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Acknowledgements:

The Namibia Vulnerability Assessment Committee (Nam-VAC) would like to thank the following participants and their organisations, by contributing directly and indirectly to field work, analysis and providing the information in this report. Special thanks also goes to the Directorate Emergency Management and SADC Regional Vulnerability Assessment and Analysis (RVAA-Programme) who provided the required funds for the field work.

Amunyela Anastasia - Directorate Emergency Management

Timothy Shixungileni- Directorate Emergency Management

lifo Festus - Ministry of Regional Local Government, Housing & Rural Development

Nambala Sylvanus - National Planning Commission

Kadjimi Olavi - Ministry of Agriculture, Water and Forestry

Kalimbo Sylvia - Oshana Regional Council

Amakali Kristofina - Oshana Regional Council

Martin Ausiku - Omusati Regional Council

James Acidri - Namibia Vulnerability Assessment Committee (Nam-VAC) Advisor (RHVP)

We would also like to thank all those who participated in the discussions and contributed towards the improvement and completion of the report.

Special thanks to the men and women from the 31 Villages who took part in the exercise. We hope this report will influence appropriate interventions for the affected communities.

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July 2009

Acronyms and Abbreviations:

CBO	-	Central Bureau of Statistics
DEM	-	Directorate Emergency Management
FAO	-	Food and Agricultural Organisation
HEA	-	Household Economy Assessment
LZ	-	Livelihood Zone
MDGs	-	Millennium Development Goals
NamVAC	-	Namibia Vulnerability Assessment Committee
NDP	-	National Development Plan
NPC	-	National Planning Commission
RVAA	-	Regional Vulnerability Assessment and Analysis
SADC	-	Southern African Development Community
WFP	-	World Food Programme

1.0 Highlights of the 2009/2010 Vulnerability Forecast

- National Food Balance Sheet: A combination of low production in communal areas, with good harvest in the commercial sector has enabled the country to produce about 50% of its annual cereal requirement. Under normal circumstances the deficit is expected to be covered through commercial imports.
- The successive floods in 2008 and 2009 compounded by drought in previous years, have eroded household coping capacity and resilience. This has resulted into increased household vulnerability to environmental risks, common hazards and economic shocks in the North Central and Eastern parts of Namibia.
- Overall trends show that agricultural productivity, particularly crop harvest in the flood affected areas was reduced due to various factors such as flood water, untimely provision of agricultural inputs, poor quality seeds, lack of fertilizer, limited household labour and draft power, lack of timely weeding and late planting of crops among others in three of the four livelihood zones within the North West, Central and Eastern parts of the country.
- The direct impact of the 2009 floods included loss and damage of crops and livestock, as well as gainful employment opportunities within the formal and informal sectors. This has reduced local availability of cereals and access to food among the poorest households. Specific losses include reduction of income derived from various livelihood activities such as agricultural labour employment opportunities, non farm and self employment opportunities. Other negative impacts included limited access to trade and markets among the directly affected population.
- Overall access to food and other non food items among the poorest households will be exacerbated by various economic factors such as extreme household poverty, loss of household income, centralized system of regional staple food markets, poor state of rural feeder roads and in some cases physical obstruction of markets due to flood waters particularly in the Caprivi region as well the possibility of an upward movement of consumer prices, which may hamper normal access to food in the 2009/10 marketing year.
- By June 2009, prices of staple foods such as Mahangu in the North Central and Maize in the North East had increased by 150% and 152% respectively compared with the 2006/07 Nam-VAC livelihood baseline prices. Despite the existing Government programmes for subsidisation of basic commodities, the poorest households do not have the ability to access subsidised markets due to poor feeder roads, irregular and high cost of transport services, lack of regular income and centralisation of key food markets in the affected regions.
- Specific policies aimed at reduction of environmental degradation as well as limiting exploitation of natural resources (construction poles, thatching grass and reeds among others) coupled with quarantine measures for purposes of controlling livestock diseases are some of the factors that will restrict access to cash income among the local population in some flood affected areas. These policies coupled with the overall impact of the floods will deepen levels of vulnerability particularly among the poorest households.

- The high levels of extreme poverty among “very poor” households subsisting at a low level of disposable income in both flood and non flood affected areas, implies the trickle down impact of the pro-poor economic growth strategies and national values aimed at inclusiveness, equitable distribution and prudent use of resources may require more spatial distribution.
- A combination of the various factors outlined above will result into varying levels of both food and expenditure deficits mainly to cover the essential livelihoods basket (seeds, fertilizer, ploughing services and education) among the “very poor” households in three of the four livelihood zones covered during the 2009/10 assessment. The table below shows a summary of livelihoods vulnerability by administrative regions in areas covered during the 2009/10 livelihoods based vulnerability assessment and analysis.

1.1 Summary of Vulnerability Analysis by Administrative Regions

Levels of vulnerability	Populations at Risk		Populations on Watch
	Missing Food Deficit	Missing Cash Deficit	
Caprivi	9,096	19,347	0
Kavango	16,891	21,029	0
Ohangwena	28,672	9,254	0
Oshikoto	22,938	4,206	0
Oshana	36,701	15,983	0
Omusati	26,378	14,300	0
Kunene	0	0	19,212
Sub totals	140,676	84,119	19,212
Total			224,795

- The livelihood based analysis shows that common risk and vulnerability factors have become the main impediments for rural household food and livelihood security. It is important for this to become a main focus of policy attention. Poorest households try to manage uncertainty using a variety of ex-ante, ex-post risk management strategies and through community support systems, but these are both fragile and economically damaging for sustainable livelihood security. Government led interventions working through food, labour or credit markets, although expensive, could be carefully designed and linked to promote both production and consumption within social protection and livelihood security interventions among the poorest people in rural parts of North Central and Eastern Namibia.

1.2 Summary of the Outcome

In October and November 2008, the Nam-VAC started a livelihoods based vulnerability assessment and analysis by initially conducting a national livelihoods zoning exercise. This process was followed by livelihoods baseline assessments and analysis in 4 of the 9 livelihood zones to be covered through Livelihoods Based Vulnerability Assessment and Analysis (LBVAA) in the country. Nam-VAC then moved to the use of advanced modelling methods in order to present its results in both food and expenditure deficits. In addition the analysis enables Nam-VAC to express its results in both maize equivalent and cash terms for the purpose of making appropriate decisions on various intervention options bearing in mind the cost implications and compatibility with long term development strategies as outlined in the National Development Plan (NDP) 3, Millennium Development Goals and National Vision 2030.

Expenditure deficit: According to the Nam-VAC analysis, expenditure deficit occurs when households can afford to purchase the balance of food required to make up 100% of energy requirements, but cannot afford to purchase all items in the essential livelihood basket. The essential livelihoods basket is comprised of items such as payment for education, health care, agricultural inputs such as quality seeds, fertiliser, ploughing services and veterinary drugs among others.

A food deficit occurs when households cannot afford to purchase the balance of food required to make up 100% of energy requirements, in addition to not being able to afford anything in the essential livelihood basket.

In each livelihood zone, the Nam-VAC has calculated a food deficit expressed as a percentage of the minimum per capita energy requirement based on the requirement of 2,100 Kcal per person per day. This information is converted into maize equivalent and cash for ease of interpretation, maize being the main staple not grown in most communal areas, but purchased in the market.

The Nam-VAC calculates the expenditure deficit by multiplying the deficit per household with the total number of affected households. The total expenditure deficit is also converted into maize equivalent to show the extent of resources required for a particular intervention or policy option.

The key rationale underlying this modelling is that, there is a sequence in household response to effects of a particular shock such as crop failure due to floods or drought conditions, which has resulted in missing of its minimum food requirements.

The first response is to adapt normal coping mechanisms such as sell of livestock. In-case this does not cover the missing food requirement; the household will draw from discretionary expenditure such as clothes and transport expenses. However if this does not cover the missing food requirement, then the household will switch to income meant for accessing essential livelihoods basket comprised of education and agricultural inputs among others. This will result to an expenditure deficit and if the missing food entitlement is likely not to be covered, even after all essential expenditure has been used to buy food, then the household experiences both expenditure and food deficit.

1.3 Levels of Vulnerability by Livelihood Zones

1.3.1 Upland Cereal and Livestock Zone:

The Upland cereal and livestock zone lies in most of the drier parts of Caprivi, upland areas of Kavango and much of Ohangwena, Omusati and Oshikoto with a small portion of Oshana region. The soils are mainly a mixture of sandy loam and windblown sandy soils drained by parallel ridges of dunes running east to west as well as seasonal rivers such as the Omatako, making it suitable for the cropping of small grain cereals such as millet (*mahangu*) and sorghum. Other crops produced in the area include beans, groundnuts, sweet potatoes, pumpkins and melons.

The 2009 floods characterised with above normal rainfall, had relatively less impact on the population in this zone compared with other neighbouring zones. However crop production is lower compared with baseline year and generally grazing and livestock conditions are not good due to poor weather conditions and outbreak of livestock diseases after the floods.

Implication of the analysis:

The “very poor” households in this zone with a population of 84,119 people are likely to face an expenditure deficit of Namibian dollars (N\$) 1,376 per household in the 2009/10 marketing year. This implies they will be unable to meet their minimum essential livelihood basket due to economic inability to afford items such as basic education and agricultural inputs (quality seeds, fertilizer and ploughing services) among others in the 2009/10 agricultural season.

The total cash required to fill the expenditure deficit is 16,535,364 N\$ or Maize equivalent of 3,307MT.

Expressed in cash terms, the expenditure deficit can be covered by 16,535,364 N\$. Expressed in maize equivalent, the expenditure deficit can be covered by 3,306MT.

1.3.2 North Central- Upland Cereal and Non Farm Income Zone

This zone lies in the north central part of Namibia, bordering Angola; it mainly covers north eastern Omusati, Northern Oshana, North West Oshikoto and Western Ohangwena regions. It covers the most densely populated part of Namibia. Drained by water courses such as Oshana and seasonal Cuvelai rivers, which flow into the Etosha pan, its vegetation cover is mainly Mopane and dense thickets. Main crops grown in the area include millet (*mahangu*) and sorghum; however overall food production is insufficient to cover people’s annual food needs. Many households in the area own cattle that are kept outside the zone, supplemented with small stock such as goats. Due to the high population density, livelihoods have been diversified particularly into non-farm income sources, such as trading, self employment activities (crafts and sell of labour)

Comparatively the 2009 floods and above normal rainfall, had a very high impact on the population in this zone, unlike the Upland cereal and livestock zone. As a result crop production reduced compared with the 2006/07 baseline year. Generally grazing conditions are poor and livestock have been affected by unfavourable climatic conditions and widespread disease outbreaks, during and after the floods. This being the second consecutive floods in this zone, preceded by drought related conditions in previous years, household coping capacity and resilience has also been eroded.

Overall the floods affected most parts of the zone resulting in to the following:

- Reduced crop harvest during the 2009 agricultural season
- Loss and damages of capital and productive assets respectively within the informal and private sector.
- Limited access to traditional sources of cash income such as small scale trade, natural resources for making local crafts, wild foods such as marula fruit and clay soils the main source of raw materials for small scale cottage industries such as local beer brewing and pottery.
- Reduction in agricultural labour (weeding and harvesting) income among the very poor and some poor households.

The situation in the zone has been worsened by the already prevailing high levels of unemployment implying the poorest households are at high risk of not meeting both their minimum survival and livelihood thresholds of 100% and 120% of energy requirements respectively.

Implication of the analysis

The “very poor” households in this zone with an estimated population of 24% (114,689 people) are likely to face a food deficit of 5% per person and an expenditure deficit of 2,115 N\$ per household as a result of switching expenditure from discretionary and essential livelihood basket to purchase of staple foods in the 2009/10 marketing season.

This implies that, the “very poor” will require 1,211MT of maize to fill the food deficit or a cash equivalent of 6,054,369N\$. The total expenditure deficit for “very poor” in this zone is 40,428,018N\$ or maize equivalent of 8,086 MT.

Expressed in cash terms the combined expenditure and food deficit for the “very poor” can be covered by 46,482,387N\$. Expressed in maize equivalent, the combined food and expenditure deficit can be covered by 9,297MT.

1.3.3 Low Land Maize and Livestock Zone

The Lowland Maize and Livestock is a spatially distributed zone, which mainly covers the low altitude areas of Caprivi region in areas such as riverine woodlands and the eastern flood plains, parts of Katima Mulilo, Impalila Island and the Kavango river basin.

The zone is drained by the Zambezi, the Kwando/Linyanti/Chobe and the Okavango rivers, which receive most of their water from direct rainfall (550-650mm per annum) and ground flowing water in Angola and Zambia. The area is characterized by flat plains with gentle slopes towards the south and fertile clay-loam rich soils known as *Sitapa* upon which much of the large scale maize in the area is grown. There are frequent floods and it is also suitable for recession cropping, particularly of maize after floods.

Comparatively the 2009 floods and above normal rainfall, had the highest impact on the population. Overall the floods affected both crops and other sources of household income. This has resulted into reduced crop harvest in the 2009 agricultural season.

Implications of the analysis:

The "very poor" households in this zone with an estimated population of 32% (25,986 people) are likely to face a food deficit of 8% per person and an expenditure deficit of 2,236N\$ per household as a result of switching expenditure from discretionary and essential livelihood basket to purchase of staple foods in the 2009/10 marketing season. However all income switched for purchase of food will still not be adequate to cover the 100% minimum annual food requirement per person.

This implies that, the "very poor" households will require 439 MT of maize to fill the food deficit or a cash equivalent of 1,580,316 N\$. The total expenditure deficit for the "very poor" in this zone is 8,300,794 N\$ or maize equivalent of 1,660 MT.

Expressed in cash terms the combined expenditure and food deficit for the "very poor" can be covered by 10,495,677 N\$. Expressed in maize equivalent, the combined food and expenditure deficit can be covered by 2,099 MT.

1.3.4 Kunene -Communal Cattle and Small Stock Zone

This zone is located in the North West of the country, specifically in North-West Kunene.

This communal cattle and small stock zone lies in the former Kaokoveld mainly inhabited mostly by Himba-speaking people. It is characterized by gravel plains and lies within an altitude of 900-1200m and has a low average annual rainfall of between 100-300mm.

Not directly affected by the 2009 floods, this zone experienced timely rainfall in the 2008/09 agricultural season resulting into good pasture conditions and adequate surface water for livestock. Overall this has contributed to good livestock conditions and relatively high production of animal products such as milk and meat among others.

Implications of the analysis:

The "poor" households in this zone with a population of 19,212 people are part of the population on watch, with a high possibility of risk to food insecurity in the 2009/10 marketing year. It is important to monitor key risk and vulnerability indicators such as price of maize meal and barter trade particularly the terms of trade for exchange of livestock with maize meal as the year draws closer to the lean/hunger period (September-December) of the 2009/10 marketing year in this zone.

2.0 Current Year Issues and Analysis

2.1 Nam-VAC Model

In the period October 2008 to June 2009, Nam-VAC carried out livelihood baseline profiling in 4 of the 9 livelihood zones to be covered under livelihoods based vulnerability assessment and analysis in the country. The Household Economy Approach, analytical framework was used to develop the livelihood profiles. The basic principle underlying the Household Economy Approach is that analyzing local livelihoods is essential for a proper understanding of the impact (at household level), of shocks such as floods, drought or market disruptions among others. Crop failure may, for example, leave one group without anything to eat because crop production is their main source of food, while another group may be able to cope because they have alternative sources of food and income that can make up for the lost crop production.

Geography and wealth are key determinants of livelihood patterns and it is for this reason that Nam-VAC focuses on analysis by Livelihood Zone to be able to pick up the specific conditions that affect households in each of the zones. This would not be possible, if one used only the administrative units of analysis. The wealth status of the household determines the options available for the access to food and income. This is the other reason Nam-VAC goes through the process of defining wealth groups in each Livelihood Zone as part of the household economy baseline development.

Having grouped households according to where they live and their wealth, the step is to generate baseline profiles for typical households in each group for a defined baseline or reference year. Food access is determined by investigating the sum of ways households obtain food, i.e. how much food they get from own crop, livestock, gifts and purchases. Information is also collected on how much cash income is earned in a year and what essential needs are met with the earned income. Once the baseline is established, analysis can be made of the likely impact of a shock or hazard in a bad year. This involves assessing how food access will be affected by the shock, what other food sources can be added or expanded to make up for the initial shortfall and what final deficits emerge after exhausting all coping strategies. **The Nam-VAC selected 2006/07 for two zones and 2007/08 for the other two zones as the baseline/reference years and therefore its current analysis reflects the impacts of the current problems on the baseline/reference situation of 2006/07 and 2007/08.**

The Nam-VAC assessment team spent 4 weeks in May and June assessing the baseline/reference situation for the Lowland Maize and Livestock Zone and current year situation in a total of 31 villages in the four livelihood zones so far covered by the livelihoods based vulnerability assessment and analysis. In each village interviews were conducted with village leaders and representatives of each of the four wealth groups, i.e. the “very poor”, and “poor”, “middle” and “better-off”. A total of 97 wealth group interviews were conducted with each interview having 5-6 participants from different households.

In addition other key informant interviews were conducted with traders and local business men to understand changes in market prices. Informal interviews were also conducted with relevant regional officials and other key informants such as livestock traders. The assessment team spent six days analyzing the field data.

2.2 The Key Parameters Assessed in May/June 2009

After the process of establishing the livelihood baseline profiles in 2008 and 2009, key parameters for monitoring were identified in each zone. Regarding food sources, a source that contributes at least 2% of total annual household minimum food energy required is considered a key parameter for monitoring. All income sources are key parameters as well as prices of food, labour, livestock and the prices of items in the Minimum Non Staple and Essential Expenditure baskets.

The key parameters assessed included;

- Household access to food from own crop production and how this compares to access in the baseline years (2006/07 and 2007/08)
- Household access to food from agricultural labour exchange and how this compares to access in the baseline year.
- Access to food from livestock and livestock products and how this compares to access in the baseline year.
- Access to income in the current year from crop sales, livestock sales, agricultural labour and other casual labour, brewing, sale of livestock products such as milk, petty trade and natural resource exploitation, i.e self employment.
- The current prices of maize, livestock (cattle, goats and poultry) in the current years and compared to 2007 and the baseline year prices.
- The price of items in the minimum non staple basket (soap, paraffin/candles, matches, vaseline, beans, cooking oil and salt) and the essential expenditure basket (education, health care and agricultural inputs)

The findings from the key parameter analysis formed the current year problem specification for the scenario modelling with the baseline data. In some cases it was difficult to estimate changes in prices due to lack of data.

2.3 Issues and Analysis

2.3.1 Crop Production

The February 2009 crop prospect report by the Ministry of Agriculture Early Warning Unit indicated a good crop prospect for the 2008/09 agricultural season. However this was before the 2009 floods. A combination of factors including the 2009 floods and heavy rainfall resulted into low crop production in communal areas, with good harvest (8% increase) in the commercial sector. This has enabled the country to produce about 50% of its annual cereal requirement. Under normal circumstances the deficit is expected to be covered through commercial imports. The national coarse grain production is forecasted at 111,100 MTs (56,900 MTs of white maize, 37,300MTs of pearl millet, 4,700MTs of sorghum and 12,200MTs of wheat)

The Nam-VAC quantified production estimates from the community interviews in respect to 2009/10 harvest and it showed a reduction in production in most of the flood affected areas. The Nam-VAC assessment compared the 2009/10 production figures with the Ministry of Agriculture, Water and Forestry (MAWF) National Early Warning Unit (NEWU) and the results were similar.

The main reasons for low crop production in three of the four livelihood zones covered were the following:

- Untimely delivery of agricultural inputs
- Poor quality seeds which affected crop germination
- Late planting of crops
- Flood waters which resulted into soil leaching and stunting of crops
- Above normal rainfall which affected cereal crops
- Lack of weeding due to flood waters and limited labour among the poorest households

As a result of late planting, some crops were affected by floods at the time of growth in February and March 2009. Meanwhile in other zones such as the Lowland Maize and Livestock there were cases of submerging of crops by flood waters, which caused people to harvest premature crops.

Trends in Cereal Production (2004-2009):

Agricultural year	Estimated production
2004-2005	154.4
2005-2006	179.0
2006-2007	116.4
2007-2008	105.7
2008-2009	165.1
2009-2010	111.3
2009 compared with Baseline Year (2006/07)	95.6%

The Nam-VAC used community level information combined with estimates for 2009 and the baseline year production (2006/07 and 2007/08) to calculate percentage changes in production that constitutes the current year cereal production in three of the four livelihood zones covered. The details of changes in cereal and other crop production problem specifications are provided in the specific sections of livelihood zone analysis.

2.3.2 Availability of casual labour

Normally the “very poor” and “poor” households access a significant portion of their minimum annual food intake and cash income from casual labour employment opportunities such as agricultural and nonfarm activities. This year such activities have been affected by the floods and above normal rainfall particularly in the Upland Cereal and Non Farm Income as well as the Lowland Maize and Livestock Zones.

As a result the current year problem expressed as a percentage over the baseline years of 2006/07 and 2007/08 in the various livelihood zones is: Upland Cereal and Livestock and Upland Cereal and Non Farm Income 50%; Lowland Maize and Livestock: 67% and Communal Cattle and Small Stock remained at 100%.

2.3.3 Casual labour wages

Casual labour is an important source of cash income for the “very poor” and “poor” households contributing up to 26% of total annual household income. The overall daily wage for casual labour did not have any significant change from the baseline prices. As such it remained at 100% compared with baseline prices.

2.3.4 Prices of Staple Foods

Over the last two years global food prices have soared posing a threat to global food and nutrition security. A number of casual factors for the dramatic food price increases have been identified and include, low global food stocks currently at the lowest in 20 years and yet demand is ever on the increase for both human and animal feed. Experts claim that, the low stock levels and high demand is responsible for the 50% of the food price increase growth.

Conversion of maize into bio-fuel production has also been identified as a major causal factor in the global food price crisis, accounting for approximately 30% of the price increase.

High fuel prices over the past were also responsible for the high food prices, pushing the cost of ploughing services/cultivation, fertilizer and transport.

Extreme weather conditions associated with climate change, causing floods and drought conditions among others are also contributing to the low crop production in the sub Saharan and southern Africa sub region.

Overall the current year situation has been worsened by the global financial crisis, highlighting income inadequacies due to reduced remittances in developing countries.

Domestic Food Prices

Although general trends show increase in staple food prices, the national and sub national food prices in the country have remained relatively stable. According to Bank of Namibia overall trend of domestic prices shows, a down ward movement in the annual rate of consumer prices, which continued during the month of May, with the annual rate of inflation decelerating at 9.6 percent from 10.0 percent in the previous month (April 2009)

The slowdown was mainly reflected in a sharp decrease in the transport category, which fell to 5.5 percent from 7.1 percent in April 2009. Never the less, with the recent increase in the pump prices of petrol, this development might be slightly reversed going forward. Overall trends of sub national food prices indicate that, the Government led price subsidisation policy may be making a major contribution towards price stability for essential commodities in the country.

There were no major changes in food prices within the centralised and subsidised regional markets in all the six regions covered under the vulnerability assessment and analysis programme.

However the poorest people in rural areas do not have access to the subsidised markets, as such they may still face some increase in food prices due to the following:

- Limited access to subsidised regional markets
- Poor feeder roads
- Irregular and high cost of transport
- Irregular access to cash income limiting their purchasing power.

Overall prices of staple foods changed by 150% and 152% for millet (*mahangu*) and maize respectively compared with the 2006/07 and 2007/08 Nam-VAC baseline prices in three of the four livelihood zones that were covered during the assessment.

2.3.5 Prices of Livestock and Livestock Products

The assessment looked at the prices of livestock and livestock products and compared them with the baseline prices. Price data for cattle, goats and chicken were collected.

In general, the prices of cattle and goats increased by 83% and 150% respectively compared with the baseline price. However there are no major changes in livestock prices within the Lowland maize and livestock zone due to the current quarantine of livestock as a result of foot and mouth disease. Specific price increases by livelihood zone are presented in sections on the analysis by livelihood zone.

Estimating changes in Chicken prices has been difficult, due to price distortions within each livelihood zone.

2.3.6 Prices of Items in the Minimum Non Staple Basket

The minimum non staple basket is constructed in the baseline to ensure that some minimum expenditure is maintained by households in the various wealth groups even in the most difficult situations. This basket contains items such as salt, cooking oil, candle, matches, domestic water, soap, beans, vegetables and Vaseline. The amount of cash income allocated to buy this basket is reserved or locked up during modelling and can therefore be converted to purchase food even in the worst case scenarios.

The price of each commodity in the basket was collected and compared to the baseline price and the overall percentage increase was 54%.

This in effect means more cash is withdrawn and allocated for the basket and therefore less is available for food purchase this year. This partly explains the food and expenditure deficits in some of the livelihood zones.

2.3.7 Price of Items in the Essential Expenditure Basket

The essential livelihoods expenditure basket contains average household expenditure such as education, health care, clothing, agricultural inputs (quality seeds and ploughing services) water for animals and in some cases cost of grinding grain.

The expenditure can be switched to buy food in times of crisis such as the 2009/10 marketing year. However this decision has major negative consequences such as children not attending school or failure to purchase vital agricultural inputs resulting into further reduction in crop production. It is therefore important to preserve this essential household livelihood basket expenditure. During this assessment, it was not possible to collect prices for all items within the essential livelihood basket. However for those items whose prices were established the change was between 12% and 77% over the 2006/06 and 2007/08 Nam-VAC baseline prices.

Unlike in the case with minimum non staple basket, the increase in the cost of the minimum essential expenditure basket means less cash is allocated to this basket thus increasing the expenditure deficit.

2.3.8 Nutrition

There are so far no nutritional surveys conducted in 2009, however the general field observations by the team is that, there are cases of malnutrition, particularly stunting among some children in the rural areas. This is also closely linked to extreme levels of poverty in some parts of the livelihood zones such as the Upland Cereal and Livestock areas in Kavango region. It is recommended that, the Ministry of Health and Social Services conducts another round of nutrition survey to have a better understanding of the general rates of malnutrition particularly in flood affected areas of the country.

3.0 Results by Livelihood Zone

3.1 Upland Cereal and Livestock

3.1.1 Main Characteristics of “Very Poor” and “Poor” households in this zone:

- Own crop production and livestock products contributes about 40-50% of annual food energy consumed.
- Agricultural and other casual labour contributes about 35-40% of annual food energy consumed
- Food purchases contributes about 25-40% of annual food energy consumed
- Main source of income include livestock sales, agricultural labour sales, self employment and social pensions.
- Remittances are not typical among the rural population in this livelihood zone.

Generally the 2009 above normal rainfall in some parts of the zone reduced crop harvest and limited access to income generation activities such as natural resource exploitation and non formal sector activities such as small scale trade and labour sales (in fields and herding) Other hazards which affected crop production included wild animals such as elephants, lions and quilea birds that destroyed some crops and livestock in specific villages such as Kambimba, Kangundja, Mpuku and Canchana in Mukwe and other constituencies of Kavango region.

The situation has been exacerbated by the prevailing extreme poverty due to dependence on poorly paid and seasonally available unskilled labor, poor condition of feeder roads limiting local trade and access to the regional subsidized staple food markets among others.

3.1.2 Current Year Situation

Though rainfall was more than sufficient for planting, most farmers indicated that rains were too much in some parts of the zone. However a combination of factors resulted into low crop harvest and poor livestock conditions compared with the 2006/07 baseline year. The following factors were particularly highlighted:

- Poor quality seeds
- Lack of weeding due to too much rainfall.
- Late planting of crops due to limited labour by some farmers
- Lack of crop diversification limiting the spread of risk of crop failure.
- Out break of livestock diseases in the aftermath of the floods.

3.1.3 Problem specification for the Upland Cereal and Livestock

Key Parameters	Percentage change from baseline
Millet production	48%
Sorghum production	48%
Maize production	80%
Beans production	35%
Price of millet (<i>mahangu</i>)	152%
Food from Agricultural labour	50%
Cash from Agricultural labour	50%
Cash from crop sales	50%
Minimum non staple basket	154%
Essential livelihood expenditure basket	112%
Price of a cow	250%
Price of a goat	183%
Price of chicken	125%

NB: 100% = normal baseline quantity or price for all problem specification tables.

The “very poor” and “poor” households in this zone purchase 25-40% of their total annual food intake and are therefore very vulnerable to market related economic shocks such as increase in staple food prices. In addition a significant portion of their annual food consumption is derived from labour exchange for food. A combination of above normal rainfall which affected weeding and agricultural labour opportunities, limited access to subsidised staple food markets, slight increase in the cost of the essential livelihood basket compounded by the already prevailing extreme levels of poverty will reduce household capacity to access the essential livelihood expenditure basket comprised of basic requirements such as education, agricultural inputs and other future investments such as restocking a key requirement for livelihoods security.

Given the above scenario, the “very poor” households with a population of 84,119 people are likely to face an expenditure deficit of 1,376 N\$ per household in the 2009/10 marketing year. This implies they will be unable to meet their minimum essential livelihood basket due to inability to afford items such as basic education and agricultural inputs (quality seeds, fertilizer and ploughing services) among others for the 2009/10 agricultural season.

The total cash required to fill the expenditure deficit is 16,264,176 N\$ or Maize equivalent of 3,307 MT.

Expressed in cash terms the expenditure deficit for the “very poor” can be covered by 16,264,176 N\$. Expressed in Maize equivalent, the expenditure deficit can be covered by 3,307 MT.

3.2 Upland Cereal and Non Farm Income

3.2.1 Main Livelihoods Characteristics of “Very Poor” and “Poor” households in this zone:

- Own crop production and livestock products contributes about 30-45% of annual food energy consumed.
- Agricultural and other casual labour contributes about 20-25% of annual food energy consumed
- Food purchases contributes about 35-45% of annual food energy consumed
- Main source of income include livestock sales, agricultural labour sales, self employment, small scale trade and social pensions.
- Remittances are not typical among the poorest households in this livelihood zone.

3.2.2 Current Year Situation

Although rainfall was relatively good, this zone was among the most affected by the 2009 heavy rainfall and floods. This flood waters affected crop production, with total failure of particularly pulses and legumes such as beans and bambara nuts. Income sources affected include agricultural labor (weeding, harvesting and cattle herding) as well as self employment opportunities such as making of local crafts, collection of wild foods for food and brewing as well as the informal sector, i.e. loss of capital and assets from small scale trade/enterprises. Despite having other income generation opportunities such as fishing and provision of local transport services using donkeys, these sources of income did not match the loss and damages caused by the floods among the “very poor” and “poor” households in this zone. Other long term impact of the floods include the loss of small livestock such as goats due to poor grazing conditions, bad weather and disease out breaks. This implies there will be further reduction in the coping capacity and resilience of the “very poor” and “poor” households in the zone.

3.2.3 Problem specification for the Upland Cereal and Non Farm Income

Key Parameters	Percentage change from baseline
Millet production	48%
Sorghum production	48%
Maize production	100%
Beans production	36%
Price of millet (<i>mahangu</i>)	152%
Food from Agricultural labour	50%
Cash from Agricultural labour	50%
Wild foods	55%
Self employment	120%
Small scale trade/enterprises	80%
Social pensions	122%
Minimum non staple basket	154%
Essential expenditure basket	112%
Price of a cow	250%

As a result of the above scenario analysis, the “very poor” households in this zone with an estimated population of 24% (114,689 people) are likely to face a food deficit of 5% per person and an expenditure deficit of 2,115 N\$ per household as a result of switching expenditure from discretionary and essential livelihood basket to purchase of staple foods in the 2009/10 marketing season.

This implies that, the “very poor” will require 1,211MT of maize to fill the food deficit or a cash equivalent of 6,054,369 N\$. The total expenditure deficit for “very poor” in this zone is 40,428,018 N\$ or maize equivalent of 8,086 MT.

Expressed in cash terms the combined expenditure and food deficit for the “very poor” can be covered by 46,482,387 N\$. Expressed in Maize equivalent, the combined food and expenditure deficit can be covered by 9,279MT.

3.3 Lowland Maize and Livestock

3.3.1 Main Livelihood Characteristics of Very Poor and Poor households in this zone

- Own crop production and livestock products contributes about 55-65% of annual food energy consumed.
- Agricultural and other casual labour contributes about 15-25% of annual food energy consumed.
- Food purchases contributes about 30-32% of annual food energy consumed
- Main source of income include livestock sales, agricultural labour sales, self employment and social pensions.
- Remittances are not typical among the poorest households in this livelihood zone.

3.3.2 Current Year Situation

Comparatively the 2009 floods and above normal rainfall, had the highest impact on the population. Overall the floods affected crops resulting into reduced crop harvest in the 2009 agricultural season. Other sources of livelihoods affected include livestock particularly cattle, agricultural employment such as weeding and harvesting among the poorest households as well as nonfarm/self employment cash income activities such as natural resource exploitation (thatching grass, reeds and construction poles among others) for making of local crafts and construction work.

Massive displacement of people in different areas such as Schuckmansburg and along the Kwando/Linyanti/Chobe and the Okavango rivers has also resulted in loss of crops and other productive household assets.

The household vulnerability levels in this zone will be worsened by the following factors:

- Annual floods which have perpetuated the vicious cycle of poverty, due to recurring floods and drought conditions
- Eroded coping capacity and resilience among some households.
- Poor state of feeder roads and in some cases limited physical access of subsidised staple markets due to flood waters for at least half the 2009/10 marketing year.

- High transport costs for local traders, resulting into relatively higher retail prices in rural areas.
- Lack of strategic food markets particularly in remote villages to ensure more regular and affordable access to staple food items.
- Limited employment opportunities particularly in the formal sector
- Limited livestock markets due to quarantine of animals as a result of outbreak of foot and mouth disease.

3.3.3 Problem Specification for the Lowland Maize and Livestock

Key Parameters	Percentage change from baseline
Millet production	8%
Sorghum production	33%
Maize production	80%
Beans production	78%
Price of millet (<i>mahangu</i>)	62%
Food from Agricultural labour	62%
Food from other labour	67%
Price of maize grain	130%
Minimum non staple basket	155%
Essential livelihood expenditure basket	177%
Price of a cow	100%
Price of chicken	100%
Self employment	25%

As a consequence of the above factors the “very poor” households with a population of 25,986 people are likely to face a food deficit of 8% per person and an expenditure deficit of 2,236 N\$ per household. The maize required to fill the food deficit is 439 MT and cash equivalent is 2,194,883 N\$. The total expenditure deficit for the “very poor” households is 8,300,794 N\$ and maize equivalent is 1,660 MT.

Expressed in cash terms, the combined expenditure and food deficit for the “very poor” households can be covered by N\$ 10,495,677. Expressed in maize equivalent, the combined food and expenditure deficit can be covered by 2,099 MT.

3.4 Communal Cattle and Small Stock

3.4.1 Main Livelihood Characteristics of Poor households in this zone

- Own crop production and livestock products contributes about 25-35% of annual food energy consumed.
- Agricultural and other casual labour contributes about 50-60% of annual food energy consumed.
- Food purchases contributes about 30-32% of annual food energy consumed

- Main source of income include livestock sales, agricultural labour sales, self employment, social pensions and remittances.
- Remittances are not typical among the poorest households in this livelihood zone.

3.4.2 Current Year Situation

The timely rainfall in the 2008/09 agricultural season in the Kunene Communal Cattle and Small Stock zone implies that, there is good pasture and adequate surface water for livestock. This has resulted into good livestock conditions and high milk production among the three wealth groups. It is also predicted that livestock prices will be relatively stable, translating into relatively high household incomes for purposes of meeting basic needs of survival and other key expenditure priorities for future investment.

3.4.3 Problem Specification for the Communal Cattle and Small Stock

Key Parameters	Percentage change from baseline
Millet production	100%
Maize production	100%
Food from Agricultural labour	100%
Price of maize grain	107%
Minimum non staple basket	154%
Essential livelihood expenditure basket	112%
Price of a cow	120%
Price of a goat	100%

Although currently there is no evidence for any food and expenditure deficits among the “poor” households with a population of 19,212 people in this zone, it is important to monitor the following risk and vulnerability indicators as the year draws closer to the lean/hunger period (September-December) of the 2009/10 marketing year.

- Changes in prices of maize meal and other basic non food items
- General distribution of maize meal and other non staple food items in the Kunene region.
- Changes in livestock prices on a bi-monthly basis.
- Terms of trade (bartering of livestock with maize meal and other basic commodities)
- Cases of livestock diseases across the region.
- Timing of long distant grazing period (Ideally it should start from late August or early September)

Implications of the Analysis and Recommendations:

The livelihood based analysis shows that common risk and vulnerability factors have become the main impediments for rural household food and livelihood security. It is important for this to become a main focus of policy attention. Poorest households try to manage uncertainty using a variety of ex-ante, ex-post risk management strategies and through community support systems, but these are both fragile and economically damaging for sustainable livelihood security. Government led interventions working through food, labour or credit markets, although expensive, could be carefully designed to cover both production and consumption within social protection and livelihood security interventions, through the following area specific recommendations:

Recommendations to address the short-term food insecurity:

- **Cash for work or food:** In the short term, the expenditure deficit among the “very poor” households in the Upland Cereal and Livestock zone can be addressed through provision of cash for work or food schemes to enable populations at risk of expenditure deficit access the essential livelihood basket. The conditional nature of this transfer should be emphasized through provision of food for increased agricultural production in the next season; cash or food for work activities like rehabilitation of community assets such as feeder roads, water points, temporary learning centers and public toilets among others. However it is more appropriate to implement a food other than cash for work scheme in remote areas due to lack of functional staple food markets and high supervision costs of public works activities.
- **Cash for work:** It is recommended that cash for work activities be implemented to address the food and expenditure deficits in some zones such as the Upland Cereal and Livestock Zone. This is the most appropriate short-term intervention to ensure household food security and livelihoods recovery in areas lying within the Upland cereal and non farm income zone in Oshana, Ohangwena and Omusati regions. The suitability of this intervention is based on the potential availability of public works opportunities created by the direct loss and damages of infrastructure by floods as well as the relatively better access to staple food markets within these areas. The local population at risk of food and expenditure deficits can access and purchase required staple foods without any difficulties and additional expenses unlike some of the remote areas of the North central region. However the timing of the cash for work activities should not coincide with the start of the next agricultural season, to enable labour poor households at risk of food insecurity focus on their own agricultural work at the start of the next agricultural season.
- **Strategic food reserves:** The construction of local grain stores in the zone was a positive step towards stabilization of local food security situation. The revival of this programme by addressing existing structural defects should be fast tracked to ensure availability of staple foods among the local population in the regions.

In medium term, the following recovery & rehabilitation interventions are presented:

- **Timely provision of agricultural inputs:** In order to build medium and long-term food and livelihood security, timely Government and Public sector led interventions (fertiliser, seed subsidies and ploughing services) should become the main focus in addressing the current levels of vulnerability among the poorest households in the six regions of Omusati, Ohangwena, Oshana, Oshikoto, Kavango and Caprivi regions.
- **Helping the very poor build assets-Option 1:** Based on expenditure deficits among “very poor” household in this zone, scaleup of Savings and Credit Co-operatives (SACCOs) initiatives should be implemented to enable these category of households acquire financial capital in the medium term. This can be achieved through training of local community saving groups and providing an initial revolving fund to enable them participate in the economic growth and development process of the country.
- **Helping the very poor build assets-Option 2:** Although asset creation among these households is ideal, key impediments such as wild life destruction of livestock through gazation of conservancies should be addressed prior to supporting these households with assets such as small stock, oxen and ox ploughs among others. The provision of productive assets (small stock) through restocking programmes as a start up capital for asset poor category, among “very poor” households may help them graduate from the current levels of extreme poverty.
- **Temporary exemption from cost of basic education or any form of user fees.** Since enhancement of human development is a key priority of NDP3, MDGs and Vision 2030 and education is a key component of the essential livelihood basket, the temporary exemption of the extremely poor households from paying costs of education could be another option to improve their access to this basic social service.
- **Employment generation programmes:** As a result of the prevailing unemployment in some of the livelihood zones, it is suggested that a Government of Namibia led private sector partnership initiates some employment creation activities such as micro credit schemes using the Savings and Credit Co-operatives (SACCOs) model to promote local trade and small scale industries aimed to address unemployment.
- **Protection and promotion of the well-being and capacities of very poor households:** This could be achieved through human capital development, by undertaking various initiatives such as ensuring affordable cost of education, similar to health services in the country.

- **Social pensions & OVC grants:** Limited access to OVC grants in the rural areas of the zone is a main problem for households living with orphans. Acceleration and improvement of access to both OVC and Disability/Elderly social grants in remote parts of the flood affected regions is critical for early recovery among eligible households. More importantly creation of awareness about these entitlements among eligible people is also vital.
- **Improved marketing of local agricultural produce:** The low prices for staple maize grain is part of the problem for the vicious cycle of poverty among some households particularly in the Caprivi region. The formation of local commodity groups for purposes of improved processing, storage and bulk marketing would improve bargaining power among the population.
- **Access to veterinary drugs:** Improved physical access to veterinary drugs particularly for the relatively wealthy households in the communities.
- **Early warning system:** There is urgent need for the establishment of a regional early warning system for countries within the Zambezi and Cuvelai basins. This should enable more timely movement of populations within high and medium flood risk areas on higher grounds or permanent relocation of people in high risk flood areas to higher grounds. Based on community consultations, there is need to promote voluntary movement of the population, but also have by laws which compel people to leave high flood risk areas, especially after provision of timely early warning information.
- **Response & Co-ordination:** Need for more effective collaboration between flood affected communities, traditional authorities, and regional/central government.

In long term, the following development related recommendations are presented:

- **Improvement of rural feeder roads, trade and markets:** The over reliance on centralized regional markets such as Katima, Opuwo and Oshakati central markets are a key constraint for effective participation of local people in economic activities. More investment in rural feeder roads and markets particularly in highly populated areas through food or cash work activities would facilitate local trade among the population in the zone. Other options for relocation of highly disadvantaged people should also be explored.
- **Preservation of community forests-**The continued cutting of trees for construction of temporary structures by internally displaced people due to floods has become another major environmental risk. There is need to promote planting of trees in the higher ground areas, which normally host the internally displaced people within the zone.

Appendix A: Annual Cereal Balance Sheet for the 2009/10 Marketing Year

Namibia Cereal Supply/Demand Forecast (1st May 2009 to 30th April 2010)- Figures in (000)				
Cereals	Wheat	Maize	Millet/Sorghum	Total
Domestic Availability	37.0	67.2	57.0	161.2
Opening Stocks (1 st May 2009)	24.70	10.30	15.00	50.00
Forecasted production	12.30	56.90	42.00	111.30
Gross Domestic Requirement	74.0	158.90	87.50	320.40
Food Use	63.40	145.10	51.20	259.70
Losses and Other Use	0.60	3.80	6.30	10.70
Closing Stocks (1 st May 2009)	10.0	10.0	30.0	50.0
Domestic Shortfall	-37.0	-91.7	1.7	159.3
After Trade Surplus/Deficit	18.0	43.30	-32.20	28.70

Explanation of the Food Balance Sheet as of 1st May, 2009

The food balance sheet is a tool which is used to estimate national cereal availability against the requirement. It is calculated every marketing year (1st May to 31st April) It is updated monthly using the imports received.

1. **Opening Stocks:** This is stock held by the major millers at the end of May 2009. This stock becomes the opening stock for the beginning of the following marketing year (1st May 2010)
2. **Forecasted Production:** This was estimated by the Ministry of Agriculture, Early Warning Unit during the crop assessment forecast conducted in May/June 2009.
3. **Domestic Availability:** is made up of the opening stock plus forecasted crop production.

4. **Gross Domestic Requirement:** This has been calculated using kilocalories required by each person for the period of one year. This year it has been decided to use this methodology, so as to avoid inconsistency with other stakeholders. The minimum kilograms estimated by Food and Agricultural Organisation (FAO) indicate the need for 127kg of maize or millet, 42 kg of wheat and some 12 kg of other cereals such as sorghum. The total projected population of 2,103,762 people by Central Bureau of Statistics (CBS)-National Planning Commission (NPC) has been used in calculating the domestic requirement. The “Kilo-calorie” method gives a more realistic picture, given that it is based on food energy requirements of 2,100 Kilocalories per person per day calculated for a whole year.
5. **Domestic Shortfall:** This is the difference between domestic availability and the requirement.
6. **Expected Commercial Imports:** This is the expected imports to bridge the domestic shortfall.
7. **After Trade Deficit/Surplus:** Any deficit or surplus as after expected commercial importation.

Appendix B: Sample Assessment Form

Key Parameters and Problem Specification Sheet- 2009/2010 Marketing Year

1. Village/Constituency Name:
2. Region:
3. Livelihood Zone: Upland Cereal and Livestock Zone
4. Wealth Group:
5. Date:
6. Interviewers:
7. Baseline Year: 2006/2007

KEY PARAMETERS	VERY POOR	POOR	MIDDLE	BETTER-OFF
FOOD	Food crops (millet-mahangu, sorghum) Market purchases	Food crops (millet-mahangu, sorghum) Market purchases	Food crops (millet-mahangu, sorghum) Market purchases	Food crops (millet-mahangu, sorghum) Market purchases
INCOME	Non farm income (domestic work, cattle herding, basket marketing & brewing) Social Grants Petty trade 'Cuca' shops	Non farm income (domestic work, cattle herding, basket marketing & brewing) Social Grants Petty trade- 'Cuca' shops	Agriculture (Crops & Cattle) Entrepreneurial /trade Natural resource exploitation	Agriculture (Crops & Cattle) Entrepreneurial /trade Natural resource exploitation
EXPENDITURE	Education Water	Education Water	Education Water	Education Water

PROBLEM SPECIFICATION

Livestock Quantity	Baseline quantity- 2006/07	Current/projected quantity	Periods (months)
Cattle (herd size)			
Goats (herd size)			
Sheep (herd size)			
Harvest	Baseline quantity	Current/projected quantity	Current/projected as % of baseline quantity

Millet (mahangu)			
Sorghum			
Maize			
Beans			
Groundnuts			

Notes:

Food Source-Quantity	Baseline quantity	Current/projected quantity	Current/projected as % of baseline quantity
Labour exchange			
Wild foods (fruits/fish ect)			
Livestock products (milk, meat etc)			

Notes:

Income Source-Quantity	Baseline quantity	Current/projected quantity	Current/projected as % of baseline quantity
Sale of cattle			
Sale of goats			
Brewing			
Construction labour			
Self employment			
Trade			

Income Source-market price	Baseline price	Last years price	Nearest primary market	Nearest secondary market	Nearest central market
Cattle					
Construction income price					
Self employment prices					

Price data- May/June 2009

Expenditure Items-Price	Baseline price	Current/projected price	Nearest primary market	Nearest secondary market	Nearest central market
Salt					
Soap					
Candles/Kerosene					
Vaseline					
Matches					

Cereal flour prices:									
Measure (Kg)	Millet (Mahangu)		% Change	Maize		% Change	Sorghum		% Change
	May 2007	May 2009		May 2007	May 2009		May 2007	May 2009	
1 Kg									
12.5 kg									
25 kg									
50kg									

Notes:

Livestock			
Cattle	May 2007	May 2009	% Change in Price
Goats			
Sheep			
Poultry (Indigenous)			
Pigs			
Piglets			

CRITICAL ASSUMPTIONS

Component of Problem specification	Source of data	Assumptions	Confidence e.g. Good- no action required Poor- requires verification

1. Which commodities have the highest price increase?
2. Which group of households are mostly affected by changes in prices?
3. How do these households cope with the current situation?
4. Have you bought any subsidised maize meal in the past six months? If Yes, which months and from where did you buy?
5. Any comments about the current price situation?

Appendix C: Examples of Vulnerability Sheets

Upland Cereal & Livestock BASELINE ACCESS				PROBLEM SPECIFICATION				RESPONSE	
Sources of Food : Very Poor HHs				Problem %norm	Food Intake kcals/day	Con.prob %norm	Max.curr Access	Curr. Access	
	Baseline Access	Expand -ability	Max. Access						
Cows' milk - wet	0%	0%	0%	100%	baseline:	100%	0%	0%	
Livestock Products	0%	0%	0%	100%	2100	100%	0%	0%	
Green cons maize	5%	-2%	3%	100%	for analysis:	100%	3%	3%	
Maize	6%	0%	6%	77%	2100	77%	5%	5%	
Sorghum	3%	0%	3%	48%		48%	1%	1%	
Beans	3%	-3%	0%	36%		36%	0%	0%	
Millet	12%	0%	12%	64%		64%	8%	8%	
Labour	35%	3%	38%	50%		50%	19%	19%	
Wild Food	3%	0%	3%	55%		55%	2%	2%	
Bambara	2%	0%	2%	50%		50%	1%	1%	
Green beans	1%	0%	1%	100%		100%	1%	1%	
Green bambara nuts	4%	0%	4%	50%		50%	2%	2%	
Gifts	0%	0%	0%	100%		100%	0%	0%	
Groundnuts	2%	0%	2%	100%		100%	2%	2%	
Pumpkin	0%	0%	0%	100%		100%	0%	0%	
Purchase - non staple	6%	0%	6%	100%		100%	6%	6%	
Purchase - staple	20%		126%	100%		100%	56%	51%	
food deficit								0%	
total	102%	-2%	206%				106%		
Income : Very Poor HHs				Problem %norm	Comm. Price	Staple Price	Con.prob %norm	Max.curr Access	Curr. Access
	Baseline Access	Expand -ability	Max. Access						
Cash									
Cattle sales	0	0	0	100%	100%	152%	100%	0	0
Goat sales	0	0	0	100%	100%	152%	100%	0	0
Sheep sales	0	0	0	100%	100%	152%	100%	0	0
Maize sales	0	0	0	100%	100%	152%	100%	0	0
Sorghum sales	0	0	0	100%	100%	152%	100%	0	0
Bean sales	0	190	190	36%	100%	152%	36%	68	68
chicken sales	29	0	29	50%	100%	152%	50%	15	15
Millet sales	0	0	0	50%	100%	152%	50%	0	0
Ag. Labour	982	0	982	50%	100%	152%	50%	491	491
Construction labour	534	134	668	120%	100%	152%	120%	802	802
Domestic labour	0	0	0	100%	100%	152%	100%	0	0
Employment	0	0	0	100%	100%	152%	100%	0	0
Remittances	0	0	0	100%	100%	152%	100%	0	0
Self-employment	646	0	646	70%	100%	152%	70%	452	452
Petty trade	200	0	200	70%	100%	152%	70%	140	140
Gifts / social support	0	0	0	100%	100%	152%	100%	0	0
Green maize sales	0	291	291	50%	100%	152%	50%	146	360
Social pensions	1,329	0	1,329	100%	122%	152%	122%	1,621	1,621
Wild foods sales	570	0	570	55%	100%	152%	55%	314	314
	0	0	0	100%	100%	152%	100%	0	0
	0	0	0	100%	100%	152%	100%	0	0
	0	0	0	100%	100%	152%	100%	0	0
total:	4,290	615	4,905					4,048	4,263
Expenditure : Very Poor HHs				Problem %norm	Comm. Price	Con.prob %norm	Max.curr Expend	Curr. Expend	
	Baseline Expend								
Cash									
min.non-staple	823			100%	154%		1,267	1,267	
essential	1,680			100%	112%		0	494	
staple	1,096						2,781	2,502	
other	691							0	
total:	4,290						4,048	4,263	
exp. deficit							1,882	1,388	

Lowland Maize and Livestock BASELINE ACCESS				PROBLEM SPECIFICATION				RESPONSE	
Sources of Food : Very Poor HHs				Problem %norm	Food Intake kcals/day	Con.prob %norm	Max.curr Access	Curr. Access	
	Baseline Access	Expand -ability	Max. Access						
Cow milk	2%	0%	2%	100%	baseline:	100%	2%	2%	
Own meat	0%	0%	0%	100%	2100	100%	0%	0%	
Green maize	5%	1%	6%	50%	for analysis:	50%	3%	3%	
Maize	25%	2%	27%	80%	2100	80%	22%	22%	
Sorghum	6%	1%	7%	33%		33%	2%	2%	
Beans	1%	0%	1%	78%		78%	1%	1%	
Labour: Agric	8%	2%	10%	62%		62%	6%	6%	
Labour Other	9%	1%	10%	67%		67%	7%	7%	
Wild food	3%	1%	4%	67%		67%	3%	3%	
School feeding	0%	0%	0%	100%		100%	0%	0%	
Gifts	2%	0%	2%	100%		100%	2%	2%	
Green beans	2%	0%	2%	75%		75%	2%	2%	
Millet	7%	1%	8%	8%		8%	1%	1%	
Pumpkins	0%	0%	0%	100%		100%	0%	0%	
	0%	0%	0%	0%		0%	0%	0%	
Purchase- non staple	4%	0%	4%	100%		100%	4%	4%	
Purchase - staple	28%		94%	100%		100%	39%	39%	
food deficit								8%	
total	102%	9%	177%				92%		
Income : Very Poor HHs				Problem %norm	Comm. Price	Staple Price	Con.prob %norm	Max.curr Access	Curr. Access
	Baseline Access	Expand -ability	Max. Access						
Cash									
Sheep sales	0	0	0	100%	100%	152%	100%	0	0
Cattle sales	0	0	0	100%	100%	152%	100%	0	0
Goat sales	0	0	0	100%	100%	152%	100%	0	0
Chicken sales	33	0	33	100%	100%	152%	100%	33	33
Maize sales	27	5	32	100%	130%	152%	130%	42	42
Sorghum sales	0	0	0	100%	100%	152%	100%	0	0
Beans sales	0	0	0	100%	100%	152%	100%	0	0
Labour: Agric	1,386	347	1,733	70%	100%	152%	70%	1,213	1,213
Construction labour	454	150	604	67%	100%	152%	67%	405	405
Domestic labour	248	0	248	100%	100%	152%	100%	248	248
Remittances	0	0	0	100%	100%	152%	100%	0	0
Self employment	1,000	200	1,200	25%	100%	152%	25%	300	300
Employment and pensions	1,420	0	1,420	100%	122%	152%	122%	1,732	1,732
Milk sales			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
total:	4,568	702	5,270					3,973	3,973
Expenditure : Very Poor HHs				Problem %norm	Comm. Price	Con.prob %norm	Max.curr Expend	Curr. Expend	
	Baseline Expend								
Cash									
min.non-staple essential	676			100%	159%	159%	1,075	1,075	
staple other	1,263			100%	177%	177%	0	0	
total:	1,366						2,898	2,898	
	1,263						0	0	
total:	4,568						3,973	3,973	
exp. deficit							2,236	2,236	

Communal Cattle & Small Stock BASELINE ACCESS				PROBLEM SPECIFICATION			RESPONSE		
Sources of Food : Poor HHs				Problem %norm	Food Intake kcals/day	Con.prob %norm	Max.curr Access	Curr. Access	
	Baseline Access	Expand -ability	Max. Access						
Cows' milk - wet	21%	2%	23%	100%	baseline:	100%	23%	20%	
Own meat	4%	2%	6%	100%	2100	100%	6%	3%	
Green cons maize	2%	0%	2%	100%	for analysis:	100%	2%	2%	
Maize	3%	0%	3%	100%	2100	100%	3%	3%	
Sorghum	0%	0%	0%	100%		100%	0%	0%	
Beans	0%	0%	0%	100%		100%	0%	0%	
Vegetables	0%	0%	0%	100%		100%	0%	0%	
Labour: herding	52%	3%	55%	100%		100%	55%	51%	
Labour: harvesting	0%	0%	0%	100%		100%	0%	0%	
Wild food	2%	1%	3%	100%		100%	3%	2%	
School feeding	0%	0%	0%	100%		100%	0%	0%	
Gift	1%	1%	2%	100%		100%	2%	1%	
	0%	0%	0%	100%		100%	0%	0%	
	0%	0%	0%	100%		100%	0%	0%	
Food aid	0%	0%	0%	0%		0%	0%	0%	
Purchase - non staple	5%	0%	5%	100%		100%	5%	5%	
Purchase - staple	26%		99%	100%		100%	98%	12%	
food deficit								0%	
total	116%	9%	198%				197%		
Income : Poor HHs				Problem %norm	Comm. Price	Staple Price	Con.prob %norm	Max.curr Access	Curr. Access
Cash	Baseline Access	Expand -ability	Max. Access						
Cows' milk sales - wet	0	0	0	100%	100%	107%	100%	0	0
Pig meat sales	0	0	0	100%	100%	107%	100%	0	0
Wool/mohair	0	0	0	100%	100%	107%	100%	0	0
Donkey sales	0	0	0	100%	100%	107%	100%	0	0
Cattle sales	4,420	1,000	5,420	100%	120%	107%	120%	6,504	4,980
Goat sales	986	329	1,315	80%	100%	107%	80%	1,052	718
Sheep sales	0	0	0	100%	100%	107%	100%	0	0
Chicken sales	0	0	0	100%	100%	107%	100%	0	0
Maize sales	0	0	0	100%	100%	107%	100%	0	0
Sorghum sales	0	0	0	100%	100%	107%	100%	0	0
Beans sales	0	0	0	100%	100%	107%	100%	0	0
Vegetable sales	0	0	0	100%	100%	107%	100%	0	0
Ag. Labour	0	0	0	100%	100%	107%	100%	0	0
Construction labour	393	0	393	100%	100%	107%	100%	393	393
Domestic labour	0	0	0	100%	100%	107%	100%	0	0
Employment/Pension	2,220	0	2,220	100%	100%	107%	100%	2,220	2,220
Self-employment	520	0	520	100%	100%	107%	100%	520	520
Sale of wild foods	760	0	760	100%	100%	107%	100%	760	760
Remittance	90	0	90	100%	100%	107%	100%	90	90
	0	0	0	100%	100%	107%	100%	0	0
	0	0	0	100%	100%	107%	100%	0	0
	0	0	0	100%	100%	107%	100%	0	0
total:	9,389	1,329	10,718					11,539	9,681
Expenditure : Poor HHs				Problem %norm	Comm. Price	Con.prob %norm	Max.curr Expend	Curr. Expend	
Cash	Baseline Expend								
min.non-staple	378			100%	154%	154%	582	582	
essential	3,259			100%	112%	112%	0	3,650	
staple	2,718						10,957	1,390	
other	3,034							4,059	
total:	9,389						11,539	9,681	
exp. deficit							3,650	0	

Upland Cereal and Non Farm Income BASELINE ACCESS				PROBLEM SPECIFICATION			RESPONSE		
Sources of Food : Very Poor HHs				Problem %norm	Food Intake kcals/day	Con.prob %norm	Max.curr Access	Curr. Access	
	Baseline Access	Expand -ability	Max. Access						
Cow's milk	0%	0%	0%	100%	baseline:	100%	0%	0%	
Goat's milk	0%	0%	0%	100%	2100	100%	0%	0%	
Own meat	0%	0%	0%	100%	for analysis:	100%	0%	0%	
Green maize	2%	-2%	0%	100%	2100	100%	0%	0%	
Sorghum	6%	0%	6%	48%		48%	3%	3%	
Beans	2%	-2%	0%	36%		36%	0%	0%	
Millet	17%	0%	17%	64%		64%	11%	11%	
Labour	23%	5%	28%	50%		50%	14%	14%	
Wild Food	2%	0%	2%	55%		55%	1%	1%	
School feeding	0%	0%	0%	100%		100%	0%	0%	
Bambara nuts	1%	0%	1%	100%		100%	1%	1%	
Green beans	1%	0%	1%	88%		88%	1%	1%	
	0%	0%	0%	25%		25%	0%	0%	
Other	0%	0%	0%	100%		100%	0%	0%	
Food Aid	0%	0%	0%	0%		0%	0%	0%	
Purchase- non staple	5%	0%	5%	100%		100%	5%	5%	
Purchase - staple	41%		121%	100%		100%	59%	59%	
food deficit								5%	
total	100%	1%	181%				95%		
Income : Very Poor HHs				Problem %norm	Comm. Price	Staple Price	Con.prob %norm	Max.curr Access	Curr. Access
Cash	Baseline Access	Expand -ability	Max. Access						
Wool/ mohair	0	0	0	100%	100%	152%	100%	0	0
Cattle sales	0	0	0	100%	100%	152%	100%	0	0
Piglet sales	0	0	0	100%	100%	182%	100%	0	0
Goat sales	0	0	0	100%	183%	152%	183%	0	0
fig sales	0	0	0	100%	100%	152%	100%	0	0
Sheep sales	0	0	0	100%	100%	152%	100%	0	0
Chicken sales	125	0	125	100%	150%	152%	150%	188	188
Sorghum sales	0	0	0	100%	100%	152%	100%	0	0
Beans sale	0	0	0	34%	100%	152%	34%	0	0
Ag labour	1,056	210	1,266	50%	100%	152%	50%	633	633
Construction labour	0	0	0	100%	100%	152%	100%	0	0
Domestic labour	0	0	0	100%	100%	152%	100%	0	0
Employment	0	0	0	100%	100%	152%	100%	0	0
Remittances	0	0	0	100%	100%	152%	100%	0	0
Self employment	842	0	842	120%	100%	152%	120%	1,010	1,010
Petty trade	612	0	612	80%	100%	152%	80%	490	490
Social pension	1,100	0	1,100	100%	122%	152%	122%	1,342	1,342
Milk sales			0	100%	100%	152%	100%	0	0
Green maize sales			0	100%	100%	152%	100%	0	0
Wild food sales	285	0	285	55%	100%	152%	55%	157	157
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
			0	100%	100%	152%	100%	0	0
total:	4,020	210	4,230					3,819	3,819
Expenditure : Very Poor HHs				Problem %norm	Comm. Price	Con.prob %norm	Max.curr Expend	Curr. Expend	
Cash	Baseline Expend								
min.non-staple essential	862			100%	154%	154%	1,327	1,327	
staple	1,225			100%	112%	112%	0	0	
other	45						2,492	2,492	
total:	4,020						3,819	3,819	
exp. deficit							2,115	2,115	