

ASSESSMENT OF DROUGHT RESILIENCE FRAMEWORKS IN THE HORN OF AFRICA





Global Water Partnership Eastern Africa (GWPEA) works through neutral multi-stakeholder platforms, usually referred to as **Country Water Partnerships (CWPs)**. These partnerships facilitate change processes which are instrumental in contributing to countries' preparedness to drought and water security.

Global Water Partnership Eastern Africa's (GWPEA) vision is for a water-secure Greater Horn and Eastern Africa region. **The mission is** supporting sustainable development and management of water resources at all levels in the region.

Global Water Partnership Eastern Africa works in the Greater Horn and Eastern Africa region in the following countries:



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Suggested Citation:

Global Water Partnership Eastern Africa (GWPEA) (2015). *Assessment of Drought Resilience Frameworks in the Horn of Africa*. Integrated Drought Management Program in the Horn of Africa (IDMP HOA), Entebbe, Uganda.

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Abbreviations and Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ALREP	Agricultural Livelihoods Recovery Programme
ASAL	Arid and Semi-Arid Land
CCIP	Complementary Community Investment Program
CPP	Country Programming Paper
CWP	Country Water Partnership
DANIDA	Danish International Development Agency
DDMC	District Disaster Management Committees
DRM	Disaster Risk Management
EAC	East African Community
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GNI	Gross National Income
GWP	Global Water Partnership
GWPEA	Global Water Partnership Eastern Africa
HABP	House Hold Assets Building Program
HIV	Human Immunodeficiency Virus
HMNDP	High-level Meeting on National Drought Policy
HOA	Horn of Africa
IDDRSI	IGAD Drought Disaster Resilience and Sustainability Initiative
IDMP	Integrated Drought Management Program
IGAD	Intergovernmental Authority on Development
IPCC	International Panel on Climate Change
IWRM	Integrated Water Resources Management
KALIP	Karamoja Livelihoods Programme
MoHADMD	Ministry of Humanitarian Affairs and Disaster Management
NDMA	National Drought Management Authority
NGOs	Non-governmental Organizations
OPM	Office of the Prime Minister
PCDP	Pastoral Community Development Project
PSNP	Productive Safety Net Program
REC	Regional Economic Community
RF	Risk Financing
RPP	Regional Programming Paper
SLMP	Sustainable Land Management Program
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
USAID	United States Agency for International Development
USD	United States Dollar
WMO	World Meteorological Organization

Acknowledgements

The Global Water Partnership Eastern Africa would like to acknowledge and extend gratitude to the stakeholders who have contributed to the development of this report. We extend special thanks to the Country Water Partnerships of Ethiopia, Kenya, Uganda, Somalia and Sudan, as well as the IGAD focal points for Djibouti and South Sudan, for participating in information gathering for this report. We also acknowledge the support and input of the Intergovernmental Authority on Development – Drought Disaster Resilience and Sustainability Initiative (IDDRSI) focal points in the IGAD region for their valuable technical input.

The unfettered cooperation of all individuals in Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda who, in their personal capacity, contributed information during the country level assessments is gratefully acknowledged. In addition, various government ministries and agencies contributed information for this report. We are deeply indebted to such cooperation.

This report was compiled as part of the Integrated Drought Management Program in the Horn of Africa (IDMP HOA), is part of the global IDMP program a joint undertaking of GWP and the World Meteorological Organization (WMO). The assessment for the compilation of this report was carried out with funding from the Global Water Partnership and Danish International Development Agency (DANIDA), with technical support from the WMO and GWP. We are very grateful for this support.

The information in this report was generated from the Country drought assesment reports for seven countries (Djibouti, Ethiopia, Kenya, Somalia, South Sudan and Uganda) commissioned by IDMP HOA in August 2014.

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Overall Coordination was provided by Gerald Kairu, GWPEA Integrated Drought Management Programme in the Horn of Africa.

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Executive Summary

The Horn of Africa region stretches over an area of 5.2 million km² and has a population of about 200 million people. The region comprises of eight countries including Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. About 70% of the region's land area is Arid and Semi-Arid Lands (ASALs) which receive less than 600 mm of annual rainfall. The Horn of Africa (HOA) is characterized by drought, which is by far the most extensive and potentially damaging natural disaster in the region. Previous efforts aimed at managing drought in the HOA region mainly focused on emergency/crisis response rather than its integrated management, which involves preparedness, drought mitigation and early warning.

Global Water Partnership Eastern Africa (GWPEA), through the Integrated Drought Management Program in the Horn of Africa (IDMP HOA), facilitated country drought resilience assessments in the region. The assessments covered socio-economic, environmental and policy issues; challenges, initiatives and available opportunities to enhance drought resilience. The assessments identified the following opportunities for promoting drought resilience in the HOA region: 1) Existence of IGAD to establish regional and international mechanisms for cooperation to address cross-border drought issues; 2) The IDDRSI framework which supports drought resilience and sustainable development with political support and commitment at regional and national level; 3) Availability of relevant national policies, plans and strategies; 4) Existence of national implementing and coordination structures; 5) Accumulated experiences in implementing related programs, projects and initiatives; and 6) Observed interest of donors to support national and regional initiatives to enhance drought resilience.

The priority intervention areas for consideration by the IDMP HOA in support of building drought resilience in the HOA Region include: 1) Demonstrating small-scale innovative drought management cases based on the IWRM approach; 2) Capacity development of institutions and key actors in drought management and resilience building; 3) Promoting partnership for Integrated Drought Management; 4) Facilitating regional cooperation/collaboration for drought management in the HOA region; 5) Facilitating policy development for integrated drought management; 6) Mainstreaming drought mitigation and adaptation strategies in relevant government sector ministries and agencies; 7) Strengthening Early Warning Systems.

The country assessments clearly showed that countries are at different stages of establishing national frameworks and developing relevant policies in building drought resilience. The response by the IDMP HOA needs, therefore, to consider the specific priorities and existing national frameworks while implementing its planned activities.

Background

The Horn of Africa (HOA) region is characterised by drought, which is known to have the most far-reaching impacts of all natural disasters. Drought and its consequences namely, degradation of environmental and natural resources, continues unabated largely due to climate changes, increased human population, inadequate institutional capacities, civil strife and high poverty levels in the region (IFRC,2011). Most countries in the HOA region currently have only emergency and recovery strategies to regulate response to drought occurrences. Such reactive responses, however, are often ineffective. Moreover, the mechanisms for stakeholder engagement to fight drought are still weak. This situation could be improved with a more pro-active and integrated approach of drought risk management.

Global Water Partnership Eastern Africa (GWPEA) is coordinating implementation of the Integrated Drought Management Program in the Horn of Africa (IDMP HOA). The IDMP HOA is a regional program targeting eight countries namely Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda (Figure 1). The main purpose of the program is to promote drought resilience of countries, communities and ecosystems in the Horn of Africa with keypartners following an Integrated Water Resource Management (IWRM) approach.

To support implementation of the IDMP, the GWPEA reviewed the existing Country Drought Resilience Frameworks through the Country Water Partnerships (CWP)¹ in Ethiopia, Kenya, Somalia, Sudan, Uganda and IGAD focal Points in Djibouti and South Sudan. The review process brought together government departments, research institutions, non-state actors, private sector and technical agencies that are capable of understanding the implications of drought hazards across different sectors, and also generating responses that enable environmental, social and economic resilience.

Accordingly, each country generated a report that summarizes key socio-economic, environmental, policy and technical issues on the country's drought situation, drought challenges, programs and initiatives undertaken to ensure drought resilience. In addition, gaps that can be filled by the IDMP HOA program and opportunities to promote drought resilience were documented. The reports provided priority areas for implementation of the IDMP HOA as well as baseline data upon which further action on drought can be built. However, the challenge is that the countries in the HOA region are at different stages of establishing national drought resilience frameworks and, as such, the regional level statements are only general in nature.

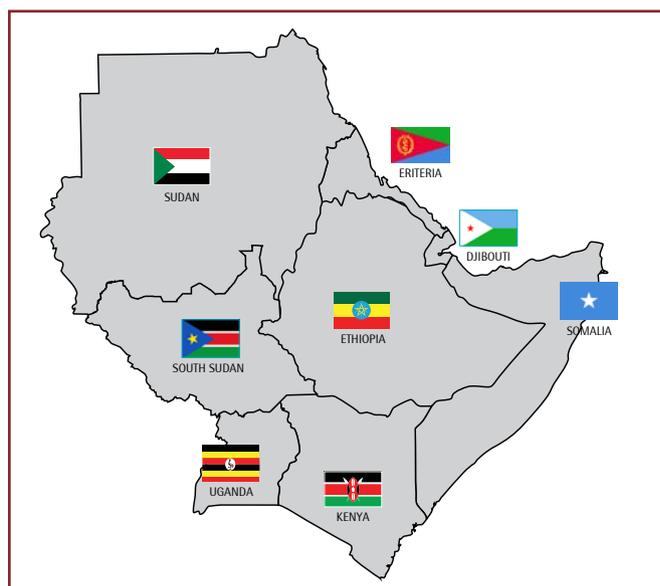
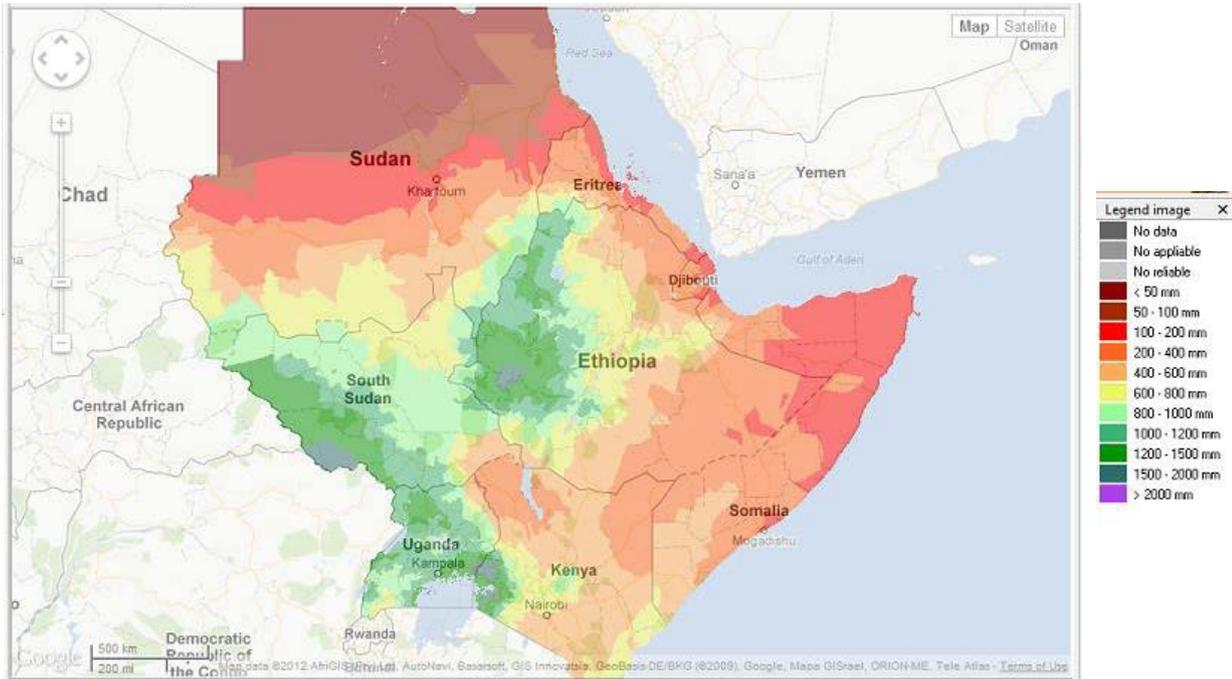


Figure 1: IDMP HOA project coverage

¹ CWPs are neutral multi-stakeholder platforms for dialogue and facilitating change processes which are instrumental in contributing to countries' preparedness to drought and water security in the Horn of Africa region. CWPs comprise of Government institutions, Civil Society Organizations, International NGOs, academia, Research private institutions.

INTRODUCTION

Socio-economic profile of the IGAD Region



Source: IGAD, 2013 a

Figure 2: Average annual rainfall (mm) in the Arid and Semi-arid Lands (ASALs) of the HOA.

The Horn of Africa region is characterized by a high population growth rate of between 2.5% to 3.5%, with over 60% of the estimated 200 million people in the region being youth. Approximately 30% of the total population live in the arid and semi-arid lands (ASALs) which receive less than 600 mm of rainfall annually (IGAD, 2013 a) (Figure 2).

In spite of their wide geographic area coverage, ASALs have always been regarded as a wasteland, and have therefore, received barely any public or private investment. This has resulted in the deterioration of agricultural productivity, worsened the impacts of drought, increased poverty, food insecurity and other livelihood vulnerabilities. Thus, over the years, the ASALs in the region have become synonymous with human emergencies, economic hardships, sufferings and catastrophes as the affected countries and international community struggled to respond to drought emergencies with relief aid and humanitarian interventions.

The HOA region is strife with poor socio-economic status of the people in the region (Table 1). Poverty, low diversity of income and livelihoods, HIV/AIDS, insecurity and weak institutions are the key factors in escalating the region's vulnerability to natural hazards and climate change. The average life expectancy at birth in the region is around 58 years; GDP per capita for the majority of the people in the region is around USD 400. Agriculture is the most dominant livelihood for the population of the region and is the major economic sector. However, agriculture is largely dominated by smallholder subsistence farming, and nomadic/semi-nomadic livestock production systems.

Table 1: Socio-economic profile of the countries of the HOA

Parameters	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	S. Sudan	Sudan	Uganda
<i>Size of the country (km²)</i>	23,200	121,320	1,119,683	581,309	637,660	644,330	1,879,360	241,550
<i>Population (Million)²</i>	0.873	6.333	94.101	44.354	10.496	11.296	37.964	37.579
<i>Life expectancy at Birth (years)³</i>	61.3	61	59.3	61.08	54.69	54.64	61.86	58.65
<i>Gross Domestic Product (GDP) per capita (US\$)³</i>	1,468.3	450	389.3	1,245.5	145.0	1,044.99	1,753.3	571.8
<i>Total renewable water resources per capita (actual) (m³/yr.) (2013)³</i>	475	1163	1,627	792	572	1,445	920	1913
<i>Major livelihoods</i>	Agriculture, livestock	Agriculture, livestock	Agriculture	Agriculture, Livestock, Entrepreneurship	Livestock, Agriculture	Agriculture	Agriculture, Livestock	Agriculture, Livestock, Fishing
<i>Major economies</i>	Port banking railway	Agriculture fisheries mining	Agriculture Services mining	Agriculture Tourism industries	Livestock services (informal)	Agriculture petroleum	Petroleum, mining agro-industries	Agriculture, fisheries tourism

Recently, there are some positive changes in economic development in the HOA region. For example, Ethiopia's average real GDP growth rate between 2005 and 2012 was 11% per annum (Mitik, 2012). Other countries such as Kenya, Uganda, and Sudan also showed good economic performance despite the many challenges they are facing. However, there is a huge challenge of sustaining economic development due to different human-induced and natural hazards, especially drought, in the region.

² Source: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries>

³ Source: FAO AQUASTAT. http://www.fao.org/nr/water/aquastat/countries_regions/

Environmental profile of the HOA region

The HOA region is characterized by high climate variability. Climate changes are expected to increase average temperatures in the region by up to 1.5°C in the next 20 years and up to 4.3°C by the 2080s (IPCC, 2014). Changes in both rainfall and temperature are likely to have significant impacts on water resources, food security, natural resource management, human

health, settlements and infrastructure. The prevailing climate changes have resulted into droughts, erratic floods and untimely rainfall patterns. Prolonged and widespread drought is a recurrent feature that is exacerbated by climate change phenomena, advancing desertification and ecological degradation (Table 2).

Table 2: Drought hazard occurrence and impact of damage

Country	Frequency of occurrence of drought hazard	Impact of drought hazard
Djibouti	Several droughts over the years (1980, 1996, 2001, 2005, 2008). ⁴	Since 2007, agriculture and rural livelihoods of nearly 50% of the rural population (120,000 people), approx. 15% of the total population has been affected. ⁴
Ethiopia	At least five major national droughts since 1980	About 11% of the total population exposed to droughts, mainly pastoralist areas.
Kenya	Major droughts every ten years and minor ones almost every 3-4 years.	Between 1983 and 1993, droughts in the ASALs have become longer and more frequent resulting in significant loss of agricultural production.
Somalia	Devastating droughts happened during 1963-64 and 1974-75 and recently in 2011	Between 2010 and 2012, more than 258,000 people died; half of the victims were children younger than 5 years.
South Sudan	The worst drought hit during 1980-1984 and 2011.	Widespread displacement and localized famine in some parts of the country
Sudan	Most serious drought incidents were in 1970, 1983 - 1985, 1991 - 1992 and 2010 - 2011.	The 1983- 1985 and the 2010-2011 droughts resulted in mass deaths of human and livestock.
Uganda	There were 7 droughts between 1991 and 2000 with increased frequency. There were recent droughts in 2008 and 2013.	Karamoja region in 1991-2007 had severe droughts leading to depletion of pasture and severe lack of water for livestock, intensifying conflicts.

The predominant livelihood system, especially in the ASALs of the HOA, is pastoral and agro-pastoral production. The pastoralists are constantly on the move, within and outside their national boundaries, in search of pasture and freshwater resources, often resulting into conflicts, which frequently necessitate regional intervention to resolve or prevent. Some other factors that worsen the vulnerability to drought risk include high dependency on climate sensitive livelihoods, fragile and rapidly degrading physical environment, inadequate extension services and high incidences of conflicts that are rampant in the region.

In addition, the region is characterised by weak institutional capacity, limited infrastructure, limited capacity and equipment for disaster management, limited financial resources, and heavy reliance on rain-fed agriculture. Whereas agriculture, water, energy and biodiversity/wildlife/forestry/tourism are the most vulnerable sectors, infrastructure, urban settlement, marine environments and health are also vulnerable. The countries in the HOA have identified following response strategies/programs to drought:

⁴ Source: EM-DAT, The OFDA/CRED International Disaster Database, Université Catholique de Louvain, Brussels – Belgium, www.em-dat.net

1. Agriculture

- Promote irrigation and conservation agriculture systems. Encourage use of water harvesting and improve efficiency of agricultural water.
- Improve land management practices, soil and water conservation practices. Promote development and implementation of proper land use plans and rangelands management practices.
- Develop and use early-maturing and drought-tolerant crop varieties.
- Enhance agricultural extension services, and supply agricultural inputs.
- Develop proper food storage facilities.
- Improve rural infrastructure to facilitate acquisition of inputs and marketing of products.
- Promote rural credit and saving schemes, and establish agricultural insurance systems.
- Diversify rural economies. Introduce/support off-farm activities.
- Promote value addition (agro-processing) and other postharvest techniques for agricultural products.
- Improve farmers' and pastoralists' knowledge about proper use of weather information in carrying out agricultural activities. Reinforce early-warning and rapid intervention systems.
- Strengthen capacities for drought risk management in agriculture.

2. Energy

- Review effects of drought on the reliability and capacity of existing and potential hydropower facilities and developments.
- Invest in alternative/renewable energy sources like hydropower, geothermal, solar and wind and biogas.
- Manage catchments to protect sources of water and energy (e.g. Catchment treatment and erosion control on hillsides).
- Promote development and use of energy efficient technologies. Establish community woodlots for fuel wood.
- Promote transport means that minimize greenhouse gas emissions.
- Promote private sector investments in clean energy, waste recycling, and afforestation.
- Raise awareness on environmental pollution from using energy.
- Support the expansion and development of regional electricity grid interconnections.

3. Protecting ecosystems/environment

- Rehabilitate degraded natural ecosystems. Control invasive species such as *Prosopis juliflora*. Promote forest management (including forest fire).
- Promote sustainable land management and use practices.
- Raise awareness of the public on environmental management and climate change.
- Manage conflicts related to access to and ownership of natural resources.
- Establish ecosystems monitoring and management systems.
- Invest in reforestation and afforestation, and in their sustainable management.
- Promote controlled grazing systems on common lands.
- Promote community forestry and establishment of woodlots.
- Promote integrated management of water, land and other related natural resources.

4. Water

- Conduct water resources assessment studies (water quality & quantity) for proper use of available water resources.
- Enhance water supply through recharging ground water, protecting flood plains, increasing capture and retention of rainwater, constructing inter-basin and intra-basin water transfers. Construct small check dams and rainwater harvesting schemes.
- Implement watershed management programs that promote local community participation.
- Manage water demands by various sectors and users.
- Establish effective information system on water resources.
- Promote IWRM by small and medium size hydrologic units.
- Improve access to water supply and sanitation facilities.
- Involve the community on the sustainable use and management of the water supply.
- Promote cooperation in water use in the region.

Policy and Institutional Frameworks

Policies, strategies and plans relevant to drought management



Photo Credit: GWP/ Mostphotos

Drought disasters in the HOA have made the countries in the region to give priority to reducing vulnerabilities to drought and responding to possible drought incidences. Various policies, strategies, plans and enabling institutions to handle the drought situation have been developed by the respective countries. Previously, the respective governments in the region mainly focused on relief and rehabilitation after drought incidences. The current approach by the HOA countries has changed to drought risk management that emphasizes building resilience to damage caused by drought.

Following the severe drought that devastated the

HOA region in 2010/2011, the Summit of Heads of State and Government of the IGAD and the East African Community (EAC) held in Nairobi in September 2011 made the decision to build resilience to drought emergencies. The Summit decided to address the effects of recurring droughts on vulnerable communities in the IGAD region, calling for increased commitment by affected countries and development partners to support investments in sustainable development especially in ASALs. The Nairobi statement was as follows:

At the international level, the March 2013 Geneva High-level Meeting on National Drought Policy

(HMNDP) organized by the World Meteorological Organization (WMO), the Secretariat of the United Nations Convention to Combat Desertification (UNCCD) and the Food and Agriculture Organization of the United Nations (FAO), in collaboration with GWP, stressed the importance of developing national drought policies and preparedness plans, establishing integrated Drought Monitoring and Early Warning Systems, as well as involving relevant stakeholders, particularly affected communities.

The issue of drought is reflected in most national development or poverty reduction strategies of the HOA countries. Some countries, such as Ethiopia,

Kenya and Uganda have national policies on disaster risk management (Figure 4). Other countries such as South Sudan are in the process of developing similar policies (GoSS, 2013). However, Djibouti, Somalia and Sudan either have old policies that focus more on emergency responses, or they do not yet have DRM policies (Table 3). However, even the existing policies in many countries of the HOA are not comprehensive to address the full integrated management of drought. At IGAD regional level, the IDDRSI framework is providing a regional guidance and coordination on drought resilience (IGAD 2013a, b).

The Nairobi Summit assigned the IGAD Secretariat the role of leading and coordinating the implementation of the decision, and urged all countries to work together as a region and all concerned to do things differently, working concertedly and holistically, combining relief and development interventions, aimed at building resilience to future shocks.

Summit of Heads of State and Government - Nairobi, September 2011

Table 3: Policies, strategies and plans related to drought management in the HOA countries

<i>Countries</i>	<i>National Policies, strategies, plans related to drought management</i>	<i>Major priority areas identified</i>
Djibouti	<ul style="list-style-type: none"> ■ National Programme for Food Security ■ The Public Investment Plan 	<ul style="list-style-type: none"> ■ Investments in food security in the country ■ Around 15% of the PIP in 2013 was allocated to interventions focused to the Priority Areas of the CPP including in areas of environment
Ethiopia	<ul style="list-style-type: none"> ■ National Plan for Climate Change Adaptation ■ National Policy on Disaster Risk Management ■ Strategic Program and Investment Framework ■ Pastoral Development Policy and Strategy Framework ■ Early Warning and Emergency Coordination Center (under formation) ■ Climate Resilient Green Economy Strategy and Framework (2011) 	<ul style="list-style-type: none"> ■ Voluntary settlement ■ Provision of suitable social services and expansion of infrastructure ■ Emergency response and Coordination ■ Early warning systems ■ Climate resilience building
Kenya	<ul style="list-style-type: none"> ■ Disaster management policy and Strategy ■ Vision 2030 has mainstreamed DRM in all its key pillars ■ The Second Medium Term Plan (2013-17) ■ National Climate Change Response Strategy (2010) and Action Plan (2013) 	<ul style="list-style-type: none"> ■ Disaster risk management ■ Climate change adaptation
Somalia	<ul style="list-style-type: none"> ■ Following the establishment of the Federal Government of Somalia in August 2012 - a fresh momentum and steady progress being made on the coordination for drought intervention and livelihood programs in Somalia. 	<ul style="list-style-type: none"> ■ Applying an integrated water resource management ■ Promoting alternative renewable sources of energy ■ Develop capacity for Geo-information management and services for early warning of hazards, environmental impact assessments and monitoring of water resources
South Sudan	<ul style="list-style-type: none"> ■ National Disaster Management Policy (under development) ■ Five Years Strategic Plan (2013-2018) on Disaster Management 	<ul style="list-style-type: none"> ■ Disaster risk management
Sudan	<ul style="list-style-type: none"> ■ There are a number of sectoral policies, laws, strategies and programmes related to drought but they are yet to be properly coordinated. 	<ul style="list-style-type: none"> ■ The understanding and coordinated implementation of IDDRSI at country and regional level is a major priority based on the national drought management policy.
Uganda	<ul style="list-style-type: none"> ■ The Constitution 1995 provides for drought risk management ■ The National Climate Change Policy, 2013; Disaster Management and Preparedness Policy, 2010 ■ The Rangeland Management Policy, 2001 ■ National Water Policy, 1999. 	<ul style="list-style-type: none"> ■ Disaster risk management ■ Climate change adaptation

Existing laws that support drought management

The constitutions of some of the countries of the HOA, such as Ethiopia and Uganda, provide that the governments have responsibility to take measures to avert any natural and man-made disasters, and, in the event of disasters, to provide assistance to the victims. However, there is no explicit law on disaster management in any of the countries in the region. In Uganda, the Department of Disaster Preparedness under the Office of the Prime Minister is developing a Disaster Preparedness and Management Bill.

The institutional arrangements and coordination mechanisms

The Intergovernmental Authority on Development (IGAD) developed an IDDRSI framework that IGAD member states (also HOA countries) can use to prevent, mitigate and adapt to the adverse impacts of drought (IGAD 2013b). The approach recommended by IDDRSI is preventive and holistic, combining relief with development interventions in dealing with drought and related emergencies in the HOA region through the IGAD Secretariat. The IGAD IDDRSI Framework put in place the IGAD Regional Programming Paper (RPP) which is the programmatic and implementation arm of the IGAD

(IDDRSI) to operationalize drought related actions at both country and regional levels (IGAD 2013a). Through IDDRSI, member states developed Country Programming Papers (CPPs) which serve as planning, coordination and resource mobilization tools for projects and investments required to contribute to ending drought emergencies. The CPPs identified the root causes of vulnerability to drought and propose to design multi-sectoral responses, identify areas of intervention and investments and establish adequate national coordinating mechanisms to implement prioritized drought resilience programs.

Most countries in the region have a government institution responsible for leading and coordinating the implementation of disaster risk management (Table 4). However, the form and structure of coordination arrangements varies from country to country. Kenya, for example, has a dedicated National Drought Management Authority (NDMA) (GoK, 2012). South Sudan has a Ministry of Environment and that of Humanitarian Affairs and Disaster Management. Ethiopia has established a Disaster Risk Management and Food Security Sector led by Minister of State under the Ministry of Agriculture. Uganda and Somalia have higher levels of coordination that are coordinated from the Office of the Prime Minister.

Table 4: National Institutions for Disaster Risk Management (DRM)

Countries	National Institutions for DRM
Djibouti	<ul style="list-style-type: none"> ■ Executive secretariat for DRM which coordinates natural disaster technical matters as well as prevention, mitigation and response activities, including adaptation to climate change ■ Ministry of Agriculture, Water, Livestock and Fisheries (Focal point for IDRSI)
Ethiopia	<ul style="list-style-type: none"> ■ Disaster Risk Management and Food Security Sector of the Ministry of Agriculture headed by a Minister of State
Kenya	<ul style="list-style-type: none"> ■ National Drought Management Authority (NDMA)
Somalia	<ul style="list-style-type: none"> ■ Steering committee (Coordinating body) appointed by the Office of the Prime Minister and comprising several ministers
South Sudan	<ul style="list-style-type: none"> ■ Ministry of Humanitarian Affairs and Disaster Management (MoHADM) and Ministry of Environment to handle drought issues
Sudan	<ul style="list-style-type: none"> ■ The institutional arrangements that deal with natural resources management are basically sector oriented. The sectors need to be coordinated
Uganda	<ul style="list-style-type: none"> ■ The Department for Disaster Preparedness and Management in the Office of the Prime Minister (OPM) coordinates and responds to drought related emergencies including supporting a number of community-based programs. ■ District Disaster Management Committees (DDMC), established and coordinated by the Office of the Prime Minister.

Existence of available capacity for policy implementation

The capacities built at the national and lower levels to coordinate implementation of policies targeted at improving agricultural productivity, drought risk management and improvement of livelihoods of pastoralist and semi-pastoralist communities represent a major asset to build on for successful implementation of an integrated drought management program in the HOA region. There is limited capacity despite the existence of structures in the countries. Moreover, the institutional capacities in the region to implement drought management programs vary from one country to the other. For example Ethiopia, Kenya, and Uganda have moderate institutional capacity while other countries such as Djibouti and Somalia have inadequate capacity for implementation.

Stakeholder involvement

Enhancing drought resilience at household, community and country level is a cross-cutting issue that requires collaborative action by a range of regional economic community (REC), public, private and civil society organizations, as well as community actors and development partners at different administrative levels. The international and regional organizations such as the World Bank, UNDP, EU, FAO, African Development Bank, USAID and DANIDA among others are also major stakeholders which are actively involved in drought resilience activities.

Most countries in the HOA region do not have a broader platform that facilitates wider stakeholders' participation on issues of drought management. In the region, Uganda has established a National Platform for Disaster Risk Reduction to facilitate wider stakeholders' participation (GoU, 2012). However, most of the countries in the HOA region have Country Water Partnerships (CWPs) for facilitating policy dialogues, stakeholder participation and partnership building for water resources management. Such structures could be strengthened to facilitate stakeholders' involvement in drought management in the respective countries.

Gaps in the HOA region to promote IDM

Even though the HOA region is taking some positive measures towards building drought resilience, there are still gaps that can be addressed through promotion of integrated drought management. The major gaps include:

1. Limitations in the human resource and institutional capacities that are required to coordinate and implement drought risk management and resilience building initiatives;
2. Inadequate policy and legislative frameworks for disaster risk management in general and drought risk management in particular;
3. Lack of information on water and other natural resources in the ASALs of the countries;
4. Weak market, communication and transport infrastructure conditions in the drought vulnerable areas;
5. Weak early warning systems to inform vulnerable communities on weather trends and disasters

and to alert them for effective preparedness and response;

6. Low level of educational and strong adherence to traditional ways of keeping large herds of livestock by pastoralist communities. At times this is exacerbated by issues related to land tenure arrangements.
7. Limitation of resources to finance the various initiatives on drought risk management and resilience building.
8. Inadequate participatory platforms in drought management programs;
9. Adoption of reactive crisis management approach in drought management, including over reliance on relief aid.

Since addressing the above gaps is a key priority, IDMP-HOA has aligned various interventions to strategically address the gaps based on prioritization by countries in the region. Learning lessons and best practices used by already existing case studies within the region can be a good first step towards building resilience in the region.

Challenges and opportunities for drought resilience in the HOA region



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Summary of challenges related to drought management in the region

The main challenge in the HOA region is to reverse the growing human vulnerability against environmental hazards, especially droughts and man-made disturbances such as resource-based conflicts and economic crises. The socio-economic and ecological aspects of the pastoral and agro-pastoral production systems are under threat and gradually losing resilience due to rapid population growth (more than 3% per annum-IGAD 2013 b), migration, environmental degradation, land re-

allocation, fragmentation of rangelands, decreasing spatial mobility for herds and growing competition in the use of scarce pasture and water resources. As access to land and water rights is not sufficiently regulated, conflicts arise between different competing users especially amongst cross-border communities.

The combination of these adverse factors increasingly leads to accelerated environmental degradation thereby exacerbating socio-ecological vulnerability. When extreme hazards, like droughts occur, the whole agro-pastoral production system collapses with disastrous consequences for the affected populations. Huge financial resources are then

required for humanitarian aid and even more to recover the production systems and livelihoods of the affected communities.

In the past efforts in ASALs were more concentrated in managing the drought disasters and related humanitarian emergencies. The new approach will focus on the underlying causes of the need for humanitarian aid and approach disaster management through pro-active, preventive and structural development oriented solutions.

Opportunities for promoting drought resilience in the HOA region

Following the Country Drought Resilience Assessments by IDMP HOA in 2014, various opportunities were identified to promote integrated drought management in the countries. These include:

- Existence of IGAD to establish regional and international mechanisms for cooperation to address cross-border drought issues;
- Existence of the IDDRSI framework at regional and national level, including the adopted Country Programming Papers (CPPs) for drought resilience and sustainable development;
- Availability of political will and commitment to drought risk reduction by governments in the IGAD region;
- Existing national implementing and coordination structures for drought management;

- Availability of relevant national policies and strategies which provide a fertile ground for drought resilience and sustainable development activities in the ASALs. In some countries, the identified policy gaps for integrated drought management and identified capacity gaps for implementation provide additional opportunities;
- Availability of institutions with long experience and well developed frameworks in implementing related programs and projects in some countries thereby providing good practices;
- Interest of development partners, IGAD member countries and the private sector to support national and regional initiatives to enhance drought resilience. An association known as the Global Alliance for Drought Resilience and Growth has recently been formed by development partners to provide an informal forum through which ideas and intervention plans on certain key climate change aspects e.g. drought resilience can be exchanged.
- Existing programs and initiatives on drought management in the HOA countries.

The major programs/initiatives in place that provide opportunity to promoting drought resilience in the HOA countries are shown in Table 5.

Table 5: Country programs and initiatives related to drought management

Country	Major programs with relevance to drought resilience	Area(s) of focus
Djibouti	Adaptation fund	<ul style="list-style-type: none"> Improvement of the resilience of the pastoral population Use of natural resources in a sustainable manner and reduction of risks through integrated planning and targeted response to emergency situations
	Program of Strengthening Resilience to Drought and Sustainable Development	<ul style="list-style-type: none"> Use of natural resources in a sustainable manner and reduction of risks through integrated planning and targeted response to emergency situations Improvement of the living conditions of rural communities by enhancing the availability and access to water Enhancement of farm incomes by increasing resilience of vulnerable groups to drought
	Djibouti Dryland project	<ul style="list-style-type: none"> Financing activities to support the farming, livestock and fisheries communities
	Regional Food Security and Risk Management Programme ⁵	<ul style="list-style-type: none"> Implementation, monitoring and evaluation as well as overall coordination of the regional food security and risk management
Ethiopia	Productive Safety Net Program (PSNP)	<ul style="list-style-type: none"> Labour-intensive public works like soil and water conservation Integrated watershed management in chronically food insecure households
	Pastoral Community Development Project (PCDP)	<ul style="list-style-type: none"> Natural resources management Development of water, animal health services, infrastructure and basic services Voluntary resettlement of pastoralists through development of irrigation facilities
	Household Assets Building Program (HABP)	<ul style="list-style-type: none"> Protection of household assets in times of drought
	Community Complementary Investment Program (CCIP)	<ul style="list-style-type: none"> Support to construction of roads, irrigation and social infrastructure in the ASAL regions.
	Voluntary resettlement and Risk Financing (RF)	<ul style="list-style-type: none"> Contingent funding mechanism for transitory food insecurity in response to shocks
	Sustainable Land Management Program (SLMP)	<ul style="list-style-type: none"> Watershed management and rural land certification and administration
	Drought Resilient and Sustainable Livelihoods Program	<ul style="list-style-type: none"> Water resources development, rangelands management, livestock marketing, animal health infrastructure, capacity building, and alternative livelihoods initiatives.
Kenya	ASAL Based Livestock and Rural Livelihoods Support Project	<ul style="list-style-type: none"> Livestock-based livelihood improvement
	Arid Lands Resources Management Project	<ul style="list-style-type: none"> Environmental rehabilitation Asset recovery
	Kenya Drylands Livestock Development Programme	<ul style="list-style-type: none"> Livestock development, pasture/rangelands development
	Enhancement of Food Security through Water Harvesting Project	<ul style="list-style-type: none"> Water harvesting
	Kenya Adaptation to Climate Change in Arid and Semi-Arid Lands	<ul style="list-style-type: none"> Local climate change adaptations
Somalia	Drought management initiatives to enhance community livelihood.	<ul style="list-style-type: none"> Strengthening Food and Nutrition Security and Enhancing Resilience

⁵ This programme was also implemented in Ethiopia, Eritrea, Kenya, Somalia, Sudan and Uganda.

Country	Major programs with relevance to drought resilience	Area(s) of focus
South Sudan	Government and donor supported initiatives	<ul style="list-style-type: none"> ■ Water supply initiatives for production ■ Early warning systems ■ Conflict management ■ Livestock development
Sudan	Water harvesting, small dams construction, area development schemes Kordufan regional government/community projects	<ul style="list-style-type: none"> ■ Enhancement of agricultural productivity ■ development of pilot projects for increasing community and ecosystem resilience
Uganda	The Northern Uganda Agricultural Livelihoods Recovery Programme (ALREP) and the Karamoja Livelihoods Programme (KALIP)	<ul style="list-style-type: none"> ■ Rebuilding the lives and resilience of conflict affected people ■ Restoration of the productive capacity of farmers, and strengthening the linkages to agricultural service provision
	Peace, Recovery and Development Plan - Northern Uganda	<ul style="list-style-type: none"> ■ Provision of water ■ Revival and re-enhancement of education ■ Provision of emergency relief ■ Farming with oxen driven ploughs ■ Provision of light processing facilities such as rice hurlers and maize.

It is important to note that the recent drought management initiatives are holistic in approach and focused on improving livelihoods of the most vulnerable communities through provision of basic services, support of livelihood systems, protection of environment and reduction of conflict and peace building. The basic framework for drought resilience activities at the regional and country levels is the Regional and Country Programming Papers. These documents were adopted at the regional (IGAD) and country levels and encompass Natural Resources Management, Market Access and Trade, Livelihoods and Basic Services Support, Disaster Risk Management, Research and Knowledge Management, Conflict Prevention, management and Peace Building.



Photo Credit: GWP / Mostphotos

Key conclusions and recommendations on next steps/actions

Assessment of drought resilience status in the HOA region shows that there is commitment by governments to fight drought for sustainable national growth and development. The IGAD initiative to strengthen food security and drought resilience in the region has also resulted in national programs with specific institutional frameworks for their implementation. Moreover, development partners are ready to support actions that are aimed at strengthening drought resilience instead of reactive emergency and relief operations. The assessment further shows that the IDMP – HOA has various options to support drought resilience related initiatives. The basic entry point is contribution to the identified priorities in the Regional and Country Programming Papers. The focus of the Regional Programming Papers includes priority areas such as:

- Strengthening coordinated approaches for rational management/utilization of common resources to the ASALs of neighboring countries such as water and range lands;
- Harmonization of legal frameworks at regional level to facilitate regional livestock and animal products trade; and
- Harmonization of the various early warning systems in the region.

To support priority intervention activities identified in the Country Programming Papers, appropriate support has to be provided to the government agencies responsible for national coordination of drought management. For example, the support can focus on knowledge management and targeted capacity building to strengthen drought resilience. The HOA region has a number of interventions already in place to manage the impacts of droughts. The IDMP HOA will add value to the existing efforts through applying the principles of IWRM by involving the GWP networks at the country level (CWP) thereby providing the fertile ground for other initiatives to take off. IDMP HOA is part of the GWP/IDMP/WMO IDMP (GWP/WMO) programs and as such will have access to the technical support of the global project.

Based on the country drought resilience assessments, the following priority areas are recommended for consideration in support of building drought resilience in the HOA Region.

1. *Demonstrating innovative drought resilience cases*

There are a number of drought management programs and initiatives in the HOA countries with potential of replication within the region from where lessons and best practices can be learned. Support needs to be directed towards developing and facilitating implementation of small-scale innovative drought resilience initiatives that use an IWRM approach. This will be useful in influencing policy, political buy-in as well as scaling up integrated drought management approaches and building drought resilience.

2. *Capacity development for drought management and resilience building*

The development and strengthening of the capacities of the HOA countries for effective management of water resources in the ASALs should be a priority. The target should be to develop capacities of key national institutions that are responsible for water and drought management, as well as local communities and local actors (local government offices and civil society organizations, private sector etc.). In addition, there is an urgent need to facilitate knowledge sharing and raising awareness about IDM with special focus on management of scarce water resources of ASALs through an IWRM approach.

3. *Promoting partnership for IDM*

Through IDMP HOA, existing CWPs need to be supported to facilitate multi-stakeholder platforms for IDM. This will promote sustainability and ownership of interventions which will, in turn, strengthen the coordination and partnership building efforts of the existing structures of drought management.

4. *Facilitating regional cooperation/collaboration for drought management in the HOA region*

Enhancement of resilience requires combined efforts of several stakeholders. Stakeholder engagement at country and regional level is important for successful drought management.

5. *Facilitating policy development for integrated drought management*

The HOA countries need to be supported to develop robust National Drought Risk Reduction Policies in which the broader aims and principles of IWRM are integrated.

6. *Mainstreaming drought mitigation and adaptation strategies in relevant government sector ministries and agencies*

The relevant government sector ministries and agencies need to be engaged to integrate drought resilience activities into their programs.

7. *Strengthening Early Warning Systems*

Access to climate information is important for effective preparedness and response to adverse weather trends and disasters by the vulnerable communities. There is, therefore, urgent need to strengthen networking and communication systems at national and regional levels for sharing climate related information.

The key priorities to enhance drought resilience that have been identified by the Country Drought Resilience assessments in the HOA region include capacity building, partnerships building, early warning systems, mainstreaming drought resilience and regional cooperation for drought management (Table 6). However, due to differences in countries, the priority areas by country may not be ranked similarly. For example Ethiopia, Kenya, Sudan, Uganda and Djibouti identified demonstrating implementation of integrated drought management approaches as priority while South Sudan and Somalia identified support for developing a comprehensive policy as their key priority.

Table 6: National Priority Intervention Areas

No	Priority interventions identified by countries	Countries that identified priority interventions
1	Capacity development	All countries
2	Partnership building/strengthening for drought management	All countries
3	Early warning system / information systems	All countries
4	Mainstreaming drought management in national/sector plans and processes	All countries
5	Facilitating regional cooperation	All countries (assumed)
6	Demonstrating integrated drought management approaches	Ethiopia, Kenya, Sudan, Uganda, Djibouti
7	Policy support	Somalia, South Sudan, Djibouti

In conclusion, the report has presented the drought resilience status in the HOA region and provided the key priorities and opportunities for each country to address them. However, mechanisms need to be put in place to design, implement and sustain the

interventions. It is important that the interventions to be supported have the potential to generate revenue that can cushion communities against drought impacts by improving their resilience and adaptive capacity.

Summary of country status

1. Djibouti



a. Country Profile ⁶

Size of the country	23,200 km ²
Population	872,932
Life expectancy at birth	61.3 years
GDP per capita	US \$ 1,468.34
Water availability per capita	475 m ³ per year
Major livelihoods	Livestock, agricultural products and fisheries
Economic sectors	Services sector (80% of GDP)

b. Impacts of drought to the various sectors

Agriculture and forestry: Loss of livestock, low resistance to livestock diseases, rangeland degradation, reduced yields, increase in irrigation and salt content of soil, depletion of ground water used for irrigation, impairment or total loss of vegetation cover

Water: Significant drop in groundwater/water table, increase in salinity of Djibouti's aquifer.

c. Environmental issues related to drought

Djibouti's climate is hot and dry and most of the country has less than 150 mm of rainfall per year. Since 2007, Djibouti has been experiencing an unprecedented drought that has severely affected more than 120,000 people in rural areas or 50% of the rural population which represents 15% of the total population.

d. Policy and Institutional frameworks

A national secretariat cluster for food security and rural development (SADR) was established in 2013. There is also the Public Investment Plan where about 15% (in 2013) was allocated to interventions focused to the priority areas of the CPP including environment. An executive secretariat for Disaster

Risk Management (DRM) coordinates natural disaster related matters as well as prevention, mitigation and response activities, encompassing adaptation to climate change.

e. Country Initiatives in drought management

- Drought resilience and the development of sustainable livelihoods in the Horn of Africa program (Cost USD 16,000,000 , funded by AfDB)
- Dry land project (Resilience) (Cost \$10 000 000 WB)
- Strengthening Resilience to Drought in the Horn of Africa (Cost 4,000,000 EURO, German KFW bank)
- Strengthen the Adaptation fund

f. Recommendation/Priority interventions

- Capacitate the key institutions to integrate drought management into the sectoral plans;
- Practice shade gardening to reduce on extreme weather conditions (drying of crops);
- Increase community resilience through improving access to water support by putting in place sand/ earth dams and water injection wells through community based surface water harvesting schemes.

⁶All the data provided in the Country Profile tables in this Annex is extracted from the World Bank:

<http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries> and FAO AQUASTAT. http://www.fao.org/nr/water/aquastat/countries_regions/

2. Ethiopia



a. Country profile

Size of the country	1.14 km ²
Population	84.5 million
Life expectancy at birth	59.3 years
GDP per capita	US \$ 389.25
Water availability per capita	1627 m ³ per year
Major livelihoods	Agriculture
Major economies	Services 46.6%, Agriculture 41.1%, Industry 13.4%

b. Impacts of drought to the various sectors

Agriculture: Drought causes crop failure, reduction in livestock production, pasture shortages.

Water: Reduced quantity and quality of water; social inconveniences i.e. migration of people, as well as conflicts.

Energy: Reduction in hydroelectric power generation.

Biodiversity: Mortality of flora and fauna due to recurrent fires outbreaks and reduced ecosystem services.

c. Environmental issues related to drought

The mean annual temperature in Ethiopia has increased by 1.3°C between 1960 and 2006, at an average rate ranging from 0.28°C per decade to 0.37 °C. Ethiopia has experienced at least five major national droughts since 1980, along with dozens of local droughts.

d. Policy and Institutional frameworks

The 1995 Constitution provides the legal basis for the policies, strategies, and programs aimed at managing disasters such as drought and floods. The main policies and strategies include Disaster Risk Management Policy and Climate Resilient Green Economy Strategy and framework (2011). Ethiopia's Country Program Paper for the "Drought Resilience and Sustainability Initiative" was adopted in 2012. The Country Program is firmly anchored in the government's Growth and Transformation Plan

(GTP) (2010/11 - 2014/2015). Implementation of drought programs in Ethiopia is coordinated by the Ministry of Agriculture's Disaster Risk Management and Food Security Sector. Direct implementation of planned activities is the responsibility of Regional Bureaus and project coordination units at the Federal, Zonal and Woreda levels.

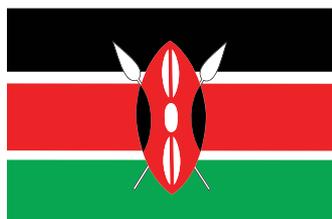
e. Country Initiatives in drought management

Initiatives for enhancing drought resilience include the Productive Safety Net Program (PSNP), House Hold Assets Building Program (HABP), Community Complementary Investment Program (CCIP), Drought Resilience and Sustainable Livelihoods Program in the Horn of Africa and Voluntary Resettlement and Risk Financing (VRRF). The Pastoral Community Development Project has been implemented since 2003 in 55 Woredas/districts in the Somali, Afar and pastoral areas of Oromiya and SNNPR.

f. Recommendation/priority interventions

- Demonstrating innovative drought resilience case studies.
- Capacity development at community level through facilitating knowledge sharing and raising awareness on management of scarce water resources in ASALs using the IWRM approach.
- Partnership building for Integrated Drought management with already existing institutions and programs.

3. Kenya



a. Country profile

Size of the country	581,309 km ²
Population	44.35 million
Life expectancy at birth	61.08 years
GDP per capita	US \$ 1,245.51
Water availability per capita	792 m ³ per year
Major livelihoods	Agriculture -crop production and livestock
Major economies	Agriculture, industry and mining, and services/tourism

b. Impacts of drought to the various sectors

Agriculture and Forestry: Crop failure, reduced animal/fish production, death of animals.

Tourism: Decline in wildlife.

Energy: Reduced hydroelectric power generation, increased cost of power generation.

Water: Reduced water volumes in water bodies, reduced ground water table.

c. Environmental issues related to drought

Kenya has faced several droughts in the last 20 years with prominent incidences in 1983/84, 1991/92, 1995/96, 1999/2001, 2004/2005 (led to famine), 2009 and 2011 (Bassi et al. 2011, McSweeney et al., 2007). The country has experienced a general warming since the 1960s, with mean annual temperature increasing by 1.0°C since 1960, an average rate of 0.21°C per decade (GoK, 2010). The minimum temperature has risen generally by 0.7 – 2.0°C and the maximum by 0.2 – 1.3°C. There is a general decline of rainfall in the main rainfall season of March-May, which means that drought in the main rainfall season is more frequent and prolonged. The short rainfall season of October to December has shown an increasing (positive) trend, with an extension to the dry and hot period of January and February.

d. Policy and Institutional frameworks

Policies and strategies: Draft National Disaster

Management Policy and National Climate Change Response Strategy.

Institutions: National Drought Management Authority (NDMA) in the Office of the President; Kenya Food Security Meeting and National Disaster Operations Centre which are involved in drought monitoring and early warning; Kenya Meteorological Department with its coordination structures at both national and county levels.

e. Country Initiatives in drought management

Arid Lands Resources Management Project, Emergency Drought Recovery Project (1991–1996), Kenya Drylands Livestock Development Programme (2010–2013), National Agricultural and Livestock Extension Programme, Enhancement of Food Security through Water Harvesting Project, Kenya Agricultural Productivity Project, Kenya Adaptation to Climate Change in ASALs.

f. Recommendation/Priority areas

- Demonstrating innovative drought resilience case studies to learn lessons and best practices.
- Strengthening institutional and community capacity in drought management.
- Partnership building for Integrated Drought management with already existing institutions and programs.
- Support to fast delivery of climate information services to the stakeholders.

4. Somalia



a. Country profile

Size of the country	637,660 km ²
Population	10,496,000
Life expectancy at birth	54.69 years
GDP per capita	US \$ 145
Water availability per capita	3.3 m ³ per year
Major livelihoods	Farming and Pastoralism
Major economies	Agriculture, livestock

b. Impacts of drought to the various sectors

Agriculture and Forestry: Crop and Livestock failure, mortality of flora and fauna.

Social sector: Increased conflicts and hostilities due to competition for water between communities and amongst the pastoralists.

c. Environmental issues related to drought

The notable recent droughts happened in 2000, 2004, 2008 and 2010-2011. After missed consecutive rainfall seasons, a mild drought developed early in 2010 and resulted into a widespread famine in 2011. The temperatures are expected to increase at a steady rate of 0.3-0.5^o Celsius per decade until 2050. The amount of rainfall received across Somalia varies from year to year, with a large area of the south receiving in excess of 730 mm whereas the north and central parts of the country generally receive less than 100 mm and 300 mm per year, respectively.

d. Policy and Institutional frameworks

The Office of the Prime Minister (OPM) has appointed a coordinating body (Steering Committee) comprising several key ministers i.e. Energy and Water Resources, Agriculture, Livestock, Finance and National Disaster Commission to oversee and coordinate drought management programmes in the country.

e. Country Initiatives in drought management

The Local NGO's and community engagement on drought has increased gradually in the last two years. In addition, a number of development partners have showed interest due to the improving security situation.

f. Recommendation/Priority areas

- Develop capacity of key institutions in drought management.
- Support geo-information management systems for national and regional early warning of hazards especially floods and droughts.
- Promote alternative renewable sources of energy (bio-energy, feedstock production, biogas, improved energy saving stoves, wind and solar energy).
- Use the integrated water resource management approach to address water shortage, water use efficiency and conservation, water harvesting, rehabilitation of water catchments and underground water sources.

5. South Sudan



a. Country Profile

Size of the country	644, 330 km ²
Population	11,296,200
Life expectancy at Birth	54.64 years
GDP per capita	US \$ 1,044.99
Water availability per capita	5.5 m ³ per year
Major livelihoods	Agriculture
Major economies	Oil, gas, livestock, fisheries, mining

b. Impacts of drought to the various sectors

Agriculture and Forestry: Crop failure, poor crop productivity, reduced animal production, increased wildfire risk, increased insect and disease out-breaks; migration of wild animals, reduced fish catches.

Water sector: Reduced water levels in water bodies, armed conflict over limited water points was high

Energy sector: Increased energy needs.

c. Environmental issues related to drought

South Sudan was hit by two droughts in 2008/2009 and 2011/2012. The mean annual rainfall ranges from 500 mm in the north to 1500 mm in the south.

d. Policy and Institutional frameworks

The guiding policies include the National Disaster Management Policy (under development) and the Five Years Strategic Plan on Disaster Management (2013-2018). The Ministry of Humanitarian Affairs and Disaster Management (MoHADM) and Ministry of Environment coordinate drought issues in the country

e. Country Initiatives in drought management

South Sudan Institutional Capacity Program (Food Security Information); Rural Development Program which supports improved livelihoods in agricultural development, livestock and fisheries development, community resource management and skills and enterprise development; Agriculture & Forestry Development Project – Small Grant Management.

f. Recommendation /Priority areas

- Capacity development of key institutions is an important investment to ensure development of policies, legislative and regulatory frameworks, public sector institutions, and mechanisms for drought resilience.
- Support to effective delivery of climate information services to the masses.

6. Sudan



a. Country profile

Size of the country	1,879,360 km ²
Population	37,964,300
Life expectancy at birth	61.86 years
GDP per capita	US \$ 1,753.33
Water availability per capita	920 m ³ per year
Major livelihoods	Agriculture, livestock, forests, labor, fisheries
Major economies	Agriculture products, Gum Arabic, livestock products, forests products, fisheries, agriculture industry, oil

b. Impacts of drought to the various sectors

Agriculture and Forestry: Decline in agricultural yield and reduced fish catches.

Energy: Reduced electricity supply due to lowering reservoirs levels, wood energy vulnerable (increased wood usage)

Water: The drought impact on rivers, seasonal wadis flow regime and lakes levels was a decrease in the low flows (scarcity) and a decline in levels.

c. Environmental issues related to drought

Rainfall records from 1930 to date indicate continuous decline of rainfall over successive 10 and 30 year averages particularly during (1970s - 1990s). The decline was very clear during 2010 - 2011 which resulted into disastrous drought and human death. Temperature has followed an increasing trend since the beginning of the 20th century.

d. Policy and Institutional frameworks

The Sudan is implementing the National Water Policy (2000) which is aimed at integrated water resources management. The Constitution, Customary and Statutory laws are the main sources of legislation

dealing with the use of natural resources, especially land and water. The Higher Council for Environment and Natural Resources is the government advisory and coordinating unit for environment and natural resources management.

e. Country Initiatives in drought management

Sudan has strong experience in drought management through various initiatives such as the East Nile project and National Adaptation Program of Action and the UNIDO Area Development Scheme, Nomadic Group Project for Increasing Resilience, Kordofan regional government/community projects for increasing community and ecosystem resilience.

f. Recommendation from the assessment

- Support water harvesting for community use.
- Support existing pilot projects to scale up for adoption.
- Develop the capacity of key institutions to integrate climate/drought management into their programmes.

7. Uganda



a. Country profile

Size of the country	241,550 km ²
Population	37,578,900
Life expectancy at birth	58.65 years
GDP per capita	US\$ 571.96
Water availability per capita (m ³ /yr.)	About 65% of rural population and 66% of urban population have access to safe and clean water.
Major livelihoods	Agriculture, livestock, fishing, forestry and tourism
Major economies	Agriculture, Fisheries, Tourism

b. Impacts of drought to the various sectors

Agriculture and Forestry: Crop failure and reduced animal production, increased pests and diseases, reduced fish volumes from the country's lakes and rivers, frequent forest fires and biodiversity loss.

Water: Water scarcity and poor water quality, competition and conflicts.

Energy: Reduced hydroelectricity production.

c. Environmental issues related to drought

Between 1991 and 2000, there were seven droughts with increased frequency since the 1970s. Karamoja region had severe droughts between 1991-2007 leading to depletion of pasture and severe lack of water for livestock, intensifying conflicts within and between neighboring communities. Rainfall seasons have become more variable. The flooding of 1998 was followed by severe drought in the western region.

d. Policy and Institutional frameworks

The policies related to drought management include the National Climate Change Policy (2013), Disaster Management and Preparedness Policy (2010), The Rangeland Management Policy (2001) and National Water Policy (1999). In addition, the

Ugandan Constitution (1995) provides for Drought Risk Management (DRM). The Uganda National Meteorological Authority (UNMA) is responsible for data gathering, processing and dissemination while the Department of Disaster Preparedness in the Office of the Prime Minister (OPM), supported by line ministries, is responsible for responding to drought related emergencies. At lower level, District Disaster Management Committees (DDMC) have been established and are coordinated by OPM.

e. Recommendation / Priority activities

- Tree planting (agro-forestry, woodlots, fruit orchards, plantations);
- Strengthening the Early Warning Systems;
- Support to provision of water for production;
- Promote Energy efficient technologies & energy diversification
- Promote drought resistant crop varieties;
- Land degradation management;
- Pasture and Rangeland management;
- Mainstream drought mitigation and adaptation strategies in relevant government sector ministries and agencies;
- Facilitate the development of implementation structures for DRR and CCA at community level.

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About the Integrated Drought Management Program in the Horn of Africa (IDMP HOA)

The Integrated Drought Management Program in the Horn of Africa (IDMP HOA) is part of the global IDMP that GWP & WMO launched in Geneva in March 2013 at the High-level Meeting on National Drought Policy (HMNDP). The IDMP HOA collaborates with several partners with the overall aim of increasing drought resilience of communities, countries and ecosystems in the Horn of Africa. The program contribution will be to strengthen partnership, capacity building, enhance knowledge development and influence policy and practice towards more integrated management of drought in the HOA following an Integrated Water Resource Management (IWRM) approach.

http://www.droughtmanagement.info/idmp-activities/idmp_hoa/

