

2009/10 NATIONAL CONTINGENCY PLAN



DISASTER MANAGEMENT AND MITIGATION UNIT
SEPTEMBER, 2009

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Zambia National Contingency Plan for Floods

Property of the Republic of Zambia

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- Communications Authority of Zambia
- Department of Water Affairs
- Department of Resettlement
- International Organisation for Migration
- Ministry of Health
- Ministry of Agriculture and Cooperatives
- Ministry of Education
- Road Development Agency
- United Nations Country Team
- Zambia Red Cross Society
- Zambezi River Authority

Acronyms

CBPP	Contagious Bovine Pleural Pneumonia
DHMT	District Health Management Team
DMCF	District Management Coordination Forum
DMMU	Disaster Management and Mitigation Unit
EOC	Emergency Operations Centre
FMD	Foot and Mouth Disease
GPS	Geographical Positioning Systems
IASC	Inter Agency Standing Committee
IFRC	International Committee of the Red Cross
NCP	National Contingency Plan
NGO	Non Governmental Organisation
OVP	Office of the Vice President
SOPs	Standard Operating Procedures
UNCT	United Nations Country Team
UNHCR	United Nations High Commission for Refugees
WFP	World Food Programme
ZamVAC	Zambia Vulnerability Committee
ZEPRIS	Zambia Emergency Preparedness and Response Information Management System
ZMD	Zambia Meteorological Department

Executive Summary

This contingency plan covers the 2009/10 rainy season with the likely scenario of having floods as a hazard. This scenario is based on the 2009/10 rainfall forecast for the country obtained from the Zambia Meteorological Department (ZMD). The 2009/10 rainfall forecast has revealed that most parts of the country will receive normal rainfall between October and December 2009. However, during the same period, the north-eastern part of the country (Nyika plateau area comprising of Nakonde, Isoka, Chama and Chinsali districts) is expected to receive normal to above normal rainfall. It is also anticipated that during the period from January to March 2010, Lusaka, Southern and Western Provinces will receive normal rainfall while the rest of the country will receive normal to above normal rainfall.

It is anticipated that a total population of 713,193 people (118,866 households) residing in 43 districts are likely be affected by floods. The districts are Chama, Chavuma, Chibombo, Chilubi, Chinsali, Chongwe, Gwembe, Isoka, Itezhi tezhi, Kabompo, Kafue, Kalabo, Kapiri Mposhi, Kasempa, Kazungula, Kitwe, Luangwa, Lufwanyama, Lukulu, Lundazi, Mambwe, Masaiti, Mazabuka, Mkushi, Mpika, Mongu, Monze, Mpongwe, Mufumbwe, Mumbwa, Mwinilunga, Namwala, Ndola, Nyimba, Petauke, Samfya, Senanga, Serenje, Sesheke, Shang'ombo, Siavonga, Sinazongwe and Zambezi.

These floods are likely to affect six sectors namely agriculture and food security, education, health, water and sanitation, habitation and human shelter and infrastructure. 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, 2007/08 and 2008/09 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.

In order to adequately prepare for the eventualities that are likely to be brought by these floods, a total budget of ZMK 123, 037, 742, 977.86 (US\$ 25,632,863.09) will be required for the implementation of this plan. However, the immediate requirement for activities to be done before and during the floods amounts to ZmK 71, 225, 995, 958.28 (US\$ 14, 838, 749.16). The budget is broken down in the table below:

Financial Requirement for Activities to be undertaken Before and During Floods					
		Resources Required(ZMK)	Resources Available(ZMK)	Net resources required(ZMK)	Net resources required(US\$)
1	Agriculture	37,232,630,000.00	294,708,333.33	36,937,921,666.67	7,695,400.35
2	Education	5,341,500,000.00	0	5,341,500,000.00	1,112,812.50
3	Health and Nutrition	924,108,332.58	482,608,332.58	540,000,000.00	112,500.00
4	Human Settlement and Shelter	6,275,745,600.00	1,528,082,880.00	4,747,662,720.00	989,096.40
5	Information and Communication	1,610,994,400	744,636,000	866,358,400	180,491.33
6	Logistics	21,300,487,304.59	0	21,300,487,304.59	4,437,601.52
7	Infrastructure	112,500,000.00	0	112,500,000.00	23,437.50
8	Water and Sanitation	1,740,839,885	361,274,018	1,379,565,867	287,409.56
	TOTAL	72,797,965,637.17	3,411,309,563.91	71,225,995,958.26	14,838,749.16

The total cost for the activities to be undertaken after the floods amounts to ZmK 51, 811, 747, 019.60 (US\$ 10, 794, 113.96).

Financial Requirement for Activities to be undertaken After the Floods					
		Resources Required(ZMK)	Resources Available(ZMK)	Net resources required(ZMK)	Net resources required(US\$)
1	Agriculture	5,442,673,750	569,722,222.22	4,872,951,527.78	1,015,198.23
2	Education	667,500,000.00	0	667,500,000.00	139,062.50
3	Health and Nutrition	16,500,000	16,500,000	0	0.00
4	Human Settlement and Shelter	0	0	0	0.00
5	Information and Communication	1,400,000	1,400,000		0.00
6	Logistics	0	0	0	0.00
7	Infrastructure	49,153,966,062.08	6,000,000,000.00	43,153,966,062.82	8,990,409.60
8	Water and Sanitation	4,922,055,411	1,804,725,982	3,117,329,429	649,443.63
	TOTAL	60,204,095,223	8,392,348,204.22	51,811,747,019.60	10,794,113.96
	TOTAL REQUIREMENT FOR THE PLAN			123,037,742,977.86	25,632,863.09

The activities to be carried out before and during the floods will receive priority over those to be conducted after the floods when resource mobilisation is conducted.

1.0. INTRODUCTION

This contingency plan covers the 2009/10 rainy season with the likely scenario of having floods as a hazard based on the 2009/10 rainfall forecast for the country from Zambia Meteorological Department (ZMD). The 2009/10 rainfall forecast has revealed that most parts of the country will receive normal rainfall between October and December 2009. However, during the same period, the north-eastern part of the country (Nyika plateau area comprising of Nakonde, Isoka, Chama and Chinsali districts) is expected to receive normal to above normal rainfall. It is also anticipated that during the period from January to March 2010, Lusaka, Southern and Western Provinces will receive normal rainfall while the rest of the country will receive normal to above normal rainfall.

This 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 on the occurrence of floods as a building block for coming up with planning assumptions and likely scenarios should floods occur during the 2009/10 rain season.

The overall objective of the National Contingency Plan (NCP) is to support the timely, consistent and coordinated response to anticipated floods during the 2009/10 rainy season. This will minimise the impact of the floods on human population, livelihoods and the environment thus reducing the scale of humanitarian needs for the affected population. The Plan also has an in - built flexibility that allows it to embrace other hazards such as cholera and water borne diseases should they occur anywhere in the country.

The specific objectives of the NCP are as follows:

- i. To improve the management and coordination of preparedness, response and rehabilitation arrangements
- ii. To ensure timely resource mobilization and response
- iii. To reduce the risk of secondary hazards i.e. epidemics
- iv. To indicate the type and quantities of assistance to be required as a result of the emergency
- v. To identify and define roles and responsibilities of all partners in emergency response

In order to identify the geographical areas that are likely to be affected by floods during the 2009/10 season, the spatial and buffer analysis was utilised. This was done by mapping the main river systems and perennial wetland areas and over-laying them with the agro-ecological zones.

It is anticipated that a total population of 713,193 people (118,866 households) residing in 43 districts are likely be affected by floods. The districts are Chama, Chavuma, Chibombo, Chilubi, Chinsali, Chongwe, Gwembe, Isoka, Itezhi tezhi, Kabompo, Kafue, Kalabo, Kapiri Mposhi, Kasempa, Kazungula, Kitwe, Luangwa, Lufwanyama, Lukulu, Lundazi, Mambwe, Masaiti, Mazabuka, Mkushi, Mpika, Mongu, Monze, Mpongwe, Mufumbwe, Mumbwa, Mwinilunga, Namwala, Ndola, Nyimba, Petauke, Samfya, Senanga, Serenje, Sesheke, Shang'ombo, Siavonga, Sinazongwe and Zambezi.

The contingency plan is premised on the following assumptions:

- The Office of the Vice President (OVP) through DMMU will coordinate the implementation of this contingency plan. The Plan will be implemented through partners which include Government line Ministries, local and international NGOs and the United Nations Country Team (UNCT).
- 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).

- 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 Zambia Emergency Preparedness and Response Information Management System (ZEPRIS) within the Emergency Operational Centre will act as a data sharing platform upon which early warning information will be shared to different stakeholders. Information on changes in the water levels for main river systems from ZESCO, Zambezi River Authority and Department of Water Affairs will be posted and visualised in different forms before, during and after emergencies. Zambia Meteorological Department will continue to provide early warning information on changing weather patterns through provision of the ten day weather bulletins throughout the rain season, which they will also post onto the ZEPRIS platform to allow wider access by different stakeholders.
- DMMU will coordinate the provision of population affected by the DDMC. This information will be 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 as the Inter Agency Standing Committee (IASC) of the United Nations and International Federation of the Red Cross (IFRC) and the International Non Governmental Organisation (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 been negatively affected by floods in the past three rain seasons. 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, health and water and sanitation. Subsequently, the 2007/08 floods started earlier than anticipated affecting the southern half (low lying areas and major river basins) of the country. These floods mainly affected infrastructure such as roads, bridges and culverts. The 2008/09 rain season, saw mainly the Northern, North Western and Western Provinces being affected by the floods. The impact of these floods was mainly on infrastructure and food security.

The emergencies in Zambia usually have a multi-sectoral impact hence the need for wider planning approaches. The impact of the anticipated 2009/10 floods on the population is likely to be higher owing to the fact that these people have been facing the same disaster the past three rainy seasons. This has eroded the people's resilience levels and may lead to them resorting to unsustainable coping mechanisms such as uncontrolled selling of assets, risky sexual behaviour in exchange for money and essentials or even thefts.

2.2. Hazard - Floods

Following the 2009/10 rainfall forecast by ZMD, it was established that most parts of the country will receive normal rainfall between October and December 2009 except the north-eastern parts of the country which are expected to receive normal to above normal rainfall during the same period. During the first quarter of 2010, Lusaka, Southern and Western Provinces will receive normal rainfall while the rest of the country will receive normal to above normal rainfall. Owing to this forecast, it is anticipated that there is a high probability of floods occurring yet again.

Disasters that are associated with flood hazards in Zambia have been caused by the bursting of river banks due to high intensity rainfall within the river catchment areas or high water volume up-streams of the rivers in question. Furthermore, over utilisation of the wetland areas has the potential to create environmental degradation owing to the fact that these floods are likely to erode the areas. The untimely release of excess water from Kariba, Itezhi-tezhi, Kafue Gorge Dams on Zambezi and Kafue Rivers respectively, will have devastating effects downstream. The poor drainage systems in urban districts have rendered these areas prone to floods especially that the water tables in most of these districts are still high. This has been a common occurrence for Lusaka, Central and Copperbelt Provinces.

It is worth noting that 2006/07, 2007/08 and 2008/09 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).

2.3. Impact

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

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 floods.

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 that is 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

Flooding usually occurs when the school calendar is just beginning or midway through the first term. When flooding actually happens, there is a risk of school children missing out on a major part of the curriculum. There is 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 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 in 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. However, there are at the same time positive aspects of the flood especially when flood water recedes as there is residual matter that is deposited. Further, there is an increase in fish catches.

Infrastructure

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

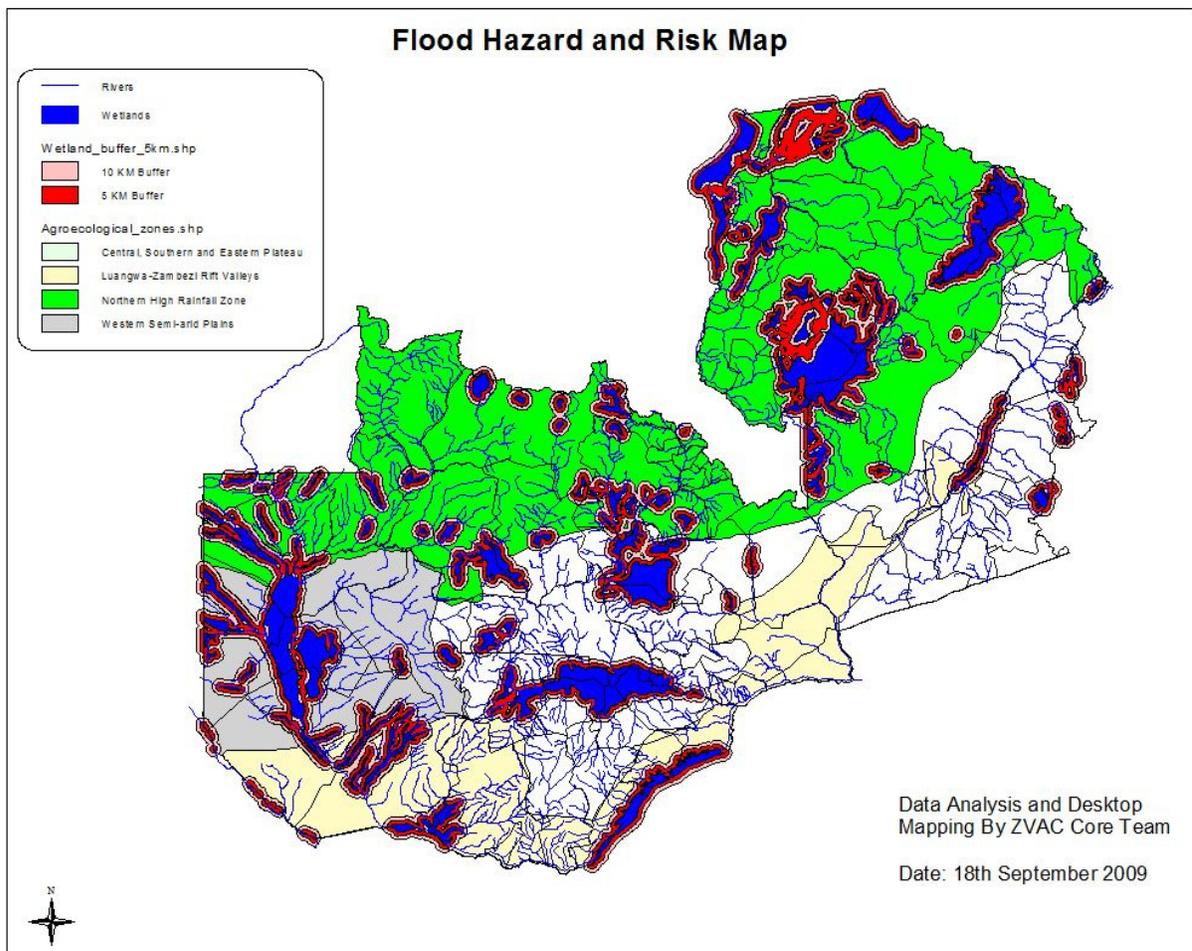
Cross Cutting Issues

Issues relating to communication, logistics and social protection are crosscutting issues that require to be planned for right at the outset owing to the nature of emergencies.

2.4. Risk Analysis

The most likely hazard to affect the country during the 2009/10 rainy season are floods which are expected to cause adverse impacts on several sectors. Chama, Lundazi, Isoka and Chinsali are likely to experience above normal rains during the period October 2009 to March 2010. These are likely to result into floods especially for the flood prone areas of these districts. During the first quarter of 2010, Central, Copperbelt, Eastern, Luapula, Northern and North-Western Provinces are likely to experience normal to above normal rainfall increasing the number of districts likely to experience flooding during that time.

These floods are likely to affect the six sectors namely agriculture and food security, education, health, water and sanitation, habitation and human shelter and infrastructure. 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, 2007/08 and 2008/09 seasons), spatial data analysis on the main river systems and perennial wetland areas and elevation information embedded within the agro-ecological zones. Furthermore, trend analysis on current and sector specific data for past three flooding seasons was also used. Spatial and risk analysis was done using ARCVIEW GIS to develop risk maps of potential flood affected areas. Sector specific data



on infrastructure that fell within the 5km buffer (highlighted in red in the map insert below) were selected as being at risk of been affected by floods during the 2009/10 season.

3.0. SCENARIOS AND PLANNING ASSUMPTIONS

This plan is developed to address floods that the country is likely to experience during the coming rainy season. Historically it is clear that every time floods occur, they tend to cause multiple impacts on infrastructure, Education, Health, Water and Sanitation and Agriculture. Below is the risk analysis table:

Table 1: Risk Analysis Table for Floods

Type of Hazard	Floods
Likelihood	Almost certain
Magnitude	High (Eastern, Northern, North Western & Western) Moderate (Luapula and Central) Low (Some areas North- Western, Luapula and Eastern Provinces and some districts of Southern province -flush floods)
Impact	Medium to high for most locations on Infrastructure, health, food security, water and sanitation, education and livelihoods.
Location and Geographical Area	Eastern Province (Chama, Lundazi, Mambwe, Nyimba, Petauke), N-Western Province (Chavuma, Kabompo, Kasempa, Mufumbwe, Mwinilunga and Zambezi); Western province (Kalabo, Lukulu, Mongu, Senanga, Sesheke and Shang’ombo); Luapula province (Samfya), Southern Province (Kazungula, Gwembe, Namwala, Itezhi-tezhi, Siavonga, Sinazongwe, Mazabuka and Monze), Lusaka Province (Chongwe, Kafue and Luangwa), Copperbelt Province (Kitwe, Ndola, Lufwanyama, Masaiti, Mpongwe), Central Province (Chibombo, Mkushi, Kapiri Mposhi, Mumbwa and Serenje) and Northern Provinces (Chilubi, Chinsali Isoka and Mpika,).
Triggers	High intensity of rainfall, rising water levels in the river basins, High water table
Time Frame	December 2009 - April 2010

Scenario Building

The effect of the 2009/10 floods is likely to range from moderate to high in most parts of the country. 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	General Assumptions	Effect
Floods	<ul style="list-style-type: none"> • It is anticipated that a total population of 713, 193 people (118, 866 Households) residing in 43 districts are likely be affected by floods. • All areas within the 5 km buffer from the main river systems and perennial wetlands) will be adversely affected. • 50 to 70% of the households residing within flood prone areas in the districts in question are likely to be affected by floods. • The trigger for the floods will mainly be high intensity rainfall between the month of December and March. 	<ul style="list-style-type: none"> • In Health sector, 546,045 people (91,008 households) are likely to be affected by floods. 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, 461, 491 people (76, 915 households) are likely to be affected in thirty (30) districts. Out of 461, 491 people, it is assumed that the 36, 144 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 642, 834 people in 39 districts will require food relief amounting to 26, 774 MT of cereals for the period of five (5) months starting from December 2009 to April 2010. These are mainly populations whose fields and general livelihood sources will be affected by floods. • In Infrastructure sector, it is assumed that forty three (43) districts which will be affected by the 2009/10 floods will experience infrastructure damage in one way or another. The likely infrastructure to be damaged includes road embankments and drainage structures such as bridges, culverts and other river crossings. Furthermore, about 327 structures that required some work as a result of damage suffered from the previous 2 rainy seasons (2007/08 and 2008/09) will require to be worked on. It is assumed that the anticipated floods from 2009/10 rain season will exacerbated the condition of the structures making them more deplorable.

Hazard	General Assumptions	Effect
Floods		<ul style="list-style-type: none"> • In Human Settlement and Shelter sector, it is anticipated that 36, 144 people (6, 024 households) will be displaced and will need temporal shelter and other essential household items. • In Education sector it is anticipated that 250 schools in 29 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. <p>Government will continue to facilitate the relocation of 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, mosquito nets, water containers, cooking utensils and charcoal. In addition households will be provided with relief food until the households are permanently settled in the new area.</p>

4.0 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 undertake 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. Activities to be implemented will be guided by the following:

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;

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.

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 identifies gaps where Government will require external support from cooperating partners.

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 unfolds. 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.

5.0. RESOURCE GAP ANALYSIS

In order to adequately prepare for the eventualities that are likely to be brought by these floods, a total budget of ZMK 123, 037, 742, 977.86 (US\$ 25,632,863.09) will be required for the implementation of this plan. However, the immediate requirement for activities to be done before and during the floods amounts to ZmK 71, 225, 995, 958.28 (US\$ 14, 838, 749.16). The budget is broken down in the table below:

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3	Health and Nutrition	16,500,000	16,500,000	0	0.00
4	Human Settlement and Shelter	0	0	0	0.00
5	Information and Communication	1,400,000	1,400,000	0	0.00
6	Logistics	0	0	0	0.00
7	Infrastructure	49,153,966,062.08	6,000,000,000.00	43,153,966,062.82	8,990,409.60
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TOTAL REQUIREMENT FOR THE PLAN				123,037,742,977.86	25,632,863.09

The activities to be carried out before and during the floods will receive priority over those to be conducted after the floods when resource mobilisation is conducted.

6.0. MANAGEMENT AND COORDINATION ARRANGEMENTS

The following shall be the coordination arrangements:

- 6.1 The Government through DMMU shall have the overall coordination in the implementation of the contingency plan.
- 6.2 The National Disaster Management Consultative Forum (NDMCF) 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.
- 6.3 At national technical level the Vulnerability Assessment Committee (VAC) shall support the DMMU in implementing the activities spelt out in the Contingency Plan.
- 6.4 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.
- 6.5 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 DMMU in its role as national coordination mechanism.
- 6.6 Rapid Assessments and dissemination of related findings should and shall be done within the framework of VAC 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 flood 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 line with this 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 implementation 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 10.9)
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
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 Country Representative Africare

Institution	Responsibilities	Contact
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. All contributions should be done through DMMU	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 Chief - of - Party USAID
District Disaster Management Committee	DDMCs will Collect and disseminate early warning information in the district. The districts will trigger a response mechanism through the office of the District Commissioner should the floods actualize in their district by relaying information to both the province and DMMU. The DDMC will also commence immediate disaster relief operation (primary response) in the event of the flood.	Chair - District Commissioner (Respective districts)

8.0 RESOURCE MOBILISATION

Resources for the implementation of this contingency plan will be mobilised by 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. In this vein:

- 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 the Permanent Secretary [A] , Office of the Vice President or the National Coordinator at Disaster Management and Mitigation Unit will be holding press briefings weekly 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. ANNEXES: SECTOR WRITE UPS

10.1. Agriculture and Food Security

Planning Assumptions

The rainfall impact is modelled on the assumption that the areas most likely to 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 planning assumptions used are based on the anticipated floodwaters which will most likely affect crops in the riverine areas due to inundation. 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 and migration of flood affected households may precipitate the outbreak and spread of some livestock diseases such as Foot and Mouth Disease (FMD). This will further affect people's livelihoods and food security status. The expected damage to crops and market infrastructure will most likely cause food insecurity and increased vulnerability to hunger.

The contingency plan aims at providing relief food amounting to 27,011 MT of cereals to an estimated population of 648,522 people (108,087 households) directly affected by floods to safeguard their household food security.

Affected households that have access to viable wetlands will need to be supported with inputs to undertake winter cropping. This intervention is targeted at 12, 243 households in 23 districts cultivating about 0.25 hectares of land.

The flood prone areas especially those that are located near 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 Households) 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 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 households), 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 households in flood affected areas.

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.

Specific Objectives

- To provide relief food to the flood affected areas if need be
- 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

Scenario Building Projection Table

Variable	Expected Events/Effects over the next 5 months	Time Frame
Maize Available	<ul style="list-style-type: none"> ▪ Declining availability of stocks at household level. ▪ Increasing dependency on markets in adjacent high producing figures. 	December 09- February '10
Maize Price	<ul style="list-style-type: none"> ▪ Increased prices expected ▪ Increased flow of commodities from surplus to deficit areas. ▪ Increased flow of food commodities from surplus countries (i.e. Malawi, Mozambique) 	December 09 - February '10
Crops	<ul style="list-style-type: none"> ▪ Emergent 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. 	December 09- Feb 10
	<ul style="list-style-type: none"> ▪ Reduced harvest as a result of poor crop 	April 09 - June 09
Livestock	<ul style="list-style-type: none"> ▪ Unrestricted movement of livestock and people resulting in outbreak of transmissible livestock diseases such as FMD and CBPP ▪ Reduced draught power due unthrift conditions of the cattle 	December 09- March 10
Rural infrastructure	<ul style="list-style-type: none"> ▪ Bridges and roads rendered impassable resulting in inability by farmers to access agriculture inputs such as seed and fertilizers. ▪ Reduced access to markets 	December 09- March 10

Scenario Building Effects Table

Effects	Effects on Households	Indirect Effect
Declining availability of stock	<ul style="list-style-type: none"> ▪ Collecting unusual amounts of wild foods ▪ Increased out migration ▪ Reduce expenditure on non essential commodities ▪ Food insecurity at household level 	<ul style="list-style-type: none"> ▪ Increased livestock sales ▪ Reduced availability of labour ▪ Increased vulnerability
Maize price increase earlier than normal	<ul style="list-style-type: none"> ▪ Increased livestock sales to purchase maize ▪ Collecting unusual wild foods ▪ Increased out migration ▪ Reduce expenditure on non essential commodities ▪ Food insecurity at household level 	<ul style="list-style-type: none"> ▪ Early on-set of hunger period ▪ Diversion of money from productive assets to fund consumption ▪ Increased numbers of sex workers
Reduced harvest	<ul style="list-style-type: none"> ▪ Low stock levels ▪ Food insecurity at household level ▪ Reduced production capacity ▪ Reduced household income 	<ul style="list-style-type: none"> ▪ Increase in non farming activities ▪ Increased vulnerability
Outbreak of transmissible livestock diseases	<ul style="list-style-type: none"> ▪ Reduced drought power ▪ Reduced household income ▪ Food insecurity at household level 	<ul style="list-style-type: none"> ▪ Increased vulnerability ▪ Reduction in number of available coping options ▪ Lower livestock prices resulting in need to sell even more quantities to survive
Increased agricultural input prices	<ul style="list-style-type: none"> ▪ Reduced purchase capacity ▪ Reduced hectarage to planted crops 	<ul style="list-style-type: none"> ▪ Reduced crop production and productivity ▪ Increase in non agricultural activities
Damage to roads/bridges	<ul style="list-style-type: none"> ▪ Reduced access to agricultural inputs ▪ Reduced access to markets ▪ Increase in transportation costs 	<ul style="list-style-type: none"> ▪ Transporters shun affected area ▪ Reduced access to agricultural extension messages. ▪ Food insecurity

Activities

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	Start November 09
Identification of seed and other input sources	DMMU	MACO/FAO	October/November
Surveillance of CBPP, FMD and other transmittable livestock diseases	DMMU	MACO	December 2009 - April 2010

Activities to be undertaken during the floods

Food Needs Table

No.	Province/Dist	Category	Population	Affected population	Projected Cereal Needs in Mt (Dec - April)
	Central				
1	Kapiri Mposhi	1	255,147	38,272	1,594
2	Mkushi	2	151,801	15,180	632
3	Serenje	2	181,741	18,174	757
4	Mumbwa	2	214,794	21,479	895
	Provincial Total		803,483	93,106	3,878
					-
	Copperbelt				
					-
5	Mpongwe	1	82,437	16,487	687
6	Masaiti	1	123,135	24,627	1,026
7	Lufwanyama	1	82,442	16,488	687
	Provincial Total		288,014	57,603	2,399
					-
	Luapula				
					-
8	Samfya	2	210,562	21,056	877
	Provincial Total		210,562	21,056	877
					-
	Lusaka				
					-
9	Kafue	1	189,765	37,953	1,581
10	Chongwe	2	178,083	17,808	742
	Provincial Total		367,848	55,761	2,322
					-
	Eastern				
					-
11	Chama	1	103,148	20,630	859
12	Nyimba	2	94,892	9,489	395
13	Petauke	2	338,347	33,835	1,409

No.	Province/Dist	Category	Population	Affected population	Projected Cereal Needs in Mt (Dec - April)
14	Mambwe	2	62,842	6,284	262
	Provincial Total		599,229	70,238	2,925
					-
	Northern				-
15	Isoka	1	126,077	25,215	1,050
16	Chinsali	1	168,611	33,722	1,405
17	Chilubi	2	87,102	8,710	363
18	Mpika	3	185,008	9,250	385
	Provincial Total		566,798	76,898	3,203
					-
	North Western				-
19	Chavuma	1	39,256	7,851	327
20	Zambezi	1	85,993	17,199	716
21	Kabompo	2	98,767	9,877	411
22	Mwinilunga	2	160,500	16,050	668
23	Kasempa	2	71,248	7,125	297
24	Mufumbwe	3	61,125	3,056	127
	Provincial Total		516,889	61,158	2,547
					-
	Southern				-
26	Namwala	1	120,257	24,051	1,002
27	Itezhi tezhi	1	60,338	12,068	503
28	Mazabuka	2	267,914	26,791	1,116
29	Kazungula	2	91,478	9,148	381
30	Monze	3	217,605	10,880	453
31	Gwembe	3	47,046	2,352	98
32	Siavonga	3	73,781	3,689	154
33	Sinazongwe	3	113,794	5,690	237
	Provincial Total		992,213	94,670	3,943
					-
	Western				-
34	Lukulu	1	89,145	17,829	743
35	Kalabo	1	141,929	28,386	1,182
36	Mongu	1	199,138	39,828	1,659
37	Senanga	2	135,230	13,523	563
38	Shang'ombo	2	88,475	8,848	368
39	Sesheke	2	96,199	9,620	401
	Provincial Total		750,116	118,033	4,916
					-
	National		5,095,152	648,522	27,011

Implementing Agencies

- DMMU
- WFP
- MACO

Budget for Activities Before and During the Floods

Activities	Coordination	Supported by whom	When	Estimated Cost	
				ZMK	U\$
Awareness creation among livestock owners on disease prevention and control measures in affected districts	DMMU	MACO	After survey	46,000,000	9,583.33
Livestock vaccinations and treatment for cattle	DMMU	MACO	After survey	120,750,000	25,156.25
Procurement of Relief food Supplies	DMMU	WFP/NGOs	After floods	36,864,630,000	7,680,131.25
Beneficiary identification and selection	DMMU	DDMC/MACO/NGOs/WFP	After floods have receded	57,500,000	11,979.17
Procurement of vaccines and antibiotics for 500,000 cattle in 23 districts	DMMU	FAO/MACO	After Diagnostic survey	143,750,000	119,791.67
Total				37,232,630,000	7,756,797.92

Budget for activities to be undertaken after the floods

Dry season inputs for 12,243 Households in 23 districts to enable cultivation of 0.25 Ha/HH	DMMU	MACO/FAO/NGOs	March	4,476,673,750	932,640.36
Inputs distribution	DMMU	NGOs/MACO/WFP	April	184,000,000	38,333.33
Survey of suspected livestock disease outbreaks and mapping	DMMU	MACO	After the floods have receded	230,000,000	47,916.67
Procurement of vaccines and antibiotics for 500,000 cattle in 23 districts	DMMU	FAO/MACO	After Diagnostic survey	143,750,000	119,791.67
Livestock vaccinations and treatment for cattle	DMMU	MACO	After survey	120,750,000	25,156.25
Total				5,442,673,750	1,133,890.36
Grand Total				42,675,303,750	

Resource Gap analysis

ITEM	Resource Requirement (ZMK)	Resource available (ZMK)	Net Resource Gap (ZMK)	Net Resource Gap (US\$)
Before and during the floods				
Awareness creation among livestock owners on disease prevention and control measures in affected districts	46,000,000	30,208,333.33	15,791,666.67	3,289.93
Livestock vaccinations and treatment for cattle	120,750,000	120,750,000	0	0
Procurement of Relief food Supplies	36,864,630,000	0	36,864,630,000	7,680,131.25
Beneficiary identification and selection	57,500,000	0	57,500,000	11,979.17
Procurement of vaccines and antibiotics for 500,000 cattle in 23 districts	143,750,000	143,750,000	0	11,979.17
	37,232,630,000.00	294,708,333.33	36,937,921,666.67	7,707,379.52
After the Floods				
Dry season inputs for 12,243 HHs in 23 districts to enable cultivation of 0.25 Ha/HH	4,476,673,750.00	0	4,476,673,750.00	932,640.36
Inputs distribution	184,000,000.00	0	184,000,000.00	38,333.33
Survey of suspected livestock disease outbreaks and mapping	230,000,000.00	17,722,222.22	212,277,777.78	44,224.54
Procurement of vaccines and antibiotics for 500,000 cattle in 23 districts	431,250,000.00	431,250,000.00	0.00	0.00
Livestock vaccinations and treatment for cattle	120,750,000.00	120,750,000.00	0.00	0.00
Total	5,442,673,750	569,722,222.22	4,872,951,527.78	1,015,198.23
Total net Requirement	42,675,303,750.00	864,430,555.55	41,810,873,194.45	8,722,577.75

10.2. Education

Planning Assumptions

The expected floods that are likely to occur will affect schools rendering them inaccessible. The floods are also expected to affect teacher's houses. The catchment's population from the affected schools will most likely go to unaffected schools. In certain areas where affected populations are displaced and resettled in areas where there are no pre-existing schools, it is anticipated that emergency school infrastructure will need to be provided.

These factors will need to be taken into account 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 positioned. The criteria used to identify the schools and population that will most likely be affected in the 2009-2010 season is as follows;

- School facilities that are located within a radius of 5km of a major river bank have been deemed to be in a flood risk area. These areas have been identified by GPS locations
- School facilities located in low lying areas and wet lands have similarly been identified by GPS locations
- In event that 35% of the schools are at risk and 4% of these are flooded in the 34 districts and teaching and learning is disrupted for at least three weeks.
- In the 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 event that both the surrounding areas and the schools are flooded the schools shall require to be shifted to higher ground.
- In the event that the school buildings are damaged and the pupils including teachers are not able to use the infrastructure.
- In the event that schools are submerged and buildings damaged school 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.

Overall Objectives

The overall objective is to provide compliant shelter and limited facilities to aid the school to function during the period of the floods. The minimum facilities to be provided are temporal shelters for classrooms, learning materials, recreational materials, safe drinking water and temporally latrines. Other activities shall include shifting schools to high dry areas, provision of tents as temporal shelter, provision of temporal latrines, provision of banana boats for transportation of teachers and pupils to new school locations and repairing of damaged school infrastructure.

Specific Objectives

- To shift the school to higher ground safe from floods and establish temporally schools.
- 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 rates varying from 1 to 2 units per school depending on the size of the school.
- To provide safe drinking water as per UN guidelines.
- To repair damaged school buildings, which might require minimal repairs at an estimated cost varying between K5.0M to K20.0M per school
- To liaise with DDMC to provide support and temporally accommodation for members of the community that may seek shelter in the school.
- To liaise with DDMC to provide banana boats for use to ferry community members across flooded river basins

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. Procurement and pre-positioning of tents for use as classrooms and housing is most recommended. Portable drinking water shall be provided per pupil including teachers and their households.

Coordination Agency

The Disaster management and Mitigation Unit will coordinate all the activities.

Site (Camp) Management

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

Food Security

Provision of food to the affected teachers and their families for at least three weeks.

No.	ACTIVITIES	MAIN ACTOR	SUPPORTED	BY WHEN
Before the Emergency				
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 2010
3	Identify implementation partners	MOE	UNICEF, WVI,WFP Catholic secretariat	Immediate
4	Procurement/preposition of supplies	MOE	UNICEF, WVI,WFP Catholic secretariat	December 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 2010
During the Emergency				
1	Carryout rapid assessment to determine the immediate needs	DDMC	DDMC	January 2010
2	Identification of actual schools affected	MOE	DDMC	Late January 2010
3	Assess the needs and design solution	MOE	UNICEF, WVI,WFP Catholic secretariat	January 2010
4	Provide necessary equipment and materials to construct temporally shelters, mount tents	MOE	UNICEF, WVI,WFP Catholic secretariat	January & February 2010
5	Shift the affected schools to identified safe sites	MOE	DDMC	January & February 2010
5	Provide safe water and temporally latrines, Provide chlorine	MOE	UNICEF, WVI,WFP Catholic secretariat	January & February 2010
6	Provide school in a box and recreational kits	MOE	UNICEF	January & February 2010
7	Construct temporally classrooms and latrines	MOE,	DDMC	January & February 2010
8	Assess how the plan is working and make necessary changes to improve the situation	MOE	UNICEF, WVI,WFP Catholic secretariat	February & March 2010
9	Periodical monitoring to review situation on the ground to make corrections if need be.	MOE	UNICEF, WVI,WFP Catholic secretariat	March 2010

No.	ACTIVITIES	MAIN ACTOR	SUPPORTED	BY WHEN
After the Emergency				
1	Demobilize and shift school back to original place	MOE	DMMC	April/May 2010
2	In-depth assessment	MOE,	UNICEF, WVI,WFP Catholic secretariat	May
3	Evaluation of the implementation plan.	MOE	UNICEF, WVI,WFP Catholic secretariat	May 2010
4	Carryout rehabilitation works on all school infrastructure damaged by floods.	MOE		May 2010

Budget

Budget for Activities Before and During the Floods

Activity	Resource required (ZMK)
Site selection and planning	45,000,000.00
Identify implementation partners	45,000,000.00
Procurement and propositioning of banana boats	100,000,000.00
Procurement/preposition of supplies	90,000,000.00
Defining criteria for shelter needs	20,000,000.00
Training on site planning and management	45,000,000.00
Assess the needs and design solution	45,000,000.00
Provide necessary equipment and materials to construct temporally shelters	50,000,000.00
Shift the affected schools to identified safe sites	700,000,000.00
Provide safe water and temporally latrines, Provide chlorine	90,000,000.00
Construct temporally classrooms and residences(Tents)and latrines	1,200,000,000.00
Assess how the plan is working and make necessary changes to improve the situation	90,000,000.00
Periodical monitoring to review situation on the ground to make corrections if need be	22,500,000.00
Provide school in a box , recreational kits and tentages	2,799,000,000.00
	5,341,500,000.00

Budget for Activities after the Floods

Periodical monitoring to review situation on the ground to make corrections if need be	22,500,000.00
Evaluation of the implementation plan	45,000,000.00
Carryout rehabilitation works on all school infrastructure damaged by floods	600,000,000.00
TOTAL	667,500,000.00
Grand Total	6,009,000,000

Resource Gap Analysis

Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Required (ZMK)
Activities Before and During the Floods			
Site selection and planning	45,000,000.00	Nil	45,000,000.00
Identify implementation partners	45,000,000.00	Nil	45,000,000.00
Procurement and propositioning of banana boats	100,000,000.00	Nil	100,000,000.00
Procurement/preposition of supplies	90,000,000.00	Nil	90,000,000.00
Defining criteria for shelter needs	20,000,000.00	Nil	20,000,000.00
Training on site planning and management	45,000,000.00	Nil	45,000,000.00
Assess the needs and design solution	45,000,000.00	Nil	45,000,000.00
Provide necessary equipment and materials to construct temporally shelters	50,000,000.00	Nil	50,000,000.00
Shift the affected schools to identified safe sites	700,000,000.00	Nil	700,000,000.00
Provide safe water and temporally latrines, Provide chlorine	90,000,000.00	Nil	90,000,000.00
Construct temporally classrooms and residences(Tents)and latrines	1,200,000,000.00	Nil	1,200,000,000.00
Assess how the plan is working and make necessary changes to improve the situation	90,000,000.00	Nil	90,000,000.00
Periodical monitoring to review situation on the ground to make corrections if need be	22,500,000.00	Nil	22,500,000.00
Provide school in a box , recreational kits and tentages	2,799,000,000.00	Nil	2,799,000,000.00
Total	5,341,500,000.00		5,341,500,000.00
Budget for Activities After the Floods			
Periodical monitoring to review situation on the ground to make corrections if need be	22,500,000.00	Nil	22,500,000.00
Evaluation of the implementation plan	45,000,000.00	Nil	45,000,000.00
Carryout rehabilitation works on all school infrastructure damaged by floods	600,000,000.00	Nil	600,000,000.00
TOTAL	667,500,000.00		667,500,000.00
GRAND TOTAL	6,009,000,000.00		6,009,000,000.00

List of Schools where Repairs require to be done for the 2009/2010 Season

Districts	Name of School	Activity
Mongu	Namushakende Basic	Minor repairs, provision of school in a box kit, tents and chlorine
	Mutwiwambwa Basic	
	Nomayi Basic	
	UCZ Sefula High	
	Mulambwa Basic	
	Tungi basic	
	Imwiko basic	
	Mongu b,	
	Namitome b,	
Senanga	Nasilimwe b,	
	Maombe b,	
	Matebele b	
	Sikumbi b	
	,Nangwani b,	
	Maziba MB,	
	Sibukali b	
	Itufa b,	
	Liu Mwemba	
Kalabo	Namaumba b ,	
	Muweshi b,	
	Sibuo b,	
	Sikongo b,	
	Malondo b,	
	Siitulu b	
	Likuyu b,	
	Liumba B,	
	Matondo MB,	
	Lweti b	
	Simbuu b	
	Lusa b,	
	Ng'uma b	
	Lilambo MB	
	Mutala b,	
Lukulu	Nalonde LB,	
	Silonga M Basic	
	Sitwala b,	
	Ngulwana b,	
	Munyondoti b,	
	Winana b,	
	Mbanga b,	
	Kapungu b,	
	Lutumo b,	
	Mulongo B,	
Mumbumbu b,		
Nanjolo b		

Districts	Name of School	Activity
Lukulu	Mwenda b,	
	Mukuma b,	
	Mitete b,	
	Mbao b,	
	Mambungo b,	
	Lindole b,	
	Imenda b,	
	Kazombozombo b,	
	Lukulu b,	
	Lukulu High ,	
	Kashinzhi b,	
Sesheke	Mutwa b,	
	Silumbu b,	
	Kalobolelwa b,	
	Njokomalomo b,	
	Lusu b,	
	Ng'ambwe b.	
	Silolo b,	
	Nang'ombe b,	
	Katima b	
	Sesheke B,	
	Nakatindi b	
	Katongo b	
	Maondo b,	
	Simungoma b,	
	Mwandi b,	
	Mangamo b,	
	Kamenyani b	
	Mulauli b,	
	Machile b,	
	Manyekanga b,	
Lwampungu b,		
Samisisi b,		
Shang'ombo	Kaale b,	
	Sankandi b,	
	Songa Mb,	
	Sioma b,	
	Sioma high sc,	
	Lilondo	
Kabompo	Kabulamema B,	
	Kabulamema High	
	,Kafungo B,	
	Nkulwashi B,	
	Samununga B,	
	Kamisombo b,	
	Kalambo b,	
	Pokola B,	

Districts	Name of School	Activity
Kabompo	Chiweze B,	
	Kavinyonde b,	
	SikufeleMB,	
	Chilumba b,	
	Chatwika b	
	Kaula MB	
	Chitebe b,	
	Mawanda b,	
	Mukondwiji b	
	Chipanda,	
	Chipatalova b	
	Kasamba B,	
	Chilemba Basic	
	Ndunga,	
	Msongwa MB,	
Zambezi	Nyachikai M B	
	Chitokoloki b,	
	Milomboyi B	
	,Matongo B	
	Mwange b	
	Nyawanda B,	
	Lutembwe B	
	Mufula B	
	Liovu B,	
	Kangulunga b,	
	Lihukwa b,	
	Muyembe MB,	
	Likungu B,	
	Kayula MB	
	Chitoloki b	
	Chihongo High ,	
	Lwitadi MB,	
	Kashona MB,	
	Kasese b,	
	Lwampungwa B,	
	Chilenga B,	
	Chizenzi b	
	,Makanga MB ,	
Kawumbu B,		
Chinyingi B,		
Chavuma	Nyamingila	
	Nyathanda B,	
	Chiyeke B	
	Mavili Lower B,	
	Lukolwe B	

Districts	Name of School	Activity
Chavuma	Kayinda B,	
	Kambuya B,	
	Mandalo B	
	Sewe B	
Mwinilunga	Mupulumba b,	
	Wamafwa b,	
	Ntambo B,	
	Chofwe b	
	Tomoyilunga	
	Musangezi b,	
	Nkenyawuli b,	
	Kanyikezhi b,	
	Kanzala B	
Solwezi	Mehebe b	
	Mwafwe B	
Samfya	Kansenga Basic	
	Itala Basic	
	Mutoni Basic	
	Chafwe Basic	
	Bwalya Mponda B	
	Mboya lubambe Basic	
	Matongo Basic	
	Mutwamina Basic	
	Kasomalunga Basic	
	Kalimankonde Basic	
	Chibulu Basic	
	Mweshi Basic	
Kazungula	Kasaya B,	
	Sikaunzwe B,	
	Mambova Basic	
	Kazungula River view Basic	
	Katombora B,	
Mandia Basic		
Namwala	Ngabo Basic	
	Kawilizhi Basic	
	Baanga Basic	
	Kabulamwanda Basic	
	Ndema Basic	

Districts	Name of School	Activity
Itezhi-tezhi	Ikonkaile M.Basic	
	,Lubwe M Basic	
	Kalundu M.Basic	
	Lubanga Primary,	
	Nansenga Basic	
Mazabuka	Itebe Basic	
	Siwowi Basic	
	Kawama Basic	
	Kabanje Basic	
	Tandabale Basic	
	Hakunkula Basic	
	Banakaila Basic	
Kafue	ChanyanyaBasic	
	Kapongo Basic	
	Cheba b	
	Chisakila Basic	
	Mafungauti Basic	
	Kabwadu Basic	
	Soloboni Basic	
Mambwe	Malanga Basic	
	Mfuwe Basic	
	Yosefe Basic	
Lundazi	Kaseche Basic	
	Kalungambewa Basic	
	Mpheluke M Basic	
	Fyofyo Basic	
	Chasamwa Basic	
Chama	Chasefu Basic	
	Mwata M basic	
	Kasempwe Basic	
	Kapembe Basic	
	Mwalala Basic	
	Chiteba Basic	
	Mabinga M Basic	
	Kabele M Basic	
	Chimphamba M basic	
Isoka	Chifunda Basic	
	Katanga Basic	
	Khuyu Basic	
	Mpalayi Basic	
	Mutanga Basic	
Chinsali	Yombwe Basic	
	Lupande Basic	
	Nkweto M Basic	
Chilubi	Bukotelo M Basic	
	Chibimbya Primary	
	Mwenge Basic	
	Chichile M Basic	

Districts	Name of School	Activity
Mkushi	Chimika Basic	
	Liteta Basic	
	Chembe Basic	
	Lumba Basic	
Serenje	Kasanshya Basic	
	Mambwe locha Basic	
	Nsomaulwa Basic	
	Nansala Basic	
Mumbwa	Shamboze	
	Shacele	
	Nkombwa Basic	
Kapiri Mposhi	Kantupu M Baisc	
	Shamputa	
	Muchinga West	
Mpongwe	Luswishi Basic	
	Machiya Basic	
	Malembeka Basic	
	Mikata Basic	
	Mushiwe Basic	
	Mwinuna M Basic	
Lufwanyama	Chikabuke Basic	
	Fungulwe Basic	
	Mpompo	
	Mukombo	
	Namushakende Basic	
	Mutwiwambwa Basic	
	Nomayi Basic	
	UCZ Sefula High	
	Mulambwa Basic	
	Tungi basic	
	Imwiko basic	
	Mongu b,	
	Namitome b,	
	Nasilimwe b,	
	Maombe b,	
	Matebele b	
	Sikumbi b	
	,Nangwani b,	
	Maziba MB,	
	Sibukali b	
Itufa b,		
Liu Mwemba		
Namaumba b ,		
Muweshi b,		
Sibuo b,		
Sikongo b,		
Malondo b,		

Districts	Name of School	Activity
	Siitulu b	
Lufwanyama	Likuyu b,	
	Liumba B,	
	Matondo MB,	
	Lweti b	
	Simbuu b	
	Lusa b,	
	Ng'uma b	
	Lilambo MB	
	Mutala b,	
	Nalonde LB,	
	Silonga M Basic	
	Sitwala b,	
	Ngulwana b,	
	Munyondoti b,	
	Winana b,	
	Mbanga b,	
	Kapungu b,	
	Lutumo b,	
	Mulongo B,	
	Mumbumbu b,	
	Nanjolo b	

10.3. Health and Nutrition

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.

It is anticipated that about 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.

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; and promote a sustainable healthy life.

Specific objectives

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

Requirements

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.

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.

The table below shows the national cholera figures from 1999 to 2006.

Year	Cases	Death	Case Fatality Rate (CFR)
1999	11,615	466	4.0
2000	3072	70	2.3
2001	3000	165	5.5
2002	587	15	2.6
2003	709	10	1.4
2004	7349	221	3.0
2005	2332	10	0.4
2006	5593	190	3.4
2008/2009	3747	94	1.3 as at 03/02/09

Health Activities Before, During and After the Emergency

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 2009
3.	Improve the information management to capture data from the districts	MoH	MoH, Collaborating partners	November 2009
4.	Preposition drug requirements	MoH	MoH/WHO/UNICEF	November 2009
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 2009
7.	Environmental Manipulation to prevent outbreaks	MLGH/MACO/MOH	CP's and NGO's	Nov 2009- continuous

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

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 10
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 10
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 10
5	Support the provision and distribution of essential drugs, vaccines and supplies including mosquito nets.	MoH	MoH, WHO, UNICEF Collaborating partners, NGOs	Dec -Jan 10

Budget

Budget for Activities Before and During the Floods

No.	Activity	Resource Requirement
1	Support the provision and distribution of essential drugs, vaccines and supplies.	89,072,332.58
	Staff refresher training for prevention and control of flood related medical conditions (emergency triage, diarrhoeal diseases, plague, etc).	300,000,000.00
	Health education to communities (on good hygiene practice, waste disposal, etc).	150,000,000.00
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
4	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	33,500,000.00
6	Technical Supervision and Support visits	100,000,000.00
8	Screening and provision of therapeutic supplements	51,500,000.00
	GRAND TOTAL	924,108,332.58

Budgets for Activities after the Floods

	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	16,500,000
	TOTAL	16,500,000

Resource Gap Analysis

No.	Activity	Resource Requirement	Resource available	Net Resource Gap
1	Before and During Floods			
1	Support the provision and distribution of essential drugs, vaccines and supplies.	89,072,332.58	89,072,332.58	-
2	Staff refresher training for prevention and control of flood related medical conditions (emergency triage, diarrhoeal diseases, plague, etc).	300,000,000.00	160,000,000.00	140,000,000.00
3	Health education to communities (on good hygiene practice, waste disposal, etc).	150,000,000.00	-	150,000,000.00
4	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	200,036,000.00	-
5	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	33,500,000.00	33,500,000.00	-
6	Technical Supervision and Support visits	100,000,000.00	-	100,000,000.00
7	Screening and provision of therapeutic supplements	51,500,000.00	-	150,000,000.00
8	TOTAL	924,108,332.58	482,608,332.58	540,000,000.00
	After Floods			
	Support integrated disease surveillance and reporting (IDSR), especially measles and polio surveillance.	16,500,000	16,500,000	-
	GRAND TOTAL	940,608,332.58	499,108,332.58	540,000,000.00

Implementing Agencies

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

10.4. Human Settlement and Shelter

Planning Assumptions

It is expected that 14 districts located in four provinces would experience population movement as a direct result of the floods. An estimated number of 36,141 persons or 6,024 households will be forced to relocate to safety.

The forced migration of the population will disrupt their normal lives especially when their coping mechanisms are minimal. Some families may require sleeping mats, blankets, mosquito nets, water containers and cooking utensils. It will also 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, districts authorities will allocate appropriate sites for the installation of temporal camps. DDMCs and concerned organizations will identify the most suitable form of shelter in potential sites. 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 2010. 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.

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.

Specific objectives

The specific objectives are as follows:

1. To provide temporal shelter to the displaced persons
2. To provide basic household 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	December 2009 to April 2010	i. Raised down houses and other infrastructure ii. Damaged roads & bridges iii. Erratic supply of social amenities

b. Scenario Building Effects Table

Effects	Effects on Households	Direct Effect	Indirect Effect
Damaged houses and other Infrastructure	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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.

Table Showing Number of Affected People Requiring Tents

District Names	Population	Affected population	Households needing shelter	Number of Tents with 10% contingency
Chavuma	39,256	785	131	144
Zambezi	85,993	1,720	287	315
Namwala	120,257	2,405	401	441
Itezhi tezhi	60,338	1,207	201	221
Lukulu	89,145	1,783	297	327
Kalabo	141,929	2,839	473	520
Mongu	199,138	3,983	664	730
Samfya	210,562	4,211	702	772
Kabompo	98,767	1,975	329	362
Mazabuka	267,914	5,358	893	982
Kazungula	91,478	1,830	305	335
Shang'ombo	88,475	1,770	295	324
Sesheke	96,199	1,924	321	353
Monze	217,605	4,352	725	798
TOTAL		36,141	6,024	6,626

Requirements

Temporal 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.

a. Site Identification and Planning

Temporal Site

Under this arrangement, the projected number of households that would be displaced temporarily is 36,141 persons or 6,024 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 while 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.

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.

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.

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,
- Per family: 1200gr of soap per month; 1 cooking set; 3 impregnated mosquito nets

Food and Nutrition

Temporal communal kitchens will be put in place as an immediate emergency measure where necessary.

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)

Site (Camp) management

The overall management of the sites will be the primary responsibility of the District Disaster Management Committee which 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 and the chairmanship of the District Commissioner.

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)

Activities

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; DDMC, 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 2009
6.	Training on Site planning and management	DMMU/	DOR;IFRC/ZRCS; UNHCR; IOM	December 2008
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

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	

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; IFRC/ZRCS; NGOs	After 6 months

Budget

Budget for Activities to be Implemented Before and During the Flood

Items	Description	Units	Quantity	Multiplier	Unit Price	Amount (USD)	Amount (ZMK)
Site Selection	14 sites in 14 districts	places	14	1	1500	21,000.00	100,800,000
Site demarcation	50 plots per day	plots	122	50	4.5	27,450.00	131,760,000
Transport of displaced population	41 HH per day	days	147	1	400	58,800.00	282,240,000
Tents	1 tent per HH	tents	4024	1	100	402,400.00	1,931,520,000
Tarpauline/kits	2 tarpaulines per HH	tarpauline	1100	1	69	75,900.00	364,320,000
Blankets	6 blankets per HH	blankets	36144	1	10	361,440.00	1,734,912,000
Used clothes	1 bale / 10 HH	Bale	602	1	5	3,010.00	14,448,000
20-lts portable containers	1 piece per HH	Containers	6024	1	2	12,048.00	57,830,400
Mosquito nets (ITN)	3 pieces/HH	piece	18072	1	7	126,504.00	607,219,200
Cooking sets - communal (kitchen for 500 families)	1 piece foe 500 HH	piece	12	1	4286	51,432.00	246,873,600
Cooking sets (family)	1 set/HH	piece	6024	1	15	90,360.00	433,728,000
Bathing soap	1.2kg/HH/month	kg	7231	3	1	21,693.00	104,126,400
Detergents	1 kit per 15 HH	kit	402	1	39	15,678.00	75,254,400
Cleaning materials	1 kit per 20 HH	kit	301	1	66	19,866.00	95,356,800
Hand tools	1 kit per 20 HH	kit	301	1	66	19,866.00	95,356,800
Total						1,307,447.00	6,275,745,600

Resource Gap Analysis

Item	Resources Required (ZMK)	Resources Available (ZMK)	Net Resource Requirement (ZMK)
Activities to be Implemented Before and During the Flood			
Site Selection	100,800,000.00	100,800,000.00	-
Site demarcation	131,760,000.00	-	131,760,000.00
Transport of displaced population	282,240,000.00	-	282,240,000.00
Tents	1,931,520,000.00	960,000,000.00	971,520,000.00
Tarpauline/kits	364,320,000.00	364,320,000.00	-
Blankets	1,734,912,000.00	-	1,734,912,000.00
Used clothes	14,448,000.00	-	14,448,000.00
20-lts portable containers	57,830,400.00	7,318,080.00	50,512,320.00
Mosquito nets (ITN)	607,219,200.00	-	607,219,200.00
Cooking sets - communal (kitchen for 500 families)	246,873,600.00	-	246,873,600.00
Cooking sets (family)	433,728,000.00	95,644,800.00	338,083,200.00
Bathing soap	104,126,400.00	-	104,126,400.00
Detergents	75,254,400.00	-	75,254,400.00
Cleaning materials	95,356,800.00	-	95,356,800.00
Hand tools	95,356,800.00	-	95,356,800.00
Total	6,275,745,600.00	1,528,082,880.00	4,747,662,720.00

10.5. Information Management and Emergency Communication

Planning Assumptions

The expected floods are likely to cause damage to communications and power systems thereby disrupting communication flows and economic activities. The disruption in communication flow will hinder government and its development partners from acquiring accurate and timely information upon which to base decisions and focus their response activities.

In order to facilitate the acquisition of timely information, response databases on preparedness shall be developed for each of the districts anticipated to be affected. This database will have information on the available communication infrastructure in the district. Based on this information, emergency communications infrastructure shall be installed as need arises and capacity built among stakeholders. This will ensure information flow from the districts to the national level as well as among stakeholders at the same levels.

To ease communication operations and information flow amongst the key stakeholders, Standard operating procedures (SOPs) will be established and put in place on the use of all communications systems. This will ensure that the stakeholders taking part in the operations utilise the available resources optimally.

Overall objective

The overall objective is to provide guidance in organizing, establishing and maintaining the communications facilities necessary for meeting the operational requirements ideal for an effective response during emergencies.

Specific objectives

- To explore innovative ways of data collection and analysis in order to speed up results and reports production for rapid assessments.
- 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 ensure the timely acquisition of appropriate communication equipment and expertise to improve the communication coordination during the floods.

- To ensure timely and appropriate information dissemination to the affected populations and service providers in order to create awareness and on floods.
- To ensure timely and credible information flow between DMMU and the affected districts for decision making and timely intervention by the relevant authorities.

Scenario Building Projections Table

Variable	Expected Events/Effects over the Next Five Months	Time Frame	Assumptions if any
Districts with damaged communication infrastructure	Floods that are likely to disrupt communication facilities	December 2009 - April 2010	<ul style="list-style-type: none"> - Non existence or damaged communications infrastructure - Non existent databases - Unaware communities

Scenario Building Effects Table

Effects	Effects on Households	Direct Effect	Indirect Effect
Damaged communications infrastructure	Disrupted communication on households in the districts where communication infrastructure is damaged	No direct effect per household	<ul style="list-style-type: none"> -House holds unable to react in time due to lack of information - Disorganised households

Activities

Communication activities are cross-cutting and therefore will be utilized by all the stakeholders in all the affected districts.

Table 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	Develop and implement an Interoperability Communications Plan	DMMU/WFP/CAZ	DMMU	Zamtel/UN/Line Government Ministries	Immediate
3	Acquisition of Equipment necessary for adequate communications during the floods.	DMMU, CAZ, WFP	DMMU	CAZ	By 30 th November 2009
4	Co-ordination of communication strategies and Equipment, Frequencies, Licensing, Request for RBGans From ITU for 5 month period.	DMMU, CAZ	DMMU/CAZ	CAZ, FPMU	By 30 th October 2009
5	Survey of aerial masts for installation of emergency communication equipment	DMMU, CAZ	DMMU	ZAMTEL, ZESCO,ZAIN, MTN, ZNBC	Immediate
6	Floods awareness campaign	DMMU / DDMC	DMMU/DDMC	ZANIS/ZNBC, Community Radio station	Immediate
7	Development of data matrix by sector (ZEPRIS)	DMMU/WFP	DMMU	NGOs, Line Ministries, UN	Immediate
8	Development of 3W database and maps	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	Immediate
9	Avail Zambia Emergency Preparedness Information System to all stakeholders	DMMU,WFP, CSO,	DMMU/WFP	NGOs, Line Ministries, UN	Immediate
10	Installation of Emergency Communications in affected areas	DMMU/WFP	DMMU/CAZ WFP	WFP, ZAMTEL, ZESCO, ZAIN, MTN, ZNBC	By 30 th November 2009

Activities to be undertaken During the Emergency

No.	Activities	Main Actor	Coordinating Agency	Supported By	By When
1	Activate the Emergency Operation Centre (EOC)	DMMU	DMMU	CAZ/WFP/Line Ministries	By December 2009
2	Installation of Emergency Communications in affected areas	DMMU/WFP	DMMU/CAZ	UN, ZAMTEL, ZESCO, ZAIN, MTN, ZNBC	By December 2009
3	Floods awareness campaign	DMMU/UNDP	DMMU	ZANIS/ZNBC, Community Radio station	Immediate
4	Data Entry into ZEPRIIS by sector	DMMU/WFP	DMMU	NGOs, Line Ministries, UN	Immediate
5	Request for Information Management support from the UN	DMMU/UNDP	DMMU	NGOs, Line Ministries, UN	By November 2009

Table3: Activities to be undertaken After the Emergency

No.	Activities	Main Actor	Coordinating Agency	Supported By	By When
1	Review of Telecommunications and Information Management Activities	DMMU/UNDP/CAZ	DMMU	NGOs, Line Ministries, UN	By April 2010
2	Equipment scale down based on review	DMMU/UN/CAZ	DMMU	UN/CAZ/Line Ministries	By April 2010

Detailed Budget

Budgets for Activities Before and During the Floods

HF and VHF Communications

Equipment Radio	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)
Solar pack, NAPS, EQP-0015-0015-IAP	10	2862	28,620	37,376,000
Motorola GM-360 VHF mobile radio kit	15	411	6165	29,952,000
Toolkit, EQP-0019-0026	1	4190	4,190	20,112,000
Motorola programming kit with USB to RS232 adapter cable	1	350	350	1,680,000
Codan HF Base radio Kits	10	4000	40000	192,000,000
Codan HF Mobile Kits	15	4000	60000	288,000,000
Motorola GR500 Repeater	10	2000	20000	96,000,000
Motorola GM360 Base radios (With DTMF Mic)	10	415	4150	19,920,000
Motorola multi-charge VHF handheld radios	1	323	323	1,550,400
Motorola GP380 Handheld radios	30	400	12000	57,600,000
Battery, NiMH Ultra high capacity	30	79	2370	11,376,000
Rope UV resistant, nylon (200m roll)	1	240	240	1,152,000
Total			178,408	856,358,400

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			65,000	234,00,000

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	
Mobile Internet Modem	15	250		
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	2,500	15,000	54,000,000
Transport to the Provinces			10,000	40,000,000-
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			113,510	412,636,000

Information Management

	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)	Comment
Development of data matrix by sector (ZEPRIS)	-	-	-	-	
Design and development of Website and webmail					
Development of 3W database and maps	-		-	-	To be imbedded under ZEPRIS
Request for Information Management support from the UN	-	-	-	-	To be imbedded under ZEPRIS
Acquisition of PDAs to collect information.	100	300	30,000	108,000,000	To be procured under the SDIF Project
Total			30,000	108,000,000	

Budget for Activities to be undertaken before and During the Flood

Summary	Total Cost (USD)	Total Cost (ZMK)
HF and VHF Communications	178,408.00	856,358,400.00
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	386,918.00	1,610,994,400.00

Budget for Activities to be Undertaken After the Floods

	Unit	Unit Cost (USD)	Total Cost (USD)	Total Cost (ZMK)	Comment
Review of telecommunication and Information Management					
Stationery	1,000,000	208.33	208.33	1,000,000	Resources available under DMMU
Refreshments	400,000	83.33	83.33	400,000	
Total			291.66	1,400,000	

Resource Gap Analysis

Activity	Resource Required (ZMK)	Resource Available (ZMK)	Net Resource Gap (ZMK)
HF and VHF Communications	856,358,400	0	856,358,400
Satellite Communications/ Cellular Communications and SMS alerts	412,636,000	412,636,000.00	0
Public Awareness Campaign	234,000,000	234,000,000	0
Information Management	108,000,000	108,000,000	0
Total	1,610,994,400	744,636,000	866,358,400

The sector requires a net resource of Zmk 866, 358, 400 (US\$ 180, 491).

Implementing Organisations

- Disaster Management and Mitigation Unit (DMMU)
- World Food Programme (WFP)
- Communications Authority of Zambia (CAZ)
- District Disaster Management Committees (DDMCs) in the affected districts

10.6. Logistics

Planning assumptions

Based on the assumption that forty three (43) districts spread across the nine (9) provinces of the Country are likely to have above normal rainfall during the 2009/2010 season, many sectors of the economy may be adversely affected as a result of flash floods in prone areas. The impact of the floods may result in the following;

- Damage to infrastructure such as Roads, Bridges, buildings, telecommunication towers, etc.
- Displacement of people in flooded areas.
- Destruction of crops resulting in food insecurity.
- Disruption of social services such health, Education, etc.
- Surge of water borne diseases such as Cholera, diarrhoea diseases, etc.

The following assumptions have been made:

The logistics sector's budget is based on the storage, handling and transportation of relief food requirements identified from the Agriculture and Food Security sector. It will include the costs relating to the food supplies whilst in transit and cost at intermediary and final delivery points (FDPs).

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. However, it's worth noting that some material requirements can still be sourced locally in respective flood affected areas as opposed from procuring from central supply points. This may include the following material, Building Sand (fine/coarse), aggregate stones, Charcoal, etc.

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.

Overall Objective

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

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 and effective handling mechanisms
- To ensure the relief supplies are delivered at the right place, at the right cost and at the right time.

Logistical Preparations

Logistics preparedness	Activities-	Key Player	By when
Prior to an emergency	<p>1.0 Assessment;</p> <p>1.1 Survey the most conceivable primary, secondary and tertiary transport routes to be used. The assessment should detail the present road capacities (with seasonal adjustments) and potential constraints.</p> <p>1.2 Assess capacities and collect information on indigenous trucking companies, e.g. fleet sizes, operational constraints (permits, fuel, spares, etc.) and indicate transport rates to major up- country destinations.</p> <p>1.3 Identify potential Government partners/counterparts at central and /or provincial level as well as NGO/religious orders already operating in the country and assess their technical and logistics capacities.</p> <p>1.4 Identify possible in-country or regional points for the local purchase of basic commodities, e.g. cereals, pulses and edible oil.</p> <p>1.5 Assess the in-country telecommunications facilities.</p> <p>1.6 Provide basic information on in-country airports and airfields including: geographical co-ordinates; existing conditions and capacities (complete specifications regarding runway length, weight bearing capacity and surface type); fuel availability and/or tank storage capacity; cargo storage facilities; and potential bottlenecks. as seasonal constraints.</p> <p>1.7 Make recommendations for the improvement of logistics preparedness for a contingency planning exercise.</p> <p>1.8 Assess local air transport operators for both passengers and cargo movements including: existing capacities; fleet capacities; fleet sizes and truck capacities; permit requirements; and indicative costs per ton/km;</p>	DMMU	ASAP

Logistics preparedness	Activities-	Key Player	By when
During Emergency	<p>2.0 Implementation;</p> <p>2.1 Deliver relief material according to sector requirements.</p> <p>2.2 Track/document relief materials delivered to each respective sector.</p> <p>2.3 Ensure relief materials reaches their intended beneficiaries.</p> <p>2.4 Ensure timely and cost - effective delivery of relief supplies to each respective sector.</p> <p>2.5 Consistently monitor the performance of services providers such as transporters, warehousing managers & cargo handlers.</p>	DMMU	OCT, NOV & DEC, 2009
After Emergency	<p>3.0 Evaluation;</p> <p>3.1 Post delivery.</p> <p>3.2 Evaluation: Targeted deliveries Vs Actual deliveries.</p> <p>3.3 Evaluation: Service providers performance evaluation, Transporters, Warehouse Managers, c/f agents, etc</p> <p>3.4 Delivery incidences, transit losses, accidents, etc</p> <p>3.5 Logistics Capacity constraints.</p>	DMMU	MARCH 2010

5.0. Logistics Budget

No.	Cost Element	Cost ZMK	10% Contingency	Total Cost ZMK	Total Cost US \$
1	Transportation of Cereals (By Road).	10,127,389,200.00	1,012,738,920.00	11,140,128,120.00	\$2,320,860.03
2	Distribution of Grain	9,318,050,000.00	931,805,000.00	10,249,855,000.00	\$2,135,386.46
3	Air lifting of Relief supplies	1,855,048,104.59	185,504,810.46	2,040,552,915.05	\$425,115.19
		21,300,487,304.59	2,130,048,730.46	23,430,536,035.05	\$4,881,361.67

4.0. Implementing Organisations

- DMMU
- Transporters (Road, Air and Water)
- NGOs
- Supplier

10.7. Road Infrastructure Sector

Planning Assumptions

The assumption is based on the June 2009 technical report which revealed that 327 structures that required some work as a result of damage suffered from the previous 2 rainy seasons (2007/08 and 2008/09) were not worked on. It is further assumed that the anticipated floods from 2009/10 rain season will exacerbate the condition of the structures making them more deplorable.

It is assumed that crushing plants for stone aggregates operated by the Road Development Agency need to be in operational during the flooding season. The RDA working with DMMU will need to alert other institutions such as Zambia Army, ZNS and Buildings Department (Ministry of Works Supply) with the capacity to provide temporary bridges and heavy equipment to facilitate emergency works.

A list of contractors in the vicinity of likely disaster areas requires to be prepared in order to help in the event of a disaster and be paid for the services. Further, a routine maintenance programme is required to limit the number of Washouts of roads and bridges.

Overall Objectives

The overall objective of this contingency plan is to provide accessible roads and bridges infrastructure to ease mobility of people as well as movement of relief supplies to populations that will be displaced by floods. The Agency's main priority will be to provide technical assistance and to ensure that stop-gap measures are put in place to guarantee accessibility and swift return to normality.

Specific Objectives

- 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.
- Provide and disseminate information on alternative routes and available pontoon services in and around distressed areas.

Scenario Building Projections Table

Variable	Expected Events/Effects over the Next Five Months	Time Frame	Assumptions if any
Damaged road infrastructure	Floods that are likely to disrupt movement of both goods and people	December 2009 - April 2010	- Bridges, culverts and roads washed away - Unaware communities

Scenario Building Effects Table

Effects	Effects on Households	Direct Effect	Indirect Effect
Damaged Roads infrastructure	Goods and people unable to move thereby affecting their livelihoods	Commerce to the affected areas disrupted	- Income to the households affected. - Interaction of affected community with others also impeded.

Activities

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

Activities to be undertaken during an emergency

No.	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

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

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 the Rural Roads Unit of the Ministry of Works and Supply;
 - 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.

Infrastructure Reinstatement Budget per Province

No.	Name of Province	Estimate Cost Reinstatement (ZMK)
1	Central	2,510,000,000.00
2	Copperbelt	3,552,000,000.00
3	Eastern	11,977,000,000.00
4	Luapula	2,238,128,462.08
5	Lusaka	4,725,337,600.00
6	North-Western	3,545,000,000.00
7	Northern	8,420,000,000.00
8	Southern	3,343,000,000.00
9	Western	7,956,000,000.00
Total		48,266,466,062.08

Budget

Budget for Activities to be undertaken Before and During the Flood

No	Sector	Resources Required (ZMK)
1	Emergency infrastructure technical assessment	112,500,000.00

Budget for Activities to be undertaken After the Flood

1	Emergency infrastructure technical assessment	337,500,000.00
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 in the forty four districts	48,266,466,062.08
Total		49,153,966,062.08

* This is the anticipated budget for the calendar year 2010.

Resource Gap Analysis

No	Sector	Resources Required (ZMK)	Resources Available* (ZMK)	Net Resource Requirement (ZMK)
<i>Activities to be undertaken Before and During the Flood</i>				
1	Emergency infrastructure technical assessment	112,500,000.00	nil	112,500,000.00
<i>Activities to be undertaken After the Flood</i>				
2	Emergency infrastructure technical assessment	337,500,000.00	nil	337,500,000.00
3	Review of performance of various structures after floods	200,000,000.00	nil	200,000,000.00
3	Identification of remedial needs and intervention methods for damaged infrastructure	150,000,000.00	nil	150,000,000.00
4	Prioritization of damaged road infrastructure/ bridges	100,000,000.00	nil	100,000,000.00
5	Generate cost estimates and mobilize resources	100,000,000.00	nil	100,000,000.00
6	Bridges/ roads emergency repairs in the forty four districts	48,266,466,062.08	6,000,000,000.00	42,266,466,062.82
	Total	49,153,966,062.08	6,000,000,000.00	43,153,966,062.82
	Grand Total	49,266,466,062.08	6,000,000,000.00	43,266,466,062.82

* This is the anticipated budget for the calendar year 2010.

Implementing Agencies

- Road Development Agency
- Zambia National Services
- Zambia Army
- Rural Roads Unit under the Ministry of Works and Supply.

10.8. Water and Sanitation

Planning Assumptions

The anticipated floods are likely to affect water and sanitation facilities in 30 districts in all 9 provinces. The flood waters are expected to flood latrines contaminating groundwater reserves and shallow wells. Approximately 461,491 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 2009/10 floods. It is also expected that approximately 6,024 households will be vulnerable to cholera outbreaks in the 2009/10 floods.

Out of the 461,491 people affected, it is assumed that 36,141 persons (6,024 households) will be displaced in 14 districts. The displaced households will be 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. About 250 schools are projected to be affected in 29 districts, representing over 82, 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 bowsers while permanent water solutions are put in place. Assuming all the 36,141 Internally Displaced People affected by the 2009/10 floods are considered for boreholes, a total of 112 boreholes are required although the distance to water points of 500 meters has not been considered. Other means or sources of water supply using bowsers will be considered depending on the prevailing disaster phase.

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.

Specific Objectives

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

- i. To ensure adequate, 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.

Scenario Building Projections Table

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 faecal 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

Scenario Building Effects Table

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

Requirements

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.

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. Each water point will cater for a maximum of 250 persons and ensure water quality of zero coli form per 100 ml. 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 litre bucket.

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 (e.g. Sensitization through Radio, TV, and Information, Education and Communication) material 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. These will include settling vulnerable populations outside the malaria zone. All populations associated with a vector-borne disease risk should have access to shelter with insect control. Intensive fly control will be carried out in high density settlement when there is risk or presence of diarrhoea epidemic.

Activities

Before the Emergency

There is need to pre-position WASH emergency preparedness and response supplies including chlorine and/or water purification tablets in the disaster/flood prone districts before the emergency starts.

Table 1: Activities to be conducted before the Emergency

No.	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

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, provision of water bladders, 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.

Table 2: Activities to be conducted during the Emergency

No.	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 emergency tanks	DMMU	MEWD	MLGH
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

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 provision of support in order to prepare community and institutional level action plans for restoration of WASH services.

Table 3: Activities to be conducted After the Emergency

No.	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

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

- 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.
- 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 DDMC 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.

Budget**Budget for Activities Before and During the Floods**

Activity/Item	Cost (ZmK)
Drilling equipment maintenance/ rehabilitation	97,637,009
Water resources assessment	97,637,009
Provision of emergency water supply by trucking	325,456,697
Procurement and provision of temporary water sources and storage containers.	125,456,697
Supply of chlorine and/or water purification tablets	120,730,715
Provision of emergency sanitation services being used at temporary shelters	253,002,366
Procure and distribute pitking/fatking enzymes and labour for dosing	55,021,900
Community hygiene promotion meetings facilitated by CHW, EHTs , etc	260,365,357
Procurement and distribution of water quality test kits, Clorin, HTH, soap, etc	318,367,724
Capacity development/training for local Communities, EHTs, CHWs, etc	87,164,411
Total	7,236,864,364

Budget for Activities After the Floods

Construction and repair/replacement of wells, boreholes or pumping units	4,575,868,000
Construction and repair/ rehabilitation of damaged sanitation facilities	346,187,411

RESOURCE GAP ANALYSIS

No.	Activity/Item	Resources Required (ZMK)	Resources Available (ZMK)	Net Resource Requirement (ZMK)
	Activities Before and During the Floods			
1	Drilling equipment maintenance/ rehabilitation	97,637,009	97,637,009	0
2	Water resources assessment	97,637,009	97,637,009	0
3	Provision of emergency water supply by trucking	325,456,697		325,456,697
4	Procurement and provision of temporary water sources and storage containers.	125,456,697	30,000,000	95,456,697
5	Supply of chlorine and/or water purification tablets	120,730,715	50,000,000	70,730,715
6	Provision of emergency sanitation services being used at temporary shelters	253,002,366	40000000	213,002,366
7	Procure and distribute pitking/fatking enzymes and labour for dosing	55,021,900		55,021,900
8	Community hygiene promotion meetings facilitated by CHW, EHTs , etc	260,365,357	20,000,000	240,365,357
9	Procurement and distribution of water quality test kits, Clorin, HTH, soap, etc	318,367,724	26,000,000	292,367,724
10	Capacity development/training for local Communities, EHTs, CHWs, etc	87,164,411		87,164,411
	Total	1,740,839,885	361,274,018	1,379,565,867

No.	Activity/Item	Resources Required (ZMK)	Resources Available (ZMK)	Net Resource Requirement (ZMK)
	Activities After the Floods			
13	Construction and repair/replacement of wells, boreholes or pumping units	4,575,868,000	1,804,725,982	2,771,142,018
	Construction and repair/ rehabilitation of damaged sanitation facilities	346,187,411		346,187,411
		4,922,055,411	1,804,725,982	3,117,329,429
	Total	6,662,895,296	2,166,000,000	4,496,895,296

10.9: 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	Mr. Emmanuel Nguni 255317/0979578144	Assistant Secretary (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. Dennis Mulenga 0977/0955793830	
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	Mr Franc Banda	