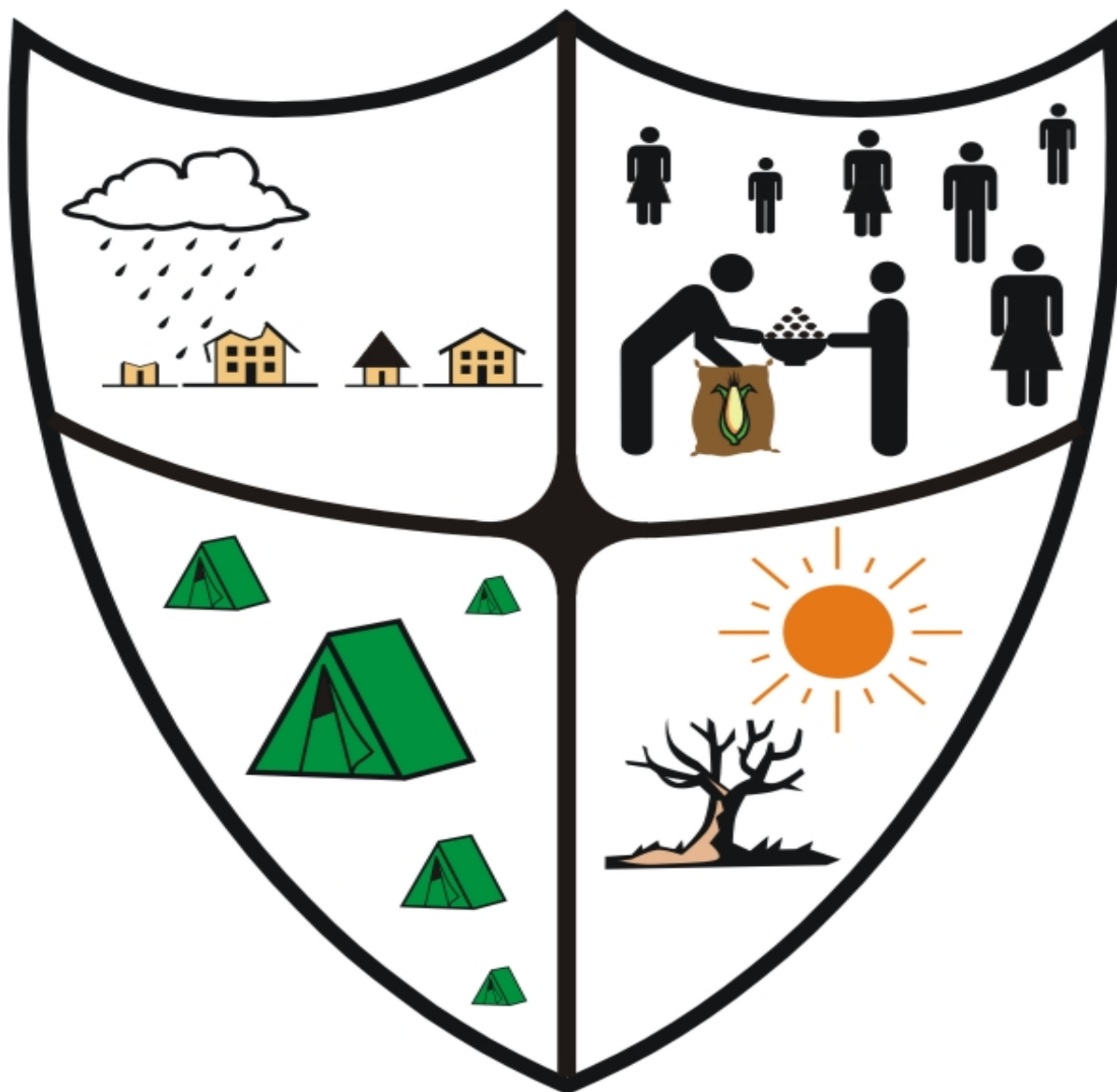


2008/09 ZAMBIA NATIONAL CONTINGENCY PLAN



Country: Zambia
Date: November, 2008
Period: October 2008 – June 2009

Zambia National Contingency Plan for Floods

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Table of Contents

Acknowledgements	iii
Executive Summary	iv
Preamble	vi
1.0. INTRODUCTION	1
2.0. CONTEXT, HAZARDS AND RISK ANALYSIS	2
2.1. Context	2
2.2.1. Floods	3
2.3. Risk Analysis	5
3.0. SCENARIOS AND PLANNING ASSUMPTIONS	5
3.1. Scenario	6
4.0 PROPOSED PREPAREDNESS, RESPONSE AND REHABILITATION ACTIVITIES (SECTOR BY SECTOR)	7
4.1. Objective	7
4.2. Strategy	7
4.2.1. Capacity Building	7
4.2.2. Response	7
4.2.3. Early Warning/Information Flow	7
4.3. Guiding Principles	7
4.4. Preparedness Activities	8
5.0. RESOURCE GAP ANALYSIS	8
6.0. Management and Coordination Arrangements	9
7.0. Roles and Responsibilities	10
8.0 Resource Mobilisation	13
9.0. RAPID ASSESSMENTS AND DISSEMINATION OF INFORMATION	13
10.0 ANNEXES	14
Annex 1: Road Infrastructure Sector	15
Annex 2: Human Settlement and Shelter Sector	34
Annex 3: Health and Nutrition	40
Annex 4: Water and Sanitation	45
Annex 5: Education	50
Annex 6: Agriculture and Food Security Sector	53
Annex 7: Information Management and Emergency Communications	59
Annex 8: Logistics	64
Annex 9: Detailed Sector Resource Gap Analysis	66
Annex 10: Disaster Risk Reduction (DRR) Sector Focal Point Persons	71

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- OXFAM
- Ministry of Health
- Ministry of Agriculture and Cooperatives
- Ministry of Education
- Road Development Agency
- United Nations Country Team
- Zambia Red Cross Society

Executive Summary

This contingency plan covers the planned activities to be undertaken in 2008/09 rainy season with scenarios for the likely occurrence of floods based on the Zambia Meteorological Department (ZMD) rainfall forecasts. The 2008/09 rainfall forecast has revealed that most parts of the country will receive normal to above rainfall between October and December 2008 with the exception of north-eastern parts of the country (Nyika plateau area comprising of Nakonde, Isoka and Lundazi) which are expected to receive normal to below normal rainfall during the same period. However, it is anticipated that during the period from January to March 2009, the whole country is expected to receive normal to above normal rainfall. Based on previous experience, the occurrence of above normal rainfall may precipitate the occurrence of excessive rainfall or flash floods in low lying areas of the country.

The Contingency Plan draws on historical data and experiences of the occurrence of disasters such as floods and/or dry spells as a building block for coming up with planning assumptions and likely scenarios should such hazards occur during the 2008/09 rain season.

The overall objective of the Contingency Plan (NCP) is to support the timely, consistent and coordinated response to anticipated floods in the 2008/09 rainy season, thus effectively minimising the impact of the floods on human population, livelihoods, lifelines and the environment. This will in turn help reduce the scale of humanitarian needs to the affected population. Although the emphasis of the plan is on floods, the plan has an in - built flexibility that allows it to embrace other hazards such as drought and cholera should they occur anywhere in the country.

The contingency plan shall be implemented at three stages i.e. before the emergency, during and after. Preparedness activities before the emergency are informed by sector response plans in annexes 1-8. The sectors covered in the contingency plan are Human Settlement and Shelter, Health and Nutrition, Water and Sanitation, Education, Agriculture and Food Security, Public Infrastructure, Information Management and Emergency Communication. Scenario analysis and assumptions are the main determining factors responsible for the scope and depth of the contingency plan.

In order to ensure a coordinated response, guidance is provided on who should carry out rapid assessments and later on disseminate the related information. In the same vein, participation of all our cooperating partners and stakeholders are maximised in the plan by encouraging them to isolate activities whose implementation they are in a position to support.

The total budget for the implementation of the contingency plan is **K98,984,267,855.00 (US\$21,996,503.97)** broken down as shown in the table below:

No	Name of Sector	Number of Activities	Net financial requirements (ZMK)	Net Financial requirements (US\$) @ K4500
1	Infrastructure	6	10,400,000,000.00	2,311,111.11
2	Human Settlement and Shelter	13	2,172,656,817.00	482,812.63
3	Health and Nutrition	8	1,040,608,332.00	231,246.30
4	Water and Sanitation	18	14,362,000,000.00	3,191,555.56
5	Education	16	6,930,000,000.00	1,540,000.00
6	Agriculture and Food Security	11	40,099,134,356.00	8,910,918.75
7	Information Management and Emergency Communication	4	663,983,550.00	147,551.90
8	Logistics	3	23,315,884,800.00	5,181,307.73
	GRAND TOTAL		98,984,267,855.00	21,996,503.97

Preamble

This contingency plan is a follow-up to the 2007/8 contingency plan. It covers a floods scenario. The main objective of the contingency plan is to reduce the impact of floods on the affected population by creating a framework for providing the basic humanitarian needs to the affected population.

The basic assumption behind the plan is that the sectors likely to be affected are public infrastructure i.e. roads, schools, bridges. Other sectors are health and nutrition, water and sanitation, agriculture and food security, human shelter and settlement and education.

The contingency plan is premised on the following:

The interventions' fundamental objective is to minimize in the first instance loss of human lives and secondly the minimal loss to livelihoods. This objective is broken down to sector based objectives. Among the strategies is to ensure that the institutions such as Department of Water Affairs in the case of floods will provide water level information updates to the Disaster Management and Mitigation Unit (DMMU). This will be done together with the Zambia Meteorological Department (ZMD) which will monitor the rain intensity especially in the flood prone areas. At the same time the Ministry of Health Diseases Surveillance Unit will monitor actively any potential cholera threats and outbreaks especially in fishing camps, markets and streets where open air food stalls are usually located. The roadside stalls are a major source of outbreaks as they are located in hygienically compromised areas.

The contingency plan will be managed by the Office of the Vice President through the Disaster Management and Mitigation Unit (DMMU), with support from other partners in the Disaster Management Consultative forum (DMCF). The DMCF which is co-chaired by the Government and the United Nations will be used to make decisions at policy level as well as serve as an information sharing platform before, during and after the crisis. The frequency of meetings will be determined by the severity of the crisis and the capacity by Government to handle the crisis. At technical level the Zambia Vulnerability Assessment Committee (ZVAC) under the DMMU will meet regularly to ensure that information is flowing and the ZVAC members will in turn inform their principals who sit in the DMCF. All public information relating to the crisis will be disseminated by the Government through the Disaster Management and Mitigation Unit (DMMU). The Emergency Operations Center (EOC) located at the DMMU will serve as the data center from where all information shall be received and analysed. The information will be sent to DMMU through the District Disaster Management Committee (DDMC) and verified by the District Commissioner who chairs the DDMC.

In terms of response, most of the prone areas are in rural areas where there is limited public infrastructure such as roads, warehousing and bridges. This will form the major constraints in terms of access. The lack of stand by human and financial resources will also form a constraint for the operational response. There is likely to be constraints in terms of the right type of transport which will need to have amphibious capacity especially if the affected areas are cut off by water. Communication by whatever means is also likely to be a constraint especially in getting information from the affected areas.

1.0. INTRODUCTION

This contingency plan covers the 2008/09 rainy season with scenarios for the likely situation based on the SARCOF and Zambia Meteorological Department (ZMD) rainfall forecasts. The 2008/09 rainfall forecast has revealed that most parts of the country will receive normal rainfall between October and December 2008 with the exception of north-eastern parts of the country (Nyika plateau area comprising of Nakonde, Isoka and Lundazi) which are expected to receive normal to below normal rainfall during the same period. However, it is anticipated that during the period from January to March 2009, the whole country is expected to receive normal to above normal rainfall.

The Contingency Plan uses the most-likely scenario in coming up with the figures used in the document. The Plan also draws on historical data and experiences of the occurrence of disasters such as floods and/or dry spells as a building block for coming up with planning assumptions and likely scenarios should such hazards occur during the 2008/09 rain season.

The overall objective of the Zambia National Contingency Plan (NCP) is to support the timely, consistent and coordinated response to anticipated floods in the 2008/09 rainy season, thus effectively minimising the impact of the floods on human population, livelihoods, lifelines and the environment. This will in turn help reduce the scale of humanitarian needs to the affected population. The Plan also has an in - built flexibility that allows it to embrace other hazards such as drought and cholera should they occur anywhere in the country.

The specific objectives the NCP aims at addressing are as follows:

- i. To improve the management and coordination of preparedness, response and rehabilitation arrangements
- ii. To improve early warning information sharing to ensure effective response.
- iii. To ensure timely resource mobilization and response
- iv. To reduce the risk of secondary hazards i.e. epidemics
- v. To ascertain the sector based level of impact of floods
- vi. To ascertain the type and quantities of assistance to be required as a result of the emergency
- vii. To identify and define roles and responsibilities of all partners in emergency response
- viii. To utilise emergency and recovery assistance as baselines towards building long term interventions

Identification of the geographical areas likely to be affected by floods during the 2008/09 season used a spatial and buffer analysis of the main river systems and perennial wetland areas elevation information embedded within the agro-ecological zones.

It is anticipated that a total of 31 districts are likely be affected by floods. These are Chavuma, Kabompo, Mwinilunga, Solwezi and Zambezi (North Western province), Mongu, Senanga, Kalabo, Lukulu, Sesheke, Shang'ombo (Western Province), Samfya (Luapula), Kazungula, Namwala, Itezhi Tezhi, Siavonga, Monze, Mazabuka, Sinazongwe and Gwembe (Southern Province), Serenje and Mkushi [Central Province] as well as Kafue, Luangwa, and Lusaka [Lusaka Province].

The contingency plan is premised on the following assumptions:

- All the stakeholders realize that the contingency plan and its implementation is the responsibility of everyone and shall therefore be implemented by all stakeholders by partnering with sectors that relate to their core functions. This will be done under the coordination of the Disaster Management and Mitigation Unit (DMMU).

- The Office of the Vice President (OVP) through DMMU will coordinate the implementation of this contingency plan. The Plan will be implemented through the implementing partners who include Government line Ministries, local and international NGOs and the United Nations Country Team (UNCT).
- DMMU will coordinate all matters related to the emergency and will ensure that all stakeholders are informed of what is happening through the National Disaster Management Consultative Forum (NDMCF) and the media.
- The Emergency Operations Centre (EOC) located at the DMMU will serve as the data centre from where all information shall be received and analysed. The information will be sent to the districts through the District Disaster Management Committee (DDMC). The data to be received and analysed at the EOC will include data on water levels which shall be provided by the Department of Water Affairs/Zambezi River Authority and ZESCO. Rainfall data will be provided by the Zambia Meteorological Department (ZMD) while that of affected populations will be provided by the DDMC and verified by the Zambia Vulnerability Assessment Committee (ZamVAC) through Rapid Assessments. It is anticipated that all information pertaining to the emergency shall be cleared by Government through DMMU before being disseminated.
- The various coordination fora such the Inter Agency Standing Committee (IASC) of the United Nations and IFRC, and the INGO forum will continue to play their important role with a view of complimenting the national coordinating mechanism.
- This Contingency Plan will endeavour to minimize the impact of the disasters for which it has been designed to avert the loss of lives and livelihoods. All the minimum assistance to be provided to the affected populations will be given through DMMU.
- Interventions proposed shall not erode the normal livelihoods of the affected population but shall instead help to build on them.

2.0. CONTEXT, HAZARDS AND RISK ANALYSIS

2.1. Context

Zambia has an estimated population of 12.5 million¹ people of which 65% live in rural areas. The majority of the rural population depend on subsistence agriculture as their source of livelihood. About 58 percent of Zambia's total land area of 39 million hectares is classified as having medium to high potential for agricultural production, but less than half of potential arable land is cultivated. The most popular type of farming practiced by these farmers is mixed farming. The majority of subsistence farmers in Zambia grow rain fed crops particularly maize, which is the main staple food crop. Other major crops include millet, sorghum, cassava and rice.

The Living Conditions Monitoring Survey of 2006 states that national poverty stands at 64% with rural poverty at 80% making the rural population extremely vulnerable to disasters. This vulnerability coupled with frequent occurrence of hazards makes populations in rural areas more at risk.

In the 90s the country experienced climate related crises with a drought in 1991/92. There was widespread hunger due to these droughts that affected most countries in Southern Africa. Another major drought hit Zambia in 2001/02 which even led to a consolidated appeal process

¹ Population Projects Report 2000, CSO

(CAP). This drought affected about 2.4 million² people mostly in rural areas where their livelihoods depend on agriculture. These droughts affected the crops which are rain fed as they could not mature. This led to wide spread hunger in the whole country.

In 2006/07 the traditional flood prone areas of North western and western Zambia experienced floods. The floods impacted on infrastructure i.e. roads, schools, habitation, agriculture, water and sanitation. Furthermore, the 2007/08 floods started earlier than anticipated affecting the southern half (low lying areas and major river basins) of the country.

According to Zambia Meteorological Department forecast for the 2008/09 rain season, the greater part of Zambia is forecast to have normal to above normal rainfall from October to December except for the north-eastern parts of the country (Nyika Plateau, Chama and Lundazi) which will experience normal to below normal rainfall. During the period from January 09 to March 09, the whole country will receive normal to above normal rainfall.

The context of emergencies in Zambia usually has a multi-sectoral impact hence the need for wider planning approaches. The impact of floods on the population is likely to be exacerbated by the rising food prices especially in districts which were adversely affected during the 2007/08 season. As people's resilience levels get eroded, they will resort to other unsustainable means such as risky sexual behaviour in exchange for money and essentials. This may lead to vices such as exploitation and abuse. Some engage violent means in order to suppress the vulnerable populations. This may in turn lead to high occurrence of gender based violence.

2.2. Hazards

2.2.1. Floods

Taxonomy

Disasters that are associated with flood hazards in Zambia have been caused by the bursting of river banks due to heavy and high intensity rainfall. Furthermore, over utilisation of the wetland areas has the potential to create environmental degradation which may negatively impact on the entire ecosystem. The untimely release of excess water from Kariba, Itezhi-Tezhi, Kafue Gorge Dams on Zambezi and Kafue Rivers respectively, will have devastating effects downstream. Due to poor drainage systems in urban districts within the unplanned settlements, there were cases of urban flooding during the 2007/08 rain season. This was common in Lusaka, Central and Copperbelt Provinces respectively.

It is worth noting that 2006/07 and 2007/08 seasons exhibited diverse and varying characteristics (in terms of flood scenarios) which resulted into severe flooding that heavily impacted on several sectors. Furthermore, these rains started and intensified earlier than expected catching most populations residing in areas that periodically don't flood seasonally unaware (Zambezi and Luangwa Rift Valley Areas).. Following the 2008/09 rainfall forecast from the Zambia Metrological Department indicating that the country will experience normal to above normal rainfall, there is a higher probability of floods occurring.

Impact

In the event of floods, the following are the sectors which are likely to be affected:

² Food Needs in-depth Assessment 2002

Human Settlement and Shelter

Populations living within the 5 km buffer from the main river systems and wetlands will lose their dwellings either due to high levels of water or structures collapsing due to excess rainfall. Most of the dwellings are built of poor quality building materials and are susceptible to flood damages.

Health and Nutrition

Due to flood waters, there is an increased risk of malaria, waterborne diseases (Cholera), hygiene related diseases (Dysentery), and Acute Respiratory Infections as a result of exposure. Snakes, rodents and other insects may retreat to the same dry areas as the human population, resulting in further risk of snakebites, plague and other related risks. Populations may have limited access to health facilities due to damages on road and health infrastructure. This will to a larger extent affect stocking levels of medical supplies (e.g. medicines, cold chains) and will particularly impact on important programmes such as ART. In addition, there is risk of increased malnutrition among the under five children due to lack of food for supplementary feeding

Water and Sanitation

There is a high risk of water contamination of drinking water due to flooding of sanitation facilities such as latrines and septic tanks. Affected populations will therefore be rendered susceptible to various water borne diseases i.e. cholera, dysentery and hygiene related diseases (scabies and other skin diseases). There is also a high risk of lack of clean water for household chores such as cooking and cleaning

Education

When flooding occurs when the school calendar is just beginning or midway through the first term, there is a risk of school children missing out on a major part of the curriculum. There is also a likelihood of some pupils not being able to attend school as they may be cut off due to floodwaters and damaged infrastructure. Pupils may also be cut off as a result of the families being completely displaced due to damages to their habitations. In some instances displaced populations, including school teachers, may occupy school buildings as emergency shelter forcing temporary closure of the schools that might otherwise be on highland and not directly affected by the emergency.

Agriculture and Food Security

Most of the food stocks for consumption are kept either in the dwellings or in grain bins that may have been submerged or damaged by rainfall or flood waters. Existing planted crops may be submerged or washed away resulting to total loss and/or decreased yield. Flooding of crop fields may cause the farmers to plant new crops. This may result into reduced yield due to loss of germplasm of adapted traditional varieties as well as decreased soil productivity due to loss of micronutrients that would have been washed away. In addition to direct loss of livestock in flood affected areas, there is also a risk of an increase in livestock diseases due to movement from the flood affected areas. There are at the same time positive aspect, usually when flood water recedes as there is residual matter that is deposited.

Infrastructure

There is a risk of flood affected areas becoming inaccessible due to basic support infrastructure such as boreholes, culverts, bridges and sections of roads being washed away. There is also the risk of communication infrastructure either being submerged in water, or damaged by hailstorms. There is also a potential of disrupting electricity supply which may cause high voltage electrocution where the areas affected are near high voltage electricity carrying pylons.

Cross Cutting Issues

Because of the nature of emergencies, issues relating to violation of human rights and protection are either not taken into account or are left till the end when they would have gone out of hand. Though according to the two previous emergencies, there has been no report of such incidences. These issues include gender based violence (GBV), sexual exploitation, sexual and child abuse. Sexual abuse will also lead to rising incidences of HIV and AIDS. It is therefore important to ensure that during the planning stages, these issues are taken into account to avoid the risk of occurrence.

2.3. Risk Analysis

The most likely emergency to befall the country are the floods which are likely to occur during the 2008/09 rainy season. In planning for the scenarios identified in each of the sectors, risk analysis was undertaken based on historical rainfall data for past flood years (2006/07 and 2007/08 seasons), spatial data analysis on the main river systems and perennial wetland areas, elevation information embedded within the agro-ecological zones. Furthermore, current and updated sector specific data was also used. Spatial and risk analysis was done using ARCVIEW GIS to develop risk maps of potential flood affected areas.

3.0. SCENARIOS AND PLANNING ASSUMPTIONS

This plan is developed to address floods as this is the most likely emergency that the country will deal with during the coming rainy season. Floods tend to cause multiple impacts on infrastructure, Education, Health, Water and Sanitation and Agriculture.

Table 1: Risk Analysis Table for Floods

Type of Hazard	Floods
Likelihood	Almost certain
Magnitude	High (North Western & Western) Moderate (Luapula, Eastern and Central) High (Southern)
Impact	Medium for most locations on Infrastructure, health, food security, water and sanitation, generally on livelihoods and education.
Location and Geographical Area	Eastern Province (Mambwe, Chama and Lundazi), N-Western province (Kabompo, Zambezi, Chavuma, Mwinilunga, Solwezi); Western province (Mongu, Senanga, Kalabo, Lukulu, Sesheke, Shang'ombo); Luapula province (Samfya) Southern Province (Kazungula, Namwala, Itezhi-tezhi, Siavonga, Sinazongwe, Monze, Mazabuka and Gwembe), Lusaka Province (Kafue, Luangwa, Lusaka), Copperbelt Province (Kitwe and Ndola), Central Province (Kapiri Mposhi, Mkushi and Serenje)
Triggers	High levels of rainfall, the intensity of rainfall, rising water levels in the river basins mentioned above, rate of drainage, animal movements such as snakes, rats into human habitations, Water springing from the ground
Time Frame	October 2008 - June 2009

3.1. Scenario

Based on the spatial and risk analysis, the following was the most likely scenario to unfold should floods occur during the coming rainy season:

Hazard (Floods)	Effect
Most Likely	The effect of the 2008/09 floods is likely to range from moderate to high in most parts of the country. 50 to 70% of the households residing within flood prone areas (i.e. 5 km buffer from the main river systems and perennial wetlands) will be adversely affected. In Health sector, 546,045 people (91,008 households) are likely to be affected by floods from sixteen (16) out of 31 districts. It is also assumed that some of these affected persons will completely be displaced and will access health services from nearby health facility. In Water and Sanitation sector, 475,823 people are likely to be affected in thirty one (31) districts. Out of 475,823, it is assumed that the 19,033 persons will completely be displaced and will require temporal shelter. This entails that water and sanitation services for the displaced will be required during and after the flood episode. In Agriculture and Food Security sector, it is anticipated that 699,678 persons in 27 Districts will be in need of food relief amounting to 27,988 MT of cereals for the period of five (5) months starting from December 2008 to April 2009. These are mainly populations whose fields and general livelihood sources will be affected by floods. This also takes into consideration the aspect of rising food prices which will exacerbate the already flood impacted population residing in the urban districts identified as being at risk of floods. In Infrastructure sector, it is assumed that all the thirty-one (31) districts which will be affected by the 2008/09 floods will experience infrastructure damage in one way or another. It is anticipated that flooding will cause damage to road embankments and drainage structures such as bridges, culverts and other river crossings respectively. The main priority will be to provide technical assistance and ensure that stop-gap measures are put in place to guarantee accessibility and swift return to normality. Priority will also be given to feeder roads which are likely to be affected and crossings leading to essential facilities such as markets, clinics and schools. In Human Settlement and Shelter sector, it is anticipated that 15,972 persons (2,662 households) will be displaced and will need temporal shelter and other essential household items. In Education sector it is anticipated that 374 schools in 28 districts will be affected by the floods. The schools will require temporary learning facilities and materials in order to continue functioning during the period of the floods. Government will facilitate relocating populations residing in perennial flood prone areas to higher grounds depending on the level of willingness. This will involve identification of suitable sites and providing these sites with basic infrastructure such as roads, bridges, latrines, health and education facilities. Households will be provided with the Non Food Items (NFIs) such as sleeping mats, blankets,

Hazard (Floods)	Effect
	mosquito nets, water containers, cooking utensils and charcoal. In addition households will be provided with relief food.

4.0 PROPOSED PREPAREDNESS, RESPONSE AND REHABILITATION ACTIVITIES (SECTOR BY SECTOR)

4.1. Objective

The main objective of the NCP has been addressed in the introduction of this report and is reinforced by sectors based specific objectives i.e. support the timely and coordinated response to anticipated floods in the 2008/09 rainy season, thus effectively minimising the impact of the floods on human population, livelihoods, lifelines and the environment.

4.2. Strategy

Mobilize all available resources and deploy them in timely manner to flood affected areas. This will involve implementation of activities in the following areas;

4.2.1. Capacity Building

As part of strengthening resilience among communities and strengthening the planning ability, training on preparedness planning in selected flood prone districts will be carried out. This training will focus on risk analysis, assessment and reporting as well as response requirements.

4.2.2. Response

In terms of response, concrete sector response plans are developed stating categorically what preparatory actions need to be carried out before, during and after the emergency with built in flexibility to provide for changes in the situation. The response plans also identify gaps where Government will require external support from cooperating partners.

4.2.3. Early Warning/Information Flow

The DMMU will work closely with the Department of Water Affairs (DWA) and the Zambia Meteorological Department (ZMD) among others, to ensure that the situation is being monitored as it is unfolding. Regular bulletins preferably on weekly basis generated by DMMU will be circulated as a way of sharing information as the triggers begin to show that the situation is getting worse. The NDMCF which is a coordination mechanism will be called regularly to update the stakeholders on the situation as well as progress on preparedness activities.

4.3. Guiding Principles

Humanitarian emergency response will be guided by the principles of neutrality, humanity and impartiality. The response will do no harm and will be based on restoration of affected

populations to their former lifestyle without exaggerating and getting populations used to lifestyles they cannot sustain after the emergency. As a guide therefore the government through DMMU will under take to provide as much detailed information as possible regarding the affected populations so that the correct amounts of assistance could be provided. The assistance will also be guided by the fact that this is not development work but short term assistance with possible early recovery programmes.

4.4. Preparedness Activities

As part of the implementation most of the work will be concentrated in the preparedness stage i.e. pre-disaster phase. And the Government will consider using the food for work and/or cash transfer programmes to engage communities in these preparedness activities by using initiatives such as food for work to carry out activities such as identification and preparation of alternative sites for relocation.

5.0. RESOURCE GAP ANALYSIS

A summary of the resource gap analysis is presented below

No	Sector	Resources Required (ZMK)	Resources Available (ZMK)	Net Resource Requirement (ZMK)	Net Resource Requirement (US\$) @ ZMK4500
1	Road Infrastructure	11,000,000,000.00	600,000,000.00	10,400,000,000	2,311,111.11
2	Human Settlement and Shelter	2,245,518,450.00	72,861,633.00	2,172,656,817.00	482,812.63
3	Health and Nutrition	1,090,,608,338.00	50,000,000	1,040,608,332.00	231,246.30
4	Water and Sanitation	15,112,000,000.00	750,000,000	14,362,000,000	3,191,555.56
5	Education	10,612,000,000.00	3,682,000,000.00	6,930,000,000.00	1,540,000.00
6	Agriculture and Food Security	40,466,200,000.00	367,065,644.00	40,099,134,356.00	8,910,918.75
7	Information Management and Emergency Communication	933,483,550.00	269,500,000.00	663,983,550.00	147,551.90
8	Logistics	23,315,884,800.00	-	23,315,884,800.00	5,181,307.73
	Total	104,775,695,138.00	5,791,427,277.00	98,984,267,855.00	21,996,503.97

6.0. Management and Coordination Arrangements

The various coordination forums will continue their coordination activities under the usual overall supervision of the Disaster Management and Mitigation Unit (DMMU), Office of the Vice President.

- 6.1 The Government through Disaster Management and Mitigation Unit shall coordinate the implementation of the contingency plan. The National Disaster Management Consultative Forum (DMCF) which is co-chaired by the Office of the Vice President and the United Nations Resident Coordinator's Office shall support DMMU in its coordination role.
- 6.2 At national technical level the Vulnerability Assessment Committee (VAC) shall support the DMMU in implementing the activities spelt out in the Contingency Plan.
- 6.3 Within the UN System the United Nations Disaster Management Team under the auspices of the UN Resident Coordinator will implement and coordinate the activities among the UN Agencies before, during and after the disaster. This will be done together with the Inter Agency Standing Committee (IASC) members which includes the International Federation of the Red Cross (IFRC) and both international and national Non Governmental Organisations.
- 6.4 Other coordination forums such as the International Non Governmental Organisations will continue to meet in coordination meetings with resolutions passed in these forums in response to the emergency communicated to the DMMU in its role as national coordination mechanism.

Rapid Assessments and dissemination of related findings should and shall be done within the framework of Zambia Vulnerability Assessment Committee in conjunction with the Provincial, District and Satellite Disaster Management Committees under the overall coordination of DMMU Regional Coordinators.

In view of the above undertaking, the Government of the Republic of Zambia will not take kindly to individual organisations that may choose to unilaterally carry out assessments and later on disseminate their findings without Government approval and clearance which should be sought from the Disaster Management and Mitigation Unit.

In order to minimise information gaps between different stakeholders, the Permanent Secretary OVP or the National Coordinator of DMMU shall provide updates to line ministry Permanent Secretaries, the Disaster Management Committees and the NDMCF through weekly bulletins. The General public shall be kept updated through press briefings that will be held weekly at a time to be designated.

No line ministry at provincial or district level or member of the NDMCF shall unilaterally issue any statement concerning any disaster situation without clearing it first with the respective Disaster Management Committee. The DMMU Regional Coordinators shall ensure that information is timely transmitted and monitor progress of interventions. The Government through Permanent Secretary [A], Office of the Vice President or the National Coordinator at Disaster Management and Mitigation Unit will be holding press briefings every week to update the general public on the floods situation as it evolves around the country as well as the measures being undertaken to address the situation.

7.0. Roles and Responsibilities

The overall responsibility of coordination shall be with the DMMU in particular and the Office of the Vice- president in general. The Provincial, District and Satellite Disaster Management Committees shall be the local coordination and implementation bodies. There shall be no independent activities carried out by any organisation outside or without the knowledge of the named coordination and implementation bodies. .The National Disaster Management Policy of 2005 places the responsibility of disaster management on the “shoulders” of each one of us, including the Disaster/floods victims themselves. It is in with this in mind that all our cooperating partners such as the UN agencies, donors, and business houses, non-governmental organisations both local and international are called upon to provide assistance during the emergency of contingency plan.

Institution	Responsibilities	Contact
DMMU	The main responsibility of DMMU will be to receive information, processing it and disseminating it to the stakeholders through the various channels. The other responsibility will be to coordinate the humanitarian response to ensure that there are no duplications for effective humanitarian response. The DMMU will also be responsible for organizing periodic briefings for stakeholders. The DMMU will also be responsible for the mobilization of initial supplies and logistics to enable the cooperating partners come on board in responding to the emergency.	Mr. D. Mulenga - +260211253123, +260978881315; Ms. Y. Mwape - +260211252436; +260966754275
Government Ministries	The various ministries have the primary responsibility of providing goods and services to the citizens with or without the emergency. The various ministries will therefore be required to continue to coordinate the implementation of sector specific activities related to the humanitarian response and emergency.	Ministerial DRR focal points (see Annex....)
United Nations Agencies	The United Nations has responsibility as the donor of last resort to ensure that they use all mechanisms such as flash appeals, consolidates appeals to mobilize resources for the emergency. It shall be expected that the UN will use their cluster approach as a mechanism around which response to humanitarian response will be organized. The UN on a case by cases basis will activate the clusters to ensure that all resources required are mobilized using their international networks. The UN will be responsible for the coordination of the UN Disaster Management Team and the IASC its members.	Mr. Macleod Nyirongo (Resident Coordinator) - +260211254417, +2608772539; Mr. Cheelo Mwiinga (Coordination Officer) - +260211251172 ext 271; +260966120021; Mr Pablo Recalde (WFP Country Director/UNDMT Chairperson) +260211252957/250407, +260977790824, Mr James Lynch (UNHCR Representative/UNDMT Deputy Chairperson) +260211265873, +260977862004

Institution	Responsibilities	Contact
Non Governmental Organizations (NGOs)	These are the primary implementing partners. Their major responsibility will be the last mile delivery of humanitarian assistance. They will also be responsible for mobilizing resources in collaboration with the cluster leads under the Inter Agency Standing Committee (IASC) of the United Nations. The NGOs shall be responsible for coordinating the NGO forum and its members.	Chair for the INGO forum
Private Sector	Through their corporate social responsibility and as good corporate citizens, the private sector will be expected to contribute to the humanitarian response in every way possible. It will be expected that as per tradition, the private sector will come to the aid of Government as part of their responsibility to the citizens of this country.	Zambia Chamber of Commerce and Industry Chairperson
Bilateral Cooperating partners	Bilateral cooperating partners have the responsibility of assistance on Government-to-Government basis. The cooperating partners will have the responsibility to work within the existing coordination structures. Bilateral partners are part of the NDMCF and will therefore have the responsibility of attending NDMCF meetings regularly and in turn inform their principle Governments. This will avoid their Governments getting information from the media which in most cases is highly inaccurate.	Chair - Donor Humanitarian Group

8.0 Resource Mobilisation

As per the National Disaster Management Policy of 2005, Disaster Management is the responsibility of everyone. It is line with this that we expect all players ranging from Government Agencies, cooperating partners, the UN System, the Private Sector, Non-governmental organisations (Local and International) and those that are community based to be fully involved in the mobilisation of the required resources to implement the contingency plan:

- 8.1** Cooperating partners are encouraged to indicate to Government through Disaster Management and Mitigation Unit - Office of the Vice President (DMMU-OVP) their intention/pledge to donate relief supplies well in advance in order to enable Government follow up on the matter and plan well the utilisation of such resources.
- 8.2** The pledge in 8.1 above should contain information relating to the target sector, and the value (financial or otherwise) bearing in mind that we are already in an emergency phase of our contingency plan.

9.0. RAPID ASSESSMENTS AND DISSEMINATION OF INFORMATION

Rapid assessments and dissemination of related findings should and shall be done within the framework of Zambia Vulnerability Assessment Committee in conjunction with the Provincial, District and Satellite Disaster Management Committees under the overall coordination of DMMU Regional Coordinators.

In this regard, the Government of the Republic of Zambia will not take kindly to individual organisations that may choose to unilaterally carry out assessments and later on disseminate their findings without Government clearance.

In order to minimise information gaps between different stakeholders during an emergency situation, the Government through Permanent Secretary [A] or the National Coordinator at Disaster Management and Mitigation Unit will be holding press briefings every week on Thursday at 14 hours to update the general public on the floods situation as it evolves around the country as well as the measures being undertaken to address the situation.

10.0 Annexes

Annex 1: Road Infrastructure

Annex 2: Human Settlement and Shelter

Annex 3: Health and Nutrition

Annex 4: Water and Sanitation

Annex 5: Education

Annex 6: Agriculture and Food Security

Annex 7: Information Management and Emergency Communication

Annex 8: Logistics

Annex 9: Detailed Sector Resource Gap Analysis

Annex 10: Contact Persons

Annex 1: Road Infrastructure Sector

1.0. Planning Assumptions

It is assumed that Thirty-one (31) Districts from Eight different provinces, namely; North-Western, Luapula, Eastern, Southern, Western, Lusaka, Central and Copperbelt Provinces that are likely to receive above-normal Rainfall resulting in flash floods that will cause damage to a large extent on Road embankments and drainage structures such as Bridges, Culverts and other river crossings. With this scenario being very likely, the Agency's main priority is to provide technical assistance and to ensure that stop-gap measures are put in place to guarantee accessibility and swift return to normality. Agency staff will be deployed to inspect and assess damaged infrastructure in the affected areas. Priority will be given to Feeder roads which are likely to be affected and Crossings leading to essential facilities such as Markets, Clinics and Schools.

The following assumptions have been made:

- **North Western** (Mwinilunga, Kabompo, Solwezi, Zambezi and Chavuma) **Luapula** (Samfya), **Eastern** (Mambwe, Lundazi and Chama), **Southern** (Kazungula, Namwala, Itezhi Tezhi, Mazabuka, Monze, Sinazongwe, Siavonga and Gwembe), **Western** (Senanga, Mongu, Sesheke, Kalabo, Shang'ombo and Lukulu), **Central** (Kapiri Mposhi, Serenje and Mkushi), **Copperbelt** (Ndola and Kitwe) and **Lusaka** (Lusaka, Luangwa and Kafue) provinces are most likely to experience Flooding.
- The average cost per Washout is ZMK 270.0 Million (i.e. Complete culvert installation, Headwall and Wing wall Construction, Aprons and Slabs e. t. c.).
- Crushing plants for stone aggregates operated by the Road Development Agency will be operational in Southern, Copperbelt, Eastern, western, North Western, Central, Luapula, Northern and Lusaka provinces.
- Other institutions such as Zambia Army, ZNS and Buildings Department (Ministry of Works Supply) have capacity to provide temporary bridges and heavy equipment to facilitate emergency works.
- Contractors in the vicinity of disaster areas will be compelled to help in the event of a disaster and be paid for the service.
- Routine maintenance will limit the number of Washouts of roads and bridges.
- Resources for repair of damaged infrastructure will be provided promptly and will be given first priority.
- Pipe Culverts and Portal frames from the known suppliers will be readily available.

2.0. Overall Objectives

The overall objective is to provide accessible Road and Bridge infrastructure to ease mobility of people as well as movement of relief Supplies to populations that will be displaced by floods.

3.0. Specific Objectives

Specific objectives include:

- Identify and formulate intervention strategies needed for road infrastructure before, during and after the floods.
- Provide reliable road Access, Bridges and Culverts in flood prone areas thereby increasing mobility of relief supplies to affected populations immediately, during and after the floods.
- Provide and disseminate information on alternative routes and available pontoon

services in and around distressed areas.

4.0. Requirements

- Utility vehicles with Four-Wheel-Drive capability.
- Communication equipment (Two-way Radios) / laptops with wireless connection, Cameras.
- Heavy construction Equipment to be provided by third parties including newly Road equipment from China per province will include;
 - 1No.Wheel loader/ Excavator,
 - 1No.Dozer,
 - 2No.Graders,
 - 1No.Roller,
 - 3No.Tippers,
 - 1No.Low bed,
 - 1No.Truck with lifting arm or Crane and,
 - 1No.Water Bowser.
- Other necessary materials such as culverts (Box and pipe)

Logistics to be used on the works

- The Concrete Pipe and Box culverts will be obtained from Lusaka and Ndola.
- The stones will be obtained from Lusaka, Southern, Central, Northern, Copperbelt and Eastern Provinces.
- Coarse and fine aggregates can be sourced from within the respective districts.
 - a. Portland cement will be supplied from Lusaka and Ndola.
 - b. Manual labour will be sourced from the affected areas.
 - c. Bailey Bridges will be sourced within the country, where available.

5.0. Implementing Agencies

- Road Development Agency
- Zambia National Services
- Zambia Army
- Roads Unit under Buildings Department

6.0. Activities

6.1.. Activities To Be Undertaken Before An Emergency

No.	Activities	Facilitator	Supported by	By when
1	Sensitization of all Regional offices	RDA - HQ	DMMU	Immediate
2	Development of an early warning system for potential failures of culverts and Bridges through a Bridge management system	RDA - HQ/Regional	DMMU	Immediate
3	Preventive/routine maintenance on rural, feeder and district roads	RDA - HQ/Regional	DMMU	Immediate/on-going
4	Clearing and desilting of waterways and drainages structures	RDA - HQ/Regional	DMMU	Immediate/on-going
5	Replacement and maintenance of Guardrails on flood prone crossings	RDA - HQ/Regional	DMMU	Immediate
6	Assessment and monitoring of conditions of bridges and road service levels through Bridge and road conditional surveys.	RDA - HQ/Regional	DMMU	Immediate/On-going

6.2.. Activities to be undertaken During an emergency

#	Activities	Facilitator	Supported by	By when
1	Monitor performance of prone crossings and effect of water levels	RDA - HQ	DMMU	Immediate/On-going
2	Provide expertise to assess damage	RDA - HQ/Regional	DMMU	Immediate/On-going
3	Provide Guidance on how to remedy damage	RDA - HQ/Regional	DMMU	Immediate/On-going
4	Provide temporary crossings and access routes	RDA - HQ/Regional	DMMU/Zambia Army/ZNS	Immediate/On-going
5	Provide information through warning signs	RDA - HQ/Regional	DMMU	Immediate/On-going
6	Provide information on alternative routes	RDA - HQ/Regional	DMMU	Immediate/On-going
7	Monitor effectiveness and provide information on available Pontoon services	RDA - HQ/Regional/ESCO	DMMU	Immediate/On-going

6.3.. Activities to be undertaken after an emergency

No.	Activities	Facilitator	Supported by	By when
1	In-depth assessment of flood impact on road infrastructure and crossings	RDA - HQ/Regional	DMMU	March, 2009
2	Review of performance of various structures after Floods	RDA - HQ/Regional	DMMU	April, 2009
3	Identification of remedial needs and intervention methods for damaged infrastructure	RDA - HQ/Regional	DMMU	April, 2009
4	Prioritization of damaged road infrastructure/bridges	RDA - HQ/Regional	DMMU	June, 2009
5	Generate Cost estimates and mobilize resources	RDA - HQ/DMMU	DMMU	July, 2009
6	Planning and implementation of recovery Phase	RDA - HQ/DMMU	DMMU	July, 2009
7	Monitoring and Evaluation of recovery phase	RDA - HQ/DMMU	DMMU	Sept, 2009

7.0. Summary of the Budget

No.	Item	Cost (K)
1	Emergency infrastructure technical assessment	450,000,000.00
2	Review of performance of various structures after floods	200,000,000.00
3	Identification of remedial needs and intervention methods for damaged infrastructure	150,000,000.00
4	Prioritization of damaged road infrastructure/ bridges	100,000,000.00
5	Generate cost estimates and mobilize resources	100,000,000.00
6	Bridges/ roads emergency repairs	10,000,000,000.00
	TOTAL	11,000,000,000.00

7.1. Detailed Costings for Road Infrastructure

CENTRAL PROVINCE IN-DEPTH ASSESSMENT OF 2007/08 FLOOD IMPACT											
Priority Order	District	Road Name	Road Code	Chainage of Defect Point*	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
1	Kapiri Mposhi	Mukobeko-Ngabwe	D817	various	T2	Bwacha, Kapiri Mposhi	Ring Culvert	Several streams	Deep erosion gullies & armco culverts vadalised and collapsed	Spot improvement at various chainages, Instal 12No.lines X 900mm Culverts	150,000,000
2	Kapiri Mposhi	T2-Muteteshi	Unclassified	30	T2		Ring Culvert	Muteteshi stream	Culvert washed away and eroded embankment	Construct a vented drift and repair the culvert headwalls and wingwalls	150,000,000
3	Mkushi	Masansa-Mboroma	RD208	90		Chabanga	Ring Culvert	Chabanga Stream	Culvert washed away	Instal 2No. x 1800 x 1800 Portal Frame and 2No. x 900 Relief culverts	
4	Mkushi	Mkushi-Upper Lunsemfwa	Unclassified	10	T2	Milombe	Ring Culvert	Milombe stream	Culvert washed away	Construct a vented drift and instal 2No. x 900mm culverts	100,000,000
5	Mkushi	Masansa-Mboroma	RD208	176	T2	Mkushi North	Ring Culverts	Misansa	Culverts washed away.	Install 2 x 1500 x 1500 portal frames	100,000,000
6	Serenje	Kundalila-Katota School	Unclassified	79.7	D224	Kundalila	Ring Culverts	Miswema river	Culverts washed away.	Install 3 x 900mm culverts	150,000,000
7	Kapiri Mposhi	Mang'ola - Lunchu	Unclassified	26.5	T2		Ring Culverts	Lunchu Stream	Culverts washed away.	Instal 3No. 1500 x 1500 Portal Frames, and raise embankment	
Total Cost of Reinstatements											650,000,000

COPPERBELT PROVINCE CONTIGENCY PLAN

Item no	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
1	Ndola			2 + 500	T3	Kavu Ward	Make shift bridge (timber)	Munkulungwe	Nil	Dec-06	(a) Washed away makeshift bridge (b) Damaged approaches to bridge (20m stretch)	a) Installation of 900mm culvert pipes x 4No. b) Repair damaged approaches H = 1.5m, W=5.5m , L = 20m	80,000,000
2	Ndola	Kavu road	earth	3 + 000	T3	Kavu Farm Block	Embankment	Munkulungwe		Feb-07	Approaches to bridge eroded	regravelling of approaches to bridge	42,000,000
3	Ndola	Madando	Feeder	0 + 500	T3	Twapya	Culvert	wapya	Culvert Type: Armco Pipe Diameter: 900mm, Head wall type: Stone masonry, Total Length: 6.8m, Embankment Height: 1.5m	Jan-07	(a) Damaged stone masonry wingwall (b) Eroded embankment (2m x 1m X 7.5m)	(a) Replace damaged wingwall (b) Backfill and compact embankment	35,000,000
4	Kitwe	Presidential Guest House rd	earth	0 + 850	T3	Kamfinsa	Culvert	Matemate	Culvert Type: Concrete box, No. of Lines: Two (2) Cells, Pipe Diameter: 3.5m per channel, Head wall type: Concrete Total Length: 7.0m, Embankment Height: 5m	Nov-07	(a) Washed away wingwall, (b) Cracked wingwall & abutment joint, (c) Eroded embankment behind wingwall 6m X 2m deep, (d) Eroded embankment (2.5m x 5m X 8.0m)	(a) Provide for new wing wall to culvert, (b) Seal crack in joint between wingwall and Abutment, (c) Backfill and compact erosion craters and provide embankment protection by stone pitching	60,000,000
Total Cost of Reinstatements													217,000,000

EASTERN PROVINCE CONTINGENCY PLAN											
Item No	District	Road Name	Distant from the Center.	Chainage of Defect Point	Nearest Main Road Code	Ward/Constituency	Type of Structure	Name of River/Stream Crossing	Type of Damage	Proposed Intervention	Estimated Cost (ZMK)
1	Chama	Chama - Kambombo	1km			Kamphemba Ward, Chama North	Drift	Kamphemba	The river changed course and eroded the drift are side	Extension of the drift/construction of a bridge on another point	60,000,000.00
2	Chama	Chama - Kambombo	4km			Kamphemba Ward, Chama North	Box culvert	Kazoo	Crack on the deck eroded apron and broken wing walls	Replacement of deck apron and wing walls	40,000,000.00
3	Chama	Chama - Kambombo	7km			Mphalausenga Ward. Chama North	Box culverts	Vitukutu	Cracks on the deck	Replacement of the deck	25,000,000
4	Chama	Chama - Kambombo	10km			Mphalausenga Ward in Chama North	Culverts	Pendwe	Culverts silted discharge drains low embankment s	Opening drainage and culverts raising embankment	50,000,000
5	Chama	Chama - Kambombo	15km			Mphalausenga Ward. Chama North	Culverts	Mbwata	Water crossing the road 5m before the culverts	Construction of a Catch Water drain.	15,000,000
6	Chama	Kalinkhu - Nthonkho	23km			Kalinkhu - Chama North	Box culvert	Chaubwa	Completely washed away box culverts	Construction of a new drift	100,000,000
7	Chama	Hospital Road	Within the Township			Kamphemba	Box culvert	Kanjiki	No wing walls	Construction of wing walls	50,000,000.00
8	Chama	Chama - Tembwe	24km			Mabinga	Drift	Bazimu	Eroded hand wall and damaged back	Rehabilitation of head wall	50,000,000.00
9	Chama	Tembwe - Chikwa	42km			Mabinga	Box culvert	Chizizi	Washed away wooden deck	Replacement of wooden deck with concrete deck	40,000,000.00

EASTERN PROVINCE CONTINGENCY PLAN											
Item No	District	Road Name	Distant from the Center.	Chainage of Defect Point	Nearest Main Road Code	Ward/Constituency	Type of Structure	Name of River/Stream Crossing	Type of Damage	Proposed Intervention	Estimated Cost (ZMK)
10	Chama	Tembwe - Chikwa	64km			Lumezi	Box culvert	Lumezi	Washed away wooden deck	Replacement of wooden deck with concrete deck	40,000,000.00
11	Ludanzi	Champhoyo - Mwasemphangwe Scheme	80km			Lumezi	Plank Foot bridge	Mwase	Bridge washed away	Construction of concrete culvert	100,000,000.00
12	Ludanzi	Kawinga - Yokobe	70km			Lumezi	Drift	Chikomeni	Bridge damaged, washed away	Construction of Drift	100,000,000.00
13	Ludanzi	Zumwanda - Bulete	35km			Lumezi	Culverts	Mthilakubili	Damaged culvert	Construction of 2 x 900mm dia culverts	90,000,000.00
14	Ludanzi	Zozo	50km			Chasefu	Plank Foot bridge	Zozo	Bridge washed away	Construction of cone Box culverts	100,000,000.00
15	Ludanzi	Chasefu - Egichikeni	80km			Chasefu	Conc Deck Bridge	Chasefu	Concrete Deck collapsed	Construction of concrete box culverts	100,000,000.00
16	Ludanzi	Hoya - Kamuzoole	70km			Chasefu	Drift	Hoya	Drift damaged	Construction of Drift	60,000,000.00
17	Ludanzi	Z.. N. S - Mwase Turnoff	65km			Lundazi	Drift	Pharaza	Drift damaged and washed away	Construction of Drift	120,000,000.00
18	Ludanzi	Mwase - Ndonda	50km			Lundazi	Culverts	Ndonda	Damaged culvert	Construction of concrete box culverts	120,000,000.00
19	Maambwe	Sanjemuleke	2km			Lundazi	Culverts	Kalopa	Damaged culvert and washed away	Construction of concrete box culverts	
20	Maambwe	Chilipadambo	3km			Lundazi	Drift	Lundazi	Damaged drift	Construction of Drift	
21	Maambwe	Mphamba - Msuzi	10km			Lundazi	Culvert	Msuzi	Damaged culverts	Construction of culverts	
Total Cost of Reinstatements											1,260,000,000.00

LUAPULA PROVINCE CONTINGENCY PLAN														
Item No	District	Road Name	Road Code	Chainage of Defect Point	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage		Proposed Intervention	Estimated Cost (ZMK)
1	Samfya					Culverts	Ing'anda Imo Stream						3 lines by 900mm concrete culverts.	130,000,000.00
2	Samfya	Varous				Culverts	Mwalashi Stream						5 Lines of 1200mm concrete pipe culverts	
3	Samfya	Varous				Culverts	Lupenda Stream						2 Lines of 900mm Concrete Pipe	100,000,000.00
4	Samfya	Varous				Culverts							3 lines by 900mm concrete culverts.	130,000,000.00
5	Samfya	Varous				Culverts							2 Lines of 900mm Concrete Pipe	100,000,000.00
6	Samfya	Nsonga-Tande-Mulumbi Road				Culverts							8 Lines of 900mm Concrete Pipe	
7	Samfya	chsunka-Chofwe-Chipili Road				Culverts							2 Lines of 1200 mm (Duoble) Concrete Pipe and 3 Lines of 900 mm at Bembe Dambo	130,000,000.00
8	Samfya	Kamami-Mutipula Road				Culverts							2 Lines of 900mm Concrete Pipe	100,000,000.00
9	Samfya					Culverts	Moonga stream						2Lines of 900mm Concrete Pipe	100,000,000.00
Total Cost of Reinstatements														790,000,000.00

LUSAKA PROVINCE CONTINGENCY PLAN														
Item No	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
6	Luangwa	Mpashya	U21		T4	Mpashya Clinic	No structure	Narrow and Dilapidated Timber structure		2004	2008	Narrow and dilapidated timber structure	Install 2 x 1200mm dia including headwalls and wingwalls	100,000,000.00
7	Luangwa	Luangwa Road	D145	37+600,1+900,10+800,17+300			Ring Culverts		Prone to flash floods. Requires installation of 600mm and 900mm culverts	Jun-08	2008	Existing structure and points becomes flooded in the rain season most culverts have been damaged and need replacement.	Installation of 1x600mm culvert and 1x900mm culvert on various points	65,000,000.00
8	Lusaka	Great East Road	T4	71+400	T4		Armco Culverts	Mambwe stream	Damaged apron causing ingress of water in the all structure	Jun-08	2008	Apron has been damaged, end wall stone pitching has collapsed need for stone pitching and backfilling with stabilized gravel.	Backfilling and stabilization of damage inlet to the culvert	
9	Lusaka	T4-Shikabeta Road	RD146		T4	Just before Shikabeta Clinic	900mm Dia. existing		Requires additional culverts		2006	Erosion of embankment because existing culvert is inadequate	Install 2 x 900mm dia additional culverts including construction of headwalls and wingwalls	100,000,000.00
10	Lusaka	Kridge	D178		T2N	Kridge farm	Splash		Damaged splash		2006	Damaged splash	Install 3 x 900mm dia culverts	120,000,000.00
11	Lusaka	Leopards/Mikango		18+000	D152		Drift Culverts	Njolwe Stream	Collapsed Culvert	Jun-08	2004	Failure of concrete deck due to collapsed culverts.	Demolish existing structure and construct a new one. New reinforced structure and stone pitch.	
12	Lusaka	Chiawa and Mugurameno	U10 and Rd117	13+300 and 13+600, 21+100, 30+900, 31+600, 41+500	D481		Culverts		Ring Culverts	June	2006	Replace damaged culverts with 600mm culverts, 9No. x 900mm culverts, 1No. x 900mm culverts and 2No. Lines x 900mm culverts 2008	Remove Existing and damaged/Washed away pipes and culverts	120,000,000.00

LUSAKA PROVINCE CONTINGENCY PLAN														
Item No	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
13	Lusaka	Situmbeko and Chimbotela	D535		M009		Culverts		Eroded culverts pipes	Jun-08	2008	Replace damaged culverts with 3 No. lines and raise road by 500mm over a 25m section	Replace damaged culverts with 3 No. lines and raise road by 500mm over a 25m section	150,000,000.00
14	Kafue	Kafue		19+100,19+400,19+600,59+100,60+100	T2 S		Culverts		Repair the steel guardrails, backfilling and stone pitching of the erosional damage.	May-08	2008	Damaged guardrails, cutting of road shoulders and undercutting of the road side.	Repair damaged guardrails with remaining components, provide gabion baskets on eroded sections	100,000,000.00
15	Kafue	Kafue	T2S		T2S		Culvert		Extend one culvertring and fill & stone pitch with rubble	Apr-08	2008	Erosional damage on the outlet side of the culvert.	Extend culvert ring and stone pitch	100,000,000.00
Total Cost of Reinstatements														855,000,000.00

NORTH-WESTERN PROVINCE CONTINGENCY PLAN													
Item No	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
1	Mwinilunga			3+500			Kampemba				Decayed timer deck Submerged timber slippers.	Replace the deck.	
2	Mwinilunga			25+000			Kankanja				Erosion Gullies.	Install 4 x 900mm. Dia Culverts	
3	Mwinilunga	Mwinilunga to Jimbe	T005	30+000			Mwinilunga to Jimbe				Erosion Gullies.	Install 4 x 900mm. Dia.	100,000,000.00
4	Mwinilunga			40+000			Nyamakabila				Erosion Gullies.	Install 4 x 900mm. Dia.	100,000,000.00
5	Mwinilunga	Lwekela to Kakoma	RD 276	115+000			Kalukundu bridge				Timber members burnt by fire.	Replace bridge with RC.	250,000,000.00
6	Mwinilunga	Nsweta to Kakoma					Mujila Bridge				Damaged timber deck.	Construct new RC Bridge	
7	Mwinilunga	Kanongesha to Kamapanda	RD 289	60+000			Kasenga				Deck swept by rains rosion gullies on approaches	Construct new RC Bridge	
8	Mwinilunga	Ntambo to Kasanjiko					Kasanjiko Culverts.				Embankment eroded, Collapsed Culverts.	Reconstruct embankment and ninstall 4 x 900mm. Dia.	
9	Zambezi	Dipalata to Kakeki	RD 294								Eroded approaches and Embankment.	Reconstruct embankment approaches and repair	30,000,000.00
10	Zambezi	Mize to Chinyama Litapi	RD 296	70+000			Mukema				Timber bridge with beams and logs laid across the Road	Construct new RC install 2 x 900mm Dia	100,000,000.00
26	Solwezi	Lamba	R184	10+000			Lamba				Washed away timer logs.	Replace with Construct 2 x 900mm dia Culverts	90,000,000.00
27	Solwezi	Kisalala to Lunga	U26**				Lunga bridge				Washed away timber slippers and embankment approach.	Replace with Construct 2 x 900mm dia Culverts construct embarmen.	

NORTH-WESTERN PROVINCE CONTINGENCY PLAN													
Item No	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
28	Solwezi			8+00			Solwezi Crossing(Kimas ala)				Slippers and embankment washed away.	Replace with Construct 2 x 900mm dia Culverts construct embarkmen.	
29	Solwezi	Kalulushi to Kesempa	M018	100+000			Musakashi				Erosion on the western side.	Repair / Replace 1x900mm dia	
30	Solwezi	Matebo - Maheba					Mafwe				Damaged timber deck	Replace with Construct 2 x 900mm dia Culverts	
31	Kabompo		U9	102+000			Ndunga culverts.(Ndunga - Luansonga Embarment)				Submerged and approach is washed away	Install 2 x 900mm. Dia Culvert.	100,000,000.00
33	Chavuma	Chavuma to Litapi	U11	40+000			Umbuze				Timber bridge with beams and slippers washed away.	Construct new RC bridge.	150,000,000.00
34	Chavuma	Chavuma to Litapi	U11	62+000			Kakonge				Timber bridge with beams and slippers washed away.	Construct new timber bridge.	60,000,000.00
35	Chavuma	Chavuma to Litapi	U11	62+000			Chiseso				Washed away culverts	Replace with Construct 2 x 900mm dia Culverts	90,000,000.00
36	Chavuma	Chavuma to Litapi	U11	102+000			Kapopolu				Washed away culverts	Replace with Construct 2 x 900mm dia Culverts	90,000,000.00
37	Chavuma	Kalombo to Chikongolo		25+000			Kalombo				Timber bridge with beams and slippers washed away.	Construct 3 x 900mm dia Culverts	
38	Chavuma	Chavuma to Mize	RD 552	08+000			Mavili				Damaged wingwalls.	Repair	
Total Cost of Reinstatements													1,160,000,000.00

SOUTHERN PROVINCE CONTINGENCY PLAN											
Item No.	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Type of Damage	Proposed Intervention	Estimated Cost (ZMK)
1	Gwembe	Bottom	D500			MASIKILI	Drift		Washed Away	Reconstruction	
2	Gwembe	Bottom	D500	Ch4+700			Drift			Rehabilitation	
3	Gwembe	Bottom	D500	Ch6+800			Solid Drift			Reconstruction	100,000,000.00
4	Gwembe	Bottom	D500	Ch8+000			Drift			Rehabilitation	100,000,000.00
5	Gwembe	Bottom	D500	Ch 9+500			Drift			Rehabilitation	100,000,000.00
6	Gwembe	Bottom	D500	Ch60+000			Drift	Koma river	Washed away	Reconstruction	100,000,000.00
7	Gwembe	Bottom	U9	Ch19+920					Embankment & Culvert washed away	Reconstruction	100,000,000.00
8	Namwala	Naminwe Bridges	M11						Erosion Gullies	Concret works. Filling eroded bidge foundation and protection against erosion	
9	Namwala	M11							Damaged culverts	Repair/reconstruction of culverts	
10	Kazungula	Makunka-Nyawa	M10	Ch32+000		Makunka	Drift		Washed away drift	Reconstruction	150,000,000.00
11	Mazabuka	Chaanga Malabo	D387	Ch43+400	Chikankanta		Drift	Jalala	vented drift washed away. Width at cross point of stream channel 45m	Construction of a new drainage structure	150,000,000.00
12	Mazabuka	Chingangauka-Chikani		Ch1+200	T1		Culvert		Original culvert washed away. Gully at this point 2.5m deep and 18m Length.	Construction of a box culvert	150,000,000.00
13	Itezhi-tezhi	Nakabangwe Rd					box culvert		Crossing damaged	Repair of embankment/repair of crossing	200,000,000.00
14	Itezhi-tezhi	Baanga					box culvert		Crossing damaged	Repair of embankment/repair of crossing	200,000,000.00
15	Itezhi-tezhi	Bachele					box culvert		Crossing damaged	Repair of embankment/repair of crossing	150,000,000.00
16	Itezhi-tezhi	Chile Village					box culvert		Crossing damaged	Repair of embankment/repair of crossing	150,000,000.00

SOUTHERN PROVINCE CONTINGENCY PLAN											
Item No.	District	Road Name	Road Code	Chainage of Defect Point	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Type of Damage	Proposed Intervention	Estimated Cost (ZMK)
17	Siavonga	At Nabbanda					Box culvert		Damaged crossing/eroded approaches	Repair of embankment/repair of crossing	
18	Siavonga	At Shamwiinga					box culvert		Damaged crossing/eroded approaches	Repair of embankment/repair of crossing	
19	Siavonga	At Diddwi					Culvert		Damaged crossing/eroded approaches	Repair of embankment/repair of crossing	200,000,000.00
20	Siavonga	At Jamba					Culvert		Damaged crossing/eroded approaches	Repair of embankment/repair of crossing	80,000,000.00
21	Sinazongwe	At Donga Stream					Culvert		Damaged crossing/eroded approaches	Repair of embankment/repair of crossing	
22	Sinazongwe	Kalinkoto Stream					Bridge		Damaged crossing/eroded approaches	Repair of the bridge	150,000,000.00
23	Sinazongwe	kama kwiya stream					Bridge		Damaged crossing/eroded approaches	Repair of the bridge	100,000,000.00
24	Sinazongwe	Kamalavu					Bridge		Damaged crossing/eroded approaches	Repair of the bridge	
25	Sinazongwe	Kamangedeni					Bridge		Damaged crossing/eroded approaches	Repair of the bridge	
26	Siavonga	At Sinachilombo					Culvert		Damaged crossing/eroded approaches	Repair of embankment/repair of crossing	88,000,000.00
Total Cost of Reinstatements											2,268,000,000.00

WESTERN PROVINCE CONTINGENCY PLAN														
Item no	District	Road Name	Road Code	Chainage of Defect Point*	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
1	Senanga	Kalabo-sitoti	D319	60km		Senanga central	Road embankment and armco culverts at 3 points of the road		At first point 60m of embankment has been washed away exposing 2 culverts at either ends. At second point culverts are inadequate therefore the fill material on culverts and some culverts have been washed away. At third point 40m of embankment has been washed away exposing the armco culverts below. There are 9x900mm diameter at the bottom and 9x600mm diameter culverts on top. All headwalls and wing walls have collapsed. These drainage structures are inadequate.		22/02/08	The road is impassable, access to the washaway at the moment is by water from senanga.	Replace the damaged armco pipes with concrete pipes and reconstruct the embankment as follows: At point one install 4 sets consisting 3No. x1800mm culverts spaced at 10m. At second point install 3No. x 1800mm diameter culverts. At third point install 8No. x 900mm diameter culverts	350,000,000
2	Senanga	Kafula - Namabunga					Bridge has been damaged	Lui River	Bridge Rehabilitation				Bridge Rehabilitation	250,000,000
3	Kalabo	Lundilwe					Bridge has been damaged	Lundilwe River	Bridge Rehabilitation				Bridge Rehabilitation	250,000,000
4	Kalabo	Silamu					Bridge has been damaged	Silamu Stream	Bridge Rehabilitation				Bridge Rehabilitation	250,000,000
5	kalabo	Lilengo bridge					Bridge has been damaged	Lilengo River	Bridge Rehabilitation				Bridge Rehabilitation	250,000,000
6	kalabo	Kataba school bridge				kalabo	Bridge has been damaged		Bridge Rehabilitation				Bridge Rehabilitation	250,000,000

WESTERN PROVINCE CONTINGENCY PLAN														
Item no	District	Road Name	Road Code	Chainage of Defect Point*	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
7	kalabo	Mwandi Culvert				kalabo	Replacement of washed away culvert		4No. x 900mm diameter culvert(first crossing point).The embankment length is 1.850km and 4.5m wide.			The road is impassable	Replace the armco pipes with 3No. x 900 mm concrete culverts	150,000,000
8	kalabo	Kachumwa				kalabo	Bridge has been damaged		The Bridge span is 10m and 1.2m high				Rehabilitation of the damaged bridge.	
9	kalabo	Kalabo-sikongo	RD 315	33.5km and 38km respectively		Sikongo	Road embankment and armco culverts at 3 points of the road		600mm dia. Armco Culverts and at two other points about 50m of embankment around Ch 33+500 from kalabo have been washed away where as at Ch 38+000 about 40m long of the embankment has been washed away		27/02/08	The washaway at chainage 38+000 is very severe traffic can hardly cross	Replace the damaged armco pipes with concrete pipes and reconstruct the embankment.A total length of 150m of the embankment needs to be reconstructed and raised to 1.2 and 1.9 around chainage 33+000 and 38+000 respectively.	300,000,000.00
10	Mongu	Namushakende -Nalikwanda	RD 305a	60Km		Nalikwanda	Armco Culverts at chainage 39+500 from M10 junction		3 No. x 600mm diameter		20/01/08	The culvert lines have collapsed leaving adeep depression on the road.	Replace the armco pipes with 3No. x 900 mm concrete culverts	100,000,000.00
11	Mongu	Nalikwanda-Litawa road	U17	75Km		Nalikwanda	Embankment with Culvert crossing points		4No. x 900mm diameter culvert(first crossing point).The embankment length is 1.850km and 4.5m wide.		20/01/08	The embankment has severely eroded and water is overtoping in most sections.Two lines of culverts at first point have collapsed.	Replace the collapsed armco pipes with 2No. x 900 mm concrete culverts . Construct new concrete culverts 2No.x900mm diameter at 3 points on ch 0+600 ,Ch 1+300 and ch 1+620. Repair and raise embankment by 0.5m.	

WESTERN PROVINCE CONTINGENCY PLAN														
Item no	District	Road Name	Road Code	Chainage of Defect Point*	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
12	Mongu	Lueti Clinic Stream					Culvert washed away	Lueti Clinic Stream	3 No. x 600mm diameter					150,000,000
13	Mongu	Liande-Namengo Road.	U14	105		Nalikwanda	Embankment with Culvert crossing points		At chainage 0+870 embankment length of 15m long and 1.5m high has been washed away.The log bridge at chainage 1+140 has a span of 12m on the main river.		20/01/08	At ch 0+965 on embankment the culvert outlet head wall,wingwalls have been washed away and the whole structure is likely to be washed away in the next heavy rainfall.At chainage 1+140 on the embankment,a log bridge has deteriorated and water is almost overtopping the bridge.	Construct 1 No.x1500mm culvert(ch 0+870),replace armco culvert(ch 0+965) concrete pipes 2x900mm concrete and construct 2No.x 1200mm culverts(ch 1+140)	150,000,000
14	Mongu	RD312	RD3 12	145		Simaa ward/ Luena constituency	Three timber bridges at Nangandu river have been washed away.At Naluwe flood plain there is need to construct an embankment		0.2km of embankment across Nangandu river.3No. Timber bridges have been washed away at 3 different points of the embankment.The first point is 2m deep and the other two points are 1.5m deep.At Naluwe construct an embankment of 333m by 1m high.		03/10/2008	The embankment is very low.Access to the wash ways requires use of 4x4 vehicles.	At the wash away construct 2No.x2400mm Box Culvert and 4No.x1500mm Box Culvert culverts and at Naluwe construct an embankment	200,000,000

WESTERN PROVINCE CONTINGENCY PLAN														
Item no	District	Road Name	Road Code	Chainage of Defect Point*	Nearest Main Road Code	Ward/Village Settlement	Type of Structure	Name of River/Stream Crossing	Construction Details	Proposed Start Date	Date of Damage	Extent of Damage	Proposed Intervention	Estimated Cost (ZMK)
15	Senanga	old M10	Old M10	30 km		Nanjucha	Bridge has been washed away at chainage 14+500 and at chainage 14+800 culverts are blocked		The Bridge span is 15m and 1.2m high		01/12/2008	The bridge was washed away sometime in 2007 and the community have since built a temporary crossing structure	Construct 4No. By 1500mm diameter culverts and unblock the culverts at ch 14+800 and add more fill.	150,000,000.00
16	shangombo	Rd 463	Rd 463	110Km from Matebele.		Sinjembela	Embankment washout		About 15m long and 1.5m high embankment washout		March,2008	Road is impassable	Repair embankment and construct culverts	
Total Cost of Reinstatements														2,800,000,000

Annex 2: Human Settlement and Shelter Sector

1.0 Planning Assumptions

In the most likely scenario where it is expected that 15,972 or 2,662 households will be affected by the floods in 9 districts. Of these about 11,981 persons or 1996 households will need temporal shelter and non food items for more than 2 weeks.

In addition some families may require sleeping mats, blankets, mosquito nets, water containers, cooking utensils and charcoal, etc. Also it will be necessary to implement appropriate camp management procedures to ensure effective prevention and control of diseases as well as adequate protection of the most vulnerable among the displaced population.

Where the affected population will need temporal shelter for more than 2 weeks, districts authorities will allocate appropriate sites for the installation of temporal camps. In this situation, in addition to the distribution of Non food items to the displaced families and to camp management activities, it will be necessary to do site identification and site planning before the end of January 2008.

Shelter in the camps will be rub-halls, plastic sheeting, poles and to the extent possible tents. DDMCs and concerned organizations will identify the most suitable form of shelter in potential sites.

2.0. Overall Objective

The overall goal is to provide temporal shelter where necessary to the displaced persons in order to minimise human suffering as a result of the disruption of their economic activities and destruction of their houses by the floods.

3.0. Specific objectives

The specific assumptions are as follows:

1. To provide shelter to the displaced persons
2. To provide basic households items to the most vulnerable households among the displaced population
3. To ensure that all camp sites are located in areas accessible by all-weather roads
4. To ensure that family unity is maintained when allocating shelter to affected households
5. To ensure easy access to relief supplies by displaced persons in various camps
6. To ensure protection and security of the most vulnerable persons among the displaced in the camps and or settlements

a. Scenario Building Projection Table

Variable	Expected Events/Effects over the Next Six Months	Time Frame	Assumptions if any
People Displaced	Damaged houses and other infrastructure due to excess rainfall and flooding	November to April	i. Raised down houses and other infrastructure ii. Damaged roads & bridges iii. Erratic supply of social amenities

b. Scenario Building Projection Table

Effects	Effects on Households	Direct Effect	Indirect Effect
Damaged houses and other Infrastructure	i. Loss of house accommodation ii. Loss of livelihood iii. Degraded environment iv. Possibility of disease outbreaks due to poor sanitation v. Lack of access to social amenities vi. Migration of people to safe areas	i. No shelter ii. No food iii. No sanitary system iv. Contaminated water v. Risk of death due to drowning vi. No access to social amenities	i. People exposed to cold weather and rain ii. People will starve iii. People will be susceptible to disease iv. Trauma associated with death of a family member v. No access to social amenities

The following districts and number of people are likely to be affected. This will require government intervention in terms of relocating the affected households to higher and safer lands and provision of food supplies and other services.

District	Projected No. Household to be Affected	No. of Tents Required	Tents Required at 10% Contingency
Gwembe	150	150	165
Itezhi-tezhi	200	200	220
Lukulu	200	200	220
Mazabuka	200	200	220
Monze	250	250	275
Mumbwa	500	500	550
Namwala	500	500	550
Sinazongwe	150	150	165
Solwezi	270	270	297
Total	2420	2420	2662

4.0. Requirements

Shelter in form of tents will be provided to each displaced household and as much as possible, family unity will be maintained by providing adequate number of tents per family. This will ensure children's safety and reduced cases of child abuse.

4.1. Site Identification and Planning

Temporal Site

Under this arrangement, the projected number of households that would be displaced temporarily is 3,996 persons or 666 households and will require sufficient number of tents to cater for the affected population. Site identification and planning for temporal relocation of affected households will be done by the DDMCs and concerned organizations will identify the most suitable form of shelter in potential sites.

Permanent Sites-Urban

For permanent sites in urban areas, the local authorities i.e. the district councils will be engaged to plan and provide alternative land for resettling of the displaced households. *Permanent sites-rural*: for rural sites, the Department of Resettlement in collaboration with the District Administration will be engaged to identify and plan such sites. Site planning will involve developing of site plans, demarcation of plots and subsequent allocation of such plots. The minimum size of plots being 4 Ha while the maximum is 50ha per household. For rural

permanent sites, the minimum land mass that would be required to permanently relocate the displaced households settled in flood prone areas is approximately 8,000 hectares.

4.2. Water

Water collection points will be in a maximum distance of 500 m from each shelter and will provide at least 15 litres of water per person per day. When necessary each household will be provided with at least two 20 litres containers with lids. It may also be necessary to provide each family with a 30 litres bucket.

4.3. Sanitation

An average of one latrine seat will be available for 20 persons. The distance between the shelters, the water collection points and the latrines will be at least 50 m.

Adequate hygiene promotion and vector control activities will be done on regular basis with the full participation of the displaced population.

4.4. Other Non-Food Items

When necessary, adequate quantities of soap, sleeping mats, blankets, mosquito nets, used clothes, cooking utensils and fuel to meet cooking and heating needs will be provided to affected households.

Also necessary sanitary napkins for women and girls in child-bearing age will be distributed. In addition adequate quantities of condoms will be available for targeted distribution.

As much as possible the Sphere standard on Non Food Items will be respected namely:

- Per person: 1 sleeping mat, 1 blanket, 1 cooking set.
- Per family: 600gr of soap per month; 1 cooking set; 1 impregnated mosquito net

4.5. Food and Nutrition

Communal kitchens will be organized as an immediate emergency measure where necessary.

4.6. Security and Protection.

Sites will be planned and managed in such a way that they do not trigger any gender based violence (GBV) or fire disaster hazards. Beneficiaries will be involved in the management of the sites to enhance site security and hygiene (cleaning and vector control)

4.7. Site (Camp) management

The overall management of the sites will be the primary responsibility of the Ministry of Community Development and Social Services through the local Council. The responsible authority will ensure that services are delivered according to agreed standards in a coordinated manner.

For information sharing and to avoid duplications coordination meetings will be held at regular intervals agreed to by all stakeholders in the camp. These will be chaired by the Chair person of the DDMC (DC)

5.0. Implementing Agencies

- Department of Resettlement
- International Federation of the Red Cross(IFRC)
- Zambia Red Cross
- United Nations High Commission for Refugees
- United Nations International

- International Organization for Migration (IOM)

6.0. Activities

6.1. Activities to be undertaken before an Emergency

No.	Activities	Main actor	Supported by	By when
1.	Sensitization of DDMCs	DMMU	DMCF members	Immediate
2.	Site selection and planning	DMMU	DOR/IFRC/ZRCS; WFP; UNHCR	December 2009
3.	Assessment of available NFIs to know what resources are available and where	DMMU	DOR; IFRC/ZRCS; UNICEF; UNHCR	December 2009
4.	Identify implementing partners: tentative allocation of responsibilities is agreed	DMMU	DOR; IFRC/ZRCS; IOM	Immediate
5.	Procurement/ Propositioning of supplies	DMMU	DOR; IFRC/ZRCS; WFP; IOM	January 2008
6.	Training on Site planning and management	DMMU/	DOR;IFRC/ZRCS; UNHCR; IOM	December 2007
7	Periodic review of the sector response plan to update it based on the changes in the scenarios and the planning assumptions	DMMU	DOR; IFRC/ZRCS; UNHCR; IOM	Every 2 months
8	Defining criteria for shelter needs identification and family/household' items distribution	DMMU/ DDMCs	DOR;IFRC/ZRCS; UNHCR; IOM	Immediate

6.2. Activities to be undertaken during an Emergency

No.	Activities	Main Actor	Supported by	By when
1	Assess household needs and resources. Establish numbers requiring assistance and groups with special needs	DMMU through DDMC	DOR;; Local administration IFRC/ZRCS; UNHCR; WFP; IOM	Immediate
2	Decide on household items required for families and individuals	DMMU through DDMC	DOR;Local administration IFRC/ZRCS; UNHCR; WFP; IOM	Immediate
3.	Provision of household items	Concerned NGO, UNHCR, UNICEF	Local administration; IFRC/ZRCS; NGOs	Immediate
4.	Site management	DDMC	Local administration; ZRCS; IOM	

6.3. Activities to be undertaken after the emergency

No.	Activities	Main Actor	Supported by	By when
1.	In-depth assessment	DDMU/ DDMCs	DOR; Provincial administration; IFRC/ZRCS; NGOs	After 2 month
2.	Identification of resettlement area	DDMU/ DDMCs	DOR; Provincial administration; IFRC/ZRCS; NGOs	After 2 months
3.	Mobilise resources for resettlement	DDMU/ DDMCs	DOR; Provincial administration IFRC/ZRCS; NGOs	After 2 months
4.	Road Infrastructure development in the newly established settlements	DMMU/ RDA	DOR, Exec Director RDA,	After 2 months
5.	Evaluation of the implementation of the resettlement plan	DDMU/ DDMCs	DOR; Provincial administration; <i>IFRC/ZRCS</i> ; <i>NGOs</i>	<i>After 6 months</i>

7.0 Budget

Items	Units	Shelter Requirements for up to 2 weeks		Shelter requirements for 2 to 8 weeks		Shelter Requirements for more than 8 weeks		Total quantity	Units	Unit Price in USD	Total Cost in USD (US\$ 1=ZMK4500)	Total Cost in ZMK
		Households	Quantity	Households	Qty	Households	Qty					
Site selection	9 sites in 9 districts	761	2	2,662	7	2,662	7	9	places	1,500.00	13,500.00	60,750,000.00
Used clothes	1 bale/10hh	761	76	2,662	266	2,662	266	342	Bale	158	54,036.00	243,162,000.00
20Ltr fordable containers	1 piece/household	761	761	2,662	2,662	2,662	2,662	3,423	Bale	1	3,423.00	15,403,500.00
Fuel (Charcoal)	1bag/household/ month	761	761	2,662	5,324	2,662	5,324	11,409	Bag	13	148,317.00	667,426,500.00
Fuel (Kerosene)	4Ltr/ household /month	761	3044	2,662	21,296	2,662	21,296	45,636	Litres	1	45,636.00	205,362,000.00
Lamps for lighting	1piece/household	761	761	2,662	2,662	2,662	2,662	3,423	Piece	4	13,692.00	61,614,000.00
Mosquito nets (ITN)	3pieces/ household	761	2,283	2,662	7,986	2,662	7,986	10,269	Piece	7	71,883.00	323,473,500.00
Cooking sets - communal (Kitchen for 500 families))	1 piece for 1000 households	761	1	2,662	3	2,662	3	4	Piece	4,286.00	17,144.00	77,148,000.00
Cooking sets (family)	1set/ household	761	761	2,662	2,662	2,662	2,662	3,423	Piece	15	51,345.00	231,052,500.00
Bathing Soap (0,25kg)	1.5Kg/ household / month	761	1141.5	2,662	7,986	2,662	7,986	17,114	Kg	1	17,113.50	77,010,750.00
Detergents	1 kit /15 households	761	51	2,662	355	2,662	178	584	Kit	39	22,773.40	102,480,300.00
Cleaning materials	1 kit /20 households	761	38	2,662	266	2,662	133	437.2	Kit	66	28,855.20	129,848,400.00
Hand Tools	1 kit /20 household	761	38	2,662	133	2,662	133	171	Kit	66	11,286.00	50,787,000.00
TOTAL COST											499,004.10	2,245,518,450.00

Annex 3: Health and Nutrition

1.0 Planning Assumptions

In an event of a flood occurring, it will be assumed that health facilities located in the flooded areas will be inaccessible and thus access adequate health services to its catchment population. The catchment population of the flood afflicted health facility will most likely seek medical attention from other nearby health facilities that are accessible to it. There is also the likelihood of a flood afflicted health facility's catchment population being resettled in an area with no pre-existing health facility or access to a pre-existing health facility. These factors will need to be taken into consideration when deciding the number of people that will be affected by the floods, the type of health services that will be disrupted, the interventions needed and where logistics are to be pre-positioned or buffered.

The criteria used to identify the population that will most likely be affected in the 2008/2009 season is as follows

- I. Health facilities that are located within a radius of 5km from the river bank and/or major wetlands have been deemed to be in a flood risk area. These centres have been identified by using their geographical location (GPS points).
- II. Health facilities located in low lying areas (valley areas) which are prone to flash floods have similarly been identified by GPS.
- III. Districts that were adversely affected by floods in the 2007/08 season have been included.

546,045 persons representing 91,008 households will be affected by the floods in 16 districts. Of this number there are 25,307 expectant mothers and 97,302 under 5 children. The affected population will need medical supplies to be pre-positioned/buffered in a health facility that has been identified for the purpose. As a result of floods or drought, some victims will suffer from cholera or dysentery which will require medical attention. Increase in malaria cases is anticipated due to the due to floods. It is assumed that the drugs that are currently available in the health facilities may not be adequate in responding to any form of disasters.

During emergencies /disasters, movement of people in search of a livelihood is inevitable. As such, preventable diseases are normally on the increase especially in children under five years, communicable and non communicable diseases among the older population. Mental and social problems are normally a concern in such situations. This calls for intensive immunization for children under five years, intensive health promotion in the affected areas and building capacity in health providers in the area of managing emergencies/disasters.

The District Health Management Teams (DHMT) as part of the District Disaster Management Committee will play a key role in the coordination, monitoring and distribution of medical supplies at district level. Health centres and hospitals will be the main implementers of health care activities. Coordination with other sectors is paramount in order to ensure that all the needs (water and sanitation, Infrastructure, transport, food etc.) are met. Community participation will be encouraged.

2.0. Overall Objectives

The overall goal is to provide health care to the affected population in order to prevent and reduce excess mortality and morbidity due to floods/drought; and promote a sustainable healthy life.

2.1. Specific objectives

The specific objectives are as follows:

1. To reduce the risk of secondary hazards e.g. epidemic.
2. To ensure adequate health care is provided to vulnerable groups.
3. To reduce impacts of diseases among the affected population.
4. To provide reproductive and child health services in disaster affected areas.
5. To provide information, education and communication on communicable and non communicable diseases.
6. To provide ART services in disaster afflicted areas.

3.0. Requirements

3.1. Scenario 1 - Floods

During floods in Zambia the number of cases of malaria, diarrhoea, and upper respiratory infection are expected to increase. There is also the possibility of plague outbreaks. There is a general need to strengthen disease surveillance and response during floods. It is expected that about 546,045 adults and children number of people will need medical attention for prevention and control of diseases. It will be essential to preposition vaccines to ensure the continuation of immunization programmes. Special attention will be needed to vulnerable groups such as pregnant women, children under 5 years and PLWHA. The provision of ART services for those already on treatment in flood afflicted areas is of utmost importance to ensure adherence. The provision of ITN's to pregnant women and children under 5 years of age is expected to safe guard against the expected increase in malaria cases. The continued control of rodents is to be carried out in collaboration with other sectors.

3.2. Scenario 2 - Cholera

Zambia has been experiencing cholera outbreaks since 1991 and this is always a common occurrence during the rainy season. The contaminated water and poor hygiene are contributory factors to outbreaks of cholera. It is expected that approximately 91,008 households will be vulnerable to cholera out break in the 2007/08 rainy season. They will be a need for the cholera prone districts to pre-designate at least one health centre as a cholera treatment centre and pre position the necessary supply of fluids and cholera drugs.

4.0. Implementing Agencies

- Africare
- CARE
- Ministry of Agriculture and Cooperatives
- Ministry of Education
- Ministry of Health
- Ministry of Local Government and Housing
- UNICEF
- USAID
- World Health Organisation

5.0. Health Activities Before, During and After the Emergency

5.1. Activities to be undertaken before an Emergency

No.	Activity	Main Actor	Supported by	By When
1.	Conduct a drug and inventory and identify gaps	MoH	WHO, NGOs	November
2.	Strengthen NEPPC&MC,DMMU coordination and communication	DMMU/MoH	MoH, Collaborating Partners	December 2008
3.	Improve the information management to capture data from the districts	MoH	MoH, Collaborating partners	November 2008
4.	Preposition drug requirements	MoH	MoH/WHO/ UNICEF	November 2008
5.	Community sensitization on personal hygiene, safe drinking water,	MoH	MoH, UNICEF, WHO, Africare, Care, Oxfam, Concern etc	Ongoing
6.	Map out inaccessible areas in the districts	MoH	DDMCs, MoE, MACO,NGOs	Nov-Dec 2008
7.	Environmental Manipulation to prevent outbreaks	MLGH/MACO/MOH	CP's nad NGO's	Nov 2008- continuous

5.2. Activities to be undertaken During an Emergency

No.	Activity	Main Actor	Supported by	By When
1.	Inform about disease outbreaks	MoH	MoH, WHO, UNICEF, NGOs	24 hrs
2.	Conduct assessment and report back to provincial -national level on medical requirements	DMMU/MoH	DDMC, NGOs, WHO, UNICEF	72 hrs
3.	Mobilize resources (drugs, water, medical supplies etc)	DMMU/ MoH	MoH, WHO, UNICEF, NGOs, USAID	1 week
4.	Coordinate the distribution of drugs and medical supplies	DMMU, MoH	UNICEF, NGOs, USAID	1 week
5	Mobilize medical teams	MoH	DDMC, NGOs, WHO, UNICEF	December 08

5.3. Activities to be undertaken after an Emergency

No.	Activity	Main Actor	Supported by	By When
1	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	MoH	MoH, WHO, UNICEF, NGOs, USAID	April - December 09
2	Health education to communities (on good hygiene practice, waste disposal, etc).	MoH	MoH, WHO, UNICEF, NGOs, USAID	Through out the year
3	Technical supervision and support visits	MoH	MoH, WHO, UNICEF, NGOs, USAID	Dec-June 09
4	Support sustained delivery of essential health services such as immunization, child growth monitoring, maternity, HIV/AIDS, TB including through outreach where appropriate.	MoH	MoH, Collaborating partners, NGOs	Dec 07 -June 09
5	Support the provision and distribution of essential drugs, vaccines and supplies including mosquito nets.	MoH	MoH, WHO, UNICEF Collaborating partners, NGOs	Dec -Jan 09

6.0 Summary of the Budget

No.	Activity	Resource Requirement
1	Support the provision and distribution of essential drugs, vaccines and supplies.	89,072,332.58
2	Support sustained delivery of essential health services such as immunization, child growth monitoring, maternity, HIV/AIDS, TB, ART including through outreach where appropriate.	200,036,000.00
3	Staff refresher training for prevention and control of flood related medical conditions (emergency triage, diarrhoeal diseases, plague, etc).	300,000,000.00
4	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	50,000,000.00
5	Health education to communities (on good hygiene practice, waste disposal, etc).	150,000,000.00
6	Technical Supervision and Support visits	100,000,000.00
7	Environmental Manipulation	150,000,000.00
8	Screening and provision of therapeutic supplements	51,500,000.00
	GRAND TOTAL	1,090,608,332.58

Annex 4: Water and Sanitation

1.0. Planning Assumptions

The 2008/09 floods are likely to affect 32 districts in 8 provinces; 6 in Western, 5 in N/Western, 1 in Luapula, 3 in Lusaka, 3 in Eastern, 4 in Central, 2 in the Copperbelt and 8 in Southern provinces. The floods will cause some amounts of destruction to education, health and road infrastructure. It will also affect water and sanitation systems and cause social economic disruptions as well as displacement of populations.

Approximately 699,678 adults and children will be affected and in need of various WASH interventions, including hygiene education to prevent WASH-related disease outbreaks due to the 2008/09 floods. It is also expected that approximately 91,008 households will be vulnerable to cholera outbreaks in the 2008/09 floods.

Out of the 699,678 people affected, it is assumed that 15,972 persons or 2,662 households will be displaced in 9 districts in need of temporal shelter and will also require water supply, sanitation facilities (bathing, latrines and hand washing) and hygiene education and supplies for various periods during flooding and immediately after the floods. Over 374 Schools are projected to be affected in 27 districts, representing over 155,000 school children needing water supply, sanitation facilities and hygiene promotion interventions. The schools will need restoration of water supply by repair or rehabilitation, provision of Chlorine and 20 litre jerry cans with lids for classroom level water treatment and storage. They will also need construction of child-friendly and gender-segregated sanitation facilities and provision of soap for hand washing to prevent disease.

For emergency water supply needs, the likely intervention will be to supply water to affected communities for the first one (1) or two (2) weeks using water bowzers while permanent water solutions are put in place. Assuming all the 15,972 Internally Displaced People affected by the 2008/09 floods are considered for boreholes, a total of 56 boreholes are required although the distance to water points of 500 meters has not been considered. However, 54 boreholes have been planned for in this case. Other means or sources of water supply using bowzers will be considered depending on the prevailing disaster phase.

2.0 Overall Objective

The overall objective of the sector response plan is to reduce mortality and morbidity cases due to WASH-related diseases triggered by the envisaged floods in Zambia through the provision of safe water and sanitation services to the affected population.

2.1. Specific Objectives

The specific objectives for WASH sector/ cluster are the following;:

- i. To ensure safe and reliable access to water supplies of appropriate quality to meet the health and hygiene needs of the affected populations.
- ii. To ensure easy access to proper and adequate sanitation (in terms of excreta disposal and solid waste management). This will take into consideration appropriate hygiene and drainage facilities for the affected people.

- iii. To ensure the affected populations are properly informed on WASH related behaviour practices (in the context of the emergency) through hygiene promotion to reduce the risk of disease outbreaks and eventual loss of life due to floods
- iv. To ensure sector/cluster coordination including regular monitoring and evaluation of the WASH emergency response and re/planning of the WASH situation of the risky and affected populations, including identifying and estimating population in need of water and sanitation.
- v. To ensure that patients at health centers and children in schools in the disaster affected areas have access to safe water, sanitation and appropriate hygiene facilities.

3.0. Scenario Building Projections Tables

Variable	Expected Events/Effects over the next 6 Months	Time Frame	Assumptions If any
Water system/ sources submerged or damaged	Inaccessibility or limited access to water sources for use of the affected populations	During Floods	People are forced to move and/ or use risky water sources
Sanitation facilities submerged or damaged	Inaccessibility or limited access to sanitation facilities for use of the affected populations	During Floods	Open defecation and fecal contamination of environment and water sources
Contamination of water/water sources due to floods	Outbreak of WASH-related diseases (including malaria, cholera, diarrhoea, etc.) in the affected areas	During Floods	Limited supply of WASH materials /necessities Health to distribute mosquito nets

Effects	Effects on WASH	Direct Effects	Indirect Effects
Inaccessibility or limited access to water sources for use of the affected populations	Use of contaminated water sources and congestions at existing facilities	Use of contaminated water, failure to practice improved hygiene practices	Walking long distances to collect water. People at risk of WASH-related diseases
Inaccessibility or limited access to sanitation facilities for use of the affected populations	Loss of dignity, congestions at existing facilities and rampant open defecation	Rampant open defecation	Contamination of the environment with faecal matter. People at risk of WASH-related diseases
Outbreak of WASH-related diseases (including malaria, cholera, diarrhoea, etc.) in the affected areas	Morbidity and mortality	Loss of productivity and funds due to WASH -related diseases	Reduced well-being and increased poverty and deprivation

4.0 WATER & SANITATION REQUIREMENTS

4.1. Site identification and planning

Site identification and planning will be done according to the sphere standards. A minimum of 35 sq meters will be provided to each individual for accommodation and day to day activities. It is worth noting that family members will be encouraged to stay near each other.

4.2. Water Supply

Water collection points will be in a maximum distance of 500 m from each shelter and will provide at least 15 litres of water per person per day. When necessary each household will be provided with at least two 20 litres containers with lids for safe water collection, treatment (with chlorine) and storage. It may also be necessary to provide each family with a 30 litres bucket.

4.3. Sanitation

To ensure proper and adequate excreta disposal, an average of one latrine hole or toilet seat will be available for 20 persons for displaced communities. For the non displaced communities, promotion of one family one latrine construction will be done. The distance between the shelters, the water collection points and the latrines will be at least 30 m.

Adequate hygiene promotion and vector control activities will be done on a regular basis in collaboration with the Health Sector/ Cluster with the full participation and involvement of the displaced populations.

5.0 ACTIVITIES TO BE UNDERTAKEN

5.1. Before the Emergency

Pre-position of WASH emergency preparedness and response supplies including chlorine and/or water purification tablets in the disaster/flood prone districts before the emergency starts.

#	Activities	Coordinating Agency	Lead Agency	Supported by
1.	Repair of machinery and equipment including vehicles, generators, measurement instruments etc	DMMU	MEWD	MLGH,
2.	Pre-positioning of bowsers and or bladders	DMMU	MLGH	MEWD, UN system, NGOs
3.	Pre-positioning of the dewatering pumps for pumping water from depressions	DMMU	MEWD	MLGH, NGOs
4.	Assessment of water resources (including flood forecasting) and estimate of people and other assets likely to be affected	DMMU	MEWD	MLGH, CSO, MCDSS, NGOs
5.	Procurement/ Pre-positioning of water treatment chemicals and field water testing kits	DMMU	MLGH	MOH, UN system, NGOs
6.	Establishing WASH Sector/cluster information management system and updating of the who-what-where components	DMMU	MLGH	UN system, NGOs

5.2. During the Emergency

During the emergency, efforts will be done to restore access to safe water supply and sanitation in communities, health centers and schools. This will be done through repair/rehabilitation of water sources, water bladders and supply of jerry cans to needy populations for safe transportation from water distribution points and other sources and storage of drinking water at home, health centers and schools.

#	Activities	Coordinating Agency	Lead Agency	Supported by
1.	Inter Sector/Cluster Assessments of the WASH situation carried out (both rapid and comprehensive)	DMMU	MEWD	MLGH, UN System, NGOs
2.	Water supply using bowsers and bladders or	DMMU	MEWD	MLGH

#	Activities	Coordinating Agency	Lead Agency	Supported by
	emergency tanks			
3.	Construction and repair/rehabilitation of water supply points (e.g., boreholes, shallow wells, etc)	DMMU	MLGH	MEWD, MOE, MOH, MCDSS, UN system, NGOs
4.	Health and hygiene education campaigns to the affected populations	DMMU	MLGH	MOH, MEWD, UN system, NGOs
5.	Construction and repair/rehabilitation of sanitation facilities in affected areas	DMMU	MLGH	MCDSS, MOH, MOE, UN system, NGOs
6.	Pumping out water in settlements that are flooded	DMMU	MEWD	MLGH, NGOs
7.	Water testing, distribution and application of chemicals for water treatment (at water sources, health centers, schools , household , etc)	DMMU	MEWD	MOH, MLGH, CSO, MCDSS, UN system, NGOs

5.3. After the Emergency

The WASH Sector/cluster will support the restoration of access to water and sanitation facilities in affected communities, including schools (construction and rehabilitation of latrines, wells, pumps, hand washing stands and storage facilities). This will include the provision of support in order to prepare community and institutional level action plans for restoration of WASH services.

#	Activities	Coordinating Agency	Lead Agency	Supported by
1.	Construction and repair/ rehabilitation of water points including boreholes and shallow wells in affected areas	DMMU	MLGH	MEWD, MCDSS, MOE, MOH, UN system, NGOs
2.	Construction and repair/ rehabilitation of sanitation facilities in affected areas	DMMU	MLGH	MCDSS, MOH, MOE, UN system, NGOs
3.	Assessment of water resources and water supply and sanitation services	DMMU	MEWD	MLGH, NWASCO, CUs
4.	Expansion/rehabilitation of water and sewage treatment works	DMMU	MLGH	MOH, Cus
5.	Provision of support in order to prepare community and institutional level action plans for restoration of WASH services	DMMU	MEWD	MLGH, UN system, NGOs
6.	Improve the drainage systems and long-term solid waste disposal mechanisms	MLGH	LOCAL AUTHORITIES	CONTRACTORS
7.	Monitoring and evaluation of the sector response plan	DMMU	MEWD	MLGH

5.4. RESPONSIBILITIES AND DUTIES

For emergency response coordination and planning, it will be necessary to identify, collect and use information on WASH sector (institutional arrangements (i.e. who is doing what and where) at different levels, maps and reports

1. The District Disaster Management Committee (DDMC) will be responsible for facilitating emergency response at district level while implementation of the response will be done through the district WASH team.
2. At the onset of the disaster, the district level WASH team from the DDMC will carry out own rapid and needs assessment which will then be submitted to the Regional/Provincial DMC who will report to DMMU at national level. They will work in conjunction with the satellite committees to assess the damage to water supply and sanitation infrastructure (such as hand pumps, pit latrines, etc in communities, resettlement camps, in schools and health centers) and will look out for possible back-up or sharing arrangements with other districts.

For effective response planning, coordination and response, it will be necessary to identify key local resource people and/or institutions with special knowledge and skills on water, sanitation and hygiene.

6.0 Budget

Activity/Item	Cost
Assessments of emergency water & sanitation needs	152,000,000
Drilling equipment maintenance/ rehabilitation	150,000,000
Water resources assessment	150,000,000
WASH co-ordination, monitoring and evaluation, and logistics	200,000,000
Provision of emergency water supply by trucking	500,000,000
Procurement and provision of temporary water sources and storage containers.	500,000,000
Procurement and supply of water testing kits	100,000,000
Supply of chlorine and/or water purification tablets	800,000,000
Construction and repair/replacement of wells, boreholes or pumping units	8,000,000,000
Provision of emergency sanitation services being used at temporary shelters	550,000,000
Construction and repair/ rehabilitation of damaged sanitation facilities	1,300,000,000
Procure and distribute pitking/fatking enzymes and labour for dosing	100,000,000
Promotion of improved solid waste management and drainage	100,000,000
Program Support to information dissemination on how to protect health	500,000,000
Community hygiene promotion meetings facilitated by CHW, EHTs , etc	400,000,000
Procurement and distribution of water quality test kits, Clorin, HTH, soap, etc	950,000,000
Capacity development/training for local Communities, EHTs, CHWs, etc	180,000,000
Support to prepare local level action plans for restoration of WASH services	480,000,000
Total	15,112,000,000

Annex 5: Education

1.0. Planning Assumptions

In an event of a flood occurring, it is assumed that schools located in the flooded areas will be inaccessible and thus unable to support learning and teaching for the catchments population. The catchment population of the flood affected school facilities will most likely opt to use school facilities that are accessible to it in adjacent non flood affected districts. There is also a likelihood of flood affected school catchments population being resettled in an area with no pre-existing school facility.

These factors will need to be taken into considering when projecting the number of schools that will be affected by flood, the type of schools that will be disrupted, the type of interventions needed and where relief facilities will be pre-positioned.

The criteria used to identify the schools and population that will most likely be affected in the 2008-2009 season is as follows:

- School facilities that are located within a radius of 5km of a river bank and/or wetland area which has been categorized as a flood risk area. Their actual geographical locations were used to locate the schools (GPS points).
- School facilities located in low lying areas (valley areas) have also been identified using their geographical locations (GPS points).
- In an event of a flood occurring, 35% of the schools will be at risk and 4% of these will flood in the 26 districts. It is anticipated that teaching and learning will be disrupted for at least three weeks.
- In an event that schools are not flooded but the surrounding community is flooded, the school buildings shall be used for sheltering the community for at least three weeks during the flood.
- In an event that both the surrounding areas and the schools are flooded, the school catchment population shall be required to be shifted to higher ground.
- In an event that schools are submerged and buildings damaged such that pupils and teachers are not able to have access to the school, it is assumed that the school shall not be accessible for at least three weeks.

The Ministry of Education has assessed the impact of the floods and prioritized interventions as immediate, medium and long term to enable the pupils and teachers to continue learning and teaching, respectively.

2.0 Overall Objective

The overall objective is to provide compliant shelter and limited facilities to aid the school to function during the period of the floods.

2.1. Specific Objectives

- To secure moveable equipment and assets to secure areas for safe keeping.
- To provide temporally accommodation for teachers and their families for a period up to three weeks of the floods.
- To provide temporally classrooms and latrines at a ratio of 1:20 persons.
- To provide learning materials i.e. school in a box kits at a rate of 2 units per school.
- To provide safe drinking water as per UN guidelines.

- To repair damaged school buildings, which might require minimal repairs at an estimated cost of K20 Million per school.
- To liaise with DDMC to provide support and temporally accommodation for members of the community that may seek shelter in the school.

3.0. Temporal School Infrastructure and Learning Materials

Ministry of Education will be the lead in the identification of suitable higher ground for shifting and construction of temporal shelters for classrooms, houses for teachers and their families including latrines. Learning materials in the form of school in a box and recreational kits shall be provided. Portable drinking water shall also be provided per pupil including teachers and their households.

4.0. Implementing Agencies

- Catholic Secretariat
- Ministry of Education
- UNICEF
- World Food Programme

5.0. Site (Camp) Management

The Ministry of education shall manage the site and shall liaise with District Disaster Management Committees at district level.

6.0. Activities

6.1. Activities to be undertaken before an emergency

No.	Activities	Main Actor	Supported	By When
1	Form committees and appoint focal point officers at all levels to lead	MOE		Immediate
2	Sensitization of DDMCs	MOE	UNICEF, WVI,WFP Catholic secretariat	Immediate
2	Make agreements with other partners about roles and coordination of areas of emergency response	MOE	UNICEF, WVI,WFP Catholic secretariat	Immediate
2	Site selection and planning	MOE	DDMC	January 2009
3	Identify implementation partners	MOE	UNICEF, WVI,WFP Catholic secretariat	Immediate
4	Procurement/preposition of supplies	MOE	UNICEF, WVI,WFP Catholic secretariat	January 2009
5	Defining criteria for shelter needs	MOE	UNICEF, WVI,WFP Catholic secretariat	immediate
6	Training on site planning and management	MOE	DDMC, UNICEF, WVI,WFP, Catholic secretariat	January 2009

6.2. Activities to be undertaken during an Emergency

No.	Activities	Main Actor	Supported	By When
1	Carryout rapid assessment to determine the immediate needs	MOE	DDMC	January 2009
2	Identification of actual schools affected	MOE	DDMC	Late January 2009
3	Assess the needs and design solution	MOE	UNICEF, WVI,WFP Catholic secretariat	January 2009
4	Provide necessary equipment and materials to construct temporally shelters	MOE	UNICEF, WVI,WFP Catholic secretariat	January & February 2009

5	Shift the affected schools to identified safe sites	MOE	DDMC	January & February 2009
5	Provide safe water and temporally latrines, Provide chlorine	MOE	UNICEF, WVI,WFP Catholic Secretariat	January & February 2009
6	Provide school in a box and recreational kits	MOE	UNICEF	January & February 2009
7	Construct temporally classrooms and latrines	MOE	DDMC	January & February 2009
8	Assess how the plan is working and make necessary changes to improve the situation	MOE	UNICEF, WVI,WFP Catholic secretariat	February & March
9	Periodical monitoring to review situation on the ground to make corrections if need be.	MOE	UNICEF, WVI,WFP Catholic secretariat	March

6.3. Activities to be undertaken After an Emergency

No.	Activities	Main Actor	Supported	By When
1	Demobilize and shift school back to original place	MOE	DDMC	April/May
2	In-depth assessment	MOE,	UNICEF, WVI,WFP Catholic secretariat	May
3	Evaluation of the implementation plan.	MOE	UNICEF, WVI,WFP Catholic secretariat	May 200
4	Carryout rehabilitation works on all school infrastructure damaged by floods.	MOE		May 200

	ACTIVITIES	RESOURCE REQUIREMENT [ZMK]
1.	Site selection and planning	150,000,000.00
2.	Identify implementation partners	1,000,000.00
3.	Procurement/preposition of supplies	500,000,000.00
4.	Defining criteria for shelter needs	25,000,000.00
5.	Training on site planning and management	80,000,000.00
6.	Assess the needs and design solution	20,000,000.00
7.	Provide necessary equipment and materials to construct temporally shelters	250,000,000.00
8.	Shift the affected schools to identified safe sites	700,000,000.00
9.	Provide safe water and temporally latrines, Provide chlorine	200,000,000.00
10.	Construct temporally classrooms and latrines	350,000,000.00
11.	Assess how the plan is working and make necessary changes to improve the situation	40,000,000.00
12.	Periodical monitoring to review situation on the ground to make corrections if need be	200,000,000.00
13.	In-depth assessment	55,000,000.00
14.	Evaluation of the implementation plan	41,000,000.00
15 .	Provide school in a box and recreational kits	3,500,000,000.00
16	Carryout rehabilitation works on all school infrastructure damaged by floods	4,500,000,000.00
	TOTAL BUDGET	10,612,000,000.00

Annex 6: Agriculture and Food Security Sector

1.0. Planning Assumptions

The areas assumed to most likely be affected are those located within five (5km) buffer from the river banks and main wetlands areas which have been categorized as flood risk areas. The anticipated floodwaters will most likely affect crops in the riverine areas due to inundation of floodwaters. Furthermore the crops planted in low lying areas are likely to be swept away by flash floods. Pasture for animals is likely to be reduced as much of it will be inundated causing livestock to be unthrifty, more prone to diseases with a reduced capacity for draught power. Unrestricted livestock movement due to limited pasture areas may precipitate the outbreak and spread of some livestock diseases such as Foot and Mouth Disease (FMD). This will affect people's livelihoods and food security status eroded as floods take their toll causing populations to be displaced.

It is also anticipated that most plateau areas within agro-ecological zone IIa and IIb (semi arid as well as eastern and central plateau areas) where the soil water holding capacity are low will result into heavy leaching of soil nutrients causing crops to start yellowing. The expected damage to crops and market infrastructure will most likely cause food insecurity and increased vulnerability to hunger. Furthermore, the rising food and fuel prices will exacerbate the food insecurity situation.

The contingency plan will aim at providing relief food amounting to 29,142 MT of cereals to an estimated population of 699,678 people (116,613 households) directly affected by floods to safeguard their household food security.

Affected households that have access to viable wetlands will also need to be supported with inputs to undertake dry season cropping (winter cropping). Lessons learnt from the floods that occurred in 2007/08 rainy season indicated that farmers who practiced conservation farming techniques were able to minimise the impact of the flood on the crops as compared to those who did not.

The flood prone areas especially those that are proximal to game parks have an interface with wild animals (due to competition of grazing land) known to carry the FMD pathogen. It is estimated that 500,000 cattle (representing 50,000 HH) will require vaccination from transmissible diseases such as *Contagious Bovine Pleuro pneumonia* (CBPP) and FMD. The threat of CBPP spread is imminent in areas of Western, North Western and part of Southern province. Wet conditions may also pre-dispose livestock to some diseases, such as Foot rot, *H. Septicaemia* and increased endo-parasitic loads. In the event of a disease outbreak in flood affected areas, Government is expected to bear the cost for most of the vaccinations (300,000 cattle representing 30,000 HH), but will require supplementary assistance to contain the spread of the disease. Supplementally efforts to control the disease would target 200,000 cattle for an estimated 20,000 cattle owning HH in flood affected areas.

2.0. Overall objective

The overall objective will be to provide awareness on flood mitigatory measures to populations likely to be affected by floods in the country so as to reduce the impact on food security.

2.1. Specific Objectives

- To restore agricultural production capacities of flood affected Households through provision of emergency input support
- To carry out emergency livestock vaccinations and treatments in order to control possible disease outbreaks this may be pre-disposed by flood conditions and the mass movement of animals as well as people.

3.0. Scenario Building Projection Table

Variable	Expected Events/Effects over the next 7 months	Time Frame
Maize Available	▪ Declining availability of stocks at household level. ▪ Increasing dependency on markets in adjacent high producing figures.	November 08- February 09
Maize Price	▪ Increased prices expected earlier than normal. ▪ Increased flow of commodities from surplus to deficit areas. ▪ Increased flow of food commodities from surplus countries (i.e. Malawi, Mozambique)	December 08 - February 09
Crops	▪ Emerged crops swept away by floods ▪ Surviving crops wilts due to excess water ▪ Surviving crop yellows and stunts due to nutrient leaching ▪ performance ▪ Crop failure due to poor rains in the Nyika plateau.	November 08- January 09
	▪ Reduced harvest as a result of poor crop	April 09 - June 09
Livestock	▪ Unrestricted movement of livestock and people resulting in outbreak of transmissible livestock diseases such as FMD and CBPP ▪ Reduced drought power due unthrift conditions of the cattle	November 08- March 09
Agricultural Input prices	▪ Increased input prices due to increasing oil prices and cost of raw materials.	October 08 - December 08
Rural infrastructure	▪ Bridges and roads rendered impassable resulting in inability by farmers to access agriculture inputs such as seed and fertilizers. ▪ Reduced access to markets	December 08- February 09

Effects Table

Effects	Effects on Households	Indirect Effect
Declining availability of stock	▪ Collecting unusual amounts of wild foods ▪ Increased out migration ▪ Reduce expenditure on non essential commodities ▪ Food insecurity at household level	▪ Increased livestock sales ▪ Reduced availability of labour ▪ Increased vulnerability
Maize price increase earlier than normal	▪ Increased livestock sales to purchase maize ▪ Collecting unusual wild foods ▪ Increased out migration ▪ Reduce expenditure on non essential commodities ▪ Food insecurity at household level	▪ Early on-set of hunger period ▪ Diversion of money from productive assets to fund consumption ▪ Increased numbers of sex workers
Reduced harvest	▪ Low stock levels ▪ Food insecurity at household level ▪ Reduced production capacity ▪ Reduced household income	▪ Increase in non farming activities ▪ Increased vulnerability
Outbreak of transmissible livestock diseases	▪ Reduced drought power ▪ Reduced household income ▪ Food insecurity at household level	▪ Increased vulnerability ▪ Reduction in number of available coping options
Increased agricultural input prices	▪ Reduced purchase capacity ▪ Reduced hectarage to planted crops	▪ Reduced crop production and productivity ▪ Increase in non agricultural activities
Damage to roads/bridges	▪ Reduced access to agricultural inputs ▪ Reduced access to markets ▪ Increase in transportation costs	▪ Transporters shun affected area ▪ Reduced access to agricultural extension messages. ▪ Food insecurity

4.0. Activities

4.1. Activities to be undertaken before the floods

Activity	Coordination	Supported by whom	When
Implementing partner identification and Coordination and defining of roles	DMMU	MACO/FAO	October
Farmer sensitization on flood mitigatory measures involving crop/variety selection and conservation farming	DMMU	MACO	Before onset of the rains
Crop monitoring	DMMU	MACO	After planting
Identification of seed and other input sources	DMMU	MACO/FAO	October/November
Surveillance of CBPP, FMD and other transmittable livestock diseases	DMMU	MACO	Year round

4.2. Activities to be undertaken during the floods

4.2.1. Food Needs Table

District Name	2008 Projected Population	Population Affected	Projected Cereal Needs (Dec 08 - Apr 09) MT
Sinazongwe	109,491	21,898	912
Chavuma	38,015	9,504	396
Zambezi	83,127	20,782	866
Lukulu	86,599	17,320	721
Siavonga	71,970	10,796	450
Senanga	131,969	26,394	1,099
Gwembe	45,404	13,621	567
Lundazi	314,765	47,215	1,966
Mazabuka	260,057	78,017	3,249
Mongu	194,957	38,991	1,624
Monze	210,845	42,169	1,756
Namwala	115,251	23,050	960
Samfwa	204,609	30,691	1,278
Chama	100,584	9,081	378
Shang'ombo	86,369	17,274	719
Kazungula	88,517	22,129	922
Lusaka	1,310,273	65,514	2,729
Ndola	466,759	23,338	972
Kitwe	461,290	23,065	961
Mkushi	145,940	29,188	1,216
Serenje	175,587	35,117	1,463
Kafue	186,224	46,556	1,939
Mambwe	60,894	15,224	634
Luangwa	25,218	5,044	210
Kalabo	138,509	27,702	1,154
Total Cereal Requirement	5,113,223	699,678	29,142

Implementing Agencies

- DMMU
- WFP

4.2.2. Activities to be undertaken After the Emergency

Activities	Coordination	Supported by whom	When	Estimated Cost	
				K 000	U\$
Rapid Food Security Needs assessment and area mapping	DMMU	VAC/WFP/MACO	After floods have receded	200,000,000	44,444.44
Relief food operations	DMMU	WFP/NGOs	After floods	32,056,200,000	7,123,600.00
Beneficiary identification and selection	DMMU	DDMC/MACO/NGOs/WFP	After floods have receded	50,000,000	11,111.11
Dry season inputs for 10,000 HHs in 23 districts to enable cultivation of 0.25 Ha/HH	DMMU	MACO/FAO/NGOs	March	2,930,000,000	651,111.11
Support to conservation Agriculture for 12,000 HHs to enable cultivation of 0.25 Ha/HH	DMMU	MACO/FAO/NGOs	April	4,120,000,000	915,555.56
Inputs distribution	DMMU	NGOs/MACO/WFP	April	160,000,000	35,555.56
Survey of suspected livestock disease outbreaks and mapping	DMMU	MACO	After the floods have receded	200,000,000	44,444.44
Awareness creation among livestock owners on disease prevention and control measures in affected districts	DMMU	MACO	After survey	40,000,000	8,888.89
Procurement of vaccines and antibiotics for 500,000 cattle in 23 districts	DMMU	FAO/MACO	After Diagnostic survey	500,000,000	111,111.11
Livestock vaccinations and treatment for cattle	DMMU	MACO	After survey	210,000,000	46,666.67
Total				40,466,200,000	8,992,488.89

Annex 7: Information Management and Emergency Communications

1.0. Planning Assumptions

It is anticipated that telecommunication infrastructure will be disrupted following the 2008/09 rainy season. This will to a larger extent affect information flow to the affected populations. This therefore entails that there is need to establish emergency information dissemination hubs.

2.0. Overall objective

The overall objective will be to provide an efficient and effective information management and emergency communication mechanism for response.

2.1. Specific objectives

- To determine the level of preparedness of communications authorities and service providers through awareness activities on the impending floods to occur in 2008/09 season.
- To determine the preparedness levels of the Government Ministries, NGOs both local and international as well as UN agencies on the impending floods for the 2008/09 season.
- To ensure the timely acquisition of appropriate communication equipment and expertise to improve the communication coordination during the floods.
- To co-ordinate the provisions of communication operability such as the licensing, frequency allocation and the transportation where necessary of equipment for use by direct stakeholders during the period of the floods where necessary.
- To disseminate timely and appropriate information to the affected populations via the print, voice and electronic media to create awareness of the Floods.
- To ensure timely and credible information flow to DMMU from the affected districts for decision making by the relevant authorities and ministries.

Emergency communications infra structure shall be installed as need arises and capacity built among stakeholders. Information shall flow from the districts to the national level as well as among stakeholders at the same levels.

In order to achieve this, national radio and TV stations will be involved. At local level, community radio stations will be used. Traditional methods of information dissemination shall not be ignored.

Standard operating procedures to be established and put in place on the use of communications equipment especially HF and VHF communications.

3.0 Implementing Organisations

- DMMU
- WFP
- Communications Authority of Zambia

4.0. Activities

4.1. Activities to be undertaken Before an Emergency

No.	Activities	Main Actor	Coordinating Agency	Supported By	By When
1	Informing of service providers, authorities, NGO's etc to ensure adequate preparation and maintenance of their communications equipment in the event of floods.	DMMU	DMMU/CAZ	Voice and print media, CAZ, UN, Zamtel	Immediate
2	Acquisition of Equipment necessary for adequate communications during the floods.	DMMU	DMMU	CAZ,	By 30 th November 2008
3	Co-ordination of communication strategies and Equipment, Frequencies, Licensing, Request for RBGans From ITU for 5 month period.	DMMU	DMMU/CAZ	CAZ, FPMU	By 30 th October 2008
4	Survey of aerial masts for installation of emergency communication equipment	DMMU	DMMU	ZAMTEL,ZESCO,CELTEL, MTN, ZNBC	Immediate
5	Floods awareness campaign	DMMU	DMMU	ZANIS/ZNBC, Community Radio station	Immediate
6	Development of data matrix by sector	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	Immediate
7	Development of 3W database and maps	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	Immediate
8	Development of Emergency Info i.e. Using PDAs to collect information.	DMMU,WFP, CSO,UNDP,UNICEF	DMMU/UNDP	NGOs, Line Ministries, UN	Immediate
	Installation of Emergency Communications in affected areas	DMMU	DMMU/CAZ	UN, ZAMTEL, ZESCO, CELTEL, MTN, ZNBC	By 30 th November 2008

4.2. Activities to be undertaken During the Emergency

No.	Activities	Main Actor	Coordinating Agency	Supported By	By When
5	Installation of Emergency Communications in affected areas	DMMU	DMMU/CAZ	UN, ZAMTEL, ZESCO, CELTEL, MTN, ZNBC	By December 2008
6	Floods awareness campaign	DMMU	DMMU	ZANIS/ZNBC, Community Radio station	Immediate
7	Data Entry into data matrix by sector	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	Immediate

9	Request for Information Management support from the UN	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	By November 2008
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4.3.. Activities to be undertaken After the Emergency

No.	Activities	Main Actor	Coordinating Agency	Supported By	By When
	Review of Telecommunications and Information Management Activities	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	By April 2009

5.0. Activities

List of activities

No.	Activities	Cost (USD)	Cost (ZMK)
1	Informing of service providers, authorities, NGO's etc to ensure adequate preparation and maintenance of their communications equipment in the event of floods.	-	-
2	Acquisition of Equipment necessary for adequate communications during the floods.		
3	Co-ordination of communication strategies and Equipment, Frequencies, Licensing		
4	Survey of aerial masts for installation of emergency communication equipment		
5	Installation of Emergency Communications in affected areas		
6	Floods awareness campaign	65,000	234,000
7	Development of data matrix by sector	-	-
8	Development of 3W database and maps		
9	Request for Information Management support from the UN	-	-
10	Development of Emergency Info i.e. Using PDAs to collect information.	30,000	108,000,000
	TOTAL		

6.0. Costing of the Activities

6.1. HF and VHF Communications

Equipment Radio	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
Solar pack, NAPS, EQP-0015-0015-IAP	6	2862	17,172	61,819,200
Motorola GM-360 VHF mobile radio kit, KMV1	11	411	4,521	16,275,600
Toolkit, EQP-0019-0026	1	4190	4,190	15,084,000
Motorola programming kit with USB to RS232 adapter cable	1	350	350	1,260,000
Cable, coaxial, 10mm, 50ohm, double shielded, Cinta CNT-400 (low loss cable), roll of 250m, Andrew, EQP-0003-0029	3	555	1,665	5,994,000
Connector, UHF/PL259 (solder), CNT-400 (low loss cable), EQP-0014-0047	20	9	180	648,000
Connector, N-FEMALE, CNT-400 (low loss cable), EQP-0014-0040	10	7	70	252,000
Connector, N-Male, CNT-400 (low loss cable), EQP-0014-0038	10	8	80	288,000
Motorola multi-charge VHF handheld radios,	1	323	323	1,162,800

Equipment Radio	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
MDHTN3004				
Barrett 2050 HF mobile radio kit (950 model not longer available), incl radio antenna tuner and whip antenna	1	3332	3,332	11,995,200
Barrett HF mobile whip antenna	6	79	474	1,706,400
Motorola GM-360 with DTMF microphone, MDM25KHF9AN5AE	1		0	0
12 Volt power supply, RS-20A-BB-220E	1	240	240	864,000
Motorola GP-340 VHF handheld radio, MDH25KDC9AN3AE_WVI	6	180	1,080	3,888,000
Battery, NiMH ultra high capacity for GP340 Motorola, HNN9008AR	1	32	32	115,200
Barrett 2050 HF base radio (950 model not longer available)	1	3060	3,060	11,016,000
Barrett 923 power supply for 950 HF radio	1	391	391	1,407,600
Barrett HF mobile automatic antenna tuners	3	689	2,067	7,441,200
Earthing kit, E-KIT	1	317	317	1,141,200
Rope UV resistant, nylon (200m roll), EQP-0014-0019	1	17	17	61,200
Motorola GR-500 internal power supply	1	450	450	1,620,000
Barrett 900 series remote control head (for 950 model)	1	544	544	1,958,400
Subtotal			40,555.00	145,998,000
Estimated shipment cost (15%)			6,083.25	21,899,700
7.5% Administrative cost			3,041.63	10,949,850
Total (USD)			49,679.88	178,847,550

Source - UN / WFP FITTEST (Dubai)

6.2. Satellite Communications/ Cellular Communications and SMS alerts

Satellite Equipment	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
Thuraya Hand Held Sat Phones	30	0	To be requested from the ITU in Geneva through CAZ	
BGAN 700 satellite phone, EQP-0004-0034	30	0	To be requested from the ITU in Geneva through CAZ	
BGAN 700 satellite phone, EQP-0004-0034	10	4,351	43,510	156,636,000
Cell Phones	12	150	1,800	6,480,000
SMS Alert System	1	9,000	9,000	32,400,000
VSAT System 1.2-1.8 M dish/stand and modem.	9	3,000	27,000	97,200,000
Bandwidth 256/256 Kbs for 6 months	6 (months)	2,500	15,000	54,000,000
Transport to the Provinces			10,000	40,000,000-

Satellite Equipment	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
Casual Labour for setting up the Equipment	9	300	2,700	9,720,000
VSAT Installation Costs	9	500	4,500	16,200,000
Total (USD)			113,510	412,636,000

Source of Equipment- UN / WFP FITTEST (Dubai) and ITU Geneva

6.3. Public Awareness Campaign

	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
Community Radio Broadcasts	100	90	9000	32,400,000
Television Broadcast	100	180	18000	64,800,000
Pamphlets and Flyers	1000	1	1000	3,600,000
Mobile public announcements (ZANIS)	9	3000	27,000	97,200,000
Others			10,000	36,000,000
Total (USD)			65,000	234,00,000

6.4. Information Management

	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
Development of data matrix by sector	-	-	-	-
Development of 3W database and maps	-	-	-	-
Request for Information Management support from the UN	-	-	-	-
Development of Emergency Info i.e. Using PDAs to collect information.	100	300	30,000	108,000,000
Total			30,000	108,000,000

7.0 Summary of the Budget

Summary	Total Cost (USD)	Total Cost (ZMK)
HF and VHF Communications	49,679.88	178,847,550
Satellite Communications/ Cellular Communications and SMS alerts	113,510	412,636,000
Public Awareness Campaign	65,000	234,000,000
Information Management	30,000	108,000,000
Total	207,440.99	933,483,550

Annex 8: Logistics

1.0. Planning assumptions

The following assumptions have been made:

The logistics sector is cross cutting. Because of this, logistics ties the relief requirements in all sectors and seeks to put in measures that will ensure their movement from the source to their utility points. There will be storage at places along the supply lines.

The logistics sector's budget is based on the storage and movement of relief supplies identified above from source to utility points as stated above. It will include the costs relating to the management of those supplies whilst in transit and cost at intermediary and final warehousing facilities.

The infrastructure damage ranges from moderate to high, thus making it difficult/impossible to reach certain areas by road.

Major rivers in flood prone areas present a barrier to access places beyond the rivers in question.

There will therefore be need to use a combination of road, air and water modes of transport in order to ensure timely delivery of relief supplies.

Key sectors will play their role in capturing the changing parameters of the operation so as to allow the logistics sector adjust the operation in real time. It is for this reason that the logistics sector has in built flexibility.

2.0. Overall Objective

The overall objective is to ensure efficiency and timeliness of the delivery of relief supplies in order to mount effective preparedness, response and rehabilitation interventions.

2.1. Specific Objectives

- To procure and deliver the right supplies according to the sectors' requirements
- To source and distribute the right quantities of supplies to avoid waste of resources and delayed response
- To provide the supplies in the right order to minimise the impact of gaps in the pipeline on the populations that will be affected
- To ensure that relief supplies are in good condition
- To ensure the relief supplies are delivered at the right place
- To ensure the relief supplies are procured and delivered at the right time.

3.0. Implementing Organisations

- DMMU
- Transporters (Rail, Air and Road)
- NGOs
- Suppliers

4.0. Budget

	Activities	Cost(ZMK)	Cost(US\$)
1	Transportation of Maize grain(by road)	11,085,616,800	2,463,470.40
2	Distribution of grain	10,199,700,000	2,266,600.00
3	Airlifting of relief supplies	2,030,568,000	451,237.33
		23,315,884,800	5,181,307.73

Annex 9: Detailed Sector Resource Gap Analysis

Sector	Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Requirement (ZMK)
Road Infrastructure	Emergency infrastructure Technical assessment	450,000,000.00	0	450,000,000.00
	Review of performance of various structures after floods	200,000,000.00	0	200,000,000.00
	Identification of remedial needs and intervention methods for damaged infrastructure	150,000,000.00	0	150,000,000.00
	Prioritization of damaged road infrastructure/ bridges	100,000,000.00	0	100,000,000.00
	Generate cost estimates and mobilize resources	100,000,000.00	0	100,000,000.00
	Bridges/Roads emergency repairs	10,000,000,000.00	600,000,000.00	9,400,000,000.00
Subtotal		11,000,000,000.00	600,000,000.00	10,400,000,000.00
Human Settlement and Shelter	Site selection	60,750,000.00	12,400,000.00	48,350,000.00
	Used clothes	243,162,000.00	0	243,162,000.00
	20Ltr fordable containers	15,403,500.00	0	15,403,500.00
	Fuel (Charcoal)	667,426,500.00	54,000,000.00	613,426,500.00
	Fuel (Kerosene)	205,362,000.00	0	205,362,000.00
	Lamps for lighting	61,614,000.00	0	61,614,000.00
	Mosquito nets (ITN)	323,473,500.00	0	323,473,500.00
	Cooking sets - communal (Kitchen for 500 families))	77,148,000.00	0	77,148,000.00
	Cooking sets (family)	231,052,500.00	0	231,052,500.00
	Bathing Soap (0,25kg)	77,010,750.00	0	77,010,750.00
	Detergents	102,480,300.00	0	102,480,300.00
	Cleaning materials	129,848,400.00	0	129,848,400.00
	Hand Tools	50,787,000.00	6,461,633.00	44,325,367.00
Subtotal		2,245,518,450.00	72,861,633.00	2,172,656,817.00
Health and Nutrition	Support the provision and distribution of essential drugs, vaccines and supplies.	89,072,332.00	0	89,072,332.00
	Support sustained delivery of essential health services such as immunization, child growth monitoring, maternity, HIV/AIDS, TB, ART including through outreach where appropriate.	200,036,000.00	0	200,036,000.00
	Staff refresher	300,000,000.00	0	300,000,000.00

Sector	Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Requirement (ZMK)
	training for prevention and control of flood related medical conditions (emergency triage, diarrhoeal diseases, plague, etc).			
	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	50,000,000.00	0	50,000,000.00
	Health education to communities (on good hygiene practice, waste disposal, etc).	150,000,000.00	0	150,000,000.00
	Technical Supervision and Support visits	100,000,000.00	0	100,000,000.00
	Environmental Manipulation	150,000,000.00	0	150,000,000.00
	Screening and provision of therapeutic supplements	51,500,000.00	50,000,000.00	1,500,000.00
Total		1,090,608,332.00	50,000,000.00	1,040,608,332.00
Water and Sanitation	Assessments of emergency water & sanitation needs	152,000,000	0	152,000,000.00
	Drilling equipment maintenance/ rehabilitation	150,000,000	0	150,000,000.00
	Water resources assessment	150,000,000	0	150,000,000.00
	WASHE co-ordination, monitoring and evaluation, and logistics	200,000,000	0	200,000,000.00
	Provision of emergency water supply by tracking	500,000,000	0	500,000,000.00
	Procurement and provision of temporary water sources and storage containers.	500,000,000	100,000,000	400,000,000.00
	Procurement and supply of water testing kits	100,000,000	50,000,000	50,000,000.00
	Supply of chlorine and/or water purification tablets	800,000,000	300,000,000	500,000,000.00
	Construction and	8,000,000,000	0	8,000,000,000.00

Sector	Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Requirement (ZMK)
	repair /replacement of wells, boreholes or pumping units			
	Provision of emergency sanitation services being used at temporary shelters	550,000,000	0	550,000,000.00
	Construction and repair/ rehabilitation of damaged sanitation facilities	1,300,000,000	0	1,300,000,000.00
	Procure and distribute pitking/fatking enzymes and labour for dosing	100,000,000	0	100,000,000.00
	Promotion of improved solid waste management and drainage	100,000,000	0	100,000,000.00
	Program Support to information dissemination on how to protect health	500,000,000	0	500,000,000.00
	Community hygiene promotion meetings facilitated by CHW, EHTs , etc	400,000,000	0	400,000,000.00
	Procurement and distribution of water quality test kits, Clorin, HTH, soap, etc	950,000,000	300,000,000	650,000,000.00
	Capacity development/trainin g for local Communities, EHTs, CHWs, etc	180,000,000	0	180,000,000.00
	Support to prepare local level action plans for restoration of WASH services	480,000,000	0	480,000,000.00
Sub Total		15,112,000,000	750,000,000	14,362,000,000.00
Education	Site selection and planning	150,000,000.00	150,000,000.00	-
	Identify implementation partners	1,000,000.00	1,000,000.00	-
	Procurement/preposi tion of supplies	500,000,000.00	0	500,000,000.00
	Defining criteria for shelter needs	25,000,000.00	25,000,000.00	-
	Training on site		0	

Sector	Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Requirement (ZMK)
	planning and management	80,000,000.00		80,000,000.00
	Assess the needs and design solution	20,000,000.00	20,000,000.00	-
	Provide necessary equipment and materials to construct temporally shelters	250,000,000.00	250,000,000.00	-
	Shift the affected schools to identified safe sites	700,000,000.00	0	700,000,000.00
	Provide safe water and temporally latrines, Provide chlorine	200,000,000.00	0	200,000,000.00
	Construct temporally classrooms and latrines	350,000,000.00	100,000,000.00	250,000,000.00
	Assess how the plan is working and make necessary changes to improve the situation	40,000,000.00	40,000,000.00	-
	Periodical monitoring to review situation on the ground to make corrections if need be	200,000,000.00	0	200,000,000.00
	In-depth assessment	55,000,000.00	55,000,000.00	-
	Evaluation of the implementation plan	41,000,000.00	41,000,000.00	-
	Provide school in a box and recreational kits	3,500,000,000.00	0	3,500,000,000.00
	Carryout rehabilitation works on all school infrastructure damaged by floods	4,500,000,000.00	3,000,000,000.00	1,500,000,000.00
	Subtotal	10,612,000,000.00	3,682,000,000.00	6,930,000,000.00
Agriculture and Food Security	Rapid Food Security Needs assessment and area mapping	391,000,000.00	100,000,000	291,000,000.00
	Relief food operations	32,056,200,000.00	0	32,056,200,000.00
	Beneficiary identification and selection	161,000,000.00	50,000,000.00	111,000,000.00
	Dry season inputs for 10,000 HHs in 23 districts to enable cultivation of 0.25 Ha/HH	2,930,000,000.00	0	2,930,000,000.00
	Support to conservation Agriculture for 12,000 HHs to enable cultivation of 0.25		0	

Sector	Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Requirement (ZMK)
	Ha/HH	4,120,000,000.00		4,120,000,000.00
	Inputs distribution	160,000,000.00	0	160,000,000.00
	Survey of suspected livestock disease outbreaks and mapping	200,000,000.00	0	200,000,000.00
	Awareness creation among livestock owners on disease prevention and control measures in affected districts	40,000,000.00	0	40,000,000.00
	Procurement of emergency vaccines and antibiotics	400,000,000.00	217,065,644.00	182,934,356.00
	Emergency vaccinations and treatment	160,000,000.00	0	160,000,000.00
Subtotal		40,466,200,000	367,065,644.00	40,099,134,356.00
Information Management and Emergency Communication	HF and VHF Communications	178,847,550.00	178,847,550.00	0
	Satellite Communications/ Cellular Communications and SMS alerts	412,636,000.00	90,652,450.00	321,983,550.00
	Public Awareness Campaign	234,000,000.00	0	234,000,000.00
	Information Management	108,000,000.00	0	108,000,000.00
Subtotal		933,483,550	269,500,000	663,983,550.00
Logistics	Transportation of Maize grain(by road)	11,085,616,800.00	0	11,085,616,800.00
	Distribution of grain	10,199,700,000.00	0	10,199,700,000.00
	Airlifting of relief supplies	2,030,568,000.00	0	2,030,568,000.00
Subtotal		23,315,884,800.00	0	23,315,884,800.00
GRAND TOTAL		104,775,695,138.00	5,791,427,277.00	98,984,267,855.00

Annex 10: Disaster Risk Reduction (DRR) Sector Focal Point Persons

	INSTITUTION	NAME and Phone No	POSITION
1	Ministry of Agriculture & Cooperatives	Mrs. Mulemwa A. Sitwala 250169/ 0977842522	Director-Cooperatives Dept.
2	Ministry of Works and Supply	Ms. Bupe Kaonga 0977118930	Director-Planning & Monitoring Dept.
3	Ministry of Community Development & Social Services	Mr. Henry Nkhoma 0977776311	Director-Community Dev. Dept
4	Ministry of Defence	Mrs. Clementine Miti Sakala	Director-Research, Planning & Projects
5	Ministry of Education	Dr. Felix Phiri 254342	Director-Planning & Information
6	Ministry of Home Affairs	Emmanuel Nguni	Director-Research, Planning & Projects
7	Ministry of Energy & Water Development	Mr. Christopher Chileshe	Assistant Director
8	Ministry of Communications & Transport	Mr. Maurice Muchinda 251912/ 0966758337	Director - Meteorology
9	Ministry of Finance & National Planning	Mr. Patrick H. Choolwe 0977877559	Assistant Director
10	Ministry of Health	Dr. Velepi Mtonga 0966430848	Director-Technical Support Services
11	Ministry of Mines & Minerals Development	Mr. Mooya B.C. Lumamba	Ag. Director-Mines Safety Dept.
12	Ministry of Local Government & Housing	Mr. Davis C. Zulu 0955881661	Assistant Director-Infrastructure & Support Services
13	Ministry of Tourism, Environment & Natural Resources	Mr. E.M. Shitima 0977893961	Principal Environment and Natural Resources Officer
14	Ministry of Information and Broadcasting Services		