relatively low, while cotton is a major income source for the worst affected category.

3.4 Fishing and livestock

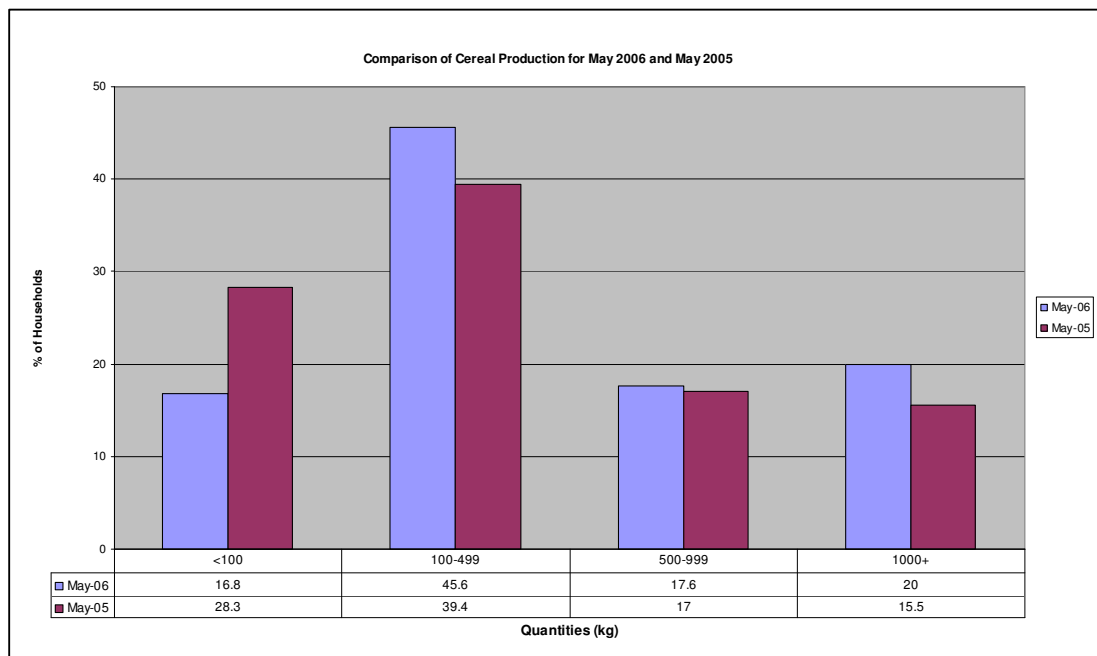
Out of 932 households interviewed, 60% of those who consider fishing as a major income source were from the worst affected areas, compared to only 30% and 10% for moderately and least affected areas respectively. More households in least affected areas indicated the sale of livestock as a major source of income compared to households in moderately and worst affected respectively. This implies that fishing is an important income source among the worst affected group in most of the visited districts.

3.5 Food security

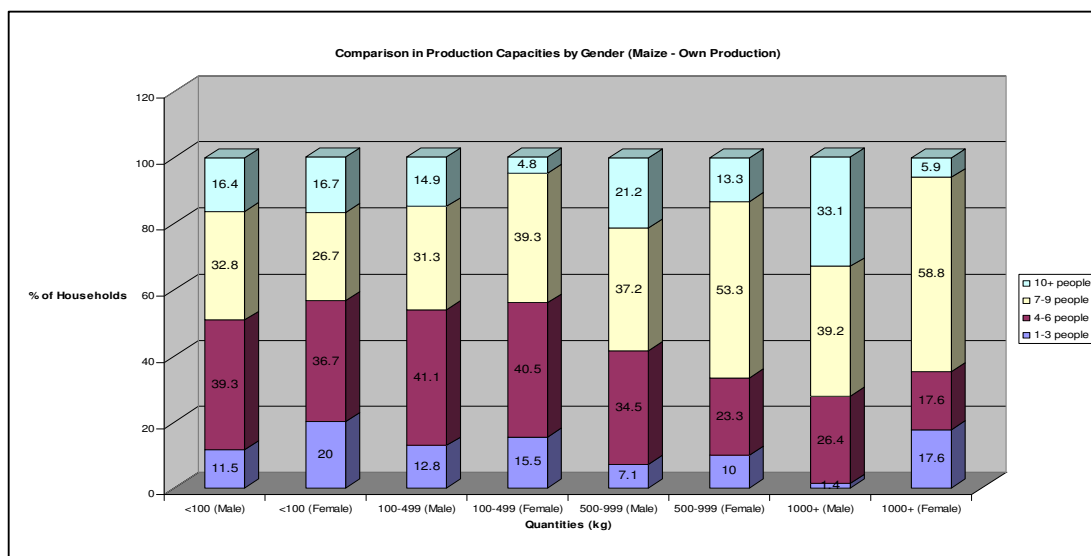
3.5.1 Availability

Out of the 932 households sampled during the survey, most households (46%) produced 100Kg to 499Kg of cereal while 20% produced above 1000Kg. The remaining households produced below 100Kg (17%) and 500Kg to 999Kg (18%).

Generally, cereal production increased in 2005/06 season compared to the 2004/05 season- Figure 4.



Using three categories of household sizes (1-3 people, 4-6 people, 7-9 people and 10+ people) it is



evident from figure 5 that production increased with household size for both male and female headed households. This implies that the level of production is a function of labour availability at household level.

From the cereal availability analysis where all the cereals from own production were converted into kilocalories to determine per capita requirement, about seven (7) districts (Siavonga, Shang'ombo, Sesheke, Kafue, Livingstone, Luangwa and Kazungula) were found to have energy levels

Table 2: Energy Surplus/Deficit Situation

District	Energy Surplus or Deficit-no Sales (Staple Only); avail energy as % of reqt	District Category
Chadiza	186.14	Rural
Chama	78.46	Rural
Chongwe	59.87	Rural
Itezhi-tezhi	89.86	Rural
Kazungula	45.67	Rural
Luangwa	35.80	Rural
Lundazi	111.36	Rural
Mambwe	65.99	Rural
Mkushi	23.82	Rural
Monze	91.99	Rural
Mumbwa	74.07	Rural
Namwala	72.68	Rural
Nyimba	162.90	Rural
Petauke	121.93	Rural
Serenje	67.61	Rural
Sesheke*	24.52	Rural
Shang'ombo	29.90	Rural
Siavonga	36.60	Rural
Kafue*	15.00	Urban
Livingstone*	1.68	Urban

extremely below than 1,470 Kcal/person/day. Despite these districts being energy deficient based on the available cereals, this does not imply a crisis situation as most households in these districts were found to be sourcing their cereals (staples) through purchases and labour exchange.

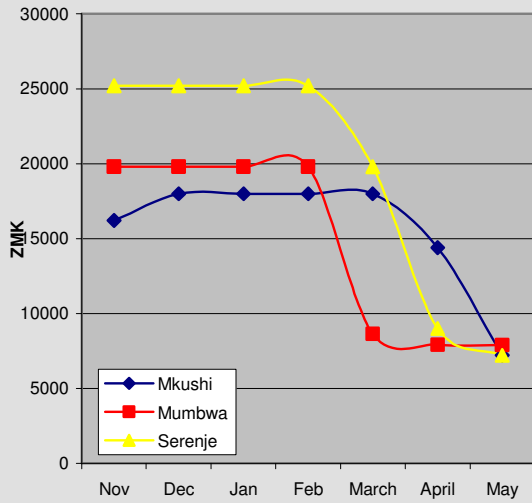
However, the situation in terms per capita requirement of energy from own production for Serenje, Mambwe and Chongwe districts indicates that energy levels are slightly below 1,470 Kcal/person/day. There are however other alternative food sources such as from purchase that could be used to fill up the gap.

3.5.2 Access

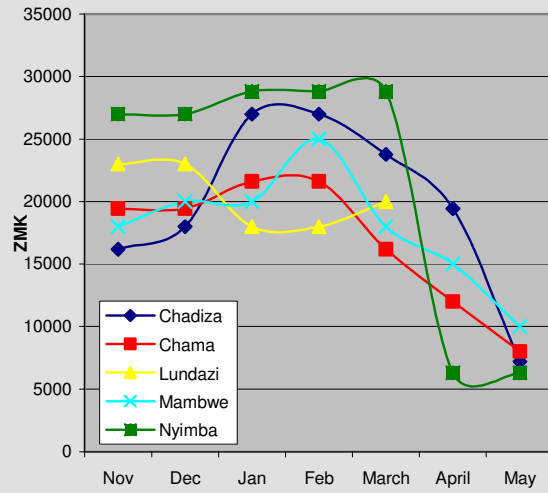
Most households in the visited districts generally have improved access to staple food. This has been attributed to a good 2005/06 production season which impacted positively on the agricultural related income sources such as sale of crops. Improved pasture and water availability for livestock has seen an improvement in livestock condition which in turn will likely improve the income base for households whose livelihood is hinged on livestock rearing.

Following the good harvest, prices of maize in all twenty districts dropped sharply an indication of significant increase in staple food supply. Generally, maize prices in the districts started falling in March. The highest drop in prices was recorded between March and April for most of the districts, which coincides with significant availability of early foods putting less pressure on the maize.

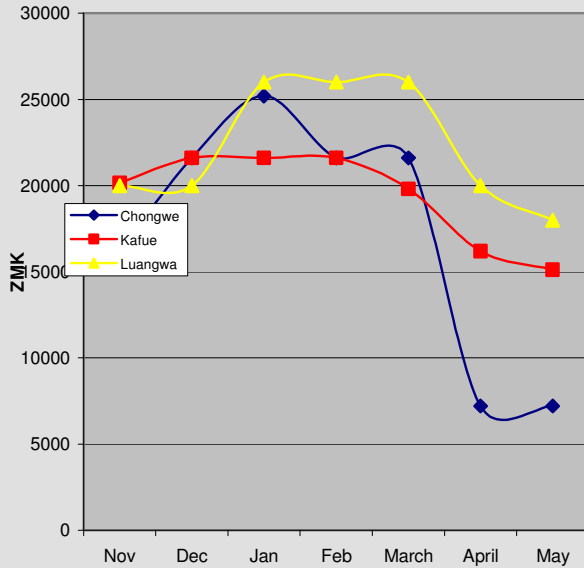
Figure 6 Maize Price Trend for Central Province



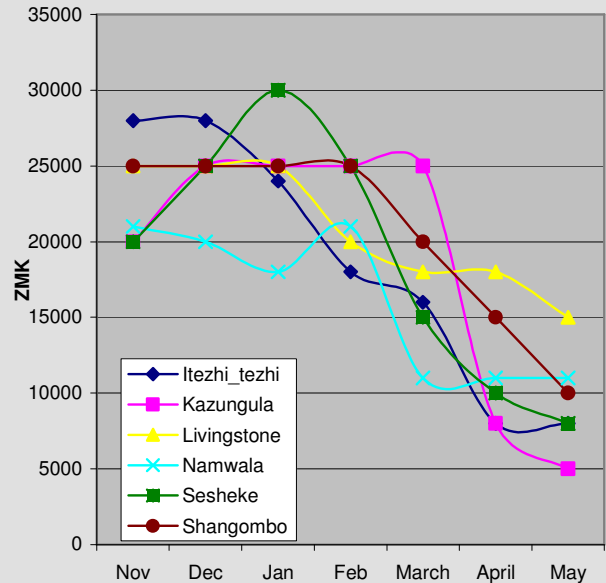
Maize Price Trend for Eastern Province



Maize Price Trend for Lusaka Province



Maize Price Trend for Southern & Western Province



Source: MACO District Offices

The highest drop in maize prices of over 60% were reported in Nyimba, Petauke, Chongwe and Kazungula while the least reduction of 17% was recorded in Livingstone which had also produced below average. Being an urban town with a small peri-urban population, the situation for Livingstone is not worrying as it has easy access to food surplus markets.

Generally, prices for the main staple food (maize) have substantially reduced as a result of a general improvement in the overall maize production. This entails an improvement in the purchasing power for those households who depend on purchases to source their food.

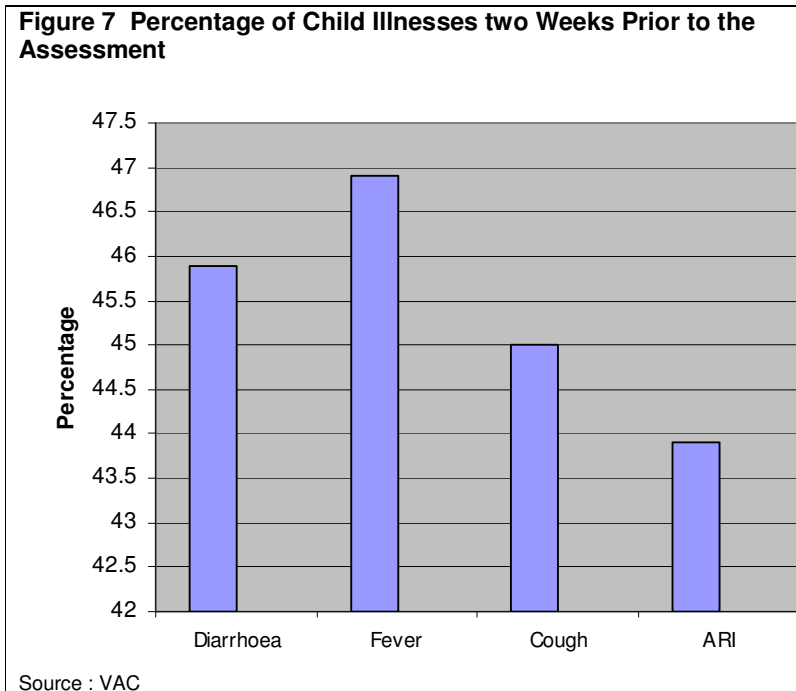
3.6 Health and Nutrition

3.6.1 Health

The major causes of childhood mortality in Zambia are acute respiratory infection (ARI), malaria and dehydration from severe diarrhoea. Morbidities generally increase during stress times such as drought years and during the rainy season.

Out of 932 households interviewed, 48.2% were headed by the 20-39 age group, while 33.4% and 17.8% were headed by the 40-59 years as well as 60 + years age groups respectively.

Figure 7 Percentage of Child Illnesses two Weeks Prior to the Assessment



Illnesses were common among under-five children in most of the visited households. A total of 53% of the children were reported to have been sick within the two weeks prior to the survey while 47% had no illness over the same period. Of those sick, a larger percentage was suffering from diarrhoea and fever as compared to cough and ARI (See figure 7).

Past studies have shown that children with diarrhoea, cough, fever or malaria were more likely to suffer from acute malnutrition. The high disease prevalence in the assessed areas was partly to poor access

to safe drinking water, poor child feeding and care practices and unhygienic environment.

3.7 Nutrition

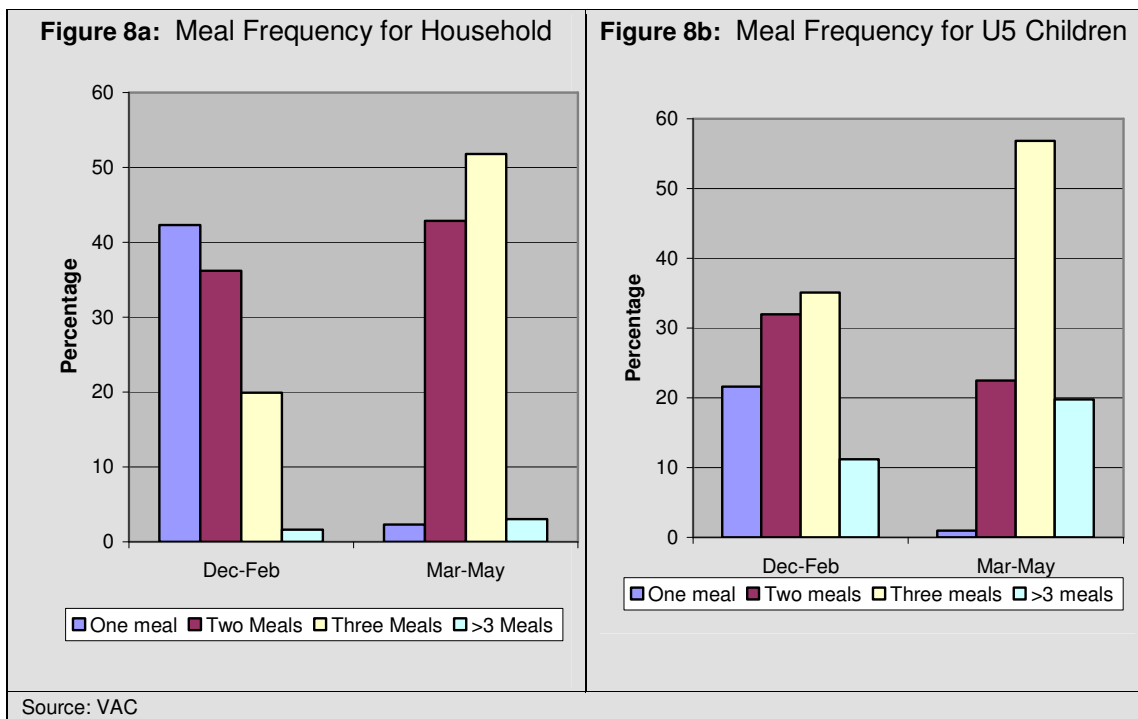
3.7.1 Vitamin A Coverage

Due to the importance of Vitamin A, and its relationship with malnutrition and measles, supplementation coverage over the previous six months was also assessed among the visited households. It should be noted that coverage included children below six months. Out of a total of 932 households interviewed, 63% had under-five children while 37% did not have. Of those with under-five children 80% had children that had received vitamin A while the remaining had not. The high vitamin A supplementation coverage in the visited households was attributed to mothers becoming more enlightened on importance of vitamin A, through the bi-annual child health week events.

3.7.2 Number of Meals

The number of meals a family takes can help to determine adequacy of energy and protein intake as the number of meals change with the prevailing food security situation in the household.

The survey revealed that meal frequency pattern varied between the two periods under comparison (figure 8). During the December to January period, most households (42%) reported



having had only one meal per day, while 36% had two meals and only 20% had three meals. The remaining 2% had more than three meals a day. However, the scenario changed during the March to May period as the majority (52%) of households had three meals a day while 43% had two meals and only 2% had one meal. In addition, the number of households eating more than three meals a day increased from 2% in the December-February period to 3% in March-May period.

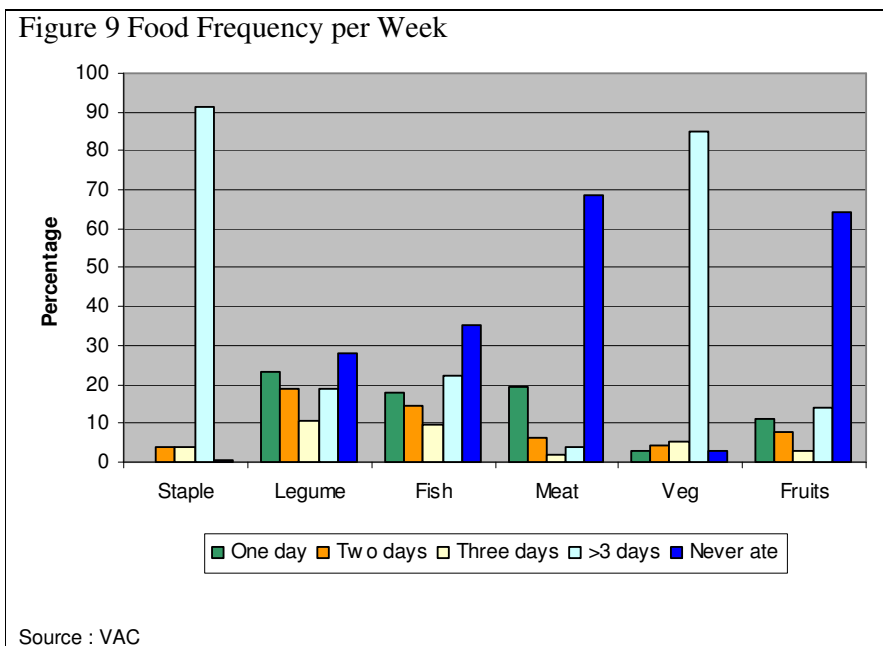
Meal frequency for children under-five was also showing a similar pattern. During the December to February period, only 35% of children were having three meals a day, 32% two meals a day and 22% only one meal a day. In the March to May period, a larger percentage of children (57%) had three meals, 22% had two

meals and only 1% had one meal per day. The number of children who had more than three meals increased from 11% around December to February to 20% in March to May period.

This could be attributed to differences in production performance related to the two reference periods. The 2004/05 production season was characterized by partial drought reducing food available to households during the period from December 2005 to March 2006. The good seasonal performance of the 2005/06 growing season has on the other hand resulted in high food availability for most households during the March to May 2006 period. It should however be noted that the months between Dec-Feb months are lean months while March-May are harvest months when most households normally have plenty of food. This may also imply that nutritional deficiencies are higher around the Dec-Feb period as one or two meals may not provide adequate nutrients required by the body. This is more crucial among children who require more nutrients per body weight as they are growing fast.

3.7.3 Food Frequency Per week

The frequency of food consumed in terms of food groups helps to determine the quality of diet in terms of diversity. The findings showed a high intake of staples (92%) and vegetables (85%) more



than three days per week (figure 9). The rest of the food groups were less consumed as findings showed less than 20% consumption per week of other foods among the assessed households. Generally, there was very low intake of meat, fruits, fish and legumes. This implies that the assessed households have inadequate dietary diversity.

The fact that at harvest time (May) households still seemed to consume mostly staples and

vegetables may be an indication of worse dietary patterns during the lean period.

3.8 Water and sanitation

3.8.1 Water

Majority (56%) of the households interviewed use boreholes as their main source of water while 19% use the river. Another 14% of the total households use unprotected well, 6% use protected well and 5% use the spring and other sources respectively. This indicates that a lot of people still have poor access to safe drinking water

Results from the assessment indicate that only 32% of the households interviewed treat the drinking water while the remaining 68% do not. Of those who indicated treatment of water, 86% use chlorine, 13% use boiling method and the remaining 1% use other methods.

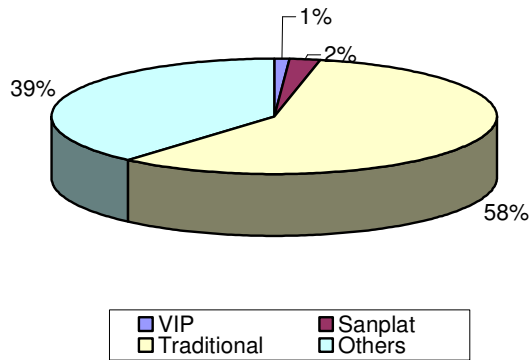
Data also show that households which were not treating water had higher cases of diarrhoea than those who treated the water. Out of 212 households that reported having diarrhoea cases, 76% were not treating, and however, the methods of treatment seemed to have a bearing on the levels of diarrhoea cases. Households using chlorine as a method of water treatment had higher cases of diarrhoea (21%) than those who were using boiling (3%) as a method of treating. This can be attributed to the possibilities of families running out of chlorine at certain times and therefore opting to use untreated water.

The prevalence of diarrhoea was also higher (46%) in households which reported good water quality compared to 20% who reported fair water quality and 23% who reported poor water quality. This could be attributed to the fact that households that realized had poor water quality would consider treating it before drinking as opposed to those who believed that their water quality was good.

3.8.2 SANITATION

The common type of toilets being used by the households interviewed were traditional toilets

Figure 10: Sanitary Facilities Used by Households



Source : VAC

(58%) and other types (38%), which was mainly the bush. Only 2% and 1% use the sanplat and VIP toilets respectively-figure 10. Diarrhoea was found to be more prevalent in households that were using the traditional toilets (57%) and other types (bush-41%). Only 1% of VIP and 1% of sanplat users reported diarrhoea cases. This shows that despite the fact that 58% of households use traditional toilets, the quality of the toilets are questionable due to high diarrhoea cases among the users.

The high rainfall experienced this year had considerable damage on the sanitary facilities. About 22% of the households reported damage

due to floods while a larger proportion (78%) reported no damage.

3.9 INFRA STRUCTURE

The excessive rains caused severe damage to a number of bridges, roads and culverts in most of the assessed districts making several feeder roads impassable. This had multiple effects such as disruption of relief food distribution in some areas; access to markets which supply commodities to the areas was difficult creating commodity shortage and therefore increased prices.

The impact was worst on the roads and damage on bridges cutting off some areas while temporarily making other areas inaccessible. Although the roads became accessible after the water subsided, they are in a worse off state than before the rainy season started.

4.0 CONCLUSION

- Major impact as a result of adverse rainfall was observed on infrastructure in all the districts visited. Bridges, culverts were damaged and roads have become impassable and are currently in worse off condition than before. In view of this, some areas were cut off from main markets resulting in commodity shortages and increased prices of staples.
- Rainfall impact on crops was moderate and mostly confined to low lying areas. Some farmers planted relief maize which affected yield because of loss of early planted crops.
- With the increased food supply and improved food access both at district and/or household level, there is no justification for continued emergency food relief distribution. Any isolated food problem areas to be handled under normal ongoing developmental programs.

- The impact on the livestock was generally favourable due to increased water and pasture. However, there were isolated incidences of lumpy skin and foot rot reported. Foot and Mouth Disease (FMD) was reported in Namwala, Itezhi-tezhi, Kazungula and Shangómbó districts. This outbreak was not related to high rainfall intensity.
- Generally, the impact was low on socio safety net ¹ as this does not exist in many visited districts.
- Major impact of rainfall on environment was land degradation through severe soil erosion that has resulted into gullies.
- Although dietary intake shows an improvement during the period March to May 2006 as compared to the period December 2005 to February 2006 due to good harvest, the pattern is likely to reduce in the next few months due to aggressive selling of the cereal crop in most of the assessed areas.
- The high disease prevalence due to poor water and sanitary facilities in the assessed areas is likely to further worsen the nutrition situation if no public health interventions are put in place.

5. RECOMMENDATIONS

5.1 Food based interventions in the short term

- Introduce developmental projects such as rehabilitation of damaged feeder roads to facilitate physical access to markets.
- WFP to revitalise the local purchase program in order to provide market to households who have already started selling their maize at very low prices (K18, 000 – K20, 000 per 50kg).
- The country should move out of the food emergency mode. Assistance for isolated pockets of food insecurity should be through developmental programs.
- FRA purchase programs should be enhanced immediately to provide a competitive market for small scale farmers

5.2 Non food based interventions in the short term

- Agricultural inputs should be provided to households who have access to wetlands for winter cropping.
- Strengthen health education on importance of water treatment and storage.
- Ensure consistence supply of chlorine in communities especially rural areas.
- Promotion of construction of quality sanitary facilities which can stand heavy rainfall.
- Continued support to vitamin A supplementation programme, routinely and through bi-annual child health week until it's adequately integrated in the health care delivery system.

¹ Social Protection refer to social support to incapacitated, micro-credit, informal savings schemes (chilimba), and Home Based Care

5.3 Medium and long term interventions

- Introduce developmental projects such as rehabilitation of damaged main roads and bridges to facilitate physical access to markets which in turn will increase income for households whose main income source is sale of crops.
- The rehabilitation and maintenance of roads in rural areas by Government should be enhanced.
- Maintain any form of socio protection for the chronically vulnerable but within developmental context.
- Promotion of health and nutrition education on dietary intake and disease prevention to be key in all developmental programs aimed at changing behaviour on health and nutrition practices.
- Strengthen health education on importance of water treatment and storage.
- There is need to conduct an in-depth food consumption survey to determine the extent of nutritional inadequacy in affected areas. This is based on the fact that food diversity is poor in the assessed areas.
- There is need for continued support to vitamin A supplementation programme, routinely and through bi-annual child health week until it's adequately integrated in the health care delivery system.

Annex 1. Report writing and editorial team

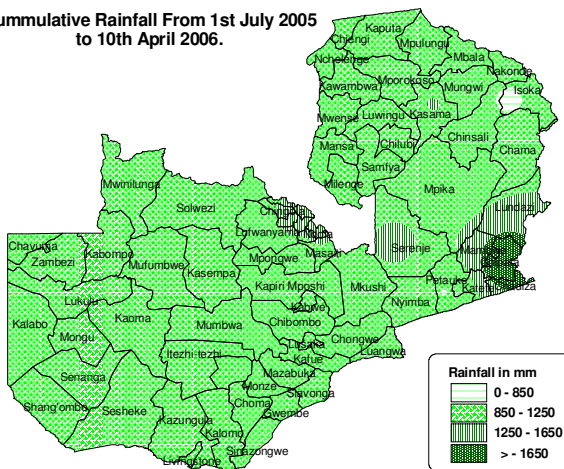
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3. Dingiswayo Banda	MACO	9. Martha	DMMU
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6. Raider Habulembe-mugode	NFNC	12. Stephen Chikwanda	MACO

Annex 2. Study areas and field research teams

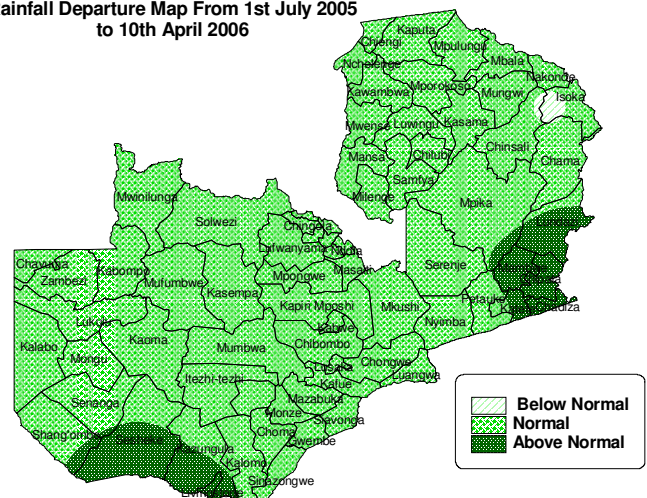
Team1	Shang’ombo, Sesheke, Kazungula and Livingstone
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Team3	Nyimba, Chadiza and Petauke
Team4	Lundazi, Mambwe and Chama
Team 5	Serenje, Mkushi and Luangwa
Team 6	Mumbwa, Itezhi-tezhi and Chongwe

Annex 3. Maps showing overall rainfall performance for 2005/06 season

Cummulative Rainfall From 1st July 2005 to 10th April 2006.



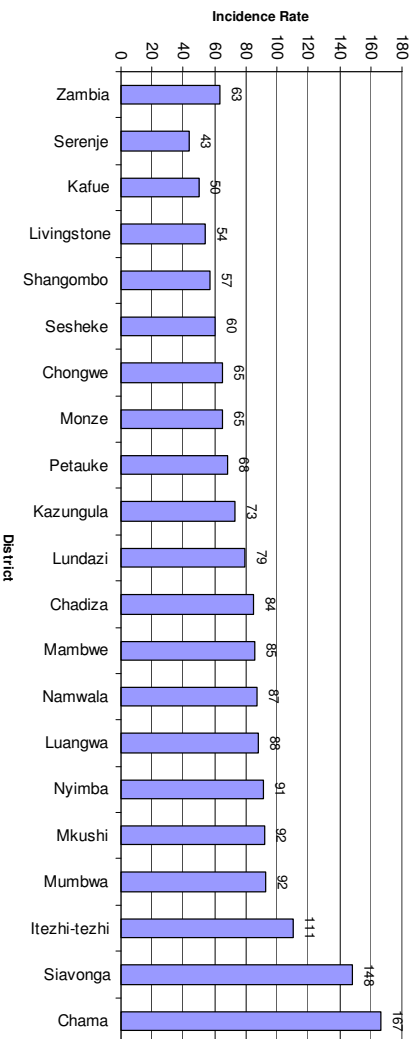
Rainfall Departure Map From 1st July 2005 to 10th April 2006



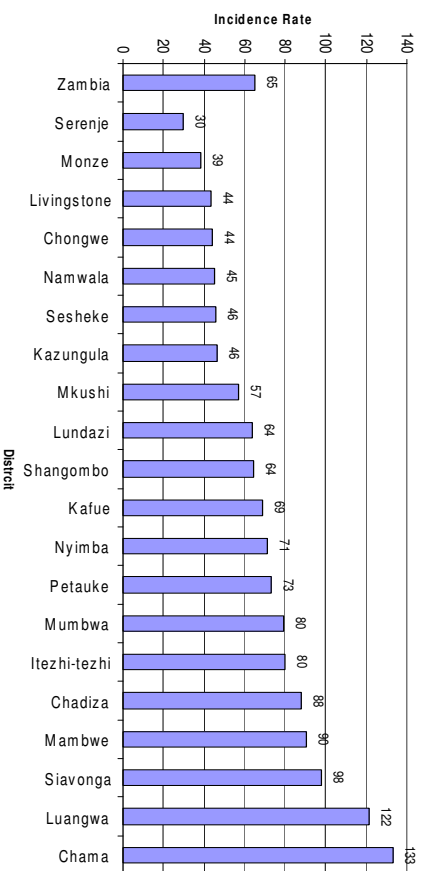
Source: ZMD

Annex 5: Selected Disease Indicators in the Sampled Districts

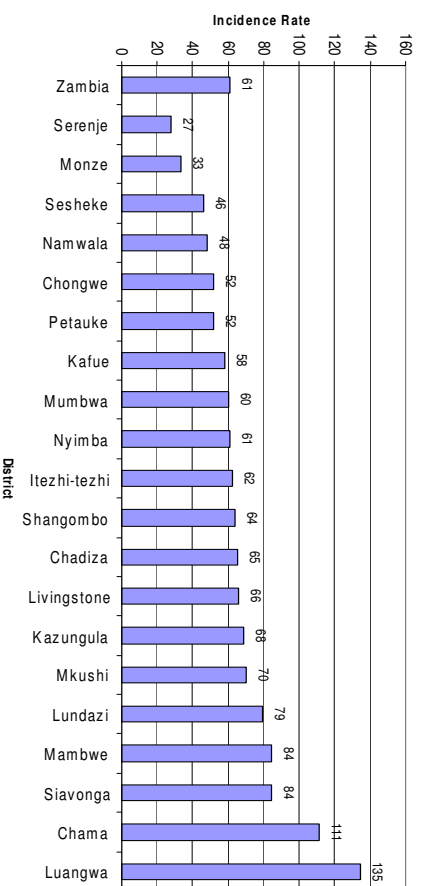
Diarrhoea Incidence Under 5 Qtr1, 2006

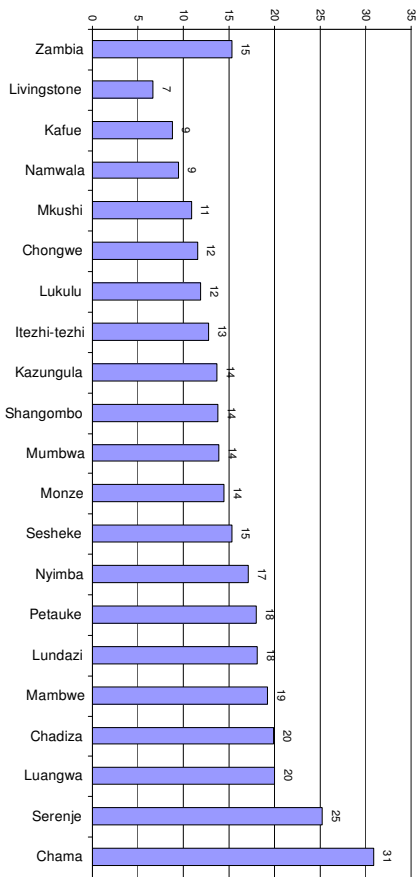


Diarrhoea Incidence Under 5 Q1, 2004



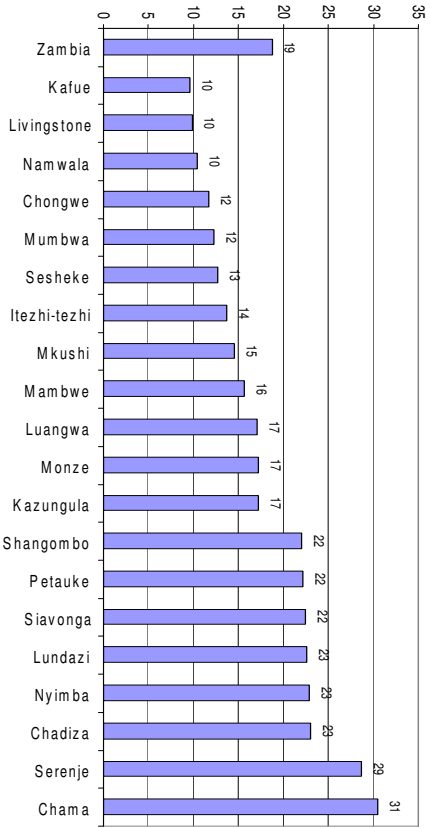
Diarrhoea Incidence Under 5, Q1 2005



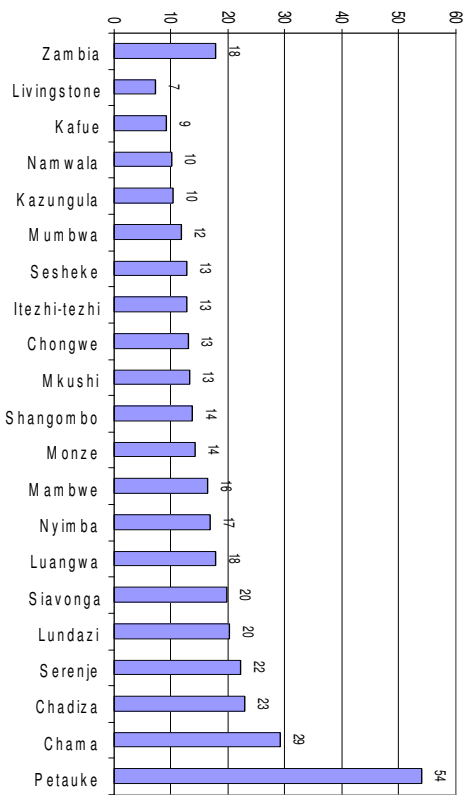


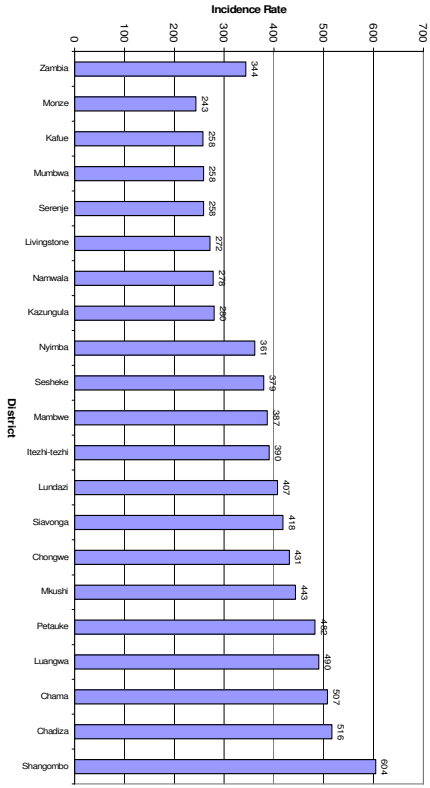
Underweight Ratio, Q1 2006

Underweight Ratio, Q1 2004

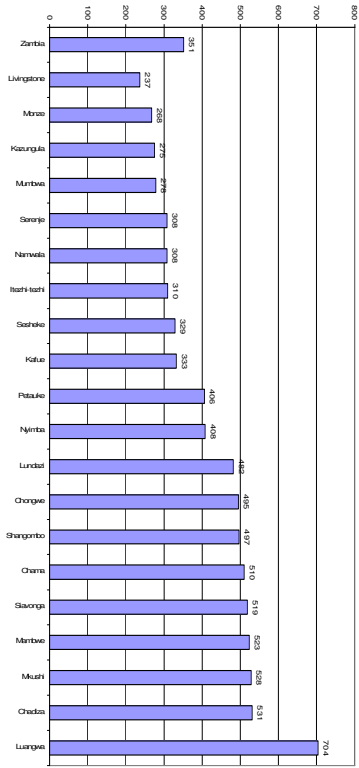


Underweight Ratio, Q1 2005

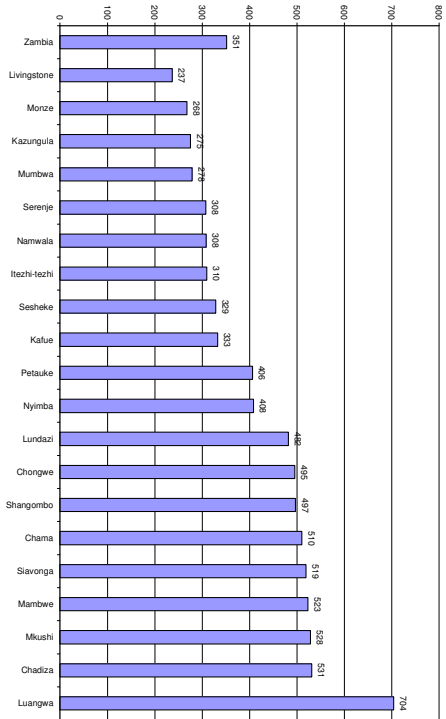




Malaria Incidence Rate Q 1, 2004



Malaria Incidence total Q1, 2005



Malaria Incidence total Q1, 2005