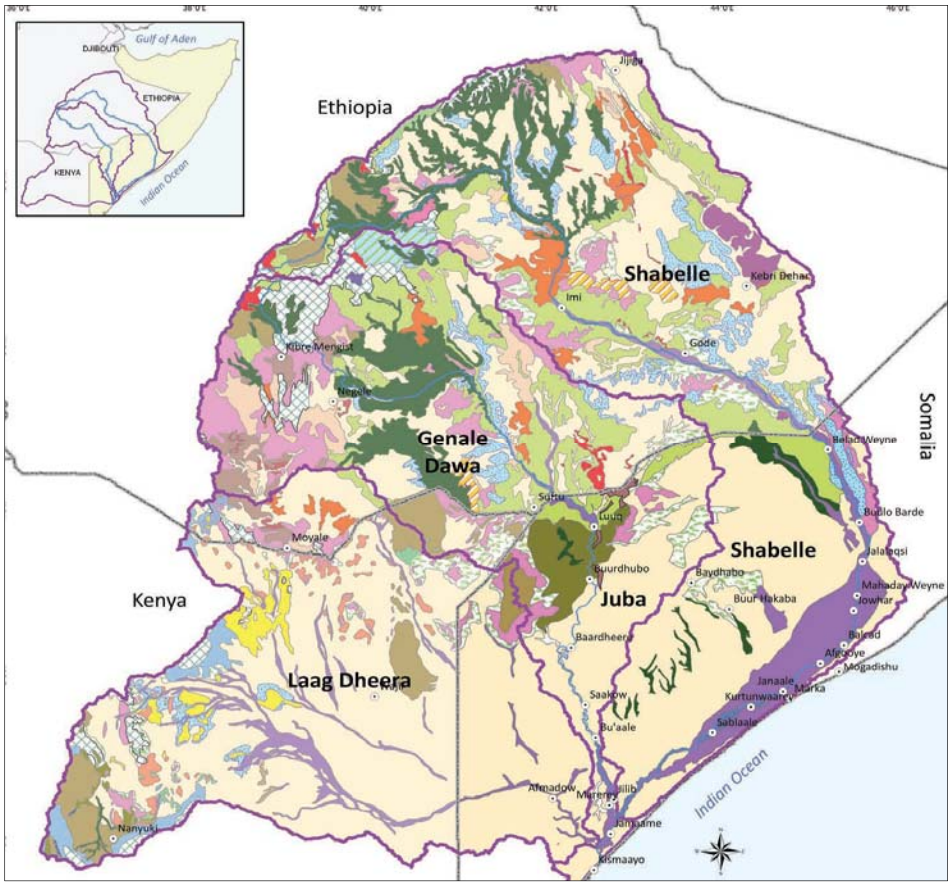
SWALIM
Somali Water and Land Information Management

Food and Agriculture Organization of the United Nations

DISASTER MANAGEMNET PLAN FOR

THE JUBA AND SHABELLE BASINS IN SOMALIA



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FOREWORD

The Somalia Water and Land Information Management (SWALIM) of the Food and Agriculture Organization of the United Nations (FAO) has been involved in the implementation of the Consolidated Humanitarian Fund (CHF) financed project on information and tools to support droughts and floods early warning, preparedness and response in Somalia.

Since floods and droughts are the most common form of hazards that are experienced in Somalia and of lately, there has been a discernible increase in the severity and frequency of these two hazards, this contingency plan is projected to benefit over 1 million vulnerable pastoralists and agro-pastoralists communities in Somalia.

One of the outputs of the project under emergency preparedness includes the production/development of the national disaster risk management contingency plan for Somalia.

This Contingency Plan was developed with inputs from the participants and stakeholders during the training of Disaster Risk Reduction (DRR) and Early Warning (EW) staff of the Federal Republic of Somalia Government.

It is anticipated that the contributions from this Contingency Plan will be useful not only for the country but also to partners and civil society in mounting a timely, consistent and coordinated response when these hazards are anticipated in order to minimize potential humanitarian consequences and initiate linkages for the early recovery of affected communities.

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ACRONYMS

CAP	Consolidated Appeals Process
CBO	Community based organization
CDI	Combined Drought Index
CERF	Central Emergency Response Fund
DMA	Disaster Management Authority
DRR	Disaster Risk Reduction
EMOP	Emergency Management Operation Procedures
FAO	Food and Agriculture Organization of the United Nations
FEWSNET	Famine Early Warning systems Network
FRRMIS	Flood Risk and Response Management Information System
FGS	Federal Government of Somalia
FSNAU	Food Security and Nutrition Analysis Unit
GIS	Geographic Information System
GTIs	Gastro-intestinal Tract Infections
HCT	Humanitarian Country Team
HoA	Horn of Africa
HRF	Humanitarian Response Fund
IASC	Inter-Agency Standing Committee
ICCG	Inter Cluster Coordination Group
IDPs	Internally Displaced Persons
IHDG	Informal Humanitarian Donor Group
IPCC	Inter-governmental Panel on Climate Change
IRCRCM	International Red Cross and Red Crescent Movement
ITCZ	Inter-tropical Convergence Zone
MAR	Mean Annual Runoff
MIRA	Multi Cluster/Sector Initial Rapid Assessment
MoIF	Ministry of Interior and Federalism
NCP	National Contingency Plan
PMO	Prime Ministers' Office
RDMC	Regional Disaster Management Committee
RVF	Rift Valley Fever
SOND	September to December
SRCS	Somalia Red Crescent Society
SWALIM	Somalia Water and Land Information Management
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commission for Refugees
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNDMT	UN Disaster Management Team
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WASH	Water, Sanitation and Hygiene
WFP	World food Programme
WHO	World Health Organization
WMO	World Meteorological Organization

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EXECUTIVE SUMMARY

This Contingency Plan articulates what the Federal Republic of Somalia Government through Disaster Management Authority (DMA) and with the support of partners will do to prevent or reduce any potential adverse impacts emanating from floods and drought disasters. Within this context, the Contingency Plan aims to prepare for and adequately respond to any of these common disasters when they evolve beyond the coping capacity of stakeholders.

It was developed through a participatory and inclusive multi-stakeholder process and aims to promote a coordinated approach to preparedness and response before, during and after disasters. In addition, the Plan is in line with provisions of the DMA Strategic Action Plan for 2016 that proposes to put in place an early warning system to help instill Disaster Risk Reduction (DRR) mechanisms in averting or minimizing the impact of disasters and also in the creation of effective emergency response and recovery plans.

One of the outcome of the training of Disaster Risk Reduction (DRR) and Early Warning (EW) held from 11th to 15th October 2015 in Mogadishu was the prioritization of key hazards likely to require contingency measures. These were identified as mainly drought and floods but with other minor ones such as land degradation, epidemics, conflicts, and pest infestation. The prioritized hazards identified in the Contingency Plan were developed with three scenarios. The most likely scenario envisages that there will be drought due to the failure of seasonal rainfall or flooding characterized with above normal rainfall in some parts of the country especially the Juba and Shabelle River Basins. As a result households will be affected and in both cases require assistance for a stipulated period of time.

It is anticipated that more than 1 million people residing in the South Central part of the country are likely to be affected by these hazards. These disasters are likely to affect five sectors namely food security, shelter, water hygiene and sanitation, health, nutrition, education, protection and logistics. In planning for the scenarios identified in each of the sectors, risk analysis was undertaken based on past historical drought/flood years.

In planning for the scenarios identified in each of the sectors, risk analysis was undertaken based on past historical flood and drought years together with the application of flood and drought alerts developed and currently being implemented by SWALIM in Somalia.

In the case of an alert by the Prime Ministers' Office (PMO) of any of the disasters, the Disaster Management Authority (DMA) and other agencies will conduct a joint assessment with main purpose to identify the circumstances existing in the affected areas and quantify the extent of damage caused by the floods to people, livelihoods and infrastructure.

This regional preparedness and response contingency plans, will allow activation of a coordinated and effective response to the situation and the initial planning of early recovery measures. The framework contained in this document, can as well provide a suitable basis for future coordinated humanitarian response to these more regular flood events.

This Contingency Plan is a living document. It will be reviewed annually and constantly updated by all stakeholders to address changes in the hazard, risks profile and scenarios.

1. INTRODUCTION

1.1 Problem Analysis

The Federal Republic of Somalia, is part of the arid Sahel Zone and is prone to a number of disasters and in particular drought and floods. These have exacerbated poverty levels and reversed many development gains. Lately, there has been a discernible increase in the severity and frequency of these hazards with unprecedented loss of lives and destruction of properties.

River flooding occur mainly along River Shabelle and Juba basin when enhanced seasonal rainfall occurs while flash floods are common in low lying and built up areas . These are highly pronounced during El Niño conditions like in 1991/1992, 1994/1995, 1997/1998, 2002/2003, 2006/2007, and 2009/2010. For instance, in 1997/1998, massive flooding resulting from the El Niño affected over 900,000 people and over 440,000 people in 2006/2007, mostly in southern and in central Somalia, along the Shabelle and Juba valley river basins. Many of the affected lost all their properties and livelihoods.

On the other hand, drought is a normal part of climate cycle that occurs virtually in nearly the whole country. It occurs almost once every two years, and it starts in some zones and slowly spreads to the rest of the country because of seasonal shifts and increased dryness. The impact of drought affects most parts of the country, leading to livestock deaths, and increasing food and water prices, which makes it increasingly difficult for poor families to feed themselves. Like other countries in eastern Africa, drought in Somalia is associated with moderate to strong La Niña phases e.g. the ones of 1987, 1991, 1994, 2000, 2001, 2003/2004, 2006/2007, 2010/2011. The 2011 drought left some millions of country's population in southern central Somalia without food.

Some of the man-made factors that have contributed to the increase of frequency of drought in the country include;

- Lack of proper land use as majority of Somali communities are pastoralists and with the increasing number of livestock there is also an increase in overgrazing of the rangelands.
- Lack of regulated use of land
- There is a lot of tree cutting in the area which interferes with the ecosystem
- Poor water resource management and governance
- Population growth pressures on natural resources

High poverty level, poor infrastructure, lack of effective early warning systems and absence of updated emergency contingency plans increase vulnerability to disasters. Coordination among the humanitarian community is very loose in disaster response. The Office of the Prime Minister through DMA is mandated to manage and coordinate disaster preparedness and response activities in Somalia. However, prerequisite technical and financial capacity in delivering these duties is limited.

The development of contingency plans has become a priority to ensure that populations are effectively prepared for disasters in order to reduce the number of casualties caused by these catastrophes. These plans help to establish and report a system of notification and response for disasters to ensure that no lives are lost and property destroyed as a result. Properties and assets can also be better protected when community members are prepared.

1.1 Areas at Flood Risk

The areas of highest risk of river flooding are districts along the Shabelle and Juba river valley in Gedo, Hiraan, Lower and Middle Jubba and Lower and Middle Shabelle regions. The following districts do severely affected whenever floods occur; Dollow (Gedo); Belet Weyne, Bulo Burto and Jalalaqsi (Hiraan); Balcad and Jowhar (Middle Shabelle); Afgooye, Baraawe, Kurtunwaarey, Marka, Qoryooley and Wanla Weyne (Lower Shabelle); Bu'aale, Jilib and Saakow (Middle Juba); Afmadow, Jamaame, Kismayo (Lower Juba). The other areas that could experience low to moderate effects of the flooding include; Mogadishu (Banadir), Bur Hakaba (Bay); Baardheere, Ceel Waaq, Garbahaarey and Luuq (Gedo); Rab Dhuure, Tayeeglow and Xudur (Hiraan); and Badhaadhe (Lower Juba).

The exact numbers of people that are likely to be inundated, displaced by the floods or otherwise affected is difficult to ascertain with total accuracy. However, trends and lessons learned from previous flood events indicate that severe flooding event could foresee up to 900,000 people affected while a moderate one could see over 500,000 people affected. The estimates represent the number of people that were affected during past severe and moderate flooding events that occurred in 1997/1998 and 2006/2007 respectively.

1.2 Constraints and Limitations

In order to ensure compatibility in the implementation of the Contingency Plan and in assessing the scope and efficacy of Emergency Contingency planning, improved disaster management should be included as a strategy to be adapted by the various sectors (including water, environment and other natural resources) that are focused towards supporting efficient and effective short-term response and longer-term livelihood development interventions aimed at protecting and enhancing livelihood assets. This will be in the context of saving lives during emergencies, reducing vulnerability and building resilience against the increasingly severe and more frequent hazards and related disasters.

The inherent challenges to be faced in the implementation of the Emergency Contingency Plan include: low capacity of the government to response to disasters; inadequate emergency preparedness/contingency plans; and insecurity inhibiting risk assessments leading to delays in response and poor investment of scarce resources.

There is no budget by the Federal Republic of Somalia government to implement this contingency plan but would rely on other agencies for funding.

1.3 Objective

The overall objective of the Contingency Plan (CP) is to support the timely, consistent and coordinated response to floods and drought related disasters during the planning period of the year. This will minimize the negative impacts on human population, their livelihoods and assets, the environment thus reducing the scale of humanitarian needs for the affected population. The Plan also has an inbuilt flexibility that allows it to embrace other hazards should they occur anywhere in the country.

1.3.1 Specific objectives

The specific objectives of the national contingency planning include:

i. To provide mechanisms for responding to an emergency,
ii. To save lives and properties
iii. To improve the management and coordination of preparedness, response and rehabilitation arrangements
iv. To ensure timely resource mobilization and response
v. To reduce the risk of secondary hazards i.e. epidemics
vi. To indicate the type and quantities of assistance to be required as a result of the emergency
vii. To identify and define roles and responsibilities of all partners in emergency response
viii. To enable humanitarian partners to respond to a critical situation in an orderly, appropriately and coordinated manner efficiently.
ix. To put in place preparedness and contingency plans aimed at minimizing the impact of disaster on populations in areas at-risk.
x. To secure support (emergency funds / and materials) from Government and Partners for relief, humanitarian assistance and recovery of potentially affected population.

1.4 Approach and Methodology

The preparation of this contingency planning process was undertaken through a joint consultative meeting and training of disaster risk reduction staff from various line ministries of Federal Republic of Somalia Government in Mogadishu (see list of participants in **Annex 8**).

1.4.1 Hazards Risk Analysis

Risk is made up of the interaction between hazards, vulnerabilities and capacities. It is the combination of intensity of exposure, vulnerable and ill-prepared population with high turnover of hazardous events that results into disasters.

Generally, it is understood by equation 1 expressed as:

$$\text{Risk} = \frac{\text{Hazard X Vulnerability}}{\text{Capacity}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. (1)$$

The assessment of risks in this context involved analysis of hazards, vulnerabilities and capacities.

According to the participants' knowledge of their country, the two top frequent hazards likely to cause adverse impacts on several sectors is drought and flood. It is therefore paramount that flood and drought risk analysis be thoroughly carried out to get conversant with places to prioritize for relief assistance.

In planning for the scenarios identified in each of the sectors, risk analysis was undertaken based on historical drought years (**Table 1)** and spatial data analysis (**Annex 1**) to develop drought

indices. Trend analysis on current and sector specific data for past three drought years was also used. To determine the number of people likely to be affected by prolonged dry spells, drought risk analysis and mapping utilizing geospatial tools was employed.

Table 1: Historical disasters in Somaliland

Disaster	Date
Drought	Dec-1964
Drought	1973/1974
Drought	1979/1980
Drought	1984
Epidemic	Mar-1985
Epidemic	Jan-1986
Drought	1987
Drought	1991
Drought	1994
Flash Floods	Oct-1997
Epidemic	Oct-1997
Epidemic	Feb-1998
Famine	Mar-1999
Drought	Jan-2000
Epidemic	Apr-2000
Flash Floods	Jul-2000
Drought	Jun-2001
Drought	Dec-2001
Drought	2003/2004
Drought	2006/2007
Drought	2010/2011
Flash Floods	Nov 2013

Source: (OFDA-CRED 2013)

SWALIM has developed drought monitoring methodology that has been improved through development of a spatially Combined Drought Index (CDI) using both observed and remotely sensed data. The improved CDI (**Table 2**) which applies and adapts the index to different land use and livelihood units has been used in the scenarios development of the Contingency Planning.

Table 2: Classification of drought severity using CDI[1]

CDI value	Drought severity
1.00 – 0.6	Mild to Moderate
0.6 – 0.4	Severe
< 0.4	Extreme

Source: (SWALIM 2013)

[1]SWALIM Combined Drought Index

Somalia experiences two types of flooding i.e. river floods and flash floods. River floods occur along the Juba and Shabelle rivers in Southern Central Somalia, whereas flash floods are common along the intermittent streams in the northern part of the country. These floods result in human casualties and major economic damage.

In this context, flood risk analysis involves the collection and analysis of information regarding floods that threaten property, lives and food security in Juba and Shabelle basins. Through the stakeholders, the flood hazard maps and historic records indicating the areas prone to severe flooding, particularly in relation to people's vulnerability was mapped. Reports that indicate how exposure and vulnerability to these hazards have changed as a result of recent environmental changes and developmental activities were collected and reviewed. More so, information on population and economic trend needs was also examined. Most of this information was from the various government departments and institutions, UN organizations, Non-Governmental organizations and other agencies operating in Somalia.

In planning for the scenarios identified in each of the sectors, risk analysis was undertaken based on historical flood years and SWALIM's Flood Risk and Response Management Information System (FRRMIS) for flood monitoring, information sharing and dissemination e.g. see **Table 3** for river gauge levels.

Table 3: Example of river and risk levels at key river gauging stations in Shabelle and Juba Rivers [Source: SWALIM 2015]

River	Station	Observed River Level (m)	Moderate Risk Levels(m)	High Risk Levels (m)
Shabelle	Belet Weyne	**4.35**	**6.50**	**7.30**
	Bulo Burti	**2.90**	**6.50**	**7.20**
	Jowhar	**4.28**	**5.00**	**5.25**
Juba	Luuq	**2.60**	**5.50**	**6.00**
	Bardhere	**4.88**	**7.42**	**8.20**
	Bualle	**2.56**	**9.00**	**10.0**
	Dollow	**2.36**	-	-

The disaster profile for the areas that could be affected in southern and central Somalia is further accentuated by the ongoing armed conflict and the resultant major conflict-induced population displacement crisis. Coupled with the structural challenges and incomplete recovery from the effects of the 2011 drought that exacerbated famine, even small-scale natural hazards can have a devastating effect on people's lives.

1.4.2 Literature Review

The agricultural economy in the Juba and Shabelle is predominately based on rain-fed subsidence farming but the region is downed with unevenly distributed rainfall patterns which are subject to great seasonal and annual variations, and therefore scarcity of water resources.

Agriculture is by far the largest water-user in most downstream areas, but relies predominantly on surface water (FAO 2005). Rainfall varies dramatically from year to year throughout the

basin, however, causing severe droughts every seven to ten years (FAO 2005). This is catastrophic for rain-fed agriculture, which has increased in Somalia in recent decades as irrigation infrastructure has fallen into disrepair or been destroyed (FAO 2005).

The frequency and intensity of floods in the basin has increased in the last few decades. The historically most memorable severe floods were those of the *Deyr* in 1961, 1977, 1997, 2006, and 2009 the floods of the *Gu* in 1981, 1987, 2005, 2010 and 2013. These floods resulted in human casualties and major economic damage. In the last three decades, both the frequency of the occurrence and losses associated with floods has increased.

The 2015 El Niño was forecasted to likely cause massive flooding (see SOND forecast in **Annex 2**). The El Niño of 1997-8 was the worst in recent memory. It caused massive flooding along the Juba and Shabelle rivers in Somalia, led to major animal disease outbreaks, which contributed to a long-lasting export ban in 1999 resulting from Rift Valley Fever (RVF), an animal disease that is particularly prone to flooding and prolonged wet conditions. With over 65 percent of the Somali population depending on livestock, the sector is likely to be very badly hit. Food production, mostly along Juba and Shabelle rivers, is also likely to be dramatically affected, at least in the short-term. Other El Niño events, such as in 2005-06, were less severe, but still caused significant damage and displacement.

Contingency planning has emerged as a key tool to ensure that countries and other agencies are as ready as they can to respond to natural disasters, conflicts and other crises. It helps ensure that when the next crisis breaks, everyone and everything is ready. Under these circumstances, it enables the lessons of recent experience to be incorporated into the process. In situations without an on-going crisis, contingency planning is often an annual or semi-annual exercise. The focus of the planning is determined by a hazard, risk or context analysis.

Based on the scenarios, a response strategy was developed including specific intervention objectives and targets, including beneficiary numbers. The response strategy links the scenarios and the subsequent plans.

Following 2011 famine that killed an estimated 260,000 people, Somalia has seen steady improvement of its food security situation. However, over 731,000 people are still estimated to be severely food insecure, requiring urgent humanitarian assistance and livelihood support, according to FAO's Food Security and Nutrition Analysis Unit for Somalia (FSNAU). In the basin, an estimated 350, 000 people are in need of food assistance during the *deyr* 2015 season.

Another 2.3 million people are classified as Stressed (IPC Phase 2) and require interventions to protect their livelihoods and build their resilience to prevent them from falling back into Crisis or Emergency conditions. Many children remain acutely malnourished, despite a small decrease in their numbers since July 2014. In particular, IDPs will very much be hard hit with little prospect for improvement.

This National Contingency Planning will be undertaken for emerging drought and floods crises in Somalia. Based on the scenarios, a response strategy was developed including specific intervention objectives and targets, including beneficiary numbers. The response strategy links the scenarios and the subsequent plans.

1.4.3 Stakehoders Involvement

This Contingency Plan has been informed mainly by a one day broad-based collaborative meeting and a one week training meeting that ensured full participation and involvement of multi-stakeholders in risk analysis and vulnerability assessment during the formulation stage. The stakeholders involved in the planning of this framework can be categorized as Government agencies, Local communities, NGOs including civil society organizations and Private sector among others:

1.5 Structure and contents of the report

The first section of this plan introduces the concept of contingency planning, problem analysis, objective and methodological approach to the process of CP. Section two gives an overview of the Shabelle and Juba River Basin's geo-physical, population distribution, and analyzed risk profiles together with existing technical and institutional capacities. Section three gives in details the contingency planning process. It highlights on scenarios development and assumptions, coordination and management arrangements together with various sectoral response plans based on floods and drought related disasters. The fourth section lays foundation on information management including activation of the response plan. The fifth section is on information management while resource mobilization is discussed in section 5. The review of the contingency plan is covered in section six. A series of appendices including hazard maps, seasonal forecast, roles and responsibility of different stakeholders, cluster plans, assessment tools and lead agencies of the various players in the plan are included in the annexes. The list of stakeholders who participated in the formulation process of this CP is also included.

2 JUBA AND SHABELLE BASINS CONTEXT AND RISK PROFILES

2.1 Geo-physical and Population Distribution

Morphologically, the basins can be distinguished into three zones that roughly correspond to their geological makeup. The upper zone, characterized by high elevations, steep slopes and rugged morphology, whose mountain peaks and high plateaus trap the moisture of the monsoon winds and transform it into generous rainfall. In this zone the drainage is well defined and made up of several steep tributaries joining the main channel. Especially during the rainy season their fast-flowing water carries a lot of sediment.

The mid zone is characterized by lower elevations and by the presence of frequent hills and sometimes deep gorges, especially in the Juba catchment. In this part, the main rivers start to form their typical confined valleys, with high relief on both sides of the valleys and difficult access to the rivers themselves. In this area, mainly transport processes act on the landscape, transferring the deposits from the upper zone downstream.

In the lower zone, the valleys widen to several tens of kilometers at some points, with smooth morphology and very limited relief and slope. In this zone the main processes acting on the landscape are of transport and deposition, especially during the frequent floods that affect this region. It is also in this zone that the Shabelle River acquires its peculiar morphology that sees the river bed higher than the surrounding floodplain. This is a typical feature of rivers carrying a lot of sediment and whose flow is not strong enough to keep it in suspension - sediment is constantly deposited throughout the river course, which builds up the river bed and banks and elevates the river.

Another typical feature of the Shabelle River is that after following the nearly straight and narrow valley of the upper and mid zones, it then enters the lower zone, where the slope is gentler, giving rise to several avulsion patterns and paleo-channels that are clearly visible from the air. The Shabelle joins the Juba River only during exceptional floods; otherwise it peters out into a marshy area well upstream (see **Annex 3**).

2.1.1 Population Estimates

Approximately 3.5 to 5.5 million of the basin's population is estimated to live in Somalia. The population likely to be affected by floods was estimated to about 900,000 people (**Table 4**). It is noteworthy that the population is increasing, while the available water resource is decreasing.

Table 4: Population estimates for flood prone areas within Juba and Shabelle basins (Source: FAO-SWALIM)

Region	District	Settlements in region	5 year Flood inundated settlements	10 year Flood inundated Settlements	Population (UNDP 2005)	5 year Flood Population in inundated Settlements	10 year Flood Population in inundated Settlements
Hiran	Belet Weyne	64	7	15	172049	18818	40324
	Bulo Burto	70	5	11	111038	7931	17449
	Jalalaqsi	39	1	4	46724	1198	4792
Bakool	Xudur	49	0	0	93049	0	0
	Ceel Barde	13	0	0	29179	0	0
	Tayeeglow	27	0	1	81053	0	3002
	Waajid	20	0	0	69694	0	0
	Rab Dhuure	20	0	0	37652	0	0
Gedo	Garbahaarey	35	4	5	57023	6517	8146
	Baardheere	91	2	2	106172	2333	2333
	Belet Xaawo	18	0	0	55989	0	0
	Ceel Waaq	29	1	1	19996	690	690
	Doolow	6	2	2	26495	8832	8832
	Luuq	26	4	5	62703	9647	12058
Bay	Baydhaba	440	0	0	320463	0	0
	Buur Hakaba	386	0	0	125616	0	0
	Diinsoor	64	0	0	75769	0	0
	Qansax Dheere	24	0	0	98714	0	0
Middle Shabelle	Aden Yabal	20	0	0	62917	0	0
	Caadale	20	0	0	46720	0	0
	Jowhar	202	22	51	269257	29325	67981
	Balcad	106	28	35	136007	35926	44908
Lower Shabelle	Wanla Weyne	189	23	40	155643	18941	32940
	Afgooye	156	24	51	211712	32571	69214
	Qoryoley	178	21	124	134205	15833	93491
	Marka	128	0	76	192939	0	114558
	Kurtun waarey	35	4	23	55445	6337	36435
	Sablale	46	4	12	43055	3744	11232
	Brava	53	4	7	57652	4351	7614
Middle Juba	Sakow	57	3	11	65973	3472	12732
	Buaale	75	14	25	59489	11105	19830
	Jilib	142	27	90	113415	21565	71883
Lower Juba	Afmadow	93	15	24	51334	8280	13247
	Jamame	127	118	122	129149	119997	124064
	Kismayo	61	26	32	166667	71038	87432
	Badhadhe	65	0	0	38640	0	0
						438,450	**902,185**

Considering that agro-ecological zones extend across one or more of the regional administrative boundaries, there still remain the big challenge to determine realistic approximate population estimates for each agro-ecological zone.

2.1.2 Geography of the Juba and Shabelle River Basin

Both the Juba and the Shabelle originate in the southeastern portion of the Bale Mountain in the Ethiopian Highlands at over 3 000 m above sea level. The Juba has the smaller catchment area

but receives heavier rainfall and has considerably higher runoff near its headwaters. Near the border with Somalia the three main tributaries of the river, the Genale, the Dawa and the Weyb meet to form what is known the Juba River inside Somalia. It enters the Indian Ocean at Kismayo town in southern Somalia and has a total length of 1, 808 km, of which 840 km lies in Ethiopia and 1, 004 km in Somalia.

The average annual rainfall of the entire basin is about 500 mm. The MAR of the river in Ethiopia is 6 600 mm3 and 6 200 mm^3 in Somalia. Ethiopia contributes over 95% of the river's total runoff. From over 1500 mm of rainfall at higher altitudes in the mountains to less than 200 mm near the border, the flow of the Juba River has large annual variability and biannual flooding period. Having an annual runoff which is almost three times higher than the Shabelle River, the river's average flow is 200 m^3/s.

The Shabelle River, about 2 526 km in length, on the other hand originates in the Ethiopian Highlands, it meanders in deep valleys and passes through an arid land in the eastern province of Ethiopia, the Ogaden, cutting wide valleys in southern Somalia. The river dries up near the mouth of the Juba River and it reaches the Juba River only in times of exceptional heavy rains and floods and thus discharging into the Indian Ocean.

With an average annual rainfall of 425 mm, River Shabelles's Mean Annual Runoff (MAR) in Ethiopia is 3387 mm^3. The figure decreases to 2 384 mm^3 at the Somali town of Belet-Weyne, near the border. The river's runoffs are entirely generated by catchments within Ethiopia, while Somalia's portion of the basin has a negative net impact on the two rivers' water budget. In downstream areas in Somalia, large amount of the Shabelle water resources have been extensively utilized mainly for irrigation.

Both Rivers Juba and Shabelle lose discharge as they progress downstream, due to a lack of rainfall in downstream areas, high evaporation and significant infiltration and withdrawals. Due to its climate conditions, the basin is frequently affected by recurrent droughts and floods causing major problems to downstream communities in Somalia.

2.2 Hydrological and Climatic conditions of the Basin

The total basin area drainage for the Juba and Shabelle Rivers is approximately 749 000 square kilometers with runoff of about 9 987 mm^3 and runoff-area ration of 26 000 m^3/km^2 or 11.4mm/year (SWALIM, 2010).

Climatologically, the river basins have similar characteristics in terms of climate and rainfall, and water availability, as their climates are determined by the north-easterly and south-easterly winds of the Inter-tropical Convergence Zone (ITCZ). With large variations in climate along their courses, the river basins have distinct dry and wet parts of their respective regions (MWR 2004). More importantly, their climate is characterized by a high variation between relatively wet and dry seasons of the years. In addition, overall evaporative capacity in the basins is considerably high. Hydrologically, this makes the basins water deficit.

The basin's rainfall comes in two rainy seasons with less pronounced dry seasons in the higher areas of Ethiopia than in lower areas throughout the rest of the basin. The primary rains occur from April to June delivering around 60 per cent of the annual rain. Lesser rains in October and November bring around one quarter of the year's precipitation (Artan et al., 2007). Total annual rainfall in some areas of the Juba headwaters is over 1 400 mm. Much of the rest of the basin is

arid or semi-arid and a lot of the lowland part of the basin receives less than 500 mm of rain annually and some parts as little as 200 mm.

High temperatures, along with the limited rainfall, further reduce the contribution of most of the basin to the Shabelle-Juba River system. Ethiopia contributes the vast majority of the two rivers' flows, while Kenya has little influence and Somalia's portion of the basin has a negative net impact on the two rivers' water budget.

2. 3 Hydro-Meteorological Hazards

2.3.1 Floods

Floods have become frequent and more intense in Somalia over the last couple of years. Flash floods of great volume and short duration are recurrent phenomena in causing extensive damages during the rainy seasons. Floods occur mainly when above normal rains are realized during the *Gu* and *Dyer* seasons. The torrential rains, high wind speeds often results into cold rains that kill several thousands of animals. Such heavy storms also destroy villages, homes, buildings, and boats causing suffering and miseries to the already vulnerable communities.

Flood monitoring in the basin has been improved through SWALIM's FRRMIS for flood monitoring, information sharing and dissemination.

Some of the flood triggers in the basin include: -

- Above normal or excess rainfall in Somalia and the Ethiopian Highlands.
- Increased river levels.
- Inundation of farmlands, grazing lands, villages and homesteads.
- Displacement and out-migration.
- Loss of means of livelihood including livestock, stored grains and seeds, and other household assets.
- Disease outbreaks

In comparison, floods affect far more people within a short period compared to other natural disasters in the basin.

2.3.2 Drought

Drought is a normal part of climate cycle that occurs in virtually all regions of Somalia. It is a common phenomenon in the basin when seasonal rains fail resulting into prolonged dry spells exacerbating crop failures and poor harvest. This is common especially during Deyr season when La Niña conditions prevail in the Pacific Ocean. For example, recent 2010/2011 drought has illustrated the vulnerability of all parts of the basin to extended periods of rainfall deficiency. Rainfall varies dramatically from year to year throughout the basin, however, causing severe droughts every seven to ten years (FAO 2005).

Drought monitoring in the basin by SWALIM has been improved through development of a spatially Combined Drought Index (CDI). Some of the drought triggers in the basin include: -

- Below normal rains
- Pasture and water shortages.
- Drought induced displacements and abnormal livestock migration.

- Increased drought related food insecurity and malnutrition.
- Drought related livestock deaths.

2.3.3 Epidemics (Human and Animals)

Epidemics and outbreak of diseases have had major impacts on the already vulnerable community members. The outbreak is exacerbated by flooding or drought in the country. Livestock diseases pose an important threat to pastoralist communities because of their reliance on livestock as sole livelihood. Water borne related diseases are common and affect many people due to degraded water, hygiene and sanitary conditions.

Inadequate provision of safe water, sanitation, personal hygiene practices and lack of resources to sustain awareness campaigns particularly in urban areas are some of the challenges in Gastro-intestinal Tract Infections (GTIs) risk reduction. Various communities have been affected by outbreak of epidemic diseases in the past. Heavy storms and subsequent flooding exacerbate massive outbreak of malaria and RVF, with thousands of death cases resulting from the disease and the effects of the storms. Regular outbreaks of measles, malaria cholera, dysentery and meningitis pose major threats to public health. With most of the underlying and infrastructural challenges having not been addressed, the risk of GTIs, including cholera and diarrhea will remain high. The risk of outbreaks of other diarrheal diseases, like dysentery, remains high due to poor WASH facilities.

2.4 Existing Institutional and Technical Capacities

The capacity of the Federal Government of Somalia institutions to respond to disasters remains limited, including the Ministry of Interior and Federalism (MoIF), which is the focal point for humanitarian issues, and the Disaster Management Agency (DMA). However, there is a growing commitment on the part of the Government to take a lead role in providing and coordinating humanitarian assistance to people in need.

In 2014, a Director General for Humanitarian Affairs and a focal point on humanitarian issues was appointed in the MoIF. FGS has also established a ministerial-level Emergency Response Committee tasked with disaster response and coordination. Existing humanitarian coordination structures, such as the Humanitarian Country Team (HCT), and cluster coordination mechanisms will continue to work closely with Government structures at strategic and operational levels respectively. Humanitarian organizations also continue to advocate for the creation of a conducive and enabling environment to provide assistance, free of costly and time consuming administrative impediments.

Coordination with partners working under the New Deal framework will be enhanced, particularly with resilience activities. Mapping of the various resilience initiatives is underway, which will inform the coordination framework between these initiatives.

The humanitarian strategy will be implemented in close collaboration with the FGS, regional states and interim administrations.

3. THE CONTINGENCY PLAN

The contingency plan is premised on the following assumptions:

- It is the forward planning process, for an event which may likely occur, in which scenarios and objectives are agreed, managerial and technical actions defined and potential response systems put in place to prevent or respond effectively to an emergency situation.
- The plan will be drawn defining the actions to be taken to prevent and mitigate flooding disaster. The plans will also deal with preparedness, response and recovery with the participation of all Government organs and humanitarian agencies.
- DMA is established as an autonomous body responsible for disaster preparedness, mitigation and recovery activities of the Federal Republic of Somalia. It will together with Prime Minister's office take the lead in this effort and shall coordinate contingency plans of all partners.
- The Prime Minister of the State shall have the power to declare or delegate the declaration of a disaster and consequently make the necessary appeal to local and international assistance.
- 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.
- DMA and other agencies will coordinate all matters related to the emergency and will ensure that all stakeholders are informed of what is happening through all Stakeholders Meeting, Ministry in charge of Information and Communication and the media.
- Early warning information will be shared with different stakeholders. SWALIM will continue to provide early warning information on changing weather patterns through provision of the ten-day, monthly and seasonal weather bulletins throughout the rainy season, which they will also post onto their webpage to allow wider access by different stakeholders.
- MDA and Prime Minister's Office will coordinate the provision of population affected by floods. It is anticipated that all information pertaining to the emergency shall be cleared by Government through DMA before being disseminated.
- The various agencies such as the Inter Agency Standing Committee (IASC) of the United Nations and Islamic Relief and the International Non-Governmental Organization (INGO) forum will continue to play their important role with a view of complimenting the national coordinating mechanism.
- This CP will endeavor to minimize the impact of the flood 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 DMA.
- Interventions proposed shall not erode the normal livelihoods of the affected population but shall instead help to build on them.
- Flood control for a historical flood is not a practical option due to state of existing infrastructure and lack of central authority.
- Continued deterioration of infrastructure and unrestricted settlement on flood plains will increase the numbers at risk to progressively smaller flood crests
- Insecurity makes general access for capacity building difficult and prevents the stockpiling of significant amounts of contingency supplies and logistics equipment in the region.

3.1 Scenario Planning Assumptions

This document presents the contingency plan for floods or drought in Southern Central Somalia. The strategy adopted in its preparation has been to compare the 'Best Case' (minimal hazard), 'Moderate Case (moderate risk of hazards) and 'Worst Case' (severe to extreme hazards) scenarios and to devise appropriate preparedness and response measures based on these three scenarios.

The definitions of the three scenarios for floods/drought are as follows:

I. **Best case scenario** – shows a situation whereby there is minimal floods/drought without much impact on the lives and livelihoods of the people. They can live with it without external support

II. **Moderate case scenario** – that element at risks (both human and non-human) having a capacity gap to cope with the situation is being affected by the floods/drought

III. **Worst case scenario** – all the human and non-human elements are being affected by floods/drought and their traditional coping capacities no longer support them.

Table 5 shows the scenario planning and assumptions for drought and floods while **Annex 7** highlights on both animals and human epidemics. The detail on clusters Cluster guidelines and Implementation plans is given in **Annex 5**.

Table 5: Scenarios Planning and Assumptions for Floods and Drought

	Hazards	Drought	Floods
Scenario and Planning Assumptions	**Description**	**Scenario 1**: Improved food security and water in the next 6 months **Scenario 2**: Increase in the food insecure and water scarcity **Scenario 3**: Food insecurity and water scarcity	**Scenario 1**: Minimal localized flooding **Scenario 2**: Significant Flooding **Scenario 3**: Extensive Flooding
	Planning Assumptions Scenario 1 : Best Case	People will not require food assistance.	Response managed by Government with assistance from partners
	Planning Assumptions Scenario 2: Moderate	Less than 1.1 million people will require food assistance and clean water. Actual figures to be confirmed by FSNAU.	Loss of animals and property. Government will require support to respond
	Planning Assumptions Scenario 3: Worst Case	More than the projected 1.1 million people will require food assistance and clean water. Joint Government and partner support to reach the affected households.	• Outbreak of disease can be expected • Government will require support to respond
	Areas most likely to be affected	Nearly all regions of Southern and Central Somalia	The worst affected areas of concern are districts within the Shabelle and Juba River basin. The specific areas tbc during rapid assessment
Hazard and Risk Analysis	**Probability**	**Almost certain**: When La Nina and below normal rainfall season is forecasted Situation to worsen in consecutive sesonal rainfall failures	**Almost Certain**: When El Nino and above normal rainfall season is forecasted especially for the areas identified above.
	Consequences	Moderate to Major: • Food shortages • Loss of livestock • Loss of livelihoods • Shortage of water • Crop failures • Outbreak of diseases e.g. cholera • Population movements • Negative coping mechanisms	Moderate to major: • Loss of lives • Loss of livestock • Water contamination • Crop failures • Loss of livelihoods • Environmental degradation • Outbreak of diseases e.g. AWD/cholera • Displacement/movements of population
	Overall Risk	**High** Adequate preparedness and effective management of available resources will however considerably reduce the risk.	**Moderate** Adequate levels of preparedness should be in place by Government and all stakeholders to ensure effective response regardless of the scenario realized
	Likely Triggers / EW Indicators	• Prolonged dry season / reducing river levels • Late onset of the rainy season • Erratic rains • Meteorological data (decreasing CDI values) • Traditional warning systems	• Meteorological data • Poor drainage • Overgrazed lands • Siltation in rivers • Traditional early warning systems
	Time Frame	**Feb to Dec (*Gu* and Deyr seasons)**	**March to Dec (*Gu* and Deyr seasons)**
	Sources of Information	FEWSNET, SWALIM/FAO, ICPAC, FSNAU, Local community, MoA, DMA	FEWSNET, SWALIM/FAO, ICPAC, FSNAU, Local community, MoA, DMA

3.2 Coordination and management arrangements

3.2.1 Humanitarian Coordinator and Humanitarian Country Team (HCT)

As part of the efforts to strengthen humanitarian preparedness and response efforts in the country, the country has a HCT that is led by the Humanitarian Coordinator. The HCT brings together Country Representatives of UN emergency agencies, IOM, representatives of NGOs, donors and the Red Crescent Movement and Organization of Islamic Cooperation and is responsible for setting out the strategy of the joint humanitarian response, and for taking policy decisions on the direction of the humanitarian operation.

Financial support to DMA from the Somali Business Council, The Transitional Federal Government, and the Kuwaiti Red Crescent and the Coalition of the Organization of Islamic Cooperation are always forthcoming during emergencies. Besides, DMA has received consignments of food and non-food items from different organizations including Kuwaiti Red Crescent, Qatari Red Crescent, Turkish Red Crescent and other aid organizations.

At the operational level, humanitarian partners have agreed on the following clusters/ sectors and leadership arrangements:

3.2.2 Roles and Responsibilities of government agencies

The Somalia Disaster Management Agency (DMA) in consultation with the Prime Minister's Office and the humanitarian community will re-activate or establish appropriate government led emergency coordination mechanisms as required. To ensure response planning and activities are effectively coordinated, cluster coordinators will foster participatory partnerships at district and community levels and will work in collaboration with relevant government line ministries and departments at the subnational levels to effectively enhance their response capacities. Enhanced engagements will also be made with local communities as front line responders to strengthen their emergency response capacities and build on their traditional coping strategies, to enable them adequately share information and pool together local resources for disaster mitigation, preparedness, prevention and response.

Preparedness and response interventions of humanitarian organizations will be coordinated through the clusters. The Inter Cluster Coordination Group (ICCG) will take the leadership role in coordinating preparedness and response interventions with strategic guidance and support from the HCT. If required, FAO-SWALIM will re-activate the flood technical working group to support flood monitoring and information dissemination. Engagements with the donor community will be made through the Somalia Informal Humanitarian Donor Group (IHDG).

Partnerships, coordination and response interventions of the humanitarian community will be undertaken in accordance with the fundamental humanitarian principles and the Code of Conduct for the International Red Cross and Red Crescent Movement and non-governmental organizations in disaster relief.

Government Line Ministries: The various line 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.

3.2.3 Roles and Responsibilities of Cluster/Sector Leads

The relevant Government ministry/department and their UN/NGO counterpart co-Lead Agency will lead coordinate and manage emergency preparedness and response activities before, during and after the emergency including early recovery activities.

The Sector/Cluster Lead Agency, in liaison with Co-lead Agency and concerned stakeholders, will undertake relevant assessment and/or upon monitoring of indicators of impeding floods

hazard reaching and/or exceeding the threshold inform Prime Minister's Office through DMA on the severity of the situation for the declaration of emergency.

Food Security, shelter, Water, Sanitation and Hygiene (WASH), Health, Nutrition, Education, Protection, and Logistics clusters operate in Somalia and meet as need arises. Relevant UN/NGO counterparts co-Lead Agency (**Table 6**) leads the coordination and manage emergency preparedness and response activities before, during and after the emergency including early recovery activities. Each Cluster/Sector is responsible for ensuring that emergency preparedness and response including early recovery cascades through all structures i.e. from central level administration to provincial and district levels.

Table 6: clusters and sectors and leadership arrangements

CLUSTER	LEAD
Inter-cluster Coordination	OCHA
Food security	FAO/WFP
Shelter and Non Food Items	UNHCR
Water , Hygiene and Sanitation	UNICEF
Health	WHO
Nutrition	UNICEF
Education	UNICEF/ Save the Children
Protection	UNHCR
Logistics	WFP

The specific roles and responsibilities of cluster/sector leads include the following:

i. To lead, coordinate and manage the activities of sector or cluster;
ii. To lead, coordinate and manage the overall disaster preparedness;
iii. To lead, coordinate and manage the overall disaster response and recovery effort;
iv. To facilitate communication within sector or cluster and with DMA;
v. To facilitate the provision of information on early warning and emergency response and recovery between stakeholders involved in the response;
vi. To coordinate joint resource mobilization effort;
vii. To coordinate joint assessments in line with call-down mechanisms (triggers) which highlight when assessments should be conducted;
viii. To facilitate timely and accurate information to donors, media and other interested parties on the response operation;

UN 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 (UNDMT), the Inter Agency Standing Committee (IASC) and its members.

International/National/Local Non-Governmental Organizations: 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 IASC of the United Nations. They shall be responsible for coordinating the NGO forum and its members.

Regional Disaster Management Committee (RDMC): They will collect and disseminate early warning information in the Region. The Region will trigger a response mechanism through the office of the County Governor in case a disaster actualize in their counties by relaying on information to DMA. The RDMC will also commence immediate disaster relief operation (primary response).

3.2.4 Public Outreach and Advocacy

The humanitarian community will continue to carry out advocacy with development actors on the prioritization of natural disaster prevention, mitigation, and adaptation assistance as outlined in the Sendai Framework priorities 1-4. Advocacy efforts will aim to set these priorities, forming the backbone of initiatives to inform and support targeted development actions and programming aimed at building resilience and reducing risks for vulnerable populations.

3.3 Operational Support Arrangements

3.3.1 Needs Assessments

Prior to disaster response, initial investigations will be undertaken (using existing tools) to determine needs in joint partnership with all relevant stakeholders. These initial investigations will provide the basis for delivery of immediate assistance that may be required. At the same time, partners will rely on SWALIM regular flood update to generate number of people affected and/or displaced. Where needed, clusters may undertake assessments using the Somalia Initial Rapid Needs Assessment Tool (SIRNA) tools to get an in-depth understanding of the needs. At the same time, the humanitarian community will rely on FSNAU's food security and nutrition assessments to further refine the number of people in need and response planning. FSNAU's assessments are thorough and provide a good understanding of the existing needs as well the dynamics and trend of these needs.

Depending on the scale and severity of the floods impact, the Government of Somalia through the Humanitarian Coordinator may request for international assistance including the deployment of a United Nations Disaster and Assessment Coordination team (UNDAC).

3.3.2 Information Management

Information Management officers are active within all clusters and OCHA will provide regular support to these focal points, through existing information management tools and services. These include establishing and maintaining an inter-cluster web platform for managing information (www.humanitarianresponse.info/operations/somalia). OCHA will issue Flash Updates or Situation Reports as necessary, in addition to regular monthly humanitarian bulletins, maps and other information products that will be useful to support response efforts. FAO – SWALIM will issue flood alert reports and maps.

3.3.3 Response Monitoring

Overall response monitoring will lie within the existing response coordination structure. Cluster level monitoring will be under the responsibility of the cluster lead agency in collaboration with all partners. If the contingency plan is triggered, cluster lead agencies will facilitate adequate reporting and information sharing to help monitor the response. Cluster leads will also monitor routinely their needs, response and gaps and introduce any required adjustments. Monitoring is a

continuous process. Its findings will be reflected in reporting documents, including snapshots, humanitarian bulletins and situation reports.

3.3.4 Common Service Areas

Common services' areas will include logistics, security, coordination and telecommunication. A WFP-led logistic cluster is in place to support the response. OCHA will support the HC in his coordination function.

3.3.5 Safety and Security

The UN Department for Security and Safety (DSS) supports the Designated Official's function, with potential support of security officers of UN Agencies; while the NGO Safety Programme (NSP) supports NGOs security and safety issues with support from OCHA and UNDSS as required. Mitigation measures will include constant monitoring of all violence triggers and all security incidents will be monitored, mapped, analyzed, and shared with relevant humanitarian partners.

3.4 Response Plans

In the event that flooding is declared a disaster, joint activities that will be taken by the PMO's Office jointly with DMA and humanitarian partners include (see **Figure 1**);

- Joint needs assessments
- Coordination and communication
- Gap analysis
- Response planning
- Implementation
- Monitoring, evaluation and reporting.

Specific cluster meeting will be convened by the Prime Ministers' Office through DMA to plan on the response. The meeting will agree on the over-arching objectives of humanitarian response, implementation strategy and over-arching principles that will guide the response. The relevant cluster and stakeholders will determine the duration of the assistance, level and type of assistance required and identify target beneficiaries. **Figure 1** gives the summary of flow of events in an event that disaster is pronounced while **Annex 6** shows a rapid field assessment form to guide the type of information that should be collected.

3.4.1 Emergency Joint needs assessment

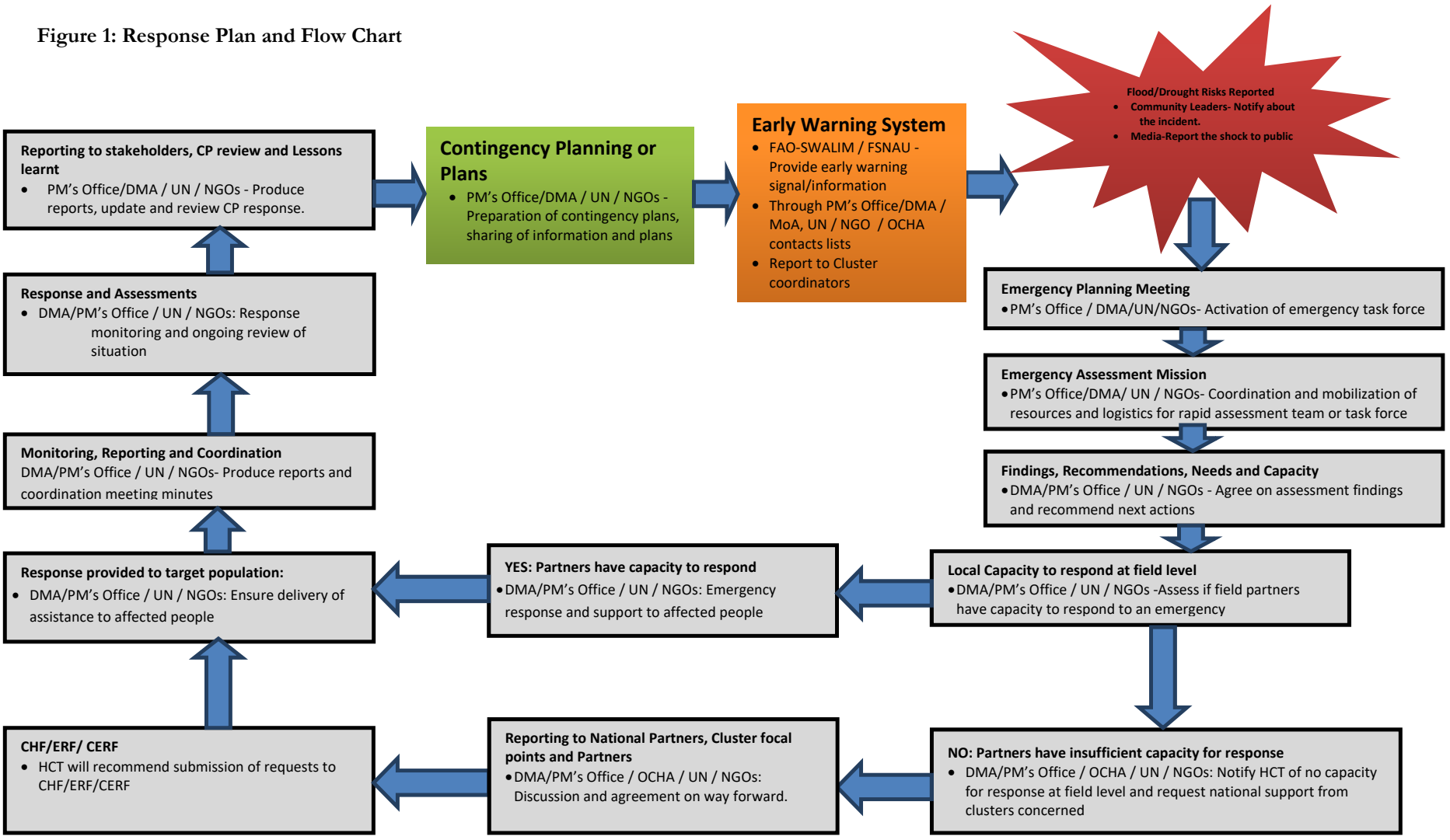
In the context of national contingency planning and implementation framework, assessment and analysis of emergencies/disasters will be done by multi-sectoral and multi-stakeholder teams drawn from the sectors at regional and sub-regional level including support from the national level. National rapid assessment methodology and tools for assessing impact of hazards at community and household levels will be standardized to take into account all sectors.

3.4.2 Guiding Principles

Humanitarian emergency response will be guided by the principles of neutrality, humanity and impartiality according to the Geneva Conventions[2]. As a guide, the government and other agencies through DMA and PM's Office will undertake to provide as much detailed information as possible regarding the affected populations so that the correct amounts of assistance could be provided. Activities to be implemented will include mobilization of all available resources and deploy them in timely manner to disaster affected areas. This will involve implementation of clusters/sector response activities/interventions as outlined in **Annex 5**.

[2] Protocol Additional to the Geneva Conventions of 12 August 1949

Figure 1: Response Plan and Flow Chart



3.4.3 Implementation of the plan

The following systems are in place to maintain readiness:

- All partners are expected to maintain preparedness for emergency activities.
- Some partners working in Somalia hold contingency stocks in Mogadishu and to a limited extent in some field locations. Stock levels are monitored.
- Early warning systems are operational with open communication among all emergency partners. Food Security Analysis Unit (FSAU) of United Nations Food and Agriculture Organization (UN-FAO) early warning system is the main source of data and information for hazard assessment. Sectoral reports are prepared by other partners who are circulated with Office of Commissioner for Humanitarian Affairs (OCHA) facilitation.

For full preparedness, the following aspects to be improved:

- Coordination by DMA and PM's Office, regular weekly meeting to review the plan with meetings held by (i) Cluster Groups; (ii) Regional/County Disaster Preparedness Committees; (iii) National Contingency Planning Committee.
- Information sharing among and between stakeholders should be enhanced through regular meetings and joint field visits.
- Lobby for funds from donors to support activities

3.4.4 Operational Support Plan

This will involve ensuring that sufficient administration, financial, human resources, information and telecommunications, security and other support are availed. Also involves ensuring access to disaster areas. DMA Commissioner is overally responsible for coordination and management of responses to emergencies in Somalia. However DMA will continue to be supported by PM's Office and other Line Ministries, UN Agencies security coordinators, NGOs security coordinators and cluster/sector groups and other stakeholders in the coordination of the operational support plan as it would necessarily liaise with all stakeholders including the security agents to ensure appropriate implementation of the national contingency plan.

3.4.5 Early Warning monitoring mechanism

DMA will work closely with the FSNAU and SWALIM among others, to ensure that the situation is being monitored as it unfolds. Flood triggers and indicators aid in monitoring as a way to determine onset and severity. Regular bulletins preferably on weekly basis generated by SWALIM using FRRMIS will be circulated as a way of sharing information as the triggers begin to show that the situation is getting worse. SWALIM will provide updates in their bulletins, a national floods summary and map.

The stakeholders meeting which is coordinated by DMA and other agencies will be called regularly to give updates on the situation as well as progress on preparedness activities.

3.4.6 Emergency Management Operational Procedures (EMOP)

The Emergency Management Operational Procedures (EMOP) provide a management structure and system for conducting on-site operations. It is applicable to small-scale operational activities as well as major mobilizations. EMOP provide command centre and operational staff with a standardized operational structure and is activated via the disaster risk management structures. EMOP are the foundation of any crisis management plan. These are a set of standard procedures

that operationalise the disaster response and/or contingency plans when responding to, and dealing with, a range of emergencies that may impact on Somalia.

Efficient and effective emergency management is grounded on principles of none duplication of efforts and resources, clear understanding of roles and responsibilities of each player in the emergency situations as well as timely implementation of appropriate interventions to save life, property and environment.

Disaster relief should be timely and responsive enough to make the interventions as effective as possible while keeping disaster risk management plans robust enough for them to be responsive to changing characteristics of given hazards. EMOP spells out some key activities that need to be undertaken during emergency response.

EMOP specify the way in which government or humanitarian sector clusters will carry out their functions and provide a standard procedure for response as well as individual emergency procedures for the various sectors at the operational level.

3.4.7 Response Timeline

DMA with assisstance from PM's Office and other agencies will mobilize for rapid assessment to be conducted within the first 72 hours of declaration of a flood disaster. Since drought is a slow-on-set disaster in nature, the indicators will be monitored and appropriate action taken. This should identify the problems, their sources and consequences that assist to determine whether response strategies should be mounted. Rapid assessments will be conducted as an inter-sectoral exercise involving a mix of specialists and generalists.

Annex 6 shows sample of a rapid field assessment form to guide the type of information that should be collected. A rapid field assessment should be followed by detailed and continuous assessments that provide more detailed information and updated information on disaster situation. In trying to understand critical needs, resources, and constraints for displaced population, the assessment will need both quantifying and qualifying information about the emergency situation.

4. Activation of the response plan

A multi-sectoral/multi-stakeholder assessment mission will be conducted in the affected areas if:

- An alert has been raised.
- Information on occurrence of emergency is received from the affected areas but reports on the extent of damage and number of people affected are not forthcoming (e.g. in case of inaccessibility).

Telecommunication

Communication via cell telephones would be used.

- Some stakeholders have High Frequency (HF) radio, satellite phone communication and electronic mail access.

Security

- UN Resident Security Coordinator is responsible for the security of UN staff.
- NGOs Security Officer is responsible for the security of NGOs staff.
- Government staff security is the responsibility of the Government.

Evaluation

- Implementing partners evaluates their inputs through frequent assessments during the implementation of the emergency.
- DMA participates in monitoring and evaluation of emergency.

4.1 Trigger mechanism

The Contingency Plan will be triggered based on the monitoring of indicators under early warning and monitoring mechanism.

To assist in monitoring the severity and spatial extent of disasters, SWALIM will frequently use indicators and triggers to advise DMA on floods / drought status.

4.2 Planning figures for humanitarian assistance

A breakdown of the number of people affected during the last El Niño events of 1997/98 and 2006/2007 will be used to estimate planning figures incase of floods while 2010/2011 for drought. The planning figures are based on the most likely scenario according to the forecasts that indicate the event would be moderate to strong.

5. RESOURCE MOBILIZATIONS

There is no current legal framework that stipulates how mobilization of resources for emergency preparedness and response should be undertaken in the Federal Republic of Somalia government. Resources for the implementation of this contingency plan will be mobilised by UN agencies on behalf of government, cooperating partners, 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. When the disaster exceeds national capacity to respond, the PM's Office will request for international assistance. The United Nations and partner NGOs will utilise existing response tools.

5.1 Pooled Funding

The UN operates two mechanisms for the launch of crisis specific joint funding appeals to the global community – the Flash Appeal for emergency responses and the Consolidated Appeals Process (CAP) for longer-term crises.

Additionally, agencies may source funds directly through a bilateral relationship with public sector donors such as government agencies or with private donors, although these projects should still be included in the Flash Appeal and the Consolidated Appeals Process.

Standby funds consist of contributions from many donors which are pooled for allocation according to a common purpose. These funds can respond rapidly to urgent humanitarian needs, without delay for confirmation of donor pledges. Examples of these funds are the Central Emergency Response Fund (CERF), and the country-specific Emergency Relief Funds (ERF) and Common Humanitarian Funds (CHF).

Pooled funding will be an important tool in humanitarian response through the CERF and the Humanitarian Response Fund (HRF). Under its dual mechanisms, CERF allocations to United Nations agencies allow for rapid response – enabling early action to time-critical humanitarian needs – and strengthen the core elements of humanitarian response in under-funded crises. The HRF, a pooled fund of unearmarked donor contributions, is directly accessible to both United Nations agencies and local and international NGOs. Its flexibility enables rapid response projects that are developed in the first phase of an emergency before mainstream responses come into play. The HRF, unlike the CERF, also supports early recovery projects.

Consolidated Appeals Process (CAP) 2015 will be a source for emergency assistance and early recovery funding through application by UN agencies and NGOs. It is covered within 2015-2016 UN framework for planning and implementing recovery and reconstruction, supporting the transition to normalisation and ownership of development, and bringing the country out of humanitarian emergency.

CAP projects fall within the nine clusters of Access and Security; Agriculture and Livelihoods; Education; Food Security; Health; Nutrition; Protection; Shelter; and Water, Sanitation and Hygiene (WASH), the two support sectors of Logistics and Coordination, and the areas of Emergency Preparedness and Multi-sector for refugees and returnees.

Logistics partners will benefit from CERF-funded projects to improve safety and security. The cluster improved information sharing through enhanced logistics-related weekly updates on road/air/port access, as well as through CERF air cargo tracking involving all cluster members. Continuous advocacy will be undertaken on road/maritime security issues and on access issues, particularly with regard to humanitarian cargo crossing at borders.

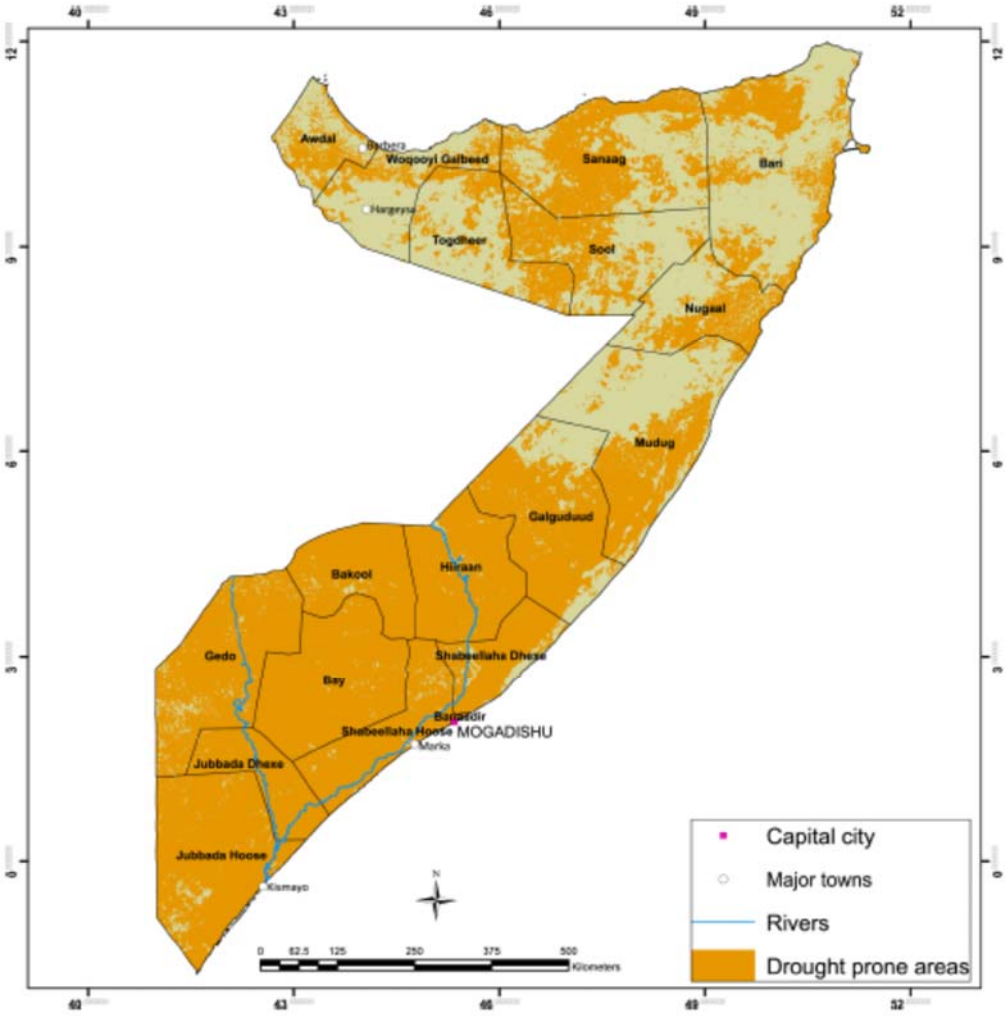
Following a humanitarian crisis, humanitarian actors can immediately access funding for life-saving activities. Being locally based, national and International NGOs, Somalia Red Crescent Society (SRCS) and UN agencies can apply for funding. Through the cluster, resources will be mobilized under the CERF and the joint appeal process.

6. REVIEW PLAN

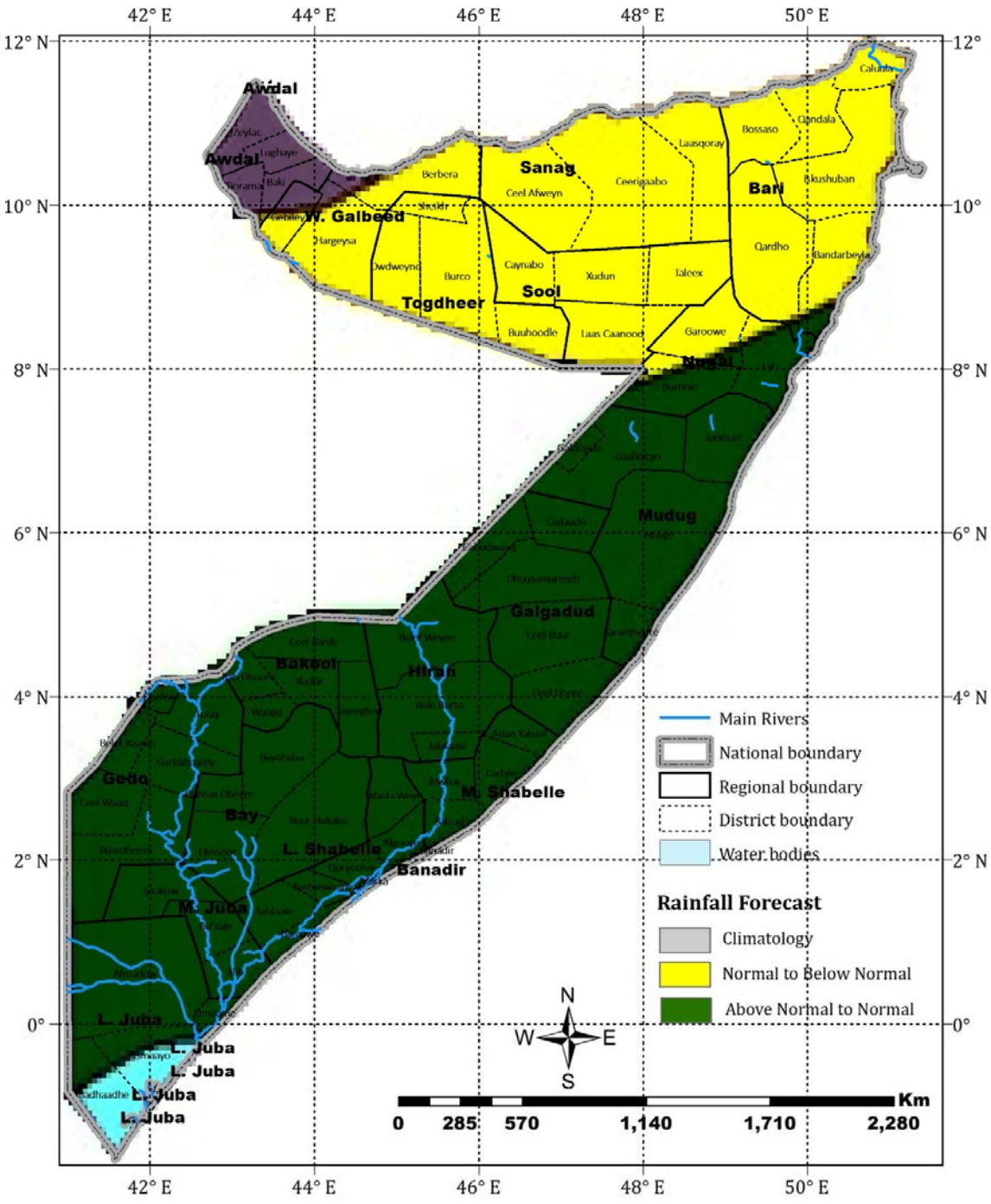
The Contingency Plan is a living document and will be reviewed on regular basis and immediately upon change in humanitarian situation – at least to ascertain whether any changes are needed in light of the prevailing situation in the country and updated by all stakeholders and will continue to be provided to address changes in the hazard, risk profile and scenarios.

ANNEXES

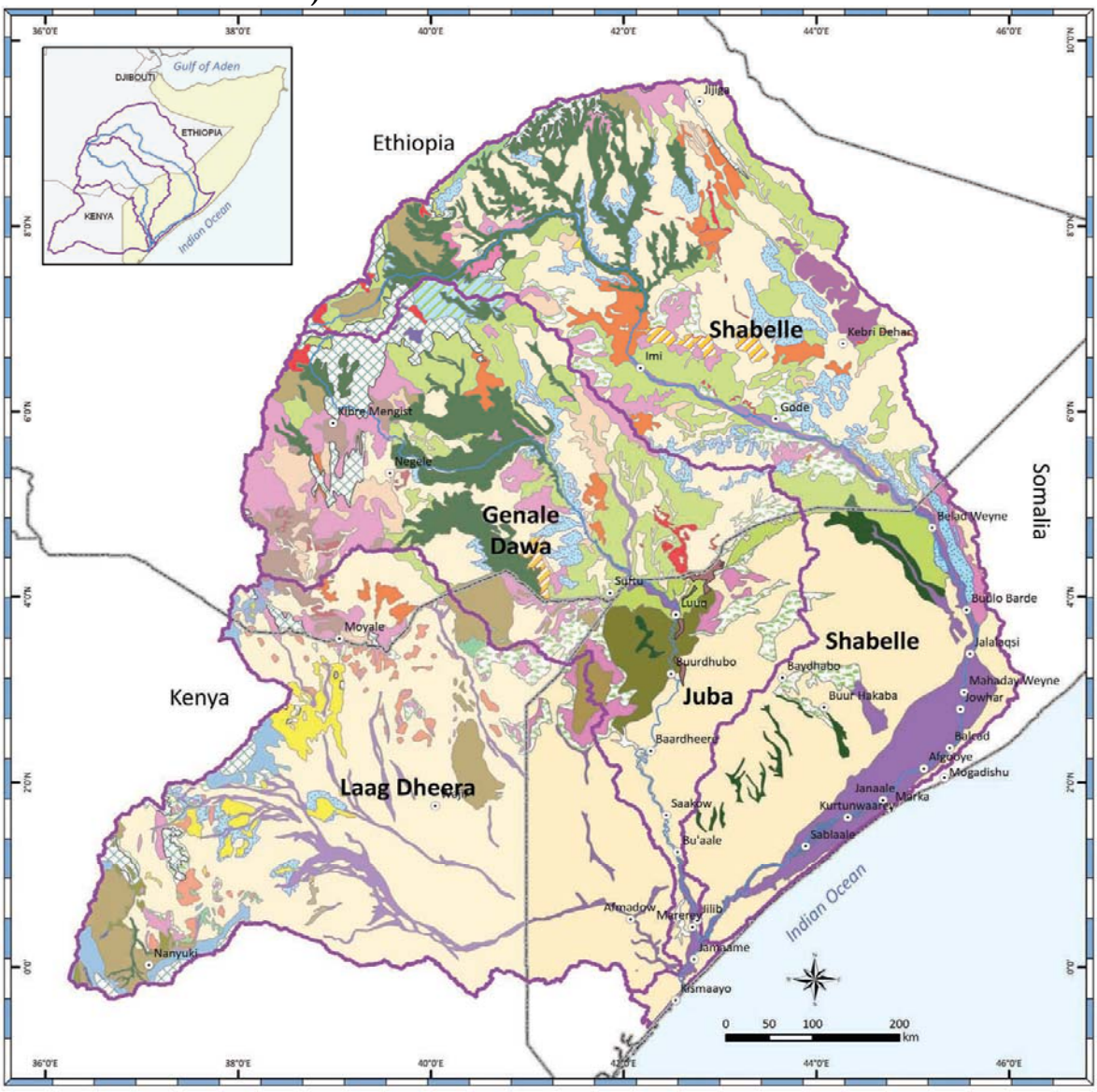
Annex 1: Drought Hazard map for Somalia (Source: IGAD Hazards Atlas 2013)



Annex 2: Somalia Rainfall Forecast for September – December 2015



Annex 3: Landscapes of the Juba and Shabelle basins (Source: Atlas of the Juba and Shabelle Rivers in Somalia)



Annex 4: Role and Responsibility for disaster emergency of different Institutions

NO	Agency	Role & Responsibility
1	The office of the Prime Minister	• Chairs the National Disaster Mitigation Committee or Council who guides the organization • Declare emergency situation in case of devastating disaster and the end of it
2	DMA	• Somali Disaster Management Agency (DMA) is the national emergency management agency of the Federal Republic of Somalia. • It leads and coordinate the government's response to various natural disasters
3	Somalia Disaster Management Council (SDMC)	• Provide policy directions and integration of Disaster Management programmes in the Somalia development framework. • Adopt Disaster Management Plans prepared by the DMA and Line Ministries • Disaster Fund raising and provision of other resources.
4	Ministry of Livestock	• Be the primary agency responsible for animal health and husbandry. • livestock damage assessments , provide for early recovery
5	Ministry of Agriculture	• Assessment of agriculture crops and provide assistance for early recovery • Soil conservation • Provides EWS together with SWALIM
6	Ministry of Interior and Federal Affairs	• The primary agency responsible for evacuation emergency assistance, search and rescue, first aid, communication, shifting of people to relief camps, traffic management. Logistics, transfer of relief material and relocation of affected people, road repairing, alternate routes • Participation for emergency response interventions
7	Regional Governors	• Coordinate among province level officers of different departments, other agencies and local administration. Liaise with DMA and PDMC
8	District Mayors	• All activities related to disaster preparedness, response and rehabilitation at the city level
9	Parliament	• Approval for Disaster policy/disaster act and other laws

ANNEX 5: Cluster guidelines and Implementation plans

The response to the crisis requires the involvement of all sectors in a coordinated fashion. This section provides the different sectors, their leads, co-leads, roles and responsibilities as well as sector objectives for the phases of disaster risk management.

A. Food Security and Livelihood

In the event of failure in rainfall or excessive flooding, there will be deterioration in food security situation in the Shabelle and Juba River Basin, together with almost in all pastoral and agro-pastoral areas. Seasonal failures result into acute water and pasture shortage, poor livestock body conditions, and production, high livestock off-take and cereal crop failure. In case of flooding, there will be emerging displacement among very poor pastoralists with movement to camps and villages in search of support. An estimated hundreds of thousands people will be in Humanitarian Emergency (HE) situation and nearly half million people in Acute Food and Livelihood Crisis (AFLC). Most pastoral areas will be in AFLC. In urban areas, the number of poor in AFLC were nearly 150,000 people, while 30,000 people were in humanitarian emergency status according to the FSAU/FAO 2013.

Reduction in moisture reduces the availability of water and forage for livestock, which in turn lead to reduced conception rates, reduced milk production and, ultimately, to livestock death. Weak livestock are also more vulnerable to livestock diseases, which usually manifest during the onset of the following rainy season.

The overall objective of food security and livelihood interventions: To address humanitarian needs of the most vulnerable households in humanitarian emergency situation, and others which are deteriorating from acute food and livelihood crisis situation to humanitarian situation and also those that are likely to deteriorate to both situations in the next six months due to drought or floods.

Activities/Interventions:

- Supplementary livestock feeding: The objective of emergency supplementary feeding is to maintain and protect core breeding stock and to increase the milk production of lactating livestock through use of multi-nutrient blocks (grass hay or straw) in order to increase the availability of milk;
- Livestock disease surveillance: For major diseases of economic and public health importance;
- Commercial and slaughter de-stocking: To facilitate provision of cash to households for household needs and reduces pressure on pasture and water resources;
- Provision of adequate quantity and quality seed: To enable the agro-pastoralist to take advantage of good conditions after the disaster;
- Procure contingency supplies;
- Monitor food security;
- Provision of relief food: To affected households both in rural and urban areas;
- Organize rapid nutrition assessment;
- Launch rapid food assessment;
- Organize rapid follow-up survey of nutrition, food aid, etc.;
- Provide technical support to stakeholders on the ground;
- Monitor and evaluate;
- Deliver and distribute drought resistant/escape crop seeds;

- Deliver and distribute agricultural tools;
- Provide necessary veterinary services including medicines, vaccines and equipment;
- Undertake capacity building of animal health workers;
- Provide fodder;
- Undertake livestock supplementary feeding.

Implementation strategy: With WFP as sector lead, FAO Co-lead Sector together with other sector members such as FSNAU, FEWSNET, and other agencies will implement emergency response in the respective regions with participation of beneficiaries under DMA and PM office's coordination.

B. Livestock sector

- **Pasture management**: A Pasture shortage is an inherent problem during drought periods resulting in livestock losses. The priority contingency plans for this sector will in effect include fodder production, management and conservation initiatives (such as irrigated fodder production, rangeland reseeding and establishment of range enclosures, and conservation /storage of standing hay for use during drought periods) in order to cushion livestock-based livelihoods. The strategy will be seeking to support pastoralists to exploit their local resources for disaster mitigation and resilience against recurring natural disasters such as drought and disease epidemics. A provision to trigger local efforts for the purpose of increasing strategic fodder production and conservation shall be made.
- **Animal healthcare:** Another priority plan for this sector is the provision of preventive animal health services based on the documented predisposing factors and the related possible interventions to be facilitated by the key stakeholders. Such interventions will include massive de-worming and vaccinations when disasters are imminent, and curative services during emergency situations.
- **Water source development and management:** Water source rehabilitation and development, and tankering as Contingency Plan elements will be used as a mitigation strategy to alleviate the adverse effects of the natural disasters on the normal (seasonal) migrations, forage availability and pattern of use, and livestock distribution particularly in the dry season or drought period fallback areas.

C. Water and sanitation (WATSAN)

Seasonal rainfall failure results into acute water shortage. This will aggravate the already current water shortage situation in most regions.

Overall objective for water and sanitation interventions: To provide water for both human and livestock consumption in the affected population.

Activities/Interventions:

- Mobile emergency water supply in the affected districts for both human and livestock using private tankers on rental basis;
- Provision of water containers;
- Promotion of sanitation at all levels;
- Hygiene promotion;
- Rehabilitation and construction of new boreholes/wells;

- Provide water to feeding centres and emergency health structures;
- Provide sanitation facilities and hygiene awareness dissemination to affected population;
- Provide safe water supply and promote hygiene and sanitation to IDPs;
- Provide water purification chemicals;
- Provide training to stakeholders including communities for capacity building to effectively support water and sanitation activities.
- Capacity building and community mobilization
- Monitoring and evaluation

Table 7: WATSAN Response Implementation Strategy

Hazard	Agro-ecological Zone	Possible Characteristics	Planning assumption	Response Strategy
Drought	All Zones	• Acute water shortage • Livestock deaths • Crop failure • Increased water prices • Conflict over water resources	• Early warning system working timely and properly	• Water supply for both human and livestock consumption using rental water tanks • Chlorination of drinking water at household and at source level • Distribution of aqua tabs • Rehabilitation of strategic boreholes • Drilling of new boreholes • Distribution of fast moving water schemes spare parts • Dewatering pumps to functional strategic water sources for trucking
Human health	All Zones	• Occurrence of water borne diseases e.g. diarrhoea, dysentery, cholera, malaria	• Emphasis of interventions is to be given to sustain support and strengthening of basic services	• Disinfection of community water supply. • Distribution of water purification chemicals. • Rehabilitation and construction of new water supply schemes. • Latrine construction (household, school, health institutions, religious institutions). • Hygiene promotion.
Displacement of people	Urban centres	• Shortage of water • Poor health and sanitation • Outbreak of diseases	• Emphasis of interventions is to be given to sustain support and strengthening of basic services	• Water supply using rental water tanks. • Water storage containers at household and community levels. • Supplying water purification chemicals and hygiene supplies. • Construction of sanitation facilities. • Hygiene promotion.

Implementation strategy: With UNICEF as Sector lead, a Co-sector lead together with Islamic Relief, and Islamic Aid and other agencies as sector members will implement emergency response in the respective regions with participation of beneficiaries as outlined in **Table 7**.

D. Health and Nutrition

The overall nutrition situation in the country will be alarming as most Internally Displaced Persons (IDPs), pastoral and agro-pastoral livelihoods are likely to be under critical nutrition situation. The nutrition situation of other livelihoods will deteriorate from alert to serious (FSAU/FAO, 2015).

Overall objective: To minimize human suffering and to save lives by responding to major emergencies.

Activities/Interventions:

- Response to disease outbreaks
- Maintain and strengthen disease surveillance system– early warning
- Coordinate information flow on health
- Procure and preposition medical supplies
- Put in place supplemental and/or therapeutic feeding centres
- Provide targeted basic feeding rations/supplies
- Vitamin A supplementation and screening of malnutrition cases for referral to therapeutic feeding centres and supplementary feeding centres
- Support health system to respond to health needs of specific population affected by emergencies
- Early diseases detection and reporting
- Capacity building and training of health staff
- Ensure reporting and sharing of information among stakeholders
- Targeted supplementary feeding

Implementation strategy: With WHO and UNICEF as Co sector lead together with Save the Children, FSNAU, UNFPA, other agencies and stakeholders as members will be involved in the implementation of identified activities/intervention at all levels.

E. Protection of vulnerable groups

In urban areas, the number of poor in AFLC is estimated at hundreds of thousand people, while thousands of people are in humanitarian emergency status. The population under these two categories is expected to increase as the situation continues. The displaced population in the rural areas is expected to increase (FSAU/FAO, 2015).

Overall objective: To provide humanitarian assistance to displaced population both in rural and urban areas in the next six months.

Activities/Interventions:

- Provision and preparation of land for settlement;
- Provision and preparation of shelter;
- Organize rapid assessments of the situation of children;
- Provide limited non-food relief items;
- Provision of social services;
- Registration of displaced people;
- Provision of legal services/assistance;

- Establishment of self-managing structures in the displaced community;
- Establishment of community policing;
- Provide temporary care, reunification and/or tracing as necessary;
- Ensure access of vulnerable and separated children to basic services;
- Lobbying for urgent fund raising;
- Ensure implementation of follow-up activities.

Implementation strategy: With UNHCR sector lead together with World Vision, NRC, DDRC, other agencies and stakeholders as members will be involved in the implementation of identified activities/intervention at all levels.

Annex 6: Rapid Field Assessment Form

1. Type of Disaster	Flood	Drought	Human Disease outbreak	Animal Disease Outbreak	Fire	Environmental Pollution	Transportation Accident	Pest infestation	Conflict	Any other specify
2. Geographic Area	Region …… …				Town/villages …… ……			Approximate # of Inhabitants		
3. Villages/Settlements Assessed								Approximate # of Inhabitants		
4. Persons	# injured		# dead		# missing		Remarks			
5. Homes Affected	# Minor damage		# moderate damage		# destroyed					
6. # of Families (provide % if number is not possible)	Currently known displaced evacuated			Projected likely to be displaced evacuated			Remarks			
7. How are people sheltered? Tents/ Make shift shelter/ host families/ camps, other	Describe situation									
Describe damage										
8. Status of roads/best way to access affected area										
9. Condition/access as applicable:	Describe access									
Bridges										
Water facilities										
Sewage systems										
Schools										
Health facilities										
10. Concerns for human health, Animal health, Hazardous & Toxic materials	Describe situation									
Others specify	Describe situation									

Annex 7: Scenarios Planning and Assumptions for Epidemics

	Hazards	Epidemics (Human)	Animal disease outbreak
Scenario and Planning Assumptions	**Description**	**Scenario 1**: Below threshold according to MoH guidelines. Very few cases as evidenced by historical data **Scenario 2**: Significant outbreak **Scenario 3**: Extensive / Major Outbreak	**Scenario 1**: Below threshold according to veterinary guidelines. Very few cases animal death **Scenario 2**: Significant outbreak **Scenario 3**: Extensive / Major Outbreak
	Planning Assumptions Scenario 1 :	hundreds of cases affected within the basin. Response managed by Government with support from partners.	Death of animals in not more than 2 districts. Response managed by Government with support from partners.
	Planning Assumptions Scenario 2:	Disease impacting Thousands of people. Severe impact with periods of further spread and treatment ranging from 1-3 months. International support will be required to assist with disease containment.	More than half of the districts reported deaths of animals
	Planning Assumptions Scenario 3:	Fatal disease outbreak causing loss of human life and productivity overstretching the capacity of the health services. Over 10,000 people affected. International support called in to assist.	• Death of animals in most districts within the Basin • Government will require support to respond
	Areas most likely to be affected	All districts within the River Juba and Shabelle Basin	All districts within the River Juba and Shabelle Basin
Hazard and Risk Analysis	**Probability**	**Almost certain**: Considering historical data on cholera outbreak	**Almost Certain**: Considering historical data on animal diseases outbreak.
	Consequences	Moderate to Major: • High morbidity and mortality • Increased demand for resource • Psychological trauma • Reprioritisation and redistribution of resources to the expense of routine programmes.	Moderate: • Loss of livestock • Water contamination • Grazing areas reduced • Environmental degradation • Outbreak of diseases e.g. RVF
	Overall Risk	**Moderate** Adequate levels of preparedness should be in place by Government and all stakeholders to ensure effective response regardless of the scenario realized	**Moderate** Adequate levels of preparedness should be in place by Government and all stakeholders to ensure effective response regardless of the scenario realized
	Likely Triggers / EW Indicators	• **Epidamic cases reported increasing** • **Loss of human lives** • **Flooding**	• Animals weak and restless • Milk production low • Highest livestock movement • Highest livestock mortality
	Time Frame	**All the time**	**All the time**
	Sources of Information	Ministry of health - updates WHO Epidemiological Update	Ministry responsible for Animal Husbandry - updates

Annex 8: Attendance list for SWALIM Open Day and DRR Training in Mogadishu 4th to 15th October 2015

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