ADAPTATION FUND

REGIONAL PROJECT PROPOSAL

I. PART I: PROJECT INFORMATION

Title of Project:	STRENGTHENING DROUGHT RESILIENCE FOR SMALL HOLDER FARMERS AND PASTORALISTS IN THE IGAD REGION
Countries:	DJIBOUTI, KENYA, SUDAN AND UGANDA
Thematic Focal Area[1]:	Disaster Risk Reduction and Early Warning Systems
Type of Implementing Entity:	REGIONAL IMPLEMENTING ENTITY
Implementing Entity:	SAHARA AND SAHEL OBSERVATORY (OSS)
Executing Entities:	**Regional level**: Global Water Partnership Eastern Africa (GWPEA) hosted by the Nile Basin Initiative (NBI) secretariat **National level:** National Project Management Units (NPMUs): ▪ **Djibouti:** Directorate of Rural Hydraulics**,** ▪ **Kenya:** Ministry of Environment and Forestry, ▪ **Sudan:** Ministry of Water Resources, Irrigation and Electricity ▪ **Uganda:** Ministry of Water and Environment.
Amount of Financing Requested:	13,079,540 US DOLLARS

Table of Contents

List of Figures & Tables

List of Annexes

1 Project Background and Context

1.1 Project area context

1. The IGAD (Inter-Governmental Authority on Development) region (also called the horn of Africa) in its entirety comprises of the countries - Ethiopia, Eritrea, Somalia, Djibouti, Sudan, Kenya and Uganda. The region is a large area that occupies about 5.2 million km^2 with a human population of about 230 million people growing at a rate of 2.6% Babikir et al, (2015)2. The region is a mosaic of cultures with considerable ethnic diversity both regionally and within countries. It is said to be home to some 340 languages. Many of the region's ethnic groups are also split across several countries by national boundaries. This Horn of Africa region supports one of the largest concentrations of pastoralist people anywhere in the world. It is one of the regions that is most vulnerable to climate-related risks; apart from protracted conflict and political violence (itself partly caused by competition for resources), climatic-induced risk is the major driver of vulnerability in the region, particularly for poor communities whose livelihood depends on rain-fed agricultural systems (ICPAC/WFP, 2017.)3.
2. The IGAD member states face severe water constraints and prolonged droughts. Between 60- 70 percent of the land area in the IGAD region consists of Arid and Semi-Arid Lands (ASALs) that receive less than 600 mm (Figure1) of rainfall annually (IGAD 2013)[4]. It is predicted that the frequency and intensity of droughts would increase as a result of climate change, especially in semi-arid areas5. In fact, climate change has exacerbated drought occurrences due to high anomalies in precipitation.
3. From the year 2015 to-date, high rainfall anomalies have been recorded (Figure 2). Moreover, the region faces uncontrolled activities such as deforestation and poor agricultural practices that lead to reduced water retention capacities, surface runoffs, and soil cover losses. Such activities not only impact negatively on water resources, environment and other ecosystems that serve as community livelihood sources but also increase their vulnerability to droughts. Significantly reduced precipitation levels lead to food insecurity, civil strife over water, food and pastures, drying-up of rivers, streams and aquifers as well as loss of plant available water in the soils on which smallholder farmers and pastoralists derive their livelihoods.

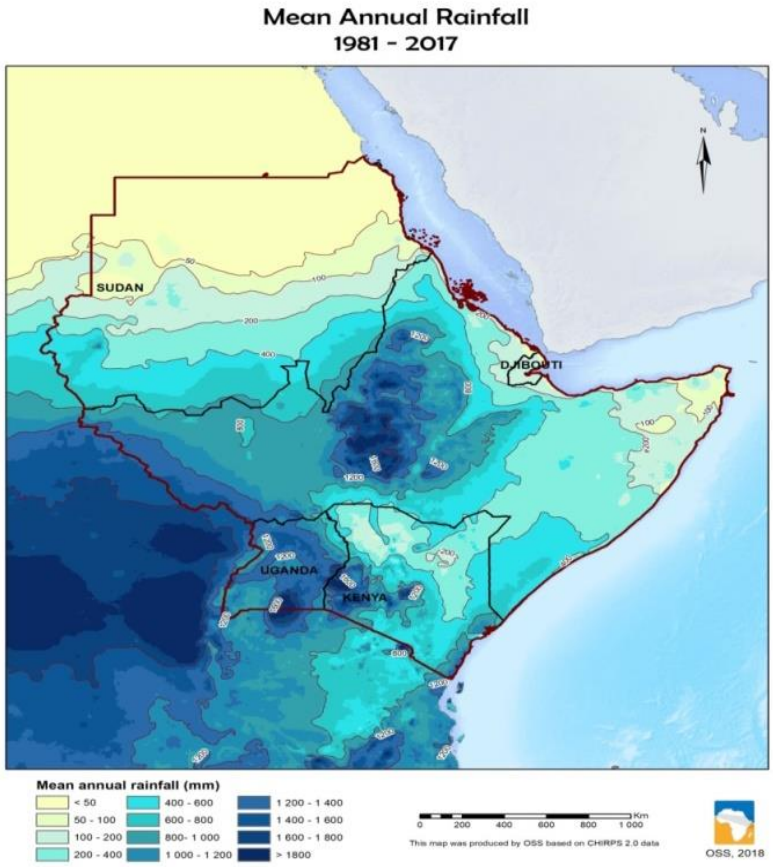


Figure 1 : Average annual rainfall (mm) in the Arid and Semi-arid Lands (ASALs) of the Horn of Africa

4. The dominant livelihoods in the region are agriculture, mainly dominated by smallholder farmers and pastoralists or semi-pastoralist production systems. Among smallholder farmers and pastoralists within the IGAD region, are women, children, youth and elderly that comprise the most vulnerable groups of societies in drought hit areas. The causes for vulnerability to droughts resulting from climate change that have led to significantly reduced precipitation in the region include low adaptive capacity by communities especially the smallholder farmers and pastoralists as well as inadequate information sharing systems for such communities to plan sufficient drought adaptation interventions. It also integrates inadequate innovative adaptation actions to droughts, poor early warning systems and insufficient knowledge and skills in drought management. Climate change contributes to higher temperatures in the region thereby aggravating the impacts of drought. Higher temperatures result in greater evaporation, reduction in soil moisture, leading to drier conditions and failed rains. Crops and pastures suffer due to less water with eminent failed harvests and reduction of feed for livestock.

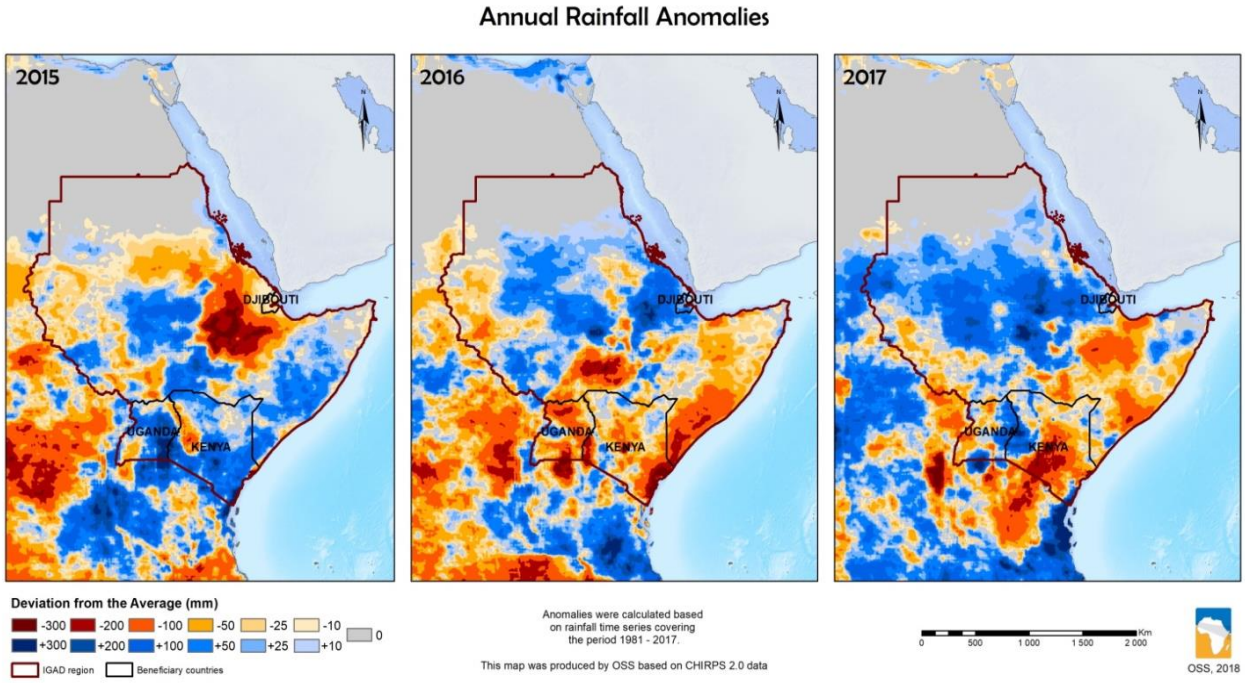


Figure 2: Rainfall deviations in the IGAD region between 2015 and 2017

5. Drought and its consequences for instance 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). Water pollution, food insecurity, civil conflict over water, food, and pastures, drying up of rivers, streams and aquifers and the general land degradation (vegetation and soil degradation) are major impacts of droughts resulting from climate change. Due to the significant destructive climate change led effects of droughts on the region's economy, ecosystems and community livelihoods, especially those of the most vulnerable members among the smallholder farmers and pastoralists in Djibouti, Kenya, Sudan and Uganda have been the most affected.

6. **Djibouti** is vulnerable to extreme events droughts[6]. Almost three-quarters of the total land area in this country is arid, yet nearly all the land is under pasture land and agricultural use[7]. However, increasing desertification remains a significant challenge where 227,463 people are threatened with food insecurity in the hardest-hit areas of Ali Sabieh, Obock and Dikhil[8]. Djibouti imports nearly all cereals consumed in the country, and food aid represents almost 10% of total imports. The Djibouti National Adaptation Programmes of Action (DNAPA, 2006)[9] however, recognizes agro-pastoral and pastoral communities as the most vulnerable to climate change and drought with high crop and animal losses due to drought reported. According to the DNAPA (2006) women are more vulnerable to water scarcity since they travel longer distances to fetch fresh potable water. Rangelands and grasslands equally face increasing degradation due to overgrazing. Droughts, floods, sea level rise, and epidemics, whose frequency, occurrence, and impacts have increased in recent years, already pose a significant risk to the country's vulnerable population. However, the vast majority of Djibouti's rural population remains highly susceptible to climatic uncertainty because they live in deserts or marginal and infertile areas, often with highly erodible soils, poor ground cover, and limited water supplies where food security is a serious concern. The country is home to a large pastoralist population, living

on poor quality pasture lands, and the impact of climate-related changes on livestock production could be significant[10]. Therefore, droughts pose a severe challenge to the already limited water stocks, frequently necessitating emergency food and water assistance. Drought conditions have previously affected nearly 28,650 people in the northwest pastoral, southeast border, and central lowlands, especially near Obock (The World Bank Group, 2011). The DNAPA prioritizes drought adaptations where drought risk management is a key area that requires urgent adaptation interventions to secure water resources and conserve soil and related ecosystems on which local communities depend.

7. **Kenya** faces risks of climate variability and change with droughts reported to be recurrent (Kenya National Adaptation Plan (KNAP, 2016). Kenya has, generally, scarce and unevenly distributed fresh water resources with major rivers showing severely reduced volumes during droughts, and many seasonal ones completely drying up[11]. The most drought vulnerable areas in Kenya are found in the Northwestern where transboundary transhumance of the Karamajong and Turkana across the Uganda and Kenya borders is pronounced. These areas are characterized with widespread crop failures and falling terms of trade for pastoralists that have affected both farming and agro-pastoral communities in the northwest, northeastern and coastal strip of Kenya (Onyandike, 2017). Actually, the agricultural sector is well considered as a very climate sensitive sector that is negatively affected by current climate variabilities such as droughts resulting in reduced productivity and insecure livelihoods. Such eminent impacts of droughts including reduced production of not only staple food crops such as maize but also other major crops such as tea, sugarcane and wheat have eventually led to increased imports especially of (maize, wheat and sugar) and reduced exports (e.g. tea), thereby weakening the country's balance of payments (Ministry of Environment and Natural Resources, 2010). Conflicts resulting from the displacement of communities by transhumance seeking water and pastures are also a common phenomenon. Fortunately, the proposed project presents an opportunity to complement the KNAP (2016) that aims to strengthen the adaptive capacity of vulnerable groups such as women, orphans and children, the elderly, and persons with disability to manage drought risks through technological support, awareness raising, up-scaling, financing specific drought adaptation actions.

8. In **Sudan**, Communities and ecosystems are vulnerable to climate-related impacts that are associated with climate variability and climate change. Currently, the major climate hazards consist of droughts and extreme flooding events as well as other climate-related phenomena such as dust storms, thunderstorms, and heat waves, whose occurrences though less frequent, still pose serious threats to local livelihoods. Generally, about seven major drought events characterized with major rainfall variability[12] are reported to have occurred in Sudan. Average annual rainfall has reportedly declined from about 425 mm/year to about 360 mm/year leading to intense rainfall variability and frequent drought occurrences. The hardest hit areas are in the western and northern parts of Sudan within the semiarid portions of the Nile including North & Western Sudan (North Kordofan and Darfur), Kassala State and some parts of the rain-fed areas in central Sudan basin. Over 80% of the population lives in rural areas and depends on agriculture and livestock production. Agriculture is among the sectors that are most vulnerable to droughts and climate change in addition to livestock, water resources and health (Sudan National Adaptation Programme of Action (SNAPA, 2006)[13]. The productivity of natural pastures has tremendously reduced in the last thirty years due to recurring droughts. The deterioration of pastures is not only limited to grasses but also decreasing the production of trees that negatively impact on soil, biodiversity, forests and food security. Consequently, the most severe effects of these changes have been felt by the most vulnerable groups of communities including the very poor people, women, and children. These groups have been reported to be significantly affected because they mostly depend on natural resources (Ahmed Eltohami, 2016). However, their options to adapt to drought and climate change are still impeded by limited capacity. Fortunately, the SNAPA prioritizes project interventions that focus on enhancing resilience to rainfall variability, reducing vulnerability to droughts by communities and ecosystems through improved crop, water resources, and biodiversity and environment management.

9. In **Uganda**, areas that are highly vulnerable to severe droughts are located within a region commonly referred to as the "cattle corridor" an area stretching from Karamoja region in the northeast, through central to the southwest of the country. These areas are mainly rangelands and cover approximately 84,000 km^2 (about 40 percent) of the total land area of Uganda. In these areas, semi-arid and dry sub-humid conditions prevail, and are characterized by low, unreliable and variable rainfall (450–800mm)[14]. Therefore, this is a semi-arid area characterized by, high rainfall variability and drought occurrence. Pastoralism and crop production are the main economic activities from which most vulnerable local communities derive their livelihoods. Agriculture is recognized by the Uganda National Climate Change Policy (UNCCP, 2015)[15] as the most vulnerable and severely affected sector especially in these parts of the country. Indeed, two consecutive seasons of rain shortage hit production across much of the country causing a drastic increase in staple food prices (UNCCP, 2015). Pastoralists frequently acknowledge evidence of climate change. Dry

periods have become longer and are occurring more frequently and rainfall has been less regular. Many of the perennial rivers have turned into seasonal rivers[16] (Stark, 2011). In addition, overgrazing is rampant in the area due to: (i) disruption of traditional transhumance corridors limit cattle movement (in many cases as a consequence of change in land tenure policies from communal property to individual titling of land)[17].

10. Such vulnerability not only negatively impacts on peoples' livelihoods but also the country's economy. Communities in the cattle corridor have long been well known for heavy reliance on mobile pastoralism as an important strategy to cope with resource variability. However, the abilities of these communities to cope have greatly weakened due to the aggravated impacts of climate change driven frequent and severe droughts. The ability of local community populations and ecosystems in such areas to recover from the shocks is so limited that they inevitably resort to overexploitation of natural resources using unsustainable methods. Food stocks are critically low in northeastern Karamoja. The UNCCP proposes the implementation of adaptation strategies for reducing climate change effects on agriculture to build climate resilient farming communities in the affected parts including drought-prone areas of Uganda.
11. Overall, it is evident that in the four riparian countries, prolonged and widespread drought is a recurrent feature that is exacerbated by climate change phenomena, advancing desertification and ecological degradation[18]. In the proposed project focal countries of Djibouti, Kenya, Sudan, and Uganda within the IGAD region in the Horn of Africa (HOA), climate change has aggravated the impacts of droughts manifested in form of acute water constraints resulting from high rainfall variability and increasing temperatures. Future climate change projections between 2030 and 2080 paint a gloomy picture characterized by high rainfall variability and increased temperatures in the IGAD region of which the four countries are part (Figures 3 and 4).
12. 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 interventions to resolve or prevent. Some other factors that worsen the vulnerability to drought risk include a 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 (Global Water Partnership East Africa, 2015).

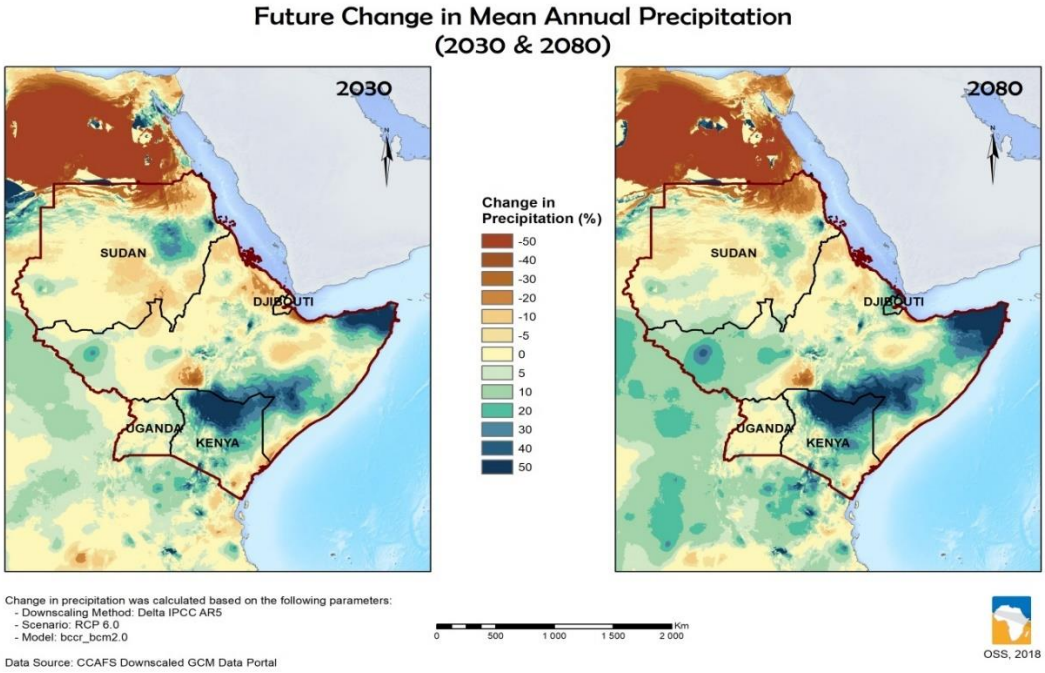


Figure 3 : Projected mean annual precipitation between 2030 and 2080 in the proposed project areas

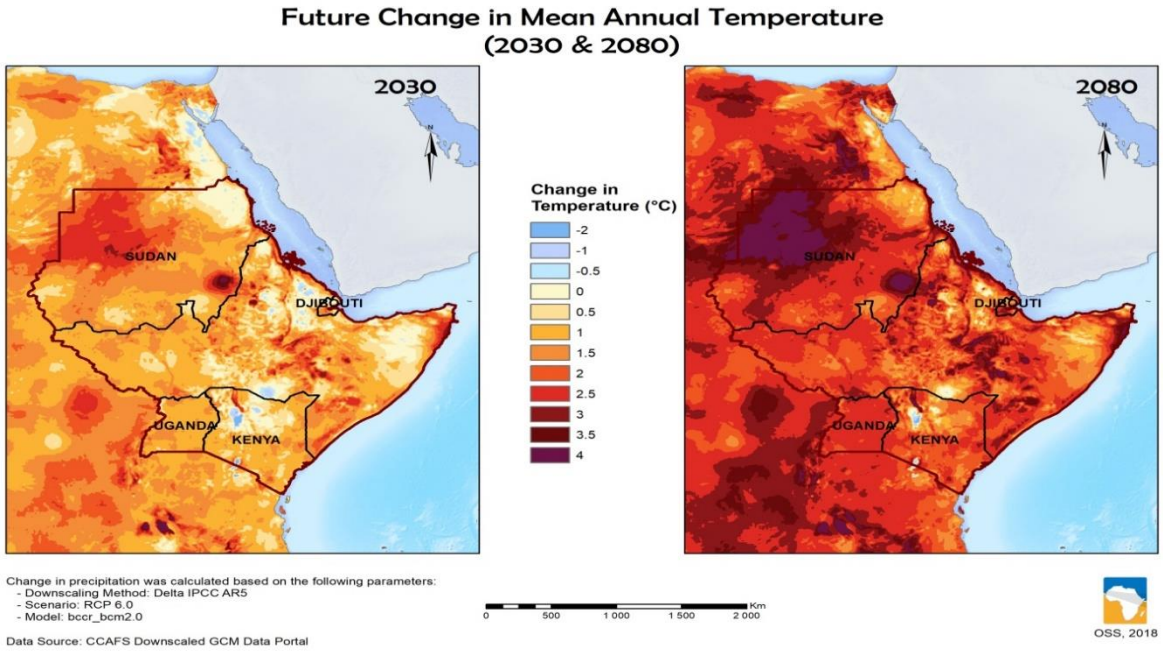


Figure 4 : Projected mean annual precipitation between 2030 and 2080 in the proposed project areas

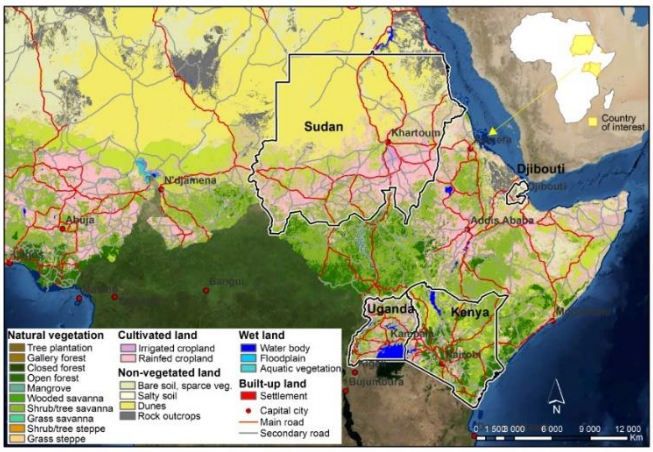
13. Global Water Partnership East Africa (GWPEA) is collaborating with IGAD and governments of Djibouti, Kenya, Sudan and Uganda through the Integrated Drought Management Programme (IDMP) and the Water, Climate and Development Programme (WACDEP) to enhance drought resilience in the region. The proposed project will build on the existing initiatives and establish new mechanisms to address drought-related challenges in the region through facilitating investments in early warning systems, building the capacity of targeted stakeholders, supporting innovative adaptation actions and enhancing knowledge management and skills.
14. The proposed DRESS-EA project will further strengthen linkages between the existing drought strategies at both regional and country levels and the drought declaration (for example the Windhoek declaration) that was adopted at the Africa Drought Conference (ADC) in August 2016 in Windhoek, Namibia. Furthermore, the project will support countries in the implementation of the Paris Agreement commitments on Nationally Determined Contributions (NDCs). Countries in the IGAD region including Djibouti, Kenya, Sudan and Uganda have put in place the NDCs as part of their national development processes and have either identified NDC priorities (e.g. Kenya and Uganda) or are in process of identifying their country priorities (Djibouti and Sudan). In addition, the countries have developed National Adaptation Plans (NAPs) and /or National Adaptation Frameworks. The project will engage the responsible entities in the countries to identify priorities and synergies in the NDCs and NAPs for support during project implementation.
15. The DRESS-EA project will also contribute to the attainment of Sustainable Development Goals (SDGs) targets of the four countries. This will be possible through the wide partnerships (at regional scale) that the project has proposed to put in place. Many of the targets of SDGs are closely linked to water resources management as water remains a key resource in several sectors of the economies of the focal countries. A prolonged absence of water (rainfall) often results in a drought, therefore, the need to target water resource management. The DRESS-EA project will strengthen national, regional and inter-regional alliances not only to realize SDG 6 but for many other development goals targets such as SDG 13[19]. These two goals align quite well with the DRESS-EA project interventions. Also, the proposed DRESS-EA capacity development approach reflects the essence of SDG 17 i.e. use of national, regional and global partnerships for developing a knowledge base, and effective capacity development. The DRESS-EA project results framework is fully aligned with the means of implementation of the global development agenda, SDG 17, target 17.9[20] and SDG 6a[21] and 6b[22]. The DRESS-EA project will further contribute to SDG1[23], 2[24] and 5[25].
16. Employing such a regional approach to tackling the drought problem not only provides a transboundary innovative way for drought management since its occurrence is not limited to borders but also enhances partnerships development efforts between the focal countries in the region. Coordinated and cooperative arrangements across the countries including capturing data and sharing the resulting information, building capacity for drought management interventions, will build cohesion and provide platforms at the regional level. The diversity of ideas generated will be harnessed so that both indigenous and modern knowledge, technologies and expertise will be equally shared. The DRESS-EA project will also contribute to the achievement of the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI). Overall, regionally led project implementation is less expensive and faster. It

helps build a pool of regional and national experts. The innovations generated are adopted more easily by the member countries and moreover, it promotes sustainability. It provides platforms and means for the countries to share experiences, practices, lessons, knowledge, and resources.

1.2 Description of the Project sites

17. The project will be implemented in different sites within each of the four selected countries of the IGAD region. Basically, these are areas that are considered to be most vulnerable and prone to drought based on the following criteria:

- In terms of the environmental conditions, the sites experience high rainfall variability with increasing frequency and intensity of drought occurrences and high environmental degradation (focusing on vegetation and soil degradation as well as degradation and deterioration of water resources such as streams and rivers).
- Communities inhabiting such sites are also food insecure characterized by recurrent famine and a shortage of food. There is high dependence on the rain-fed agriculture especially high dependence of farmers and pastoralists on crop and livestock farming.
- Socially, there are many vulnerable members among the smallholder farmers and pastoralists especially women, children, youth, disabled and elderly by gender. Low-income levels of the population/high poverty levels in such sites therein are known and reported.



- Economically, smallholder farmers and pastoralists have limited options in terms of the potential alternative sources of livelihoods and /or income.

18. These criteria allowed the selection of the project sites which are the most vulnerable to drought and Climate Change Impacts.

Figure 5 : Landcover map in countries of interest (Sudan,Uganda,Kenya and Djibiouti)

1.2.1 Geographical location and area

19. ***In Djibouti,*** the project will be implemented in three sites that are considered most vulnerable to droughts (Figures 6). The sites include Bieidley in Ali Sabieh region as well as, Wadi Gobaad, and Hanle sector in Dikhil region. Ali Sabieh Region is located at latitudes 11.1516° and Longitude 42.7122N and 9.6" 42° 42.44" E and lies in southern Djibouti with a total land area of about 2,400km^2. It borders Somalia and Ethiopia near the Dikhil region to the west. Dikhil region is the largest region in Djibouti with a total land area of approximately 7.200 km^2.In Dikhil region, Wadi Gobaad is 120 km long and drains south of the Gobaad depression to the southwest of the Republic of Djibouti. On one hand, Dikhil region is the confluence of many superficial flows of the Adigala region in Ethiopia that crosses from south to north into Djibouti territory via Abbot Lake as Eyla. On the other hand, the Hanle sector is found 150-200m above sea level. The three project sites in Djibouti are majorly characterized by the pronounced warm and dry climate, very low and highly variable precipitation (not exceeding 200 mm annually) with scattered shrubs and grassland patches.

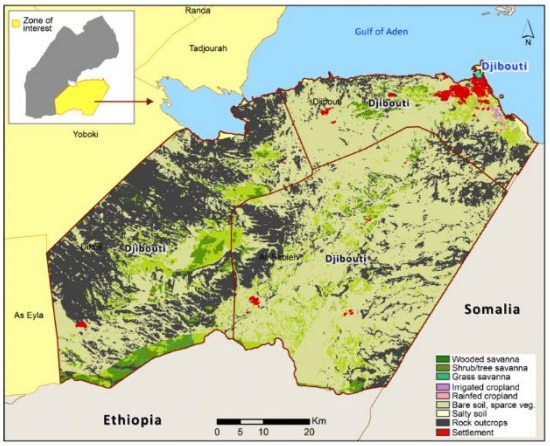


Figure 6: Location of project sites (Ali Sabieh/Bieidley, Wadi Gobaad and Hanle sector) in Djibouti

20. ***In Kenya***, the project will be implemented in Kitui and Samburu counties (Figure 7) that lie between latitudes 0°10‟ and 3°0‟ south and longitudes 37°50‟ and 39°0‟ East and latitudes 0°30’and 2° 45’ north of the equator between longitudes 36°15’ and 38° 10’east of the Prime Meridian respectively. Kitui covers an area of 30,496.4 km^2 including 6,369 km^2 occupied by Tsavo East National park. Kitui County shares its borders with seven other counties: Machakos and Makueni counties to the west, Tana River County to the east and south-east, Taita Taveta County to the south, Embu to the north-west, and Tharaka-Nithi and Meru counties to the north. Samburu County (0030’ – 2 045’N and 36015’ – 38010’E) is located within the northern parts of Great Rift Valley in Kenya in the region of Arid and semi-arid lands (ASAL) covering an area of 21,022.27 km^2. It is bordered by the following Counties Turkana (Northwest), Baringo (Southwest), Marsabit (Northeast), Isiolo (East) and Laikipia (South). The County is a member of North Rift Economic Block (NOREB).

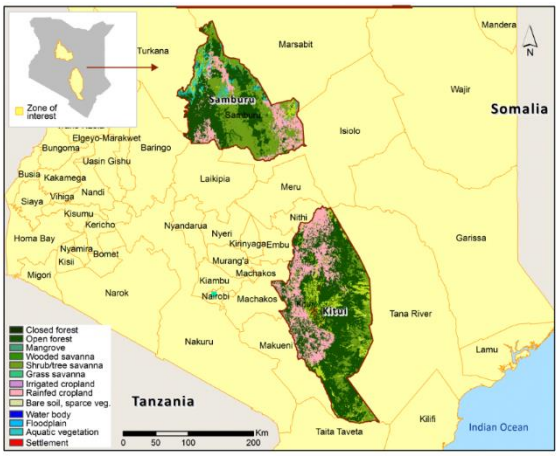


Figure 7 : Location of project sites (Kitui and Samburu counties) in Kenya

21. ***Sudan*** stretches over land between latitudes 10°N and 23°N and longitudes 21°45‟E and 38°30‟E. The territory borders South Sudan, six other African nations, and the Red Sea. The majority of the land is composed of vast arid plains interrupted by a few widely separated ranges of hills and mountains. Sudan, the third largest country in Africa, has an area of 1,886,068 km2 (181 million hectare). The Nile River divides the country into eastern and western halves. Most of the population lives along the river, the major cities, industry, wealth and power are all concentrated there. Water resources outside the Nile basin are limited, soil fertility is low, and drought is common. Considering the extent of drought occurrence in Sudan**,** the project will be implemented in Kosti and surroundings within El Salam in the White Nile state (WNS). The WNS lies between latitudes 12^o and 13.3^o N and longitudes 31^o and 33.3^o E, straddles the White Nile South of Khartoum and borders six states. Kosti lis found in the White Nile State that lies along the western bank of the White Nile River (Figures 8). It is bordered by South Sudan to the south, South Kordofan state to the west and Kosti town mid-way to the north and North El Zelate town of South Sudan to the north. To the east there is White Nile. The locality covers an area of about 5919 km^2 and represents about 11.2% of the total WNS area.

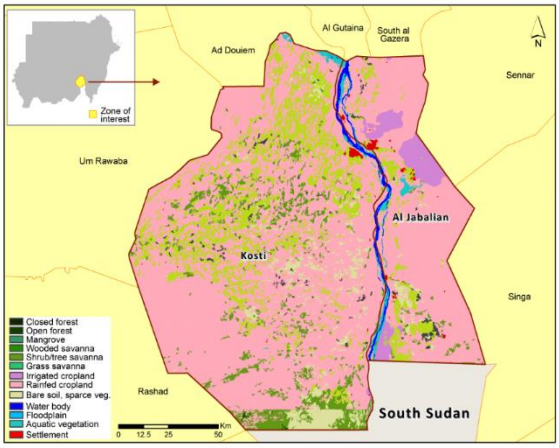


Figure 8: The location and landcover of El Salam in Sudan

22. ***In Uganda***, the project will be implemented in Rupa Sub County in Lokere Catchment, Nangoloapolon sub-catchment, Moroto district (figure 9 and 10). The catchment is located in the districts of Kaabong (5.4%), Moroto (32.0%), Kotido (3.8%), Napak (32.9%) and Nakapiripirit (2.2%) in the Karamoja Region and; Amuria (11.0%), Katakwi (9.5%) and Soroti (3.3%) in Teso Region. Lokere Catchment covers a total area of 8,156 km^2. Rupa Sub County generally lies within the upper part of Lokere catchment in Nangoloapolon sub catchment in Moroto district. Moroto district is situated in the Mid North Eastern Uganda between latitudes 1˚53’N, 3˚05’N and Longitudes 33˚38’E, 34˚56’E and at altitudes between 1,356m – 1,524m above sea level. It shares borders with 4 districts: Kotido to the north, Lira to the northwest, Katakwi to the west, and Nakapiripirit to the south. Kenya is its eastern neighbour. Moroto is one of the seven districts in the Karamoja Region in northeast Uganda (the others being Kaabong, Kotido, Abim, Napak, Amudat and Nakapiripirit). The district has a total area of 8,516 km^2 of which 4,900 km^2 is covered by game reserves and 100 km^2 by Mount Moroto. Upper Lokere catchment and the sub-catchment are

characterized by the highlands of Mount Moroto and the escarpment along the Ugandan-Kenyan border. This Sub County in Moroto district borders Kotido District to the North, Katikekile Sub County to the South East, Moroto Municipality to the south and Turkana County of the Republic of Kenya. This calls for transboundary approaches and interventions in tackling the drought problem across neighboring areas in Uganda and Kenya.

Figure 9: Districts and Sub-Counties in Lokere Catchment in Uganda

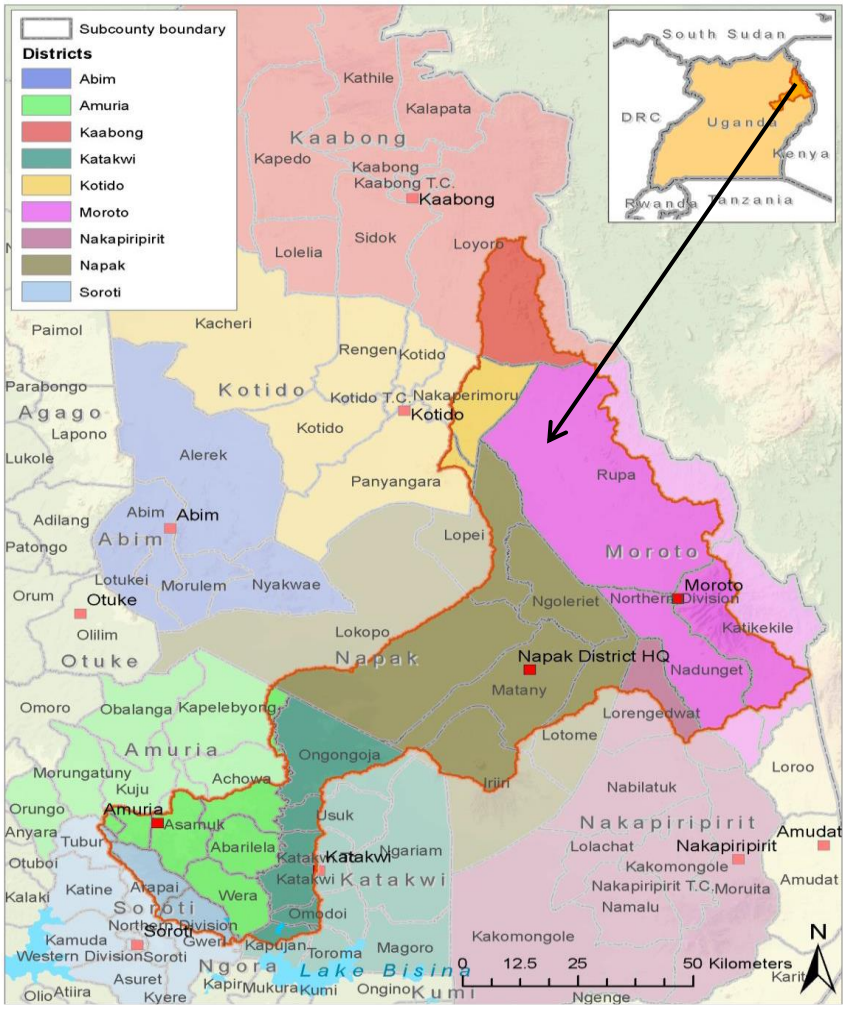


Figure 10 : Districts and Sub-Counties in Lokere Catchment (Source: Lokere catchment Management Plan)

1.2.2 Agriculture

Djibouti

23. In Djibouti, the agricultural sector contributes just 3% of GDP, and only a few people work in farming[26].About 10% of the workforce is engaged in agriculture. There is generally high dependency on imported food stuffs. Due to the Djibouti climate (arid to semi-arid) and the scarcity of fresh water resources (~150 mm rainfall/year), only irrigated and seasonal agriculture is possible (Sougal et al, 2009).The climatic conditions and poor soils limit agricultural food production to the extent that the domestic demand for food is barely met by 15% of the overall food production in the country. The agricultural lands are widely distributed on the terraces of the large basins of Wadi Gobaad and Hanley Wadi with a cultivated area of 0.5 to 1 ha per farm. Irrigation water is obtained from the wells dug in the terraces. According to the Government of Djibouti, only 10,000 hectares (24,700 acres) of arable land exist in the country. Majority of the agriculture is irrigated and domestic food production satisfies only 20% of the grain needs and 10% of the fruit and vegetable requirements of the population. Palm oil, refined sugar, and rice accounted for a combined 25.9% of total imports in 2007. Due to the limited number of either permanent or intermittent water sources, rainfall is a key determinant of food security in the country. Livestock production is regarded as more important than crop farming although the former is highly susceptible to droughts. Therefore, it is vital for the DRESS-EA project to design and implement interventions that are aimed at boosting agricultural crop and livestock production in the proposed project sites in Djibouti.

Kenya

24. Out of the total area of 30,496.4 km^2 for Kitui County, about 6,369 km^2 of the County land consists of the Tsavo East National Park and is not available for agricultural production. About 14,137.2 km^2 is arable agricultural land and 6,364.4 km^2 non-arable land. Despite such proportion of land area that is unavailable for crop and livestock farming in Kitui County, agriculture remains the backbone of the economy. In the highlands of Kitui for instance, farmers are involved in subsistence agriculture by mainly growing cotton, tobacco, sisal, mangoes, maize, beans, cassava, sorghum, millet and pigeon peas. These crops are well adapted to the climatic conditions of Kitui characterized by the hot dry months with high temperatures. Crops produced are consumed locally with the surplus being sold to traders from Nairobi and neighboring towns. In the lowlands, farmers keep livestock - mainly cattle, sheep, goats, and chicken - as a means to supplement crop farming as their source of income. Livestock rearing is the backbone of Samburu County's economy. The majority of people are nomadic pastoralists who mainly keep cattle, camels, sheep and goats. These animals are mainly sold to the Kenya Meat Commission as well as traders from Nairobi and other neighboring towns especially during droughts. Despite the harsh climatic conditions, some Samburu residents have recently started growing crops in effort to fight starvation and boost food security. Drought-resistant crops such as millet, sorghum and certain species of maize are grown in areas such as Lpartuk, Poros and Malaso. Given such enormous challenges to agricultural crop and livestock production, there is a need to undertake interventions aimed at increasing the resilience of agricultural systems in the proposed project sites in Kenya.

Sudan

25. Overall, El-Salam like in vast areas of Sudan is dominated by traditional subsistence agriculture where over 70% of the population is dependent on crop production and/or livestock farming to support their livelihoods. There are three ecological zones ranging from sub-humid to semi-arid with an annual rainfall that ranges from 300 mm in the north to at least 600 mm in the south. Majority of the farming schemes in Sudan are traditional farming schemes (10 – 30 feddans) although there are also some mechanized rainfed schemes (500 – 1000 feddans). Agriculture generally accounts for about 30.4% of GDP in Sudan (Sudan National Adaptation Plan (SNAP) 2016[27]). The agricultural sector mainly comprises smallholder farmers that employ largely rain-fed and traditional practices. Farmers produce a range of crops. The main crops grown are sorghum that occupies close to three quarters of the area, followed by wheat (18%) and cotton (8%). The major food security crops are sorghum, wheat and to a much lower extent millet. Sorghum wheat and millet contribute 57%, 39% and 4% to the total annual average cereal production in Sudan. The main livestock produced are sheep, goals and cattle. Not only are the small-scale farmers dependent on the sector for food but also employment to support their livelihoods. With such dominant characteristics of agricultural sector in El-Salam, and especially Kosti, the proposed project site remains highly vulnerable to climate variability due to past persistent droughts and anticipated climate change. Therefore, the agricultural crop and livestock production within White Nile State in the El-Salam locality is quite low due to the vulnerability of rain-fed agriculture that is greatly affected by rainfall variability and prolonged droughts. There is a need for targeted interventions to improve the agricultural production in the area.

Uganda

26. Overall, Uganda is regarded as agriculture-based economy and a food basket for the Eastern Africa region considering its ability to produce various foods in large quantities28. The sector comprises the food and cash crops production, livestock, forestry and fishing sub-sectors that contribute approximately 62, 8, 17 and 13 percent respectively to the agricultural Gross Domestic Product (GDP) (UBOS, 2012). However, agricultural systems in the proposed project site in the Karamoja region especially where Lokere catchment, Nangoloapolon sub catchment and Rupa sub County are part, is influenced and determined by the temporal and spatial variations in rainfall. Since the 1880s integrated crop farming and transhumance livestock management systems, also described as agro-pastoralism has been practiced in the area[29]. The Karamajong regard crop farming and transhumance livestock keeping as mutually reinforcing: when the first fails, the second helps absorb the shock, and vice-versa (Cullis *et al* 2018). Crop production in Karamoja is purely rain-fed crop, although the environment and climate are more conducive to livestock rearing than crops. This sub-region is a food deficit zone in two out of every three years (on average). Majority of households depend on food purchases from the market, supplemented by food from their own crop production, and milk, meat and sometimes blood from their own livestock. Overall, this area has some of the poorest food security and nutrition indicators in the region30 hence calls for interventions to improve agricultural production therein.

1.2.3 Pastoralism

27. In Djibouti, livestock resources are important and approximately 60% of the population depend on it as a source of livelihood. There is an estimated 1 million head of sheep and goats and 300,000 cattle in the country. (IGAD 2015).

The sector is faced with many challenges including inadequate government policies to support sustainable livestock production, lack of rainfall to naturally produce pasture/fodder, insufficient groundwater to grow irrigated livestock feed, poorly developed public or private sector animal health, production and breeding services.

28. Moreover, there is little governmental budgetary support that could facilitate and promote private sector investment in the livestock sector. Therefore, the sector has attracted little innovation such as promoting public-private partnership investment to develop it even though most of the country's inhabitants have a strong cultural attachment to livestock.

29. Approximately 130,000-170,000 pastoralists and/or nomads in Djibouti live in the rural parts of the country. These nomads live very traditional lives, sheltering themselves in portable huts made of branches and woven mats and living through the herding of sheep, goats, and cattle. However, due to the consistent presence of drought, pastoralists have lost 70-80% of their livestock from a lack of food and water.

30. In Kenya, the majority of people in Kitui are nomadic pastoralists who mainly keep cattle, camels, sheep, and goats. These animals are mainly sold to the Kenya Meat Commission as well as traders from Nairobi and other neighboring towns, especially during droughts. The Samburu people are nomadic pastoralists related to the Maasai that mainly occupy the county. The Samburus rely on sheep, goats, cattle, and camels as their source of livelihood. Livestock rearing is the backbone of Samburu County's economy. Their main food consists of maize, milk and blood, and meat on special occasions such as during circumcision ceremonies, marriage and birth of a child. Other ethnic groups living in Samburu County include Rendille, Turkana, and Borana. These are nomadic pastoralists who rear cattle, donkeys, camels, and goats. Cattle are an essential feature of the Samburu culture, especially because milk is an important part of the Samburu diet-a mixture of blood and milk. Traditionally, men are supposed to protect their villages and the livestock, whereas the women are tasked with looking after children and performing domestic duties such as cooking, fetching water and gathering firewood.

31. In Sudan, in the early 1990s, drought caused a dramatic decline in livestock raising, following a period in the early 1980s when livestock provided all or a large part of the livelihoods of more than 40 percent of the country's population. Livestock raising was overwhelmingly in the traditional sector, and, although initial steps had been taken to improve productivity and develop market orientation for the modern monetized economy. In 1983, more than 50 million Sudan's animals comprised the second largest national herd in Africa, next in size to that of Ethiopia. According to FAO estimates in 1987, it is indicated that there were about 20.5 million cattle, 19 million sheep, 14 million goats, and 3 million camels. Other animals included 660,000 donkeys, 21,000 horses, a small number of pigs and 32,000 chickens. By 1991, these numbers had been reduced by around one-third due to the drought. In other hand, August 1988, floods in the south was described as the worst in Sudan's history; and the ravages of civil war in the south has brutally decreased the productions. Approximately 80% of the pastoralists moved from the El Salam to South Sudan in search for pastures and water where they stay from September to June every year.

32. In Uganda, the pastoral livelihood zone runs along the extreme eastern border with Turkana-Kenya, which comprises mostly of eastern Kaabong and Nakapiripirit, a huge proportion of Kotido, and Moroto as well as parts of Napak. In this area, transhumance is practiced by Karamajong and Turkana across the Uganda and Kenya border in search for water and pastures. At the on-set of the rains, these communities return to their homes in the respective countries. In the pastoral and agro-pastoral livelihood zones of Karamoja, households obtain a proportion of their annual income from livestock. Among the climate risks facing the pastoral sectors are higher temperatures, increased unreliability of rainfall (more variability), increased length or intensity of dry periods and increased intensity of extreme events. The impacts resulting from these risks are increased evaporation of water points leading to shortage of water and competition between people and livestock for limited resources and conflict, increased incidence of disease outbreaks as disease vectors change and grow, changing water systems which increase the difficulty of maintaining healthy animals in a sanitary environment, lack of reliable markets due to bad roads, reduced forage availability and increased milk spoilage due to higher average temperatures.

1.2.4 Water resources

Djibouti

33. Djibouti is generally poorly endowed with natural resources. It has inadequate arable land, insufficient rainfall, and underground water resources. The hydrographic network is formed only by temporary flow streams called "wadis". The wadis drain twenty-six major watersheds, themselves composed of many sub-basins. No precise data exists on these watersheds (infiltration coefficient, wadi flow, flood characteristics). This network of intermittent streams drains the southern plateaus of Djibouti. The mountainous areas, on both sides of the Gulf of Tadjourah, flow into the sea. The rest of the national network feeds the depressions which present a pastoral potential, see agro-pastoral

by places. However, the country is characterized by the scarcity of irrigable agricultural land: the national irrigated area does not exceed 1,000 hectares. The soil cover is often skeletal (lithosols) this explains the runoff which is still tempered by the state of roughness of the soil, strongly covered with pebbles thus partially limiting the erosion.

34. Considering the number of experimental and experimental drilling carried out in the District of Dikhil, there are strong hydraulic potentialities. The Djibouti Water Master Plan provides, as an example, as a possible alternative, the supply of the Djiboutian capital from the Hanle Plain. The District has, moreover, some rare perennial sources of water. The hydrology is distributed between that of surface (flow fluviatile) and that of the subsoil (aquifers). However, considering the experimental drilling carried out in Dikhil, there are strong hydraulic potentialities. The Djibouti Water Master Plan provides, as an example, as a possible alternative for water supply to the Djiboutian capital from the Hanle Plains. The District has, moreover, some rare perennial sources of water. The hydrology is distributed between that of surface flow and that of the subsoil (aquifers). Surface water is characterized by the occasional flow of rivers from wadis during rainy periods. These wadis are fed, in addition to precipitation, by the hypodermic or sub-surface water runoff, corresponding to the movement of water down through the soil of the slopes in the process of drying. These wadis have an episodic flow (spasmodic) that lasts only a short time. They are characterized by a torrential and erosive flow on the ground with topographic encapsulation in relief of plateaus and mountains. In the plains and plateaus reliefs, wadis have wandering and endorheic patterns. These plains are important for recycling of runoff and surface runoff, resulting in the accumulation of loose lateritic layers, which are favorable for the development of agricultural activities. This action of water accumulation allows a better recharge of the underlying aquifers (groundwater). The arable land is large despite the small farms carried out by the rural population. In fact, the development of agricultural practices is limited by the combination of several practical parameters of a hydrological, technical and pedological nature that highlighted in this section.

Kenya

35. Most of Kenya's water originates from its five "water towers": Mau Forest Complex, Aberdare range, Mount Kenya, Mount Elgon and the Cherengani Hills. They are the largest montane forests in the country and form the upper catchments of the main rivers in Kenya (except Tsavo river flowing down Mount Kilimanjaro) (NEMA, 2010). However, Kenya is a land of contrast. Though it is home to some of the great water towers of East Africa, 90 percent of the country is either arid or semiarid. Rainfall patterns are highly variable, both annually and across seasons, a challenge likely to be further exacerbated by climate change. For the economy, local water stress is already a factor, not only in the arid areas but also in more water-rich regions where water-intensive economic activity has grown rapidly, such as Naivasha, greater Nairobi, and northern Mt Kenya. In the future, water demand is expected to grow very rapidly, especially in the context of ambitious agribusiness development plans (Water Resources Group report, 2015).

Sudan

36. In Sudan, the main water resources comprise rainfall that is harvested in small scale dams and artificial ponds (haffirs). The White Nile River is another source of water. Irrigated pump schemes along the left bank of the river act as barriers for animals to reach the river and most of the time conflicts arise between farmers and pastoralists. During wet period floods from seasonal Khors, particularly Khor Abu Habil which originates from the Kordofan mountains hits the west side of the locality. It is worth-mentioning that the rain water needs to be stored for use during dry periods (summer), as filing of the ponds and small earth dams, and recharge of the shallow wells completely depend on rainfall. There are a number of water pump schemes in Sudan scattered along the river Nile. However, most of them have not been operational since 1995. No groundwater sources have been recorded in the El Salaam. Rainwater harvesting facilities mainly haffirs (artificial bonds) therein enable farmers and pastoralists to harvest and store water during dry spells. The White Nile River is the major source of water in the El Salaam.

Uganda

37. Karamoja has a uni-modal rainfall pattern, with a single long-rainy period between April and November. Rainfall peaks during April and May. Rainfall in Karamoja is characteristically episodic, alternating with a prolonged severe dry season and considerable variation from year to year. Cyclic droughts occur every 2-3 years. The episodic nature of these events means that most of the region's population is typically affected by a sequence of shocks that pose significant challenges to livelihood security. The main climate related shocks in the region include erratic and unevenly distributed rainfall which can result in droughts (generally between April-June), severe dry spells and erratic rains (particularly between May-July), floods (particularly from July-September), outbreaks of livestock disease or changing crop pest dynamics (August-September), high food prices and general livelihood insecurity (USAID, 2016)[31]. Despite the limited water resources in the Karamoja area, Lokere Catchment is well drained with a dense network of meandering seasonal rivers and streams. The only permanent streams run in the Mount Moroto Ranges (IIRR 2015),

all other rivers and streams are seasonal. They originate in the mountainous areas along the border with Kenya, of which the rivers Nangoloapolon, Apule, Matheniko, and Omanimani are the most noticeable. With more frequent and severe droughts, such water resources in Uganda will likely experience negative impacts on water supply, biodiversity, and hydropower generation. A shift in rainfall patterns decreases the recharge of rainwater into the soil, which has far-reaching negative impacts on groundwater resources and water tables in wells.

1.2.5 Population and indigenous people[1]

Djibouti

38. Overall, there is a high human population that is vulnerable to climate change and droughts in the project sites in Djibouti. Overall, the human population of Djibouti is estimated to be 923,000 persons, comprised of two main ethnic groups; the Afars and the Issas, with a small portion of other mixed ethnical groups. Two thirds of its population lives in the urban sites mainly in the capital town of Djibouti. About 58.1% live in the capital city, Djibouti-Ville. The hinterland, an extension of the deserts of Ethiopia and Somalia, is sparsely occupied by a poor pastoral and largely nomadic population. Djibouti's population is young, with about 40 percent under age 15 and only 15 percent over 40 years of age 18. The Dikhil region occupies about 30% of the national territory with a total area of about 6,800 square kilometers. The population of the region is estimated at about 88,948 inhabitants, or 10.87% of the total population of Djibouti or 25.9% of the total national population living outside the city of Djibouti. The new zone straddles the Obock and Tadjourah districts, but covers only about 80,000 hectares. About 8000 inhabitants are considered in this area outside Tadjourah.

Population group		Ali Sabieh/Bieidley	Dikhil/Wadi Gobaad-Hanle sector
Total population		8 000	88 948
Target beneficiaries		4 800	53 369
Age structure	0-14 (31,14%)	1 495	16 619
	15-64	3 076	34 199
	65 years and over	173	1 927
Breakdown by gender	Women (49,80%)	2 390	26 578
	Men (50,20%)	2 410	26 791

Kenya

39. Kenya is a medium human development country with HDI index of 0.555, ranked 146 out of 188 countries in 2015. After recording strong performance between 2000 and 2010, Kenya's HDI has experienced only modest growth since 2010, from 0.53 to 0.555 in 2015. At the County level, Nairobi County had the highest HDI of 0.641 above the national average. Kitui County's HDI was estimated at 0.481 being below the national average in 2012. Effective development at the county level provides an opportunity to address the disparities that are reflected in the HDI.

40. According to the 2009 Population and Housing Census, the population of Samburu County was 223,947. Given a population growth rate of 4.45 percent per annum, as opposed to the national growth rate of 3 percent, the County population is projected to increase to 399,378 by 2022 and 456,418 by 2025. These changes represent about 25% population rise between 2017 and 2022. This increase is significant and calls for commensurate expansion of basic amenities in the County. Furthermore, there is need to increase investment in economic activities in order to make the county self-reliant in food security and creation of employment opportunities. From the Population census data, it is evident that the County has a youthful population with over 80 percent of the population being below 35 years of age in 2009.

41. The population density is expected to rise to 15 and 19 persons per Km^2 by 2017 and 2022 respectively. Samburu West constituency had the highest population density of 29 persons per Km^2. Samburu north and Samburu East had 17 and 8 persons per Km^2 respectively. In 2009, the county had a total population of 223,947 comprising of 112,007 males and 111,940 females respectively giving a sex ratio of 1:0.98. Samburu County has various mixed ethnic backgrounds comprising of Samburu people, Turkanas, Boranas, Somalis, Elmolos and Oromos which makes it a diverse County mostly comprising of pastoralists and nomads.

42. Population dynamics form an integral part of socio-economic and cultural development for Kitui County. According to KNBS (2009), the county has population of 1,012,709. Also, 531,427 are females while 481,282 are males. The population was projected to grow to 1,065,330 by 2013 and is projected to reach 1,176,650 in 2022. The population growth rate of the county at 2.1% is slightly lower than the national rate of 2.6%. Population density in Kitui was 33

[1] *According to the demographic studies of the countries available on the mundi.com index, broken down by sex and age group, we were able to establish, using the same methodology available on the site, the population ratio of the DRESS EA project intervention area. By highlighting the rates of women, men, youth and seniors.*

persons per Km^2 in 2009 compared to a national average of 66 persons per Km^2. The population density is estimated at 37 persons per Km^2 and is projected to increase to 39 persons per Km^2. Kitui Central has the highest density. High population exerts pressure on social and natural resources, and it is imperative for the county to develop strategies in addressing the population growth rate.

43. Kitui County shares its borders with seven other counties: Machakos and Makueni counties to the west, Tana River county to the east and south-east, Taita Taveta county to the south, Embu to the north-west, and Tharaka-Nithi and Meru counties to the north, it has a diverse ethnic composition consisting of Kambas which is the main ethnic community and flanked by Somalis, Merus, Boranas, and Gares. Kambas in Kitui County and Turkana, Somali and Samburu in Samburu County are also considered as indigenous people.

Population group		Kitui	Samburu
Total population		481 282	224 000
Target beneficiaries		288 769	134 400
Age structure	0-14	118 020	54 929
	15-64	162 317	75 546
	65 years and over	8 432	3 924
Breakdown by gender	Women (50,30%)	145 251	67 603
	Men (49,70%)	143 518	66 797
Indigenous People (Kitui/Kambas=11,42%) (Samburu/samburu-turkana-somali=2,23%)		32 977	2 997

Sudan

44. In Sudan, the human population of the area constitutes about 136,000 people (permanent), 120,000 (refugees in camps), 68,000 people (coming from South Sudan. Kosti is the most populated locality followed by Aldueim, Alquiteina and Rabak, but Kosti and Rabak are the most densely populated localities. The population of the area is around 136,000 in addition to huge number of refugees (120,000) and returnees (68,000). El Salam locality is maintaining long open border with South Sudan as well as historical social/blood relationships as a result of mixed-marriages particularly with Shuluk and Nuer tribes, the most dominant in Upper Nile States, these factors have motivated/driven majority of the South Sudanese flee to WNS in seek of safe refuge. Generally, the settlements in Es Salam locality are scattered with some concentrations around productive agricultural areas, trading centres, and water sources. El Selame, El Ahamd, El Gemea, Awlad Hassan, Mashalga and Uwesab are the permanent pastoralist tribes. Hasaneya and Husonat are cattle breeder tribes, while El Kababeesh and Bany Garar are camles breeders. Other tribes such as Taisha, Mesarya, and Hawasset are most of the year moving with their animal from place to place as per water and pasture availability. Within the area, 7 camps to accommodate the refugees and re-turnees are existing. The estimated population of them exceeds 120,000. Needs for food, energy and health protection are in the top of the issues facing these groups.

Population group		El Salam Kosti
Total population		136 000
Target beneficiaries		81 600
Age structure	0-14	31 563
	15-64	47 369
	65 years and over	2 668
Breakdown by gender	Women (%)	40 808
	Men (%)	40 792
Refugees in camps		21 500

Uganda

45. The human population in Lokere catchment comprises mainly the rural poor estimated at 420,000 people. Such population constraints or is in dire need of the scarce water resources during drought. The Karamoja region is home to 11 ethnic groups: the largest, “true” Karimojong—Matheniko, Pian, and Bokora; the Jie; the Dodoth; the Pokot; and a number of smaller groups that includes the Tepeth, Nyakwae, Ik or Teuso, Napore, and Ethur The Karamajong are Paranilotic speakers, while the Napore, Ethur, and Nyakwai are Luo speakers and the Tepeth and Ik speak a separate language Opinions vary as to the origins, but there is general agreement that by 1800 the Karimojong occupied the Magos Hills in Moroto District and that the Turkana, Jie, Dodoth, and Iteso splintered off, mostly amicably apart from the Jie, who broke away by force. The Karamajong are clearly considered as indigenous people. In 2014, the District of Moroto had a total population of 104,539 people. The area is sparsely populated with an overall land density of 29 persons per km^2, up from 17 persons / km^2 in 1991. The district has growth rate: 2.4% and population density of 29/km^2. The population is mainly rural, with only 13.7 living in urban areas. Rupa Sub-county

had a population of 25,785 people by 2014, of whom 13,393 were female and 12,392 were males. The average household size in Rupa sub-county is 4.8, higher than the Moroto District average of 4.4 people (UBOS 2014)[32]. The Settlement pattern in the district is of a scanty nature with concentrations around productive agricultural areas, trading centres and near rivers and springs (UNDP, 2014). The main tribal groupings are the Tepeth and Matheriko whose main livelihood is agro-pastoralism practicing both subsistence agriculture and semi nomadic livestock rearing (Lysette Boucher, 2016). The Tepeth are a forest-dependent pastoralist group who live in the mountains of Moroto, Napak and Kadam in Karamoja. The 2014 National Population Census put their population at 23,500. They are considered one of the minority ethnic groups of Uganda. They depend on the resources of the mountains, though all three mountains have been gazetted as Central Forest Reserves (Bintoora 2015)[33].

46. The vulnerability of the Tepeth as a minority ethnic group has been escalated by the gradual reduction of the resource base on which they depend. The reduction is due to land use change towards crop farming mainly by other ethnic groups Bintoora (2015). This has led to deforestation in Mt. Moroto Central Forest Reserve and along river valleys that were dry season grazing areas for the Tepeth. Trees of high food, medicinal and cultural value to the Tepeth are being cut as land is turned into crop fields. As a result, the Tepeth are overgrazing fragile high-altitude moorland areas leading to unprecedented land degradation. Commercial charcoal burning associated with settlers within the CFRs, the return of peace to the region, uncontrolled burning, commercial and artisanal mineral exploitation, and the extension of Moroto Municipality into the CFR all contribute to forest degradation, increasing the vulnerability of the Tepeth minority group. Their livelihoods and security are at risk as essential forest resources become scarce and loss of forest cover exposes them to cattle raiders from neighboring communities (Bintoora, 2015).

Population group		Rupa
Total population		25 785
Target beneficiaries		15 471
Age structure	0-14	7 434
	15-64	7 731
	65 years and over	306
Breakdown by gender	Women (%)	7 766
	Men (%)	7 705
Indigenous People (6,4%)		1000

1.2.6 Livelihoods

47. With its few natural resources and low rainfall, Djibouti has limited possibilities for agricultural production. Activities in the primary sector make a negligible contribution to the national economy although are extremely important at the rural level, where livestock forms the basis of household livelihoods. Livestock rearing is the main livelihoods activity for 80% of rural households. The mode of livestock keeping is subsistence nomadic or semi-nomadic pastoralism of small ruminants (primarily goats) and camels. The livelihood system is highly vulnerable to the impact of recurrent drought (Babikir et al, 2015). Livestock pastures constitute the country's major industries with the fishing sector employing only about 1,000 people in Djibouti.

48. The economy of Kenya is largely dependent on agriculture and tourism. About 75% of Kenya's population earns its living from agriculture which in turn depends on rainfall. About 70% of the poor are in the central and western regions, living in areas that have medium to high potential to agriculture. The highest poverty levels in Kenya are in the ASALs where over 60% of the population lives including Kitui and Samburu counties. Tourism is a key economic activity in Samburu as Bee-keeping has remained a major economic activity, especially in Kitui. Despite the harsh climatic conditions, some Samburu residents have recently started growing crops in an effort to fight starvation. Drought-resistant crops such as millet, sorghum and certain species of maize are grown in areas such as Lpartuk, Poros, and Malaso for food as well as income. Tourism is also a major source of revenue to the Samburu people, with some of the residents being employed in the county's safari lodges and others working as tourist guides. The county's main attraction sites offer a thriving market for Samburu artifacts such as beads, necklaces, and bracelets.

49. The agricultural sector constitutes an important source of livelihood especially rural livelihoods in the entire White Nile State in Sudan. Most people in the area engage themselves in crop and livestock keeping. They also undertake other livelihood alternatives such as providing wage and skilled labour. Along with crops, livestock is an important livelihood in the area and the main livestock kept are small ruminants and poultry that nevertheless are sold to pay for food and medical expense. Dairy farming and fisheries are another livelihood means. Fish is sold fresh or subjected to traditional simple processing[34].

50. In Uganda, the Karamoja region is characterized by high prevalence of hunger, stunting and lack of access to food, with over 80 percent of children and 50 percent of women suffering from anemia. Heavy reliance on the natural

resources' base renders livelihoods highly sensitive to climate variability and change manifested through recurring droughts, unpredictable rainfall patterns, flash floods and prolonged dry spells (CARE 2013). The main livelihood of the Karamojong and Iteso in Lokere Catchment revolves around a mixed agro-pastoral economy. An increasing number of people rely on agro-pastoral livelihoods, which combine livestock rearing with crop production. Due to these constraints, women have adopted other options in livelihoods like charcoal burning, firewood and local brew sales as a substitute to crop agriculture that suffered crop failure for quite a number of years. Crop failures and cattle deaths due to severe droughts increase the communities' vulnerability to starvation and deprivation. Women bear the brunt of bad harvests and loss of livestock as they solely take on the role for providing for the family in difficult times through sale of charcoal, firewood, and causal labour. In Rupa and Kothiro sub-counties of Moroto District, artisanal mining is becoming prominent as a form of livelihood activity employing both men and women. Minerals including limestone, marble and gold from the slopes of Mount Moroto are important to communities for income generation (CARE 2013,). These activities help communities adapt to harsh environments, but at the same time increase the rate of land degradation. Mining has contributed to degradation of Mt. Moroto CFR, and also increased the vulnerability of the minority Tepeth community (Bintoora 2015).

1.2.7 Climate

51. In Djibouti, the average annual rainfall over the country is of the order of 150 mm. The maximum annual rainfall is observed in the mountainous areas west of Tadjourah (Goda Massif). Rainfall decreases sharply in the direction of the northeast to the coast at Obock-Khor Angar-Doumeira with 50 to 100 mm per year. In the northern parts of the country, the annual rainfall is 100 to 150 mm (Dorra-Balho), while in the western regions (Hanle Plain, Gobaad Plain) precipitation exceeds 150 mm. In the south of the country, in the coastal plain, the annual rainfall is between 130 and 200 mm, and decreases towards Dikhil. Climatic data have two distinct regimes: the seaward slope with an arid to semi-arid climate of the Mediterranean type and the tropical and warm continental slope. The rainfall varies from 50 mm (Obock) to 300 - 400 mm on the heights. The altitudinal data is here major and determines characteristic vegetation stages. It should be noted that the violence of the rains is also a fundamental fact that must be considered closely. As for temperatures, they are high with westerly and northwesterly winds that accentuate the arid nature of the country.

52. Kitui has three different climates: Hot semi-arid climates, Tropical savanna climate, and Warm-summer Mediterranean climate. The county receives between 500mm and 1050mm of rainfall annually, with average rainfall of 900mm a year. It has two rainy seasons; May-June (long rains) and September-October (short rains). Kitui County is mostly dry and hot with temperatures ranging between 14°C during the coldest months (July-August) and 34°C during the hottest months (January-March). Samburu however, is one of the driest counties in Kenya with temperatures ranging between 25°C during the coldest months (June and July) and 35°C during the hottest months (January to March). The county receives between 200mm and 250mm of rainfall annually. The rainfall pattern is unpredictable and at times the county receives no rain in a whole year. The elevation and orientation of the major topographic features such as Mathew ranges and Ndoto hills influences rainfall distribution. Apart from South Horr and Wamba areas, short rains occur during the months of July and August, sometimes extending into September. At Wamba and South Horr areas, the short rainy season is usually delayed and occurs in October and November and sometimes extends into December. The southwest plains and the Lorroki Plateau receive between 500 mm and 700 mm of rain annually. The Nyiro and Ndoto Mountains and Matthews range receive the highest amount of rainfall between 750 mm and 1250 mm per annum. The central basin and the plains east of the Matthews Range are the driest parts of the county with annual rainfall of between 250 mm and 500mm. Annually, the county has annual mean temperature of 29^0C with the maximum range being 33^0C and minimum of 24^0C. The central plains and the region east of the Matthews Range have the highest temperatures while the highland belts in the North Eastern side of Lorroki Plateau are cooler.

53. Despite El-Salam's location in the south of the WNS, it is severely impacted by the climate change induced drought. It is one of the most vulnerable locations for agriculture, water and health. The total average annual rainfall in this area varies between 300 to 600 mm/year. There is a short rainy season with heavy rainfall events from July to October with typically up to a 2-week dry spell at the beginning of June, and a long rainy season with less heavy rainfall events during August. The average minimum temperature (1963 – 2004):15.7^{0}C (Jan.) – 25.3^{0}C (May). Average maximum temperature (1964 – 2004): 32.5^{0}C (Jan.) – 41.5^{0}C (Apr/May). The average annual rainfall (1961 – 2008) is 350 mm.

54. The total average annual rainfall varies between 550 mm/year in the upstream areas of Lokere and 1,300 mm/year in downstream areas. There is a short rainy season with heavy rainfall events from April to July with typically a 2-week dry spell at the beginning of June, and a long rainy season with less heavy rainfall events from September till December/January. The long rainy season is almost absent in the upstream parts of Lokere. Precipitation is highly

variable in space and time, with both intense rainfall events and long dry periods. The dry season lasts between 2 to 9 months, depending on the year and the location in the catchment. The long dry season lasts longer the further one moves north in the catchment. As a result of the high rainfall variability Lokere Catchment suffers from acute water shortages during the dry season in the Middle and Upper Catchment and heavy flash floods during the rainy season in Middle and Lower Lokere. During the dry season the Karamajong migrate many kilometres in search of water and pasture for their animals. Climate change projections indicate that temperatures will rise, rainfall intensity will increase and extreme events such as droughts and floods will occur more often.

1.2.8 Biodiversity

55. According to the National Biodiversity Strategy Paper, Djibouti's (terrestrial and marine) biodiversity consists of 826 plant species and 1,417 animal species, including 493 species of invertebrates, 455 species of fish, 40 species of reptiles, 3 species of amphibians, 360 species of birds and 66 species of mammals. The terrestrial fauna in Djibouti are beautiful species. Vultures and sea eagles, herons, ibises and pelicans, flamingos, common bustards, ostriches, antelopes, gazelles have become rare. The Kudu is endangered, and the oryx is rare, Arcouboudo (oroeotragues) that seem to walk on tiptoe, dig-digs, dwarf antelopes, are still widespread.

56. Other species of terrestrial fauna include carnivorous and wild animals, fennec, jackal, wild cat, hyena, cheetah and panther. The warthog, various monkeys, monitor lizards (giant lizards), sand squirrels etc. are also available biodiversity resources. In the proposed project areas, hunting is prohibited as well as throughout Djibouti. As far as the North Zone is concerned, turtle fishing is also prohibited. All conventions on biodiversity including on endangered species are ratified by the Republic of Djibouti.

57. Kenya is endowed with unique natural ecosystems that constitute biodiversity assets in the terrestrial, aquatic and aerial environments. These comprise over 35,000 species of flora and fauna (NEMA, 2009). The species diversity comprises; 7,000 plants, 25,000 invertebrates (of which 21,575 are insects), 1,133 birds, 315 mammals, 191 reptiles, 180 freshwater fish, 692 marine and brackish fish, 88 amphibians and about 2,000 species of fungi and bacteria. This diversity is as a result of the variable ecosystems ranging from marine, mountains, tropical, dry lands, forests and arid lands. In addition, there are some 467 inland lake and wetland habitats covering about 2.5% of the total area. Kenya's rich biodiversity can be attributed to a number of factors, including a long evolutionary history, variable climatic conditions, diverse habitat types and ecosystems. In Samburu, there is a total of 3,250 km^2 of gazetted forests translating to a 15.4percent forest cover in the county.

58. This mainly consists of indigenous forests uniformly distributed across the county. The main tree species are the *Acacia* spp, *Commisera*, *brocella* which are dominant in the lowlands of Samburu North and Samburu East as well as sections of Samburu Central. The highland species include: cedar, podo, chepnuts and olea, Africana amongst others these are mainly found in Kirisia and Porror areas. The most endangered species are the Cedar and Podo because of their value in construction of houses particularly in upcoming urban/trading centers. The County boasts of having the largest number of wildlife outside the game reserve. Some of the wild animals found in the County include; Reticulated Giraffe, the endangered bevy zebra, Besia Oryx, Greater and Lesser Kudu, Gerenuk, Somali ostrich, Pun cake tortoise, Wild Dog, lions, elephants, and buffalos in addition to the small wildlife.

59. The vegetation pattern in Moroto district is typically semiarid with dry tree Savannah species dominantly grass species. The main vegetation communities in the district include: forests at high altitudes (dry montane forests), Savannah woodland, semi evergreen thickets, deciduous thickets, Riparian communities, and grass steppe communities. Forests are found only at Localized patches on hills and mountains such as Mt. Moroto, Kamalinga forest on Mt Napak. Forest cover is estimated at 100 km^2 (UNDP, 2014). Mt. Moroto Central Forest Reserve (3,008 m above sea level) is one of the few important water catchment areas in semi and chronically food insecure Karamoja region of Uganda. The forest reserve is rich in biodiversity and mineral resources. It hosts about 200 species of trees and shrubs. The vegetation is classified as *Combretum butyrospermum* and dry savana acacia with *Juniperus podocarpus* dry montane forest (Nanyunja, 2003[35], cited in Bintoora 2015). Endemic bird species of *Tricholaema melanocephora, Nectarinia habessinica, Mirafra poecilsterna and Tchagra james* (Nature Uganda, 2010[36]) as well as wild animals such as leopard, Cheetah, rock hyrax and olive baboons are found in Mt. Moroto forest ecosystem. Like most parts of Karamoja, the reserve is endowed with precious mineral resources such as gold and marble stones (Bintoora, 2015). Thus, mining is one of the leading causes of degradation of this forest and the biodiversity therein.

1.2.9 Climate Change, droughts, vulnerability and threats

(Details are provided in the vulnerability assessment)

60. **Djibouti** is characterized by a very arid and semi-desert type of climate, which makes it extremely sensitive to climate change-induced drought and water scarcity risks. It experiences fluctuating, low and abrupt precipitation regime with annual mean rainfall of 150 mm, mean temperatures between 17°C and 42°C and extremely high rate of evapotranspiration amounting to 2000 mm per year.
61. The vast majority of Djibouti's rural population is highly susceptible to climatic uncertainty – they live in deserts or marginal and infertile areas, often with highly erodible soils, poor ground cover and limited water supplies, where food security is a serious concern (Figure 11).

Figure 11: Typical landscape of marginal and infertile areas, with highly erodible soils, poor ground cover and limited water supplies in Gobaad and Hanle sites

62. Djibouti imports nearly all of the cereals consumed in the country, and food aid represents almost 10% of total imports. The country is poor in natural resources and arable land are limited (only 0.1% by area), as well as rainfall and groundwater reserves. According to the UN assessment of 2005, the population of Djibouti was 800,000 inhabitants, of which two-thirds live in the capital. The poor pastoral and nomadic people in Djibouti are highly vulnerable to prolonged droughts. The last major drought claimed nearly 4 percent of gross domestic product (GDP) annually between 2008 and 2011 and impacted more than half of its 860,000 residents. Djibouti is at particular risk for water shortages and severe flooding, both of which profoundly impact its growing but fragile economic sector.
63. **In Kenya,** the rural populations, who derive their livelihoods from agricultural activities, are particularly vulnerable to impacts of Climate Change on the agricultural sector. Such impacts include crop failures and consequent reduced yields, reduced fish stocks, impacts on prices of food, farmers' incomes and livelihoods. Pastoralism on the other hand is practiced in the Arid and Semi-Arid Lands (ASALs) regions of the country, which are characterized by high spatial temporal variability in rainfall and account for about 80 per cent of Kenya's land surface area. Pastoralists are usually worst hit by climatic changes (including seasonal weather changes, increasing temperatures, rainfall variability and extreme weather events) which often result in livestock losses and associated income and livelihood losses. Rainfall distribution is erratic and unreliable due to drought most especially in ASALs. Kitui County is mostly dry and hot with temperatures ranging between 14°C during the coldest months (July-August) and 34°C during the hottest months (January-March).
64. The county receives between 500mm and 1050mm of rainfall annually, with an average rainfall of 900mm a year. It has two rainy seasons; May-June (long rains) and September-October (short rains). Also, Samburu is one of the driest counties in Kenya with temperatures ranging between 25°C during the coldest months (June and July) and 35°C during the hottest months (January to March). The county receives between 200mm and 250mm of rainfall annually. The rainfall pattern is unpredictable and at times the county receives no rain in a whole year with communities adapting by digging shallow water basins and deep-water tanks on their lands (Figure 12). The water quality is poor.

Figure 12: Shallow water basin and deep ground water tank in Kitui site in Kenya.

65. Although **Sudan** is generally vulnerable to climate change especially to the high rainfall variability and related recurrent droughts, the human and livestock populations as well as the ecosystems in El Salam are highly vulnerable to the effects of drought (Figure 12). Insufficient and highly variable annual precipitation define the climate of most of Sudan with El Salam recording average minimum temperature (1963 – 2004) of 15.7°C in (Jan.) and 25.3°C (May); average maximum temperature (1964 – 2004) of 32.5°C (Jan.) and 41.5°C (April/May). The average annual rainfall (1961 – 2008) of 350mm characterizes Kosti in ElSalam. Agro-pastoralist communities have inadequate water points in the vast area and travel very long distances in search of water (Figure 13).

Figure 13: Human and livestock populations and ecosystems faced with inadequate water resources due to climate change aggravated drought in Kosti, ElSalam, Sudan

66. In **Uganda**, the climate is not only a driving force but also a key determinant of the status of natural resources, such as water resources, forest, agriculture, ecotourism, and wildlife. Uganda has diverse and rich biodiversity, which has provided both food and medicines. The first rainy season ranges from March to June, while the second one ranges from August to November. The rainfall level ranges from 400 to 2200 mm per year. The precipitation pattern in Lokere is classified as bimodal, but is highly variable in space and time, with high peak events and long dry periods. Variance in annual rainfall is highest in the middle parts of the catchment. It is characterized by prolonged dry spells and erratic rainfall with flash floods that erode soils, leaving deep gullies (Figure 14).

Figure 14: Inadequate water resources during drought and effects of flush floods during the short erratic rains in Rupa, Lokere catchment, Uganda.

67. These prolonged dry spells result in: total crop failure with far-reaching impacts on food security, leaving communities vulnerable to starvation; reduced water and pasture for livestock; disease outbreaks; loss of biodiversity and increased resource use conflicts. Overall the targeted countries have experienced drought pressure for quite a long time. The table below illustrates the drought years with widespread impact.

2 Project Objectives

68. The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region.

69. The project targets to consolidate synergies and adopt innovative and resilient drought management actions from selected IGAD region countries including Djibouti, Kenya, Sudan and Uganda. More specifically, this project is intended to strengthen the drought resilience of smallholder farmers and pastoralists by:

- Developing and promoting regional investments in drought early warning systems (EWS) and improving the existing ones
- Strengthening and improving the capacity of key stakeholders in drought risk management at regional, national and local levels
- Facilitating smallholder farmers and pastoralists inputs to undertake innovative adaptation actions that reinforce their resilience to drought
- Enhancing knowledge management and information sharing on drought resilience at the considered levels.

3 Project Components and Financing

Table 1: Budget summary

Project/Programme Components	Expected Outcomes	Expected Outputs	Countries	Amount (US$)
1. Development and enhancement of a regional Drought Early Warning System	1.1: Increased use of effective Early Warning Systems by stakeholders	1.1.1: Efficient and effective EWS in place/developed	Djibouti, Kenya, Sudan &Uganda	763,000
		1.1.2: Institutional linkages for EW information established	Djibouti, Kenya, Sudan &Uganda	401,000
		1.1.3: Feedback mechanism for EW information developed	Djibouti, Kenya, Sudan &Uganda	316,000
		1.1.4 Emergency plan for drought management is put in place	Djibouti, Kenya, Sudan &Uganda	907,100
2. Strengthening the capacity of stakeholders to manage drought risks due to Climate Change effects	2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened	2.1.1: Drought management plans (DMPs) integrating CC aspects and adaptation actions are developed	Djibouti, Kenya, Sudan &Uganda	360,000
		2.1.2: Adaptive capacity of institutions, farmers, and pastoralists in drought management is improved	Djibouti, Kenya, Sudan &Uganda	950,000
	2.2: Partnerships for drought management at regional, national and local levels strengthened	2.2.1: New/existing regional and National arrangements /networks for drought management supported	Djibouti, Kenya, Sudan &Uganda	440,000
3. Supporting innovative drought and Climate change adaptation actions	3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	3.1.1: Innovative water and soil conservation structures constructed	Djibouti, Kenya, Sudan &Uganda	1,550,000
		3.1.2: Groundwater sources established/ improved	Djibouti, Kenya, Sudan &Uganda	460,000
		3.1.3: Adaptive agricultural practices for improving crop production promoted	Djibouti, Kenya, Sudan &Uganda	1,140,000
		3.1.4 Adaptive livestock and rangeland practices enhanced	Djibouti, Kenya, Sudan &Uganda	1,044,040
		3.1.5: Enabling environment for smallholder farmers' and pastoralists' adaptive activities created	Djibouti, Kenya, Sudan &Uganda	625,600
		3.1.6: Environmentally friendly IGAs ([e.g., Pottery, Beekeeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted	Djibouti, Kenya, Sudan &Uganda	1,460,280
4. Enhancing knowledge Management, awareness creation and information sharing	4.1: Knowledge and awareness on drought risks management is increased	4.1.1 Good practices and lessons on drought management documented and disseminated	Djibouti, Kenya, Sudan &Uganda	304,000
		4.1.2 Drought information management strengthened	Djibouti, Kenya, Sudan &Uganda	288,000
6. Project/Programme Execution cost				1,045,860
7. Total Project/Programme Cost				11,009,020
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				1,024,660
Amount of Financing Requested				**13,079,540**

4 Projected Calendar

Milestones	Expected Dates
Start of Project Implementation	June 2020
Mid-term Review (if planned)	June 2022
Project Closing	June 2024
Terminal Evaluation	December 2024

II. PART II: PROJECT JUSTIFICATION

A. Project components

COMPONENT 1: DEVELOPMENT AND ENHANCEMENT OF A REGIONAL DROUGHT EARLY WARNING SYSTEM

70. Component one will focus on upgrading, as well as reinforcing, the climate change early warning process since smallholder farmers and pastoralists are facing challenges of accessing timely and accurate climate information for planning and responding to drought risks. Current EWS are inadequate and unsustainable causing crop failures, pasture losses, the death of livestock, soil degradation, conflicts, migration, and food insecurity. The purpose of this component is to conduct baseline studies and assessments as a first step to understand the current status of the existing EWS for different types of hazards in the four selected countries. By understanding the challenges associated with the existing EWS, the project will consequently undertake interventions aimed at promoting adaptation actions to address drought risks and improving the situation for the benefit of smallholder farmers and pastoralists, including women. In achieving these goals, the project proposes to improve and develop effective and efficient innovative EWS by equipping and upgrading weather stations including observation and monitoring infrastructure to ably collect weather related information that could aid smallholders, farmers, and pastoralists to plan appropriate drought adaptation measures. It is also understood that good risk management decisions rely on accurate information, which, in turn, requires reliable and timely data which is by far the most useful assets farmers and pastoralists can access to help them adopt drought resilient actions. In fact, farmers and pastoralists are constrained in accessing EW information and later alone respond or deal with emergencies, for these reasons, the project proposes to construct and/or renovate EW information centers where all the necessary data for drought adaptation planning could be availed to the farmers and pastoralists and support emergency planning.

71. Institutional linkages for sharing early warning information will also be supported and the targeted beneficiaries' capacities reinforced to access EW information for instance through, developing social media tools and other response and feedback mechanisms for EWS. Quite often even with efficient and effective high quality EWS, there are always possibilities of shortfalls in supplies or interventions to respond to drought. The project will endeavor to provide support to plan for such shortfalls that were not envisaged by developing drought emergency plans. In this case, the project will further support regional and national stakeholders in securing appropriate equipment and plank operations for populations and monitor feedback mechanisms regarding the preparation and implementation of contingency plans.

72. These specific aspects will be achieved through outcome 1.1, outputs 1.1.1, 1.1.2, 1.1.3 and 1.1.4 presented below. The proposed activities in relation to the corresponding outcomes and outputs are also presented.

Outcome 1.1: Increased use of effective Early Warning Systems by stakeholders

Output 1.1.1: Efficient and effective DEWS in place/developed

Activities

- Activity 1.1.1.1 Assess the status of EWS in the target countries and the update options of traditional EWS with modern EW technologies
- Activity 1.1.1.2 Develop an EWS prototype to be used at the regional and national levels
- Activity 1.1.1.3 Equip/upgrade selected weather stations and Remote sensing derived products, time series of bioclimatic variables, etc.
- Activity 1.1.1.4 Construct/renovate and equip EW information centers including database
- Activity 1.1.1.5 Support/Equip project beneficiaries (pastoralist, farmers, and extension agents) to access EW information (e.g. devices including, brochure, SMS, Radio etc.)
- Activity 1.1.1.6 Conduct a baseline study

Output 1.1.2: Institutional linkages for EW information established

Activities

- Activity 1.1.2.1 Develop/Review EW information sharing frameworks at regional. National and sub-national levels
- Activity 1.1.2.2 Develop an implementation action plan to operationalize the frameworks
- Activity 1.1.2.3 Hold inter-ministerial and sectoral meetings for data sharing
- Activity 1.1.2.4 Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)
- Activity 1.1.2.5 Support Incorporation of EW information into planning and budgeting processes of targeted countries

Output 1.1.3: Feedback mechanism for EW information developed.

Activities

- Activity 1.1.3.1 Support regular stakeholder EW information feedback platforms for farmers and pastoralists
- Activity 1.1.3.2 Hold quarterly stakeholder meetings on EW information utilization for national and sub-national stakeholders
- Activity 1.1.3.3 Conduct KAP surveys on EW information
- Activity 1.1.3.4 Develop periodic feedback user-friendly tools on accessing, utilizing and reporting EW information to mandated institutions

Output 1.1.4: Emergency plan for drought management is put in place

Activities

- Activity 1.1.4.1 Develop an emergency response plan for drought disasters at the regional and national levels
- Activity 1.1.4.2 Monitor the EWS, feedback mechanism and its contingency plan at regional level
- Activity 1.1.4.3 Acquire equipment for drought management (machines/pickup, bicycles, motorcycles)
- Activity 1.1.4.4 Implement two blank operations (including regional and national levels)
- Activity 1.1.4.5 Acquire tools and materials to disseminate warning messages to the populations (e.g. beacons, flags, sirens, signaling, speakers, telephone, local radios etc.)

COMPONENT 2: STRENGTHENING THE CAPACITY OF STAKEHOLDERS TO MANAGE DROUGHT RISKS DUE TO CC EFFECTS

73. The current capacity to integrate drought risk management interventions into development plans is insufficient to ably implement drought adaptation actions and support responses at the community level. These coupled with a limited budget allocation for drought risk management at the national level aggravates drought management among the vulnerable communities in the four riparian countries. Therefore, communities' drought coping mechanism is weak.

74. Component two aims at strengthening and improving the adaptive capacity of various stakeholders including women and youth that are affected by climate change induced drought and contribute to drought adaptation and resilience in various ways. Such stakeholders include extension agents, artisans, local government or sub-national and national as well as regional leaders including technical and non-technical plus the smallholder farmers and pastoralists in the four selected countries/areas. This project seeks to, first of all, understand the stakeholders' needs in drought adaptation and contribute to developing their capacity to plan and manage droughts if their resilience is to be enhanced. Based on such needs, capacity building plans including developing the appropriate tools and materials will be supported. The proposed activities are indicated under outcomes 2.1 and 2.2 in outputs 2.1.1, 2.1.2 and 2.2.1.

75. The project has proposed several drought management innovations. In fact, for cross-learning purposes (Activity 2.1.2.4), focus will be on easily adoptable and fast replicable innovations by communities. Innovations with such high multiplier effect include locally made water harvesting and storage structures e.g. simplified water jars. Others include rock water harvesting, sunken sand dams and water ponds etc. also, ground water management initiatives

are critical because it poses a huge potential and yet an immediate solution for water security amongst the communities.

Outcome 2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened

Output 2.1.1: Drought management plans (DMPs) integrating CC aspects and adaptation actions developed

Activities

- Activity 2.1.1.1 Develop/update existing DMPs at national and sub-national levels integrating CC aspects and adaptation actions
- Activity 2.1.1.2 Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists
- Activity 2.1.1.3 Support integration of DMPs into the national and sub-national development plans. This activity involves organizing workshops for stakeholders to meet, share documents and integrate the drought management plans into national and sub-national level development plans.
- Activity 2.1.1.4 Support formulation of bye-laws and ordinances at sub-national and lower political units. The support required is facilitating the organization of a workshop for formulating as well as deliberating on the specific bye-laws.

Output 2.1.2: Adaptive capacity of institutions, farmers, and pastoralists in drought management improved

Activities

- Activity 2.1.2.1 Undertake a capacity needs assessment to identify gaps and hindrances to effective drought management
- Activity 2.1.2.2 Develop capacity building plans for regional, national and sub-national levels
- Activity 2.1.2.3 Develop capacity building materials
- Activity 2.1.2.4 Undertake exchange visits and learning tours for cross-learning in areas with successful drought management innovations including best water management practices
- Activity 2.1.2.5 Train staff managing EW information centers
- Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions
- Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach
- Activity 2.1.2.8 Support farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services. In this activity farmers and pastoralists will be provided with inputs

Outcome 2.2: Partnerships for drought management at regional, national and local levels strengthened

Output 2.2.1: New/existing regional and National arrangements /networks for drought management supported

Activities

- Activity 2.2.1.1 Support review/development of MoUs, protocols and stock route agreements for Drought Management and reducing conflict between farmers and pastoralists
- Activity 2.2.1.2 Facilitate the establishment of regional and national drought management multi-sectoral/stakeholder platforms to coordinate partner efforts
- Activity 2.2.1.3 Support regional and national partners to jointly mobilize resources for Drought Management in a changing climate context.

COMPONENT 3: DROUGHT AND CLIMATE CHANGE ADAPTATION ACTIONS

76. Component three aims at increasing resilience of smallholder farmers and pastoralists by supporting them to undertake concrete innovative and appropriate sustainable land, water, crops and livestock management measures or technologies. It is understood that currently, smallholder farmers and pastoralists have limited drought adaptation technologies that have consequently caused the extremely low productivity characterized by low crop and livestock food production levels, food insecurity and low incomes. The proposed project seeks to understand the current status of water security by focusing on surface and groundwater resources, soil and water conservation, crop and livestock production and sources of incomes. Some of the specific climate change and drought adaptation interventions include: developing soil and water conservation, water harvesting and storage structures e.g. simplified water jars, rock water harvesting, construction of sunken sand dams and water ponds. Mini-irrigation systems to support crops during water stress will be constructed. Underground water sources e.g. construction of boreholes and water wells will be constructed. Drought resistant pastures and crops will be promoted to enhance the resilience of pastoralists and farmers. The project further aims to establish an innovative competitive grant scheme targeting household value addition to food crops as well as food crop and livestock products. The competitive small grants scheme will focus on encouraging and rewarding the efforts of the most vulnerable among smallholder farmers and pastoralists such as the women, youth and elderly. Such efforts sought for evaluation will be on drought adaptation actions or IGAs. For instance, the innovativeness of the competitive grant scheme will include interventions on alternatives energy sources (solar, improved energy stoves, etc.), energy saving innovations, interlocking blocks and charcoal briquettes manufactured from household waste such as briquettes from crop residues will be promoted. Pasture management techniques- including growing fast-growing pasture varieties and storage as silage or hay for longer term use by

domestic animals, improved livestock breeds of animals (cattle and goats), drought-resistant crops will be tackled. These are some of the probable innovative drought adaptation actions that could be rewarded under the competitive small grants scheme of the proposed project. These aspects are covered under outcome 3.1 and outputs 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5 and 3.1.6.

Outcome 3.1: Increased uptake and usage of concrete and innovative drought adaptation actions

Output 3.1.1: Innovative water and soil conservation structures constructed

Activities

- Activity 3.1.1.1 Undertake assessment on surface water utilization/potential/availability and develop water Management Plans in project sites
- Activity 3.1.1.2 Construct appropriate, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, valley dams, rock water harvesting, roadside water harvesting facilities, water ponds, and locally dug underground tanks, deep and shallow wells. Furthermore, Contour Stone Bunds and Stone Lines for water and soils conservation will be established.
- Activity 3.1.1.3 Construct mini-irrigation and water delivery systems (e.g. gravity flow scheme, micro-irrigation systems, check dams, drip irrigation borehole irrigation, and solar powered irrigation systems)
- Activity 3.1.1.4 Support protection of water wells and springs to ensure quality, quantity and efficient water use by providing inputs, for instance, live markers around the wells. Train the established water management committees to protect water wells and springs to ensure quality, quantity and efficient water use
- Activity 3.1.1.5 Promote appropriate soil and water conservation measures (e.g. terraces, contours, conservation/minimum tillage, pit gardening, Zai pits and home gardening). other soil and water conservation measures (e.g. Integrated soil fertility management, terraces, contours, conservation/minimum tillage, pit gardening, Zai pits and home gardening)

Output 3.1.2: Groundwater sources established/ improved

Activities

- Activity 3.1.2.1 Undertake assessment on groundwater utilization/potential/availability and develop groundwater Management Plans in project sites
- Activity 3.1.2.2 Review/develop regulatory framework and guidelines on groundwater sources
- Activity 3.1.2.3 Restore degraded water catchments to improve recharge rates of groundwater

Output 3.1.3: Adaptive agricultural practices for improving crop and livestock production promoted

Activities

- Activity 3.1.3.1 Promote fast growing and drought resistant crop varieties (e.g. Promote agro-silvopastoral systems (dryland agroforestry) (e.g. fast-growing multi-purpose tree species such as *Acacia mearnsii*,)
- Activity 3.1.3.2 Promote agrosilvopastoral systems (dryland agroforestry) (e.g. fast-growing multi-purpose tree species such as *Acacia mearnsii*, integrated with crops and livestock rearing)
- Activity 3.1.3.3 Provide inputs for irrigated agriculture technologies (Drip irrigation, small irrigation etc.)
- Activity 3.1.3.4 Promote climate-smart agricultural practices

Output 3.1.4: Adaptive livestock and rangeland practices enhanced

Activities

- Activity 3.1.4.1 Promote improved rangeland management practices (e.g. developing of rangeland management plans, reduction livestock stocking, integrated pest and disease management)
- Activity 3.1.4.2: Support introduction of drought-tolerant livestock breeds. The project will collaborate with animal research/breeding centers in the targeted countries to identify livestock breeds that are able to feed on poor quality forages (a characteristic of drylands) and crop residues. Often these are the breeds that have low feed requirements and yet produce better quality livestock products in the drylands.
- Activity 3.1.4.3: Promote hydroponic systems for growing nutritious fast-growing cereals for livestock (animal feeds). Hydroponics agricultural systems have the advantage of growing crops with less water and moreover recyclable. The other merits of the system are that it requires a small area of operation, plants grow quicker, production is throughout the year and there is quality control of the plants being raised. The project will train potential farmers/pastoralists to adopt the system and will select women and youth groups to demonstrate the technology for future scale up/replication
- Activity 3.1.4.4 Support farmers and pastoralists to prepare high-value silage and hay for livestock during dry spells. The targeted communities will be trained in this aspect to increase on the production of livestock products. Preparation of nutritious silage and hay is a function of its exposure to appropriate weather condition, methods of collection of materials from the field, using optimum temperatures for curing. Other ways to increase the quality of hay and silage are the size of particles used in its processing and fiber ratios. High-value silage and hay will be made through the use of proper harvesting techniques of the materials and good management.
- Activity 3.1.4.5: Support formation and/or facilitate existing livestock associations/groups/cooperatives at the community level.

Output 3.1.5: Enabling environment for smallholder farmers and pastoralists' adaptive activities created

Activities

- Activity 3.1.5.1 Introduce and promote Index-based weather insurance in partnership with insurance companies. The targeted communities face the challenge of addressing residual losses and damages due to climate change risks. The focal countries require being supported to improve contingency measures and risk mitigation strategies. The DRESS-EA project will mobilize partners to support target countries to enhance knowledge and capacity on innovative risk insurance. Further, the project will collaborate with relevant partners and existing initiatives in the insurance sector to improve understanding of the risk profiles of the targeted countries. This information will be useful to connect the potential beneficiaries to providers of the risk insurance solutions. The project will also support countries to explore climate risk-pooling insurance solutions and other insurance products to address residual losses to climate risks.
- Activity 3.1.5.2 Conduct drought risk assessments on the agriculture value chain
- Activity 3.1.5.3 Facilitate farmer and pastoralists associations/cooperatives to generate analyze and share market information.
- Activity 3.1.5.4 Create linkages between farmer and pastoralists associations/cooperatives at regional, national and sub-national levels to enable sharing of market information

Output 3.1.6: Environmentally friendly IGAs ([e.g., Pottery, Beekeeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted

Activities

- Activity 3.1.6.1 Support women and youth groups with inputs for IGAs including (e.g. growing of sisal and Aloe vera to support rope production and art crafts; beekeeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism. Farmer groups will be trained in modern techniques of sisal and Aloe growing. Also, the project will assist farmers to acquire high-value planting materials. Aloes spp that grow in dryland and produce quick returns through the sale of the aloe gel will be targeted. For example, Aloe ferox grows quite well in drylands and produces bitter extract and leaf powder for use as a constipation remedy as well as supporting immune function. This product is highly marketable and required by pharmaceutical companies. Linkage of collaboration between producers (farmer associations) and a prospective buyer will be made.
- Activity 3.1.6.2 Provide competitive small grants targeting smallholder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions.
- Activity 3.1.6.3 Provide inputs for value addition crop and livestock products

Selection Criteria for beneficiaries of the IGAs and competitive small grants scheme

77. The people and/or communities that will be most affected by the project activities in accordance with the ESMP of the proposed project will be deliberately targeted for undertaking the environmentally friendly IGAs and later on access the competitive small grants scheme. Such vulnerable members of the population are for instance communities/people whose properties or sources of income have been affected by the project such as the indigenous peoples for example the Karimojong in Rupa Sub County, Uganda. The views/opinions of such people will be considered. Deliberate efforts will be made to consult them about which income generating activities they would be interested in and willing to undertake. Such people/communities will be prioritized such that deliberate efforts are made to reach out to the most vulnerable members of such communities. Furthermore, the most vulnerable members among the small holder farmers and pastoralists including women and youth will be prioritized as beneficiaries for the environmentally friendly IGAs and small competitive grants scheme. The selection criteria for such populations/ individuals will include:

Criterion 1: Land use and ownership

78. The people and/or communities that inhabit areas and/or sites or lands where the project interventions have been planned to be undertaken will be accorded maximum priority. The impacts of such project activities could potentially affect the properties and income sources of the most vulnerable among people and/or communities.
79. As provided in the ESMP framework for the proposed project (Annex 4), as a form of compensation such people will be deliberately allowed access to the support for the environmentally friendly IGAs as well as the competitive small grants scheme. Efforts will be made throughout project implementation to ensure that such people are involved in all the consultative meetings and workshops such that their views, opinions and priorities are accorded due consideration.

Criterion 2: Vulnerability

80. The most vulnerable groups that heavily rely on the environmental/natural resources in the proposed project areas for their livelihoods and are most exposed to hazards risks will be selected for the IGAs and Competitive small grants scheme. Women and youth will be deliberately prioritized.

Criterion 3: Gender

81. In consultation with local leaders or community leaders such as the traditional elders, at least 40% of the women will be deliberately selected for the IGAs support. Similarly, for the competitive grant scheme, women especially those engaged in innovative value addition IGAs will be selected.

Criterion 4: Resource users

82. Populations using natural resources and deriving their income from them will be deliberately prioritized in accessing and participating in project interventions and the alternative income generating activities. Their knowledge of resources and their dynamics is a major asset for conservation, rehabilitation and restoration actions of habitats. It is understood that, their proximity to and close interaction with the natural resources gives them relatively wide knowledge, skills and experiences that could be utilized in project implementation.

Criterion 5: Impacts

83. Communities that will be most affected by the project interventions e.g. construction of water harvesting and storage as well as small irrigation systems, water points and restoration of water catchments will be targeted for IGAs and small grants scheme. Such an approach will be deemed to compensate them against the project impacts.

Criterion 6: Education

84. Young graduates living in and around the project sites and are interested and willing to write micro-projects on alternative income generating activities and any other value addition interventions e.g. drought adaptation actions will be selected for the IGA and small grants support. This approach is not only advantageous in halting rural exodus but also in posterity promotes the sustainability of project results.

COMPONENT 4: KNOWLEDGE MANAGEMENT AND AWARENESS CREATION

85. There is limited awareness on drought risks and adaptation actions amongst stakeholders leading to poor planning and responses to drought risks and disasters with low crop and livestock yields hence food insecurity and low incomes. This component seeks to support knowledge generation, packaging, and dissemination between and across stakeholders in various institutions within the targeted countries in the region.

86. The activities of the proposed project basically facilitate institutions to generate knowledge on drought risk management, undertaking study tours and exchange visits, documenting lessons learned or best practices and generally facilitating knowledge exchange. The information, lessons learned, best practices and innovative technologies will be documented and shared for the use by various stakeholders. The specific activities of this component are highlighted under outcomes 4.1 and 4.2 and outputs 4.1.1 and 4.2.1.

Outcome 4.1: Knowledge and awareness on drought risk management increased

Output 4.1.1: Good practices and lessons on drought management, EWS, and Climate Change impacts documented and disseminated

Activities

- Activity 4.1.1.1 Document lessons and best practices from project interventions. From the onset of project implementation, lessons and best practices that can be replicated will be documented. This will also promote sustainability as it will promote continuity of the good practices identified even beyond the project implementation period.
- Activity 4.1.1.2 Generate and package information dissemination materials on EW, CC and drought adaptation actions in forms for easy uptake (e.g. policy briefs, brochures) adapted to the various stakeholders. Generate and package information dissemination materials on EW and drought adaptation actions in forms for easy uptake (e.g. policy briefs and brochures). The packaged information will be done commensurate with the various levels i.e. at Policy (national and sub-national levels), technocrats, and community levels.
- Activity 4.1.1.3 Disseminate/share knowledge and information through the use of existing and popular platforms e.g. electronic and print media as well as telecommunications that is easily accessible to the stakeholders.

Output 4.1.2 Drought information management strengthened

Activities

- Activity 4.1.2.1 Support existing channels/networks for information generation and dissemination at the regional level (e.g. GHACOF for EW and IDDRISI for drought management platform and national platforms)
- Activity 4.1.2.2 Engage policymakers in the dissemination of drought management information and best practices
- Activity 4.1.2.3 Support drought management working groups to share and disseminate the information. This involves organizing workshops and meetings for vulnerable groups of women and youth to share and disseminate information on drought management.
- Activity 4.1.2.4 Facilitate empowerment of women and other vulnerable groups on water management in a context of drought

87. The proposed project targets smallholder farmers and pastoralists that are threatened by the changing climate risks from recurrent and prolonged droughts that negatively impact on their sources of livelihood in the IGAD region. The project basically intends to increase the resilience of such populations to the impacts of recurrent and prolonged droughts. In fact, recurrent and prolonged drought not only limit agricultural production but also lead to chronic scarcity of water, food, and pastures for human and animal/livestock populations of communities especially in arid and semi-arid areas in drylands within the IGAD region.

88. The tables in annex 5 present the training plan and the key modules as well as the associated topics to be undertaken within the framework of the capacity building process:

B. Promotion of new and innovative solutions to climate change adaptation

89. First of all, pastoral and agro-pastoral communities in the four targeted countries have experienced drought pressure for quite a long time. Their survival is essentially dependent on climate-sensitive livelihoods that are derived from fragile and degraded natural resources amidst weak and inadequate extension services for improved natural resources management. The abilities of these communities to cope with climate-related events such as droughts have greatly remained weak. The ability of local community populations and ecosystems in the proposed project areas to recover from the shocks is largely limited. Therefore, this project will promote new and innovative solutions by employing a Regional Participatory Learning and Action Approach. In this approach, new and already existing innovative solutions to communicate, manage and adapt to climate change and drought impacts will be identified through participatory processes involving gatherings at national, sub-national and regional levels. Considering the project design, it essentially seeks to develop and maintain a strong linkage between the stakeholders at the regional level and others including smallholder farmers and pastoralists at the sub-national levels. Such linkage has been and continues to be a major hindrance to the resilience of communities to climate change impacts and drought. Smallholder farmers and pastoralists rarely access early warning information on droughts. If they did, still they rarely use it to plan the various adaptation activities. This project innovatively harnesses, develops and enhances the communication channels and linkages, develops new and upgrades existing tools and technologies for various stakeholders including smallholder farmers and pastoralists in the focal countries. The proposed project also seeks to provide fora and platforms where stakeholders can easily share information, and other opportunities for managing climate change impacts and drought risks. The project further innovatively plans to train extension staff such that they could easily support knowledge and capacity building among smallholder farmers, pastoralists and other stakeholders.

90. Another new and innovative solution to climate change adaptation is the inclusion of small competitive grants to stimulate and reward hard work. Small competitive grants will be provided to the most vulnerable yet organized farmers' groups including women and youth with innovative ideas. Women and youth groups will be provided an opportunity to present and showcase their innovative climate change adaptation and drought management ideas or mini-projects. Some of the innovative IGAs activities and drought adaptation actions envisaged under the competitive small grants program include: *Training, skills building* and *engaging* in gender responsive and home-based income generating activities such IGAs include pottery, production of energy saving stoves and briquettes making for vulnerable members of the community (e.g. women, youth and the elderly). Smallholder farmers and pastoralists interested in pursuing specific IGAs will be supported with training sessions and facilitators or experts to be knowledgeable, skilled and perfect these activities and develop innovative ideas. It is well known that among smallholder farmers and pastoralist communities in the four selected focal countries in the IGAD region, women are essentially responsible for home keeping where they manage homes daily with numerous domestic chores. The men may not allow them to travel far or be away from home for relatively longer times unless they are attending regular women group meetings for household development. Therefore, promoting IGAs that respond to such society social set up for stay home women and mothers as well as the elderly is a major innovation that enhances sustainability under the proposed project. In this case, such vulnerable members of the community stay home and focus on making such products as pottery, weaving sisal and other crafts, producing briquettes and energy-saving stoves which they later sell for income. Women and the elderly can ably engage in such home-based productivity by accessing the funds under the competitive small grants scheme which they invest to ably produce more for higher incomes. One other area of innovation could be *adding value* to some of the products of pottery, energy saving stoves, and briquettes through better designs that do not compromise the overall purpose of the product. They could also innovate by customizing the products to various stakeholder needs and ably earn more money from them.

91. In terms of innovative drought adaptation measures under the competitive small grants program, notable activities include *training* and *skills developing* and *value addition* to the various drought-resistant food crops and food crop

products; drought tolerant livestock products. Similarly, Smallholder farmers and pastoralists interested in pursuing such IGAs will be supported with training sessions and facilitators or experts to be knowledgeable, skilled and perfect these activities and develop innovative ideas. For instance, among smallholder farmers' crops such as tubers and cereals could be ground using local materials and stored for longer periods. This way a farmer can rest assured of higher incomes for a relatively longer time. Also, pastoralist women and girls are known and credited for adding value to milk products, for instance, they skillfully process milk to ghee and store such a high-value product longer. Aware that there are similar products on the market, the project will invest in producing better design of the products to improve branding and contribute to obtain a specific label for products such as milk products, or other such as honey, pottery, etc. This will attract more customers hence, increase incomes. The project will create market linkages between producers and potential buyers. This will be possible through facilitating producers to participate in business tours, supporting producers in trade shows (to exhibit the products), business forums etc. In addition, the project will support radio talk shows on products generated during project implementation. The proposed project will also support these vulnerable members of the community to innovate more using the competitive small grants scheme. The ideas or mini-projects will be evaluated competitively under a specific call for innovative ideas where the best persons are evaluated following specified criteria will be awarded the small grant for implementation. The following criteria will be used to select the beneficiaries for the competitive small grants scheme: They should (i) be women, youth or men that are already actively participating in the DRESS-EA project activities, special focus will be on vulnerable and marginalized groups; (ii) the rationale should be for IGA, (iii) be knowledgeable and skilled in the IGAs and drought adaptation measures they intend to innovate in, (iv) write, cost and present their ideas, (v) the innovation plans should be feasible with net profit, (vi) have the capacity to scale up the innovation at the end of the project, (vii) activity that contributes to resilience to climate variability and change. One other innovative aspect of the proposed project is the introduction and promotion of Index-based weather insurance in partnership with insurance companies. In this activity, appropriate insurance products that could help smallholder farmers and pastoralist reduce and offset climate change-related losses from crop and livestock and other livelihood sources will be promoted in partnership with insurance companies. The targeted communities face the challenge of addressing residual losses and damages due to climate change risks. The focal countries require being supported to improve contingency measures and risk mitigation strategies.

92. Among the relevant institutions promoting innovation; research & development and technology transfer on climate change that the project will collaborate with, there will be the involvement of IGAD Climate and Predication Centre (ICPAC) which is the technical arm of IGAD with role to generate, apply and disseminate climate products. Secondly, there are research institutions in the target countries providing innovative drought ideas. These include in Djibouti (the Ministry of Higher Education and Research is the focal point ministry for research and innovations and they carry out research on climate related resilience aspects including drought; Kenya (International Livestock Research Institute), Sudan (Hydraulic Research Centre) and Uganda (Resilience Africa Network-RAN with an Eastern *Africa resilience* Innovation Lab (RILab) located in Makerere University.

C. Economic, social and environmental benefits

93. The DRESS-EA project's design promotes activities that are compliant and compatible with the ecological and social context of smallholder farming and pastoralist in the IGAD region as well as the Environmental and Social Policy of the Adaptation Fund.

At the socio-economic level

94. The project will directly contribute to improving the populations' livelihoods, across the four selected countries in the IGAD region, through innovative approaches and measures and income-generating activities. The development of new EWS infrastructures and the improvement of existing ones at regional and national levels and the organization of smallholder, pastoralists and vulnerable groups of women and youth will serve to enhance their livelihoods.

95. In fact, activities such as promoting the growth of drought-resistant crops and drought tolerant breeds of livestock, soil and water conservation measures and climate-smart agriculture are expected to increase incomes. The livelihoods improvement will also be based on the development and promotion of IGAs (ecotourism, beekeeping, sisal, and crafts production, energy saving stoves, briquettes and promotion of interlocking bricks for construction).

96. Furthermore, these actions would also socially enhance and ensure food and water security for the drought-affected populations in the four countries by limiting the drought-related risks on agriculture and pasture and health (water-related diseases). Indeed, the project plans to improve water resources quality and quantities, to prevent communities from natural disasters and avoid epidemics.

97. Another benefit from such measures would be reduced social unrest, conflicts and, migration of community members seeking water and pastures and other sources of livelihoods. Therefore, in posterity, these measures would socially reduce people's instability and migration across the countries as well as across the regions within the countries.

98. Some activities of the project are specifically targeting women, women-headed households, and vulnerable groups by involving them in the consultative processes. In addition, to reduce their vulnerability to drought, for instance, the competitive small grants programme, improved cook /energy saving stoves and briquettes stoves will be introduced and promoted for both income generation and improving resilience to climate change. The stoves will also have the positive impact of reducing women's and children's burden of collecting fuelwood. Women could then spend more time on productive activities. The youth will also be engaged in activities such as pottery and ecotourism.

99. Overall, the planned interventions of the proposed project provide concrete socio-economic and environmental benefits to ecosystems and populations especially the vulnerable groups including women and youth among smallholder farmers and pastoralists in the region. The interventions essentially reduce pressure on the ecosystems so that they can provide the goods and services to vulnerable populations upon which they derive their livelihoods. It is evident that with such planned interventions in early warning systems, (capacity building efforts, soil and water management, surface and groundwater improvement, climate-smart agriculture, range and livestock management and the proposed IGAs) not only make the vulnerable women, youth, children and elderly resilient against drought and climate change variability but also provide them with concrete benefits in terms of food, crop products, livestock products, income/money from sale of such products and clean and safe water. Developed water points support women and children in reducing the distance traveled to collect water. The stoves will also have the positive impact of reducing women's and children's burden of collecting fuelwood. Women could then spend more time on productive activities.

At the environmental level

100. The project will have very high impacts on the natural ecosystems' restoration and management. The implementation of the proposed drought EWS will allow the reduction of the impacts related to climate changes disasters especially droughts. The information that the drought EWS will generate at the appropriate time will help the community leaders, the natural resources managers and the individual smallholder farmers and pastoralists to develop contingency plans/emergency plans and eventually reduce the damages and losses associated with climate change and droughts. The project will develop specific contingency plans based on the analysis of the vulnerabilities of ecosystems and populations.

101. The development of drought management plans or reviewing the existing ones will greatly contribute to drought management at various levels. In addition, the implementation of concrete drought adaptation actions will also have concrete benefits on the ecosystems through the implementation of adapted approaches, measures and actions.

102. Moreover, during the project implementation period, the activities to be undertaken will have direct environmental benefits. For instance, the silvopastoral dryland agroforestry and the rangeland management practices will help reduce the pressure on the ecosystems and preserve biodiversity.

103. Activities will also focus on surface and groundwater resources by drawing up their current status and by undertaking activities for better mobilization and use efficiency. This will be achieved through the implementation of innovative water and soil conservation structures, the establishment, and enhancement of groundwater sources and the promotion of adaptive agricultural practices. The concrete impact of the project on developing surface and groundwater resources is the availability of clean water resources for human and livestock populations among smallholder farmers and pastoralist communities in the IGAD region.

104. The lessons learned and the good practices to be adopted will be extended to sites in the four participating countries and other countries and sites in the IGAD region. This will be achieved through the involvement of the populations and actors at local and central level. The planned sensitization and communication activities will ensure the mobilization of decision makers and local population and their engagement for a sustainable management of the ecosystems in the focal countries. The results of dissemination and scaling up in addition to the awareness-raising actions will be the basis for sustaining the project's achievements and their ownership by the population. Capacity building of the smallholder farmers, pastoralists, and other involved stakeholders will focus on the approaches and adapted techniques of managing drought-prone areas in other regions/areas.

105. All these are anticipated benefits of the project interventions. However, to mitigate negative impacts of the interventions in compliance with AF ESP, Environmental and Social Impact Assessments, Gender analysis supported by a complete gender action plan as well as a grievance redress mechanism have been undertaken during the development of the full proposal document. Beyond the lifespan of the project as a way to further ensure sustainable

benefits to vulnerable groups, it is proposed that a study will be undertaken to develop gender responsive and scale-up strategies for drought, CC and early warning technologies among women, and other vulnerable groups (Activity 4.1.2.4).

Table 2:Benefits of the project

Outcome of the project	Economic benefits	Social benefits	Environmental benefits
Outcome 1.1: Increased use of effective Early Warning Systems by stakeholders	▪ Reducing agricultural production losses through better management of drought areas using indicators.	▪ The implementation of the proposed drought EWS will help in safeguarding social assets. ▪ The livelihoods enhancement of smallholder, pastoralists and vulnerable groups of women and youth. ▪ The information will provide input to the population in order to adapt their agricultural production and practices.	▪ A better understanding of the interaction between climate, environment and human factors which impact the sustainable use of natural resources.
Outcome 2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened		▪ Drought management plans will provide opportunities for social cohesion and further work on developing resilience at national and sub-national levels.	▪ The outcome will contribute in lowering the excess demand for natural resources through fair and equitable sharing of water resources.
Outcome 2.2: Partnerships for drought management at regional, national and local levels strengthened	▪ Local communities will benefit in term of new ways of resilient economic activities if their views are integrated for developing drought adaptation instruments. ▪ The participatory approach will help in creating new work opportunities.	▪ The participation and involvement of people will contribute to develop long-term sustainable products and services which will be beneficial in increasing personal and national growth.	
Outcome 3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	▪ Improve the gross income through promoting the growth of drought-resistant crops and drought tolerant breeds of livestock, soil and water conservation measures and climate-smart agriculture. ▪ Develop specific activities on value chain associated to adaptation needs. ▪ Reduce expenditure through bringing together the economic sectors and stakeholders. ▪ Develop new careers.	▪ Improvement of life quality through income increase ▪ Securing of the drinkable water supply. ▪ Enhancing of food and water security for the drought-affected populations. ▪ Reducing social unrest, conflicts and, migration of community members seeking water and pastures and other sources of livelihoods	▪ Efficient use of water. ▪ Reduce the pressure on the ecosystems and preserve biodiversity. ▪ Improved land management/conservation infrastructure, leading to reduced soil loss and increased quantity of agricultural produce. ▪ Improving water resources for human and livestock populations. ▪ Improve the efficiency of projects
Outcome 4.1: Knowledge and awareness on drought risk management Increased	▪ Increase in availability of regional expertise decreases the costs for external know-how	▪ Adaptive capacity of communities to drought increased ▪ General raising of awareness of importance of ecosystems services to the community and the need for an enhanced role by the community ▪ Strengthening the active participation of vulnerable populations in decisions linked to climate change ▪ Strengthen cohesion and integration between stakeholders	

D. Cost-effectiveness

106. The proposed project focuses on using the regional approach towards improving drought resilience of smallholder farmers and pastoralists through enhancing and developing an EWS. The project has a twofold objective, it aims at the one hand to sharing updated and relevant information to announce the drought on a regional scale, which will enable the deployment of a regional action plan where the joint capacities and measures of intervention will be more efficient and more cost-effective. On the other hand, it plans to contribute to improving the conditions and infrastructures of the beneficiary countries in the most vulnerable sites they selected, thus permitting an effective response to drought and greater resilience to climatic variations and changes, which intensified this situation over last decades.

107. Drought phenomenon is a transboundary issue faced by the four target countries, so the DRESS-EA project has similar challenges to be addressed allowing capacity building and support processes streamline, thus creating an economy of scale in implementation. It encompasses an important capacity-building component of the various stakeholders, policy makers, managers, technicians, local government representatives, local community representatives and people. It further proposes to support the vulnerable members such as women, children, youth and elderly in undertaking the innovative IGAs. Undertaking these interventions in four selected countries of the IGAD region is not

only catalytic but also pioneers innovativeness in addressing climate change and drought that transcend the political boundaries. Comparing taking no action and actually undertaking the proposed project interventions basically leads to positive cost-benefit ratios and Net Present Value (NPV), probably with varying magnitudes.

Determination of project cost effectiveness

108. This project has been developed targeting its implementation for a period of four years targeting the detailed human populations in the countries as detailed in table 3. The project has four components. The total project budget for is USD 13,079,540 (Thirteen million seventy-nine thousand five hundred forty. The detailed budget for each component splits from the entire project budget indicated in table 4.

Table 3: Countries cost/investment

Country	Project sites	No. of people
Djibouti	Dikhil	88,948
	Biedley	8,000
Kenya	Kitui	481,282
	Samburu	224,000
Sudan	Kosti/El Salam	136,000
Uganda	Rupa	25,785
Grand Total		964,015

Table 4: Total project cost/investment

Components	Cost (USD)
Component 1	2,387,100
Component 2	1,750,000
Component 3	6,279,920
Component 4	592,000
Management fees	2,070,520
Total	13,079,540

109. Based on the World Bank (2015) and ICPAC, 2017[37] population figures and the socio-economic characteristics in the Greater Horn of Africa including the IGAD, the average population growth rate of three percent (3%), it is anticipated that, at the commencement of the project in the next two years, the target population within the project sites will be 1,022, 550 inhabitants. The average household size is 6 persons. Therefore, considering the target population, the estimated number of households is 170,425 persons. According to the results framework end of project target milestones, 60% of the target population is expected to have improved incomes as a result of improved drought and resilience. Thus, a total of 613,530 people will be directly affected by project interventions. Based on the total investment of the project, it can be estimated that the cost of the project per beneficiary will be USD 21.3.

110. The financial profitability of the project investment can be determined based on the following financial appraisal techniques: *i)* Benefits cost ratio, *ii)* Cash Flows, *iii)* Net financial Present Value (NPV), and *iv)* (Internal) financial rate of return (IRR)

Financial Analysis

111. Direct benefits of the project can be estimated from the activities or interventions undertaken by the project beneficiaries. The monetary evaluation of the avoided effects of the concrete adaptation actions including the physical quantification of the impacts and substituted/ exchanged value is vital for the financial analysis of the project. This implies that multiplication of the number of units affected by their monetary value. The monetary value of these interventions will be made to obtain total direct benefits accruing to project beneficiaries. The analysis will take into consideration, the following:

Discount Rate: The discount rate also called the hurdle rate or cost of capital is the expected rate of return for an investment. In other words, this is the interest percentage that an investor anticipates receiving over the life of an investment. Therefore, it will take into consideration (i) the market interest rate for a comparable period; (ii) the inflation rate and (iii) the risk premium. For the *DRESS-EA* project, the discount rate used is 8%. This rate takes into consideration, among others, the inflation rate.

Project costs by component estimation: The main costs necessary for the implementation of the project are related to studies/consultancies, trainings, investments (infrastructure such as as the water related infrastructure, equipment such as the Early Warning System prototype and associated devices, etc...). These costs by components are estimated from the costs of the activities planned for the implementation of the project.

Project benefits and revenues Estimation: The project benefits estimation is mainly based on the added value generated by the promoted activities/project interventions.

Project Residual value estimation: Equipment, infrastructure and other equipment acquired during project implementation spanning several years. Given that the duration of the project is 4 years, these investments will have a residual value that will be taken into account at the end of the project period as a benefit.

Project Cash Flows estimation: annually over 4 years;

Project Net Present Value (NPV): is the sum of the cash flows;

Project Internal Rate Return: is the rate that leads to an NPV nil value. For this project, the rate that makes it possible to bring back the NPV to zero is 57.8%.

Table 5: Financial analysis for cost effectiveness of the project

Section	Year 1	Year 2	Year 3	Year 4
A. Cost components				
Component 1 costs	824 910	1 253 810	241 600	66 780
Component 2 costs	420 000	576 670	418 670	334 660
Component 3 costs	143 340	1 273 790	3 015 960	1 846 830
Component 4 costs	81 000	100 730	279 940	130 330
Execution costs (management units)	398 750	220 000	201 830	225 280
Implementation costs (management unit)	232 000	275 000	242 000	275 660
Total costs	**2 100 000**	**3 700 000**	**4 400 000**	**2 879 540**
B. Financial benefits				
Benefits from studies/consultancies	1 525 185	815 670	248 670	128 670
Benefits to water users		366 795	927 885	700 305
Benefits to trainers and trainees	120 000	397 005	307 005	307 005
Benefits to agricultural crop farmers		270 000	765 000	405 000
Benefits to agricultural livestock farmers and rangeland users		186 000	558 000	252 000
Benefits to business community	120 000	769 365	1 550 595	942 945
Benefits to the crafts associations/groups	35 000	190 020	825 030	600 000
Residual value				1 110 000
Total financial benefits	**1 800 185**	**2 994 855**	**5 182 185**	**4 445 925**
C. CASH FLOWS (B-A)	(299 815)	(705 145)	782 185	1 566 385
BENEFITS COSTS RATIO (B/A)	0,86	0,81	1,18	1,54
NPV				897 569
IRR				**57,8%**

112. From the financial analysis in (Table 5) the benefit cost ratios throughout the project duration are positive. The NPV is also positive with a positive Internal Rate of Return. The positive values of the financial appraisal parameters indicate that the proposed project is worth an investment and is therefore cost effective.

Advantages of the regional approach

113. It is worth noting that climate change and drought cannot be coordinated only at the respective national levels because these aspects are transboundary in nature. Therefore, regional coordination has comparative advantages that are cost-effective with positive cost-benefit ratios considering scenarios of implementing the interventions or not.

114. Implementing this project using the regional approach provides the following advantages. First of all, drought is a transboundary challenge that affects many countries including the four selected countries of the IGAD region. These transboundary challenges require using transboundary innovative solutions, hence the proposed regional approach to address the drought problem in the IGAD. In addition, the regional approach to tackling the drought challenge presents the advantages below.

(i) *Cooperation/coordination:* Drought is regional phenomena and as such, the data and information generated by each country will feed into the regional EWS and make it more efficient. In addition, the project will strengthen the regional capacity; build cohesion and provide platforms at the regional level.

(ii) *Knowledge, technology, and expertise:* A wider platform at the regional level to harness diversity of ideas, indigenous and modern knowledge, technologies and expertise in drought risk management will be established. This will facilitate exchange and experiential learning;

(iii) *Duplication:* The regional design will enable coordinated planning and implementation of interventions thereby minimizing duplication of efforts*;*

(iv) *Contribution to regional frameworks:* The project will contribute to the achievement of the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI). Overall, regionally led implementation is less expensive and faster. It helps build a pool of regional and national experts. The innovations generated are adopted more easily by the member countries and moreover, it promotes sustainability. It provides platform and means for the countries to share experiences, practices, lessons, knowledge, and resources.

E. Consistency with development strategies

115. The proposed project will contribute to achieving the respective national adaptation priorities. For all the four selected focal countries water and agriculture are priority sectors for adaptation to drought, in a Climate change

context. Consequently, the project is in alignment with national or sub-national sustainable development strategies, development plans, poverty reduction strategies, national communications and national adaptation programs of action. It is also consistent with national socio-economic priorities, national climate change priorities and national disaster risk management priorities.

Regional level

Protocol on the Establishment of a Conflict Early Warning and Response Mechanism (CEWARN) for the IGAD Member States, 2003	The CEWARN mandate is "to receive and share information concerning potentially violent conflicts as well as their outbreak and escalation in the IGAD region, undertake an analysis of the information and develop case scenarios and formulate options for response."
IDDRISI strategy, 2013	This is an initiative developed for driving a regional agenda to develop and harmonize policies, strategies, and systems throughout the IGAD region. It enhances cooperation and integration among the member countries and causes the execution of national and regional projects in a coordinated framework of implementation, aimed at ending drought emergencies.

National level

1) Djibouti

Intended Nationally Determined Contribution	Djibouti's mitigation contribution is to abate its greenhouse gas emissions by 40 percent by 2030 relative to the business as usual scenario. http://www4.unfccc.int/ndcregistry/PublishedDocuments/Djibouti%20First/CPDN%20Djibouti_9%20-%20CPDN%20-%20Format%20pour%20soumission%20CCNUCC.pdf
Primary Sector Development Master Plan 2009-2018	This is a reference framework for the planning and development of natural resources in the primary sector. The Ministry of Agriculture of Livestock, and the Sea, in charge of hydraulic resources, have prepared it. This plan aims at improving the contribution of the primary sector to the socio-economic development of the country by a better valorization of the resources of this sector.
Accelerated Growth Strategy for the Promotion of Employment 2015-2019	This is the first instrument for the operationalization of the Vision Djibouti 2035. It is built around four strategic axes: (i) economic growth, competitiveness and role private sector engine, (ii) human capital development, (iii) public governance and institutional capacity building, and (iv) regional development poles and sustainable development. It aims to achieve, for the 2015-2019 period, an average real GDP growth rate of 8%.
Vision Djibouti 2035	Achievement of the goals of the 2035 Djibouti vision will be achieved through the strategies that underpin each of the identified pillars and cross-cutting themes (Gender, Youth, and Environment).To address food and nutrition insecurity and combat food shortage, the 2035 Djibouti vision aims to promote a food and nutritional security strategy. In the context of more productive and sustainable agriculture, forestry and fisheries, Vision Djibouti 2035 provide for the promotion and development of agriculture, fishing, and breeding.
Second national communication, 2013	The development of this document demonstrates to the international community the vulnerability of the Republic of Djibouti to the impacts of climate change and its financing and capacity-building needs in the areas of both mitigation and adaptation.
National adaptation programme of action - NAPA (2006)	National adaptation programmes of action (NAPAs) provide a process for Least Developed Countries (LDCs) to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and/or costs at a later stage.
Strategy and Action Plan for the implementation of the Great Green Wall, 2011	The overall objective of the Strategy and Action Plan for the implementation of the Great Green Wall is to create sustainable socio-economic and environmental development conditions for the populations concerned by the GGW.

2) Kenya

Constitution of Kenya (2010)	Kenya's Constitution provides the basis for action on climate change by guaranteeing citizens a clean and healthy environment, which is a fundamental right under the Bill of Rights
Intended Nationally Determined Contribution	Kenya's mitigation contribution is to abate its greenhouse gas emissions by 30 percent by 2030 relative to the business as usual scenario. Kenya also commits to mainstream adaptation into Medium-Term Plans and to implement actions. Achievement of these contributions will require financial, technology and capacity building support (MENRRDA). http://www4.unfccc.int/ndcregistry/PublishedDocuments/Kenya%20First/Kenya_NDC_20150723.pdf
Second Medium-Term Plan of Vision 2030	Mainstreaming of climate change in national planning, by identifying actions to address climate change, many of them recommended in the NCCAP (MODP)
County Integrated Development Plans	Many county governments are addressing climate change in their policy and planning documents, including the CIDPs that outline development priorities (County Governments).
National Climate Change Framework Policy	Adopts a climate change mainstreaming approach that includes integration of climate change considerations into development planning, budgeting and implementation in all sectors and at all levels of government (MENRRDA).
Climate change legislation	A Climate Change Bill is expected to be enacted into law. This legislation includes the establishment of a National Climate Change Council that has responsibility for coordination of climate change actions, including mainstreaming climate change in national and county budgets, plans and programs (MENRRDA)
Draft National Policy	aims to further Kenya's national development goals through enhanced mobilization of climate finance (National

on Climate Finance	Treasury and MENRRDA)
National Climate Change Response Strategy, 2010	The first national policy document on climate change has improved understanding of the issue and has guided policy decisions (MENRRDA).
National Climate Change Action Plan 2013-2017	Sets out priority adaptation and mitigation actions that will help Kenya move toward a low carbon climate resilient development pathway. Effective implementation will be supported through the establishment of an enabling governance structure including a climate change policy and law, a funding mechanism and investment framework, a capacity development and management framework, and a national performance and benefit measurement system (MENRRDA).
National Adaptation Plan	Consolidates the country's vision on adaptation supported by macro-level adaptation actions that relate with the economic sectors and county level vulnerabilities in order to enhance long-term resilience and adaptive capacity (MENRRDA). http://www4.unfccc.int/nap/Documents%20NAP/Kenya_NAP_Final.pdf The NAP recognizes the governance and institutional arrangements for implementation of adaptation actions as stipulated in the NCCAP and Climate Change Act, 2016. With drought being the main hazard, the NAP recognizes that the National Drought Management Authority (NDMA) is a key institution in enhancing adaptive capacity. Established in 2011, NDMA is mandated to establish mechanisms to ensure that drought does not become famine and that impacts of climate change are addressed.
Green Economy Strategy and Implementation Plan	Sets out a framework to encourage a shift towards a development path that promotes resource efficiency and sustainable management of natural resources, social inclusion, resilience and sustainable infrastructure development (MENRRDA).
Agricultural Sector Development Strategy	The Agriculture (farm forestry) Rules require the establishment and maintenance of farm forestry on at least 10 percent of every agricultural land holding (MALF)
Draft Kenya Climate Smart Agriculture Framework Programme 2015-2030	Promotes climate resilient and low carbon growth sustainable agriculture that ensures food security and contributes to national development goals in line with Kenya Vision 2030 (MALF and MENRRDA).
REDD+ Readiness	The proposal outlines a strategy for developing REDD+ in Kenya (REDD+ Coordination Office, KFS).
Renewable energy policy tools	0% import duties and Value-added tax exemption on renewable energy materials, equipment and accessories; feed-in tariffs at a price level that attracts and stimulates new investment in the renewable energy sector (ERC).
Energy regulations	On solar water heating, energy management and solar photovoltaic systems were passed in 2012. The regulations require that: buildings using more than 100 liters per day shall use solar water heating systems; designated energy consuming facilities shall carry out energy audits and implement audit recommendations; and design, manufacture and sale of solar PV be licensed by the ERC. Draft regulations developed to set minimum energy performance standards for selected electrical appliances and improved biomass cookstoves (etc.)

3) Sudan

Intended Nationally Determined Contribution	Sudan intends to pursue implementing low carbon development interventions in three sectors of energy, forestry, and waste in line with Sudan's national development priorities, objectives and circumstances. http://www4.unfccc.int/ndcregistry/PublishedDocuments/Sudan%20First/28Oct15-Sudan%20INDC.pdf
Agriculture and Articulate a Future Vision and Action Plan for Agricultural Revival	In continuation of the strategy to support agriculture manifested in the declaration of the green mobilization and the preparation of the five-year strategic plan, the government has formulated the present status of agriculture and articulated a future vision and action plan for Agricultural in 2008. The overall mission of the agricultural development strategy is to transform agriculture from a sector dominated by subsistence production to a modern sector responsive to market signals and with substantial contributions to poverty reduction, growth, foreign exchange earnings and sustainable management of natural resources.
Interim Poverty Reduction Strategy Paper.	Interim Poverty Reduction Strategy Paper is a national multi-sectoral strategy paper of Sudan. Its main objective is the reduction of poverty in Sudan and providing the roadmap for the elaboration and implementation of the full Poverty Reduction Strategy Paper. The Paper covers the area of environmental protection, agriculture, and livestock.
National Action Plan for the implementation of the Great Green Wall for the Sahel and Sahara Initiative (GGWSSI) 2015	The National Action Plan for the implementation of the Great Green Wall for the Sahel and Sahara Initiative (GGWSSI) is a national action plan with a cross-sectoral approach. The timeframe of this Action Plan is 5 years between 2015 and 2020. The main objectives of the Action Plan are the restoration of degraded lands; forest and rangeland sustainable management; support to livelihoods and resilience of local communities.
National Adaptation Plan 2016	The Plan provides information on actions to reduce climate change vulnerability regarding water resources, agriculture and food security, public health, coastal zones, and rural communities in all the 18 states of Sudan. http://www4.unfccc.int/nap/Documents%20NAP/National%20Reports/Sudan%20NAP.pdf
National Adaptation Programme of Action 2007	In order to offer an effective basis for urgent and immediate action to reduce the mounting risks of climate change on the nation's most vulnerable communities, the government of Sudan has adopted the national adaptation programme of action (NAPA) in 2007. The overall goal of the NAPA process in Sudan has been to identify urgent and immediate activities to address climate variability and climate change within the context of the country's economic development priorities. http://extwprlegs1.fao.org/docs/pdf/sud148489.pdf
Second national communication, 2013	This document identifies specific adaptation measures to build future resilience against looming impacts.

Combat Desertification Law of 2009.	This Law consisting of 25 articles divided in V Sections aims at: establishing the competent authorities, at national and local level, to achieve: elimination or mitigation of desertification; achieving development of material and human capabilities; creating a successful environment to achieve the intended goals; and coordinating between them through a mechanism of supervision and follow-up.

4) Uganda

Intended Nationally Determined Contribution	The livelihood of the people of Uganda is highly dependent on the exploitation of her natural resources, including climate. In submitting this INDC, Uganda's priority is the adaptation. The country will continue to work on reducing vulnerability and addressing adaptation in agriculture and livestock, forestry, infrastructure (with an emphasis on human settlements, social infrastructure, and transport), water, energy, health and disaster risk management. Sustainable Land Management (SLM) and Climate Smart Agriculture (CSA) will be scaled up to increase resilience at the grassroots level.
National Climate Change Policy	The National Climate Change Policy is a national sectoral policy of Uganda. Its main objective is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures while promoting sustainable development and a green economy.
National Agriculture Policy, 2013.	This National Agriculture Policy (NAP) shall be guided by six principles derived from the country's lessons learned in implementing the PEAP, the PMA, and decentralized governance through the Local Government Act of 1997. The overall objective of the agriculture policy is to achieve food and nutrition security and improve household incomes through coordinated interventions that focus on enhancing sustainable agricultural productivity and value addition; providing employment opportunities, and promoting domestic and international trade.
Second National Development Plan (NDPII) 2015/16-2019/20.	This Plan is designed to propel Uganda towards middle-income status by 2020, in line with the aspiration of Uganda's Vision 2040. This Plan aims at strengthening Uganda's competitiveness for sustainable wealth creation, employment, and inclusive growth. This Plan prioritizes investment in five areas with the greatest multiplier effect on the economy, which are: (i) agriculture, (ii) tourism, (iii) minerals, oil, and gas, (iv) infrastructure development, (v) human capital development.
Uganda Vision 2040.	The present Uganda Vision 2040 lays out the general development objectives for Uganda over a 30-year period. Its goal is to transform Uganda from a predominantly peasant and low-income country to a competitive upper middle-income status country. Together with the National Development Plan, Uganda Vision 2040 provides the overall leadership and policy direction for job creation and priority setting. It prioritizes agricultural development as well as tapping into the youth demographic dividend. Agricultural production in Uganda is mainly dominated by smallholder farmers engaged in food and industrial crops, forestry, horticulture, fishing and livestock farming.
Uganda National Land Policy.	The Uganda National Land Policy is a national policy of the Republic of Uganda whose main goal is to ensure an efficient, equitable and optimal utilization and management of Uganda's land resources for poverty reduction, wealth creation, and overall socio-economic development. To this end, the document provides for a set of goals, including in the area of the environment.
Second national communication, 2014	This document summarizes up to date information as well as general and specific data on climate change in Uganda, the national greenhouse gas inventory, interventions made and/or proposed in adapting to and mitigating climate change. https://unfccc.int/resource/docs/natc/uganc2.pdf
National Adaptation Programme of Action (NAPA) 2007	Undertook the first preliminary assessment of the country's vulnerability to climate change, and identified its adaptation priority projects. The proposed project is anchored firmly in the priorities identified in the NAPA. The project will contribute towards implementing NAPA Priority projects in Uganda such as Community Tree Growing, Land Degradation Management, and Water for Production and Development Planning

F. Alignment with national technical standards

116. During the implementation of the project, the implementing entity (OSS) and the other executing entities must comply with the Adaptation Fund standards and policies such as the Environmental and Social Policy and the Gender Policy. In order to ensure the national ownership of the project and the sustainability of its expected outcomes, the project will also be implemented in accordance with the international and national standards of the 4 countries concerned.

117. Four National Executing Entities (NEE) will be involved in the project execution. The NEE of the DRESS-EA project will be i) the Ministry of Agriculture, Water Fisheries and Livestock of Djibouti – Directorate of Rural Hydraulics, ii) Ministry of Environment and Natural Resources-Climate Change Directorate for Kenya, iii) Ministry of Water Resources and Electricity of Sudan and higher council for Environment and Natural resources (HCENR) iv) Ministry of Water and Environment- Directorate of Water Resources Management of Uganda.

118. The National Executing Entities have been consulted during the development of the full proposal to ensure that all activities comply with relevant national standards, as well as the environmental and other statutory laws and regulations of the four countries. In the following tables are listed the laws and regulations related to Policies framework, Legal framework and Institutional Framework of most of the fields that are included into the DRESS-EA project. These tables present the purpose of the Policy and its relevance to the project. Other national laws on Environmental, Social and Gender assessment in each of the countries will be followed during the project execution and implementation to ensure compliance and to complement with the ESP of Adaptation Fund. It should be noticed that the ESIA reports has been submitted to the National Environment Authorities for review and compliance

verification with the national standards. In addition, compliance certificates will be provided by the incumbent national authorities and will be annexed to the ESIA study.

119. Project activities will be screened, their impacts assessed and depending on the magnitude of the impacts, they will undergo an Environmental Impact Assessment (EIA) or Review in accordance with EIA procedures and guidelines of the respective countries as well as the Adaptation Fund. Mitigation measures will then be proposed.

120. The national technical standards alignment is described in a set of tables produced for each country and presented in the documents in Annex 6. These tables describe the coherence between the planned activities of the DRESS-EA project and national or sub-national development strategies, poverty and national adaptation programs of action. At the same time, the tables list the conformity of DRESS-EA project activities with national technical standards such as Environmental Assessment Standards, the Risk and Disaster Management Framework, the National Early Warning and Response Mechanism as well as the Pastoral and Urban Conflicts Management. The detailed evaluation concluded that the activities proposed by the DRESS-EA project are fully compatible with the laws and regulations pertaining to the country's political (long-term Vision, Gender policy, National Adaptation Plan, National Drought Management Plan, National Environment Policy, Water and Irrigation policy); Legal and technical framework (Code of Environment and Water, Decree for National Early Warming Mechanism, Decree for Disaster management). These activities include: Water management, Disaster Risk Management, Setting up the Early Warning System to Drought, Transhumance, and especially the information and training of target audiences at EWS. Controls will be put in place to ensure that the project will not exacerbate inequities, harm marginalized populations and will not harm the environment. In order to finalize the project design, a number of stakeholder consultations were conducted to verify the interest and commitment of the project and to better define the activities and strategies for each component of the project.

121. In order to ensure that all Unidentified sub-projects (USPs) are compliant with the environmental and social policy requirements and/or standards of the respective countries, all sub-projects will be detailed per country during project implementation. In addition, as regards to the USP and according to OSS and Adaptation Fund standards, further Environmental Impact Assessments will be undertaken in compliance with the OSS and AF methodology as well as the National laws and standards. The USPs will be subjected to initial screening and categorized based on individual country requirements and specifications as stipulated in their Environmental laws and regulations. For Projects whose impacts can easily be mitigated, appropriate mitigation measures will be proposed and recommended for implementation by the project stakeholders. For those with more complex impacts that may need deeper studies, full environmental impact assessment will be recommended and undertaken before the actual activity implementation takes place.

122. An Environmental and Social Management Framework has been developed and annexed to this document. Four national Environmental and Social Management Frameworks has been established and takes into account the laws and regulations governing Environment and social issues in the target countries and well as the Environment and social policy of the adaptation fund. During the project implementation and since the kickoff workshop, all relevant laws, regulations and existing technical standards including water resources management, water infrastructure development, agriculture development, and other project related activities will be reviewed and relevant aspects observed including labor and public procurement procedures for project investments. The proposed project will be aligned to respect all current regulations relating to water, biodiversity and soil protection, and work for a better management of natural resources. The project will be implemented using the existing structures (Ministries). The respective Ministries are expected to spearhead and ensure that all relevant laws and regulations applicable to each Country are observed.

G. Project duplication

123. During the design process, all stakeholders, including other projects entities were consulted in order to avoid any potential duplication of efforts, resources or geographical coverage, and to ensure synergy between ongoing initiatives and the proposed DRESS-EA project.

124. The project will complement and create synergies with existing similar initiatives including projects and programmes. At the regional level the ongoing projects and programmes include:

125. The *Integrated Drought Management Programme (IDMP) in the Horn of Africa* promotes drought resilience of countries, communities, and ecosystems in the region. It is part of the global IDMP programme that the Global Water Partnership (GWP) and the World Meteorological Organization (WMO) launched in Geneva in March 2013 at the High-level Meeting on National Drought Policy (HMNDP). Overall, the IDMP HOA builds climate resilience, reduce economic and social losses, and alleviate poverty in drought-affected regions within the HOA through an integrated approach to drought. Specifically, the program operates in Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda covering all the focal countries for the DRESS-EA Project.

126. The programme facilitates collaborative and integrated approaches to achieve sustainable management of water and drought in the drought-prone areas of the HOA mainly focusing on enhancing strong partnership and strengthening capacities with the overall aim of developing resilience to drought and climate change in the HOA following an *Integrated Water Resource Management (IWRM) approach*. Its particular contribution is to strengthen partnership and influence policy and practice towards the better integrated management of drought in the HOA in a changing climate. The DRESS-EA Project will supplement this project by strengthening the capacities of different institutions in the focal countries to generate, package and disseminate drought information as well as supporting the implementation of adaptation actions. (1)

127. The *Agricultural Climate Resilience Enhancement Initiative (ACREI) Project* (Ethiopia, Kenya, and Uganda) focuses on enhancing the capacity of communities to cope and adapt to climate variability by building their resilience and their livelihoods which are dependent on climate-sensitive resources. The interventions are intended to technically improve climate forecasts using a regional approach and build the capacity of communities to understand and appropriately use climate information and related agro-advisories in decision-making to climate-proof their livelihoods, and thus enhance their food and nutrition security. The Project uses Agro-pastoralist Field School (APFS) approach, an adaptation of the well proven Farmer Field School approach as its main delivery mechanism that builds strongly on previous experiences. The Project uses Climate-sensitive APFS interventions in engaging communities in participatory group learning and experimentation coupled with Village Community Banking approach (VICOBA) to support community uptake of strategies and practices for resilient local food and income systems (2). The DRESS-EA Project will supplement efforts of this project by further simplification and packaging of drought information and support drought actions. The projects also are focusing on different parts of the countries (Uganda and Kenya) that are the same while others are different countries altogether (Djibouti and Sudan).

128. *Strengthening IGAD's capacity to enhance drought resilience in the Horn of Africa (SCIDA-II). (2016-2018).* The main objective of the project is to strengthen IGAD's competencies and services in order to help coordinate and implement the Drought Disaster Resilience and Sustainability Initiative (IDDRSI). IDDRSI's objectives are linked more closely with the fight to eliminate the causes of conflict and migration. The project uses the approach of building resilience by strengthening IGAD's and its Member States' capacity to develop adequate proactive policies and interventions to build drought disaster resilience and the project builds on the measures GIZ conducted in support of IDDRSI during the first phase from May 2012 through to December 2015 and covers all IGAD Member States. The project focuses on improving internal capacity for IDDRSI support at the IGAD Secretariat and within its institutions, boosting IGAD's capacity to deliver IDDRSI support services and to facilitate Member State implementation of cross-border IDDRSI activities, strengthening specific IGAD capacities for managing natural resources within selected IDDRSI clusters, strengthening peace and security as an integral part of cross-border IDRSSI measures as well as assisting IGAD to build up the basic capacity it needs to deal with the drought resilience-migration nexus (3). The capacity built by this project will contribute to the smooth implementation of the DRESS-EA Project and help upscale the capacity building component of the project for implementation of concrete adaptation actions.

129. At the *Famine Early Warning Systems Network (FEWS NET),* we use a methodology known as scenario development to assist in projecting food insecurity and future food assistance needs. FEWS NET has adapted common scenario building concepts to help analysts make sense of the complex food security landscape. Our process provides a logical structure to think through the interactions among the many variables that affect food security. At FEWS NET, scenario development is the methodology we use to make projections about acute food insecurity outcomes. This approach

is the basis of the analysis presented in our food security outlooks and updates. Scenario development allows FEWS NET to meet its core mandate of giving decision makers early warning about potential food security crises. (4)

130. The *Building Resilient Communities, Wetlands Ecosystems, and Associated Catchments in Uganda project* was approved in approved in December 2016 with the aim of enhancing Ugandan subsistence farmers' ability to deal with climate impacts including drought. It is estimated that 4 million people who live in and around Uganda's wetlands rely on them for food security. The impact of climate change, coupled with other environmental stresses, is increasing the degradation of these wetlands and associated ecosystems.

131. The Project is intended to will assist the Government of Uganda to take climate change effects into account in managing wetlands and associated ecosystems including include increased climate variability and extreme weather events, such as droughts, floods, high temperatures and violent storms.

132. It will also help Uganda to restore critical wetlands to improve ecosystem services - such as replenishing groundwater, improving flood control, and enhancing the livelihoods of subsistence farming communities through fishing and agriculture as well as enhancing the skills of people to diversify their livelihoods and become more resilient to climate shocks. The project will improve the ability of communities in sensitive wetland areas to reduce climate risks and prepare them for climate-related disasters including through decentralized early warning systems. The Project targets the south-western and eastern regions of the country that are home to some most vulnerable people more than half of them women. (5)

133. The implementation of the DRESS-EA project will supplement the activities of this project as it will improve access to information of the most vulnerable people and help in the up-scaling capacity building of the government and local communities in the implementation of adaptation actions in the project focal areas (Karamoja region).

134. The *Drought resilience in northern Kenya Project* focuses on the counties of Marsabit and Turkana in northern Kenya with the aim of supporting the county governments to improve the overall conditions for increasing resilience to drought of the ecosystems and local communities.

135. The Project offers technical advice to the governments of these two agrarian counties on implementing the initiated reforms and on restructuring, training, back-up and direct consulting activities that enables state and non-governmental players to elaborate sustainable policies and strategies that enhance resilience to drought in the counties.

136. Different stakeholders work together to create and support structures for a better exchange of knowledge between the counties, the national government and other decision-makers and the project assist the county governments in knowledge-based and results-oriented planning, steering and financing of preventive measures. This facilitates the coordinated, effective implementation of state policies and programmes that will improve drought resilience among the inhabitants of Turkana and Marsabit.

137. In addition, the project supports those responsible in the agricultural institutions of the county governments in developing holistic approaches for increasing resilience to drought. The county governments cooperate with non-governmental organizations, the private sector and grassroots organizations with a view to developing and coordinating effective service systems to be implemented at the local level in selected agro-ecological areas with cooperatives and other user communities. Activities will focus on providing agricultural extension services, training, and organizational advice.

138. The project is working with the tried-and-tested practices and processes initiated by the predecessor project and developing them further. These include plans for the agricultural sector, which are being drawn up as the basis for follow-on measures, in cooperation with decision-makers in Turkana and Marsabit counties. The project supports training activities in order to strengthen the county governments' capacities for making decisions and taking action as well as supporting user-oriented training courses on geographical information systems (GIS) in the counties to bring about a lasting improvement in regional planning (6).

139. The development objective of the *Rural Community Development and Water Mobilization Project for Djibouti* is to increase access of rural communities to water and enhance their capacity to manage water and agro-pastoral resources in the project areas using a participatory approach to community-based development. The restructuring is to entail following changes: (i) include some additional small activities, for example, protection against floods of water infrastructure constructed under the project, monitoring of works, small equipment for the beneficiaries, etc.; include additional financing for the recruitment, within the project implementation unit (PIU) of a regional coordinator and support staff for Tadjourah region and amend the definition of the open-air reservoirs which were constructed with a capacity of about 20,000 m, without change in the unit cost; (ii) update the results framework to adequately measure all relevant objectives and achievements of the project; (iii) update the number and or the unit

cost of some activities (cisterns, income generating activities, beneficiaries and staff capacity building program, etc.); (iv) take into account the actual cost of some expenses which were underestimated in the actual cost tables (incremental costs, income generating activities, etc.); and (v) split the unallocated amount between the three categories of the project. The project abstract is drawn from the PAD, SAR or PGD and may not accurately reflect the project's current nature (7). The proposed project will supplement the activities of this project especially in areas of capacity building and increasing access to water resources by the local communities.

140. The '*Adapt for environment and climate resilience project' (ADAPT)*, being implemented in Sudan aims to drive change for a better future. It's led by the Ministry of Environment and Natural Resources, in coordination with the Ministries responsible for water resources, agriculture, forestry, and livestock. The project will help over one million people to build resilience and cope with climate shocks, improve policy and decision making through strengthened data, analysis and capability in government, help mobilize large-scale climate financing, and make humanitarian and development investments more environmentally sustainable and 'climate-smart'.

141. The project focuses on Championing and supporting better management and governance of water resources, better management, and governance of forests and rangelands and better understanding and adaptation to climate change. This will be achieved through by providing expert advice and guidance to key partners, improving science and make data available to inform decisions and strengthening institutions and policies. The project will strengthen environmental institutions and integrate sound environmental governance and climate change adaptation into policies and plans. It will leverage financing to increase the implementation of adaptation actions (8).

142. The DRESSEA project will complement these initiatives of the ADAPT project and where possible upscale the interventions that have proved to be working. The key experiences gained at the national level, sub-national and local levels will help in the implementation of the DRESS-EA Projects as both projects are focusing on increasing the resilience of ecosystems and communities.

H. Learning and knowledge management component

143. This component of the project will help facilitate experience sharing and cross-learning of innovative drought adaptation interventions in the Project focal countries. This will be achieved by generating knowledge on drought risk management, concrete drought adaptation actions. It will also consist in packaging it appropriately according to the target audiences/stakeholders and sharing it through electronic and print media and forums at regional, national, sub-national and local levels.

144. The project will support generation and documentation of case studies, good practices and lessons learned from the implementation of this project and other innovative case studies and successful drought management interventions. The Project will address challenges and create response strategies to help future design and scaling-up of project interventions, and policy/practice influencing in the focal countries and the IGAD region as a whole.

145. This will enable development/production of appropriate awareness materials i.e. print materials, posters, flyers, video documentaries, and others as well as briefs (technical and policy) to facilitate influencing practices or policies at regional, national, sub-national and local levels. The project will also organize and facilitate awareness raising events, forums, and platforms at all levels to facilitate joint learning and experience sharing among various stakeholders.

146. The project will organize and facilitate both inter and Intra-community and country exchange visits and tours to areas with successful drought management interventions to enable experience sharing among extension officers, farmers, pastoralists, and other key project stakeholders share experiences at regional and local levels. Such visits and tours will be organized targeting women and youth among the smallholder farmers and pastoralists in the region.

147. To emphasize the regional approach this component will be aligned to the IDDRSI strategic objective on enhancing generation, access, use and integrated management of research, knowledge, technology, and innovations in the IGAD region. The strategy highlights documentation and sharing of lessons learned and evidence-based good practices and promising technologies amongst key stakeholders for adoption and scaling up.

148. In a more specific way and based on project planned activities the knowledge management in the framework of the DRESS-EA Project is an important element to which a whole component has been dedicated (Component 4). In fact, accessing to current and detailed information on drought risks, climate trends and adaptation techniques is essential for project stakeholders such as government agencies, agricultural extension services and local communities to effectively and sustainably implement prioritized adaptation interventions.

149. In addition to Component 4 knowledge sharing and learning is a common element to all project's components. The knowledge mainstreaming will ensure the project ownership and the capacity of beneficiaries and users to manage,

execute and handle all the project outcomes. Specific activities and outputs are almost totally dedicated to knowledge as presented in the following table.

Table 6: Knowledge activities of the project

Component	Specific Training theme/activity	Type of monitoring and evaluation	Targets
Component 1: Development and enhancement of a regional Drought Early Warning System	Activity 1.1.2.1 Develop/Review EW information sharing frameworks at regional. National and sub-national levels	• Workshop and travel	• Local Governments / National Government • Communities
	Activity 1.1.2.3 Hold inter-ministerial and sectoral meetings for data sharing	• One inter-ministerial regional meeting • 2 sectoral national meetings per year in each country • 2 sub-national meetings per year	• Local Governments / National Government • Communities • Civil society
	Activity 1.1.2.4 Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)	• One meeting at regional level • 2 meetings at national level • 2 meetings at sub-national level	• Local Governments / National Government • Farmers • Pastoralist • Communities • Civil society
Component 2: Strengthening capacity of stakeholders to manage drought risks due to Climate Change effects	Activity 2.1.1.2 Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists	• translating DMPs, printing and dissemination	• Local Governments • Farmers • Pastoralist • Communities • Civil society
	Activity 2.1.1.3 Support integration of DMPs into the national and sub-national development plans	• Consultancy • 2 workshops	• Local Governments / National Government • Communities
	Activity 2.1.2.2 Develop capacity building plans for regional, national and sub-national levels	• Consultancy	• Local Governments / National Government
	Activity 2.1.2.4 Undertake exchange visits and learning tours for cross learning in areas with successful drought management innovations including ground water management initiatives	• Exchange visists and learning tours	• Local Governments • Farmers • Pastoralist • Communities • Civil society
	Activity 2.1.2.5 Train staff managing EW information centers	• Initial and follow up training	• Technical Staff
	Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions	• 3 annual trainings	• Extension staff • Artisans
	Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach	• 2 quarterly community trainings	• Communities • Farmers • Pastoralists
	Activity 2.1.2.8 Support farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services	• Construction of 4 learning centers for farmers and pastoralists	• Farmers • Pastoral groups
Component 3: Drought and Climate Change adaptation actions	Activity 3.1.4.4 Support farmers and pastoralists to prepare high value silage and hay for livestock during dry spells	• Farmer trainings	• Farmers • Pastoralists
	Activity 3.1.4.5 Support formation/facilitate existing livestock associations/groups/cooperatives at community level	• Meetings and workshops	• Livestock associations/ groups/cooperatives
	Activity 3.1.5.4 Create linkages between farmer and pastoralists associations/cooperatives at regional, national and sub-national levels to enable sharing of market information	• Meetings and workshops	• Farmer • Pastoralists • Associations
	Activity 3.1.6.1 Support women and youth groups with in puts for IGAs including (e.g. growing of sisal and Aloe vera to support rope production and art crafts; bee keeping; briquette making;	• Meetings and workshops	• Women • Youth groups • Communities

	keeping of local poultry (e.g.Kroilers) and community tourism		
Component 4: Knowledge management and awareness creation	Activity 4.1.1.1 Document lessons and best practices from project interventions	• Consultancy • Regional compilation of lessons and best practices	• Local Governments / National Government • Communities • Farmer • Pastoralists • Associations
	Activity 4.1.1.2 Generate and package information dissemination materials on EW, CC and drought adaptation actions in forms for easy uptake (e.g. policy briefs, brochures) adapted to the various stakeholders	• Printing the materials	• Communities • Farmer • Pastoralists • Associations
	Activity 4.1.1.3 Disseminate/share knowledge and information through use of existing and popular platforms e.g. electronic and print media, telecom that are easily accessible by the stakeholders.	• Various communication platforms and channels	• Local Governments / National Government • Communities • Farmer • Pastoralists • Associations
	Activity 4.1.2.1 Support existing channels/networks for information generation and dissemination at regional level (e.g. GHACOF for EW and IDDRISI for drought management platform and national platforms)	• Meetings and workshops	• Communities • Farmer • Pastoralists • Associations
	Activity 4.1.2.2 Engage policy makers in dissemination of drought management information and best practices	• Meetings, workshops and travel	• Local Governments / National Government • Communities
	Activity 4.1.2.3 Support drought management working groups to share and disseminate the information	• Meetings, workshops and travel	• Local Governments / National Government • Communities
	Activity 4.1.2.4 Facilitate empowerment of women and other vulnerable groups on water management in a context of drought	• Studies	• Local Governments / National Government • Communities • Women

I. Consultative process

150. The consultative process initially started with meetings and discussions with the Global Water Partnership Eastern Africa (GWPEA), which is a regional organization covering over 9 countries in the region: Uganda, Kenya, Egypt, Eritrea, Somalia, Ethiopia, Sudan, Rwanda, and Burundi. The GWPEA is hosted by Nile Basin Initiative Offices in Uganda.

151. The adopted consultation process has been based on the involvement and participation of all the instances since the preparation of the Pre-Concept, through the preparation of this Full Proposal. In all four countries, work meetings were held with local authorities, and field visits and workshops with community members were carried out. A participatory approach was used throughout the formulation of the Regional Project, involving key local actors (recipients and beneficiaries) in preparing the proposal.

152. According to the consultation process, during the formulation of the pre-concept, several workshops and meetings with national authorities from all beneficiaries' countries were held on 15th – 16th December 2016, Golf Course Hotel in Kampala and 4th – 9th July 2017 at the Common Wealth Resort, Munyonyo, Kampala, Uganda. During these meetings initial ideas and guidelines for a comprehensive and regional approach were discussed, and the sites and counties involved in the project were preliminary identified. The discussions also focused on identifying and validating the threats/problems and needs of the selected territories. This enabled a consensus on the objectives, results and measures planned to respond to these problems since it is a regional project.

153. Later at the regional level, following the approval of the DRESS-EA pre-concept by the Adaptation Fund, further consultations using several methodologies were organized. These included key informant interviews, focused group discussions and reconnaissance surveys. Individual meetings were held with representatives of the countries from the EE and telephone calls to stakeholders who were difficult to physically meet but recommended to provide input. In addition, a regional validation meeting with countries' representatives was made on March 15th – 16th 2018, in Entebbe, Uganda. Among the key stakeholders that were consulted during the consultative workshop held in Entebbe, government officials from the Ministry of Agriculture Water Fisheries and Livestock for Djibouti, the Ministry of Environment and Forests for Kenya, Ministry of Water Resources, Irrigation and Electricity for Sudan and the Ministry of Water and Environment for Uganda as well as officials at lower government levels. The workshop also allowed the participation of other stakeholders including non-government organizations, private sector,

development partners, research/academics as well as farmers and pastoralists. This approach is intended to create ownership by the various stakeholders and ensure sustainability of project interventions by creating institutionalized systems. The consultative meeting was also drawn from the GWPEA as well as from the OSS, in addition to countries' representatives. The workshop aimed at:

- Providing information to key stakeholders on the Adaptation Fund and the current Concept note development processes
- Facilitating the integration of inputs by key stakeholders and triangulating the information collected from stakeholders and literature.
- Informing partners and beneficiary populations about the project scope and objectives;
- Gathering final opinion on the target sites in each country and to clarify on the DRESS-EA project activities.
- Listening to participants' expectations and needs to take them into consideration in the project activities design.

154. The process of consultations with the different stakeholders at the concept note has mainly focused on the project nature and its specific role in enhancing the resilience of the most vulnerable communities. During the consultative process activities and adaptation measures to be included by the project, defined key stakeholders, their roles, responsibilities, and contribution during project implementation have been discussed; identified project management structures and issues of sustainability and ownership, especially by communities and local government. Specific actions have been planned for the most vulnerable groups such as women, female-headed households and representatives from the elderly, disabled, children, youth, socio-economically disadvantaged groups and indigenous people.

155. Similarly, following endorsement of the DRESS-EA Concept Note by the Adaptation Fund and the approval of the Project Formulation Grant to help developing this full proposal a continuous participatory approach was deployed and spearheaded by the OSS and Global Water Partnership Eastern Africa (GWPEA). In fact, according to the AF requirements and in order to ensure the project ownership and success during its execution a series of consultations, meetings and field visits have been conducted.

156. The consultation process adopted for the development of the full proposal has been based on three main levels:

- Local Level: Focusing on the final project beneficiaries including all the targeted communities and all vulnerable groups.
- National Level: Specific meetings with several stakeholders involved in the project execution, management of outcomes and responsible for project results sustainability.
- Regional Level: Synthesis and global meeting with representatives from all 4 countries, GWPEA, IGAD, ICPAC, OSS, etc.

National and Local Consultations

157. More comprehensive consultations were undertaken at both local and national levels. These consultative meetings were held in each of the four countries. The national and local consultations process had begun since the approval of the concept note in 2018. During the consultation, the advances and analyses carried out during the preparation of the full proposal document, such as Environmental and social, gender, vulnerability and cost-effectiveness analyzes, were presented in order to include comments and observations from key stakeholders. All the preparatory studies and documents were disseminated to the beneficiaries for additional improvements and for a better ownership.

158. In the framework of the consultative process, meetings with the national institutions and ministries were held in the four countries and has preceded the public consultations :

a. *Djibouti: Ministry of Agriculture, Livestock and Sea, and Hydraulic Resources - Djibouti on 10th February 2019 attended by 28 participants*
b. *Sudan: Ministry of Water Resources, Irrigation and Electricity (MWRIE) - Khartoum on the 3rd of March 2019 attended by 21 participants.*
c. *Kenya: Ministry of Environment - Nairobi on the 21st February 2019 attended by 12 participants.*
d. *Uganda: Ministry of Water and Environment - Kampala on the 9th of March 2019 attended by 25 participants.*

159. These meetings were structured around the following points:

- Provide information to key stakeholders on the Adaptation Fund and the Full proposal development processes;
- Facilitate the integration of inputs by key stakeholders.

- Create awareness about the project to wider stakeholder membership, seek endorsement from the focal country authorities, seek acceptability and consent among the likely beneficiary populations and
- Understand the needs and expectations of the various parties in order to aid smooth project implementation in the region;
- Identify the needs and requirements for the EWS implementation;
- Define the role of the national institutions in the project execution and monitoring;
- Involvement and improvement of the local populations' and indigenous people living conditions;
- Key stakeholders, their roles, responsibilities, and contribution during the project implementation;
- Strengthening the project management structures;
- Reinforcement of awareness and communication activities among the various stakeholders;
- Role of women and young people in the project implementation;
- Environmental and Social and Gender risks and mitigation measures;
- Grievance mechanism and communication channels;
- Preparation and organization of public consultations and requirements for communities' participation to the local meetings;

160. As regards to the local public consultations and for a high level of participation in the meetings with communities, the local authorities has been informed in due time of the meetings venue and agenda. The local authorities were responsible of the identification and mobilization of the targeted communities to attend the consultative meetings. The identification was based on; i) gender criteria, such as: socio-professional groups, female-headed households, indigenous people, etc. ii) land owners, iii) chiefs of villages, iv) representatives of communities, v) local elected people, vi) potentially impacted people, etc. The project team with the support of the local authorities has established the required contact with communities to ensure their participation to the several preparatory meetings and to the public consultations.

161. The main purpose of these public consultation sessions was to seek the beneficiaries' points of view and to collect information for a better design of the project with a focus on involving vulnerable groups, indigenous groups, minorities, farmers, pastoralists, women, and youth. This participatory approach aimed at (i) the project appropriation by the beneficiaries during preparation and planning stage; (ii) learning about the concerns of all stakeholders, including vulnerable groups (women, youth, children, heads of localities etc.) in the design and implementation of the project; (iii) exchanging views on the financing and sustainability of the project; (iv) informing the participants about the project's related risks and mitigation measures, and (v) the project grievance mechanism and the contact person and authority at local level.

162. During the local consultative workshops attended by communities' members and representatives including, women, youth and elders, from several groups (vulnerable and indigenous people) discussions were structured around the following points:

- Introduction of the project objective and activities as well as its expected outcomes that will directly benefit to the population;
- Collection of populations views and opinions regarding the several activities planned as well as the Early Warning system (EWS) to be developed;
- Ensure a feedback mechanism related to EWS
- Description of the project risks and the expected impacts and their relevant mitigation measures;
- Role of women and youth in the project implementation;
- Description of the Environmental and Social and Gender risks and mitigation measures;
- Grievance mechanism and communication channels;

163. The table below shows the specificities of the communities that attended the public consultations as well as the main common outcomes for the four countries.

Country	Djibouti	Kenya	Sudan	Uganda
Date	10th to 12th February 2019	19th to 22nd February 2019	2nd to 4th March 2019	11th to 13th March 2019
Project sites	**Hanle** and **Gobaad** (Sissalou, Garsaledabba, Yalahlou, Bonta) in Dikhil region **Bieidley** in Ali Sabieh region	**Kitui** County **Samburu** County	**Es Salaam** Locality in White Nile state	**Rupa** sub-county Moroto district Karamoja region
Attendance profiles				
Main Socio-professional groups	- Pastoralists - Agro-Pastoralists - Farmers	- Pastoralists - Agro-Pastoralists - Farmers	- Pastoralists - Agro-Pastoralists - Farmers	- Pastoralists - Agro-Pastoralists - Cattle breeders/ Farmers
Number of participants	80	37	50	32
Men	70 %	90 %	54 %	47 %
Women	30 %	10 %	46 %	53 %
Elders	6 %	15 %	10 %	8 %
Youth	18 %	10 %	5 %	50 %
Indigenous people			80 %	100 %
Main common outcomes	• Lack of capacity building programs from the government side. • Technical, managerial and financial capacities are not enough to cope with drought. • Farmer use and concentrate to purchase biomass, as a fodder, rather than producing seeds. • Fodder production for their livestock. • Spread of animal diseases and shortage of drugs and vaccinations, are dominant phenomena within some localities. • Both males and females are sharing the different livelihood activities at the locality (farming, animal breeding, drinking water supply, marketing … etc.). • Construction of water point, animal routes, establishment and activation of existing legislations … etc. are some proposal for solving the accumulated problems emerged during dry years and drought. • More water points for human separate from those of livestock. • Tree planting to reduce the heat and wind. • Providing communities with seeds for planting. • Providing water harvesting reservoirs to tap the running water/floods. • Construction of water reservoirs, points and ponds. • Small scale irrigation schemes.			

	• Construction of check dams and channels to stop run off. • Conserving some trees that are spiritually and culturally important in appeasing the Gods to release rainfall to the region. • Restoration of degraded environment. • Establishing and managing apiaries for honey and income generation. • Support vegetable growing. • Support women with farm tools to cultivate. • Encourage and support block or group farming. • Encourage and support youth to innovate in developing livelihoods.

164. The consultation process used several methodologies. These included key informant interviews, focused group discussions and reconnaissance surveys.

The main consultation outcomes and findings are presented in the specific reports which described the proceedings of the consultations and the discussions including list of participants and various stakeholders to the several meetings.

165. Since the presence of indigenous people and minorities in the targeted countries project sites and in accordance with the Adaptation fund requirements, special attention has been given to the Free, Prior and Informed Consent (FPIC) procedures. The FPIC aims to avoid to the maximum possible the extent of adverse impacts on indigenous peoples. Consultation of stakeholders on the project interventions was done in the targeted countries i.e. Djibouti, Kenya, Sudan and Uganda. Moreover, these consultations were held in the localities where the project interventions are earmarked. This provided an opportunity for the stakeholders to, provide additional input by freely airing out their views and opinions.

166. Indeed, and regarding the Involvement of the Indigenous people in the project consultative process, all the workshops meetings and filed visits organized during project preparation, representatives from the indigenous peoples and minorities took part to these meetings. The main objective of this procedure is to ensure that all beneficiaries are well informed about the project activities, impacts, proposed mitigation measures and the grievance mechanism. The exchanges have also concerned the appropriate mitigation measures and alternatives to project design to minimize impacts and appropriate compensation that will be determined with the full and effective participation of affected indigenous peoples, including indigenous women, youth, the elders and disabled people. These consultations were also important for preparing the Environmental and Social Management Plan (ESMP) which is also attached to this proposal.

167. The FPIC process implementation for the DRESSEA project has been structured around the following steps:

a. ***Identification of indigenous peoples*** within the project sites that could be affected: Based on different sources of information starting from exiting socio-economic studies to interviews with local authorities, community-based organizations; national or regional confederations, NGOs, official national censuses and communications, the targeted groups of indigenous people has been identified and contacted. Their identification allowed understanding their language, main activities and practices. This information was crucial for the consultations meetings held with the communities during project preparation.

b. ***Preliminary participatory mapping*** that will make clear which community members are appropriate to engage with at such an early stage of project development. This step allow understanding who is the decision-maker and the referee of the community, what is the role of women, youth, elders, disabled and how they can be involved in the whole process starting from project development to project execution and closure. The mapping will be developed later during the project preparatory steps of the effective implementation.

c. ***Discussions with the Indigenous Peoples and communities' representatives*** were organized in time and place agreed on with the communities according to their will and availability (transhumant, farmers, miners, pupils, etc.). As stated above the discussions were structured around various issues such as; project activities, impacts, proposed mitigation measures, main exploited natural resources, land tenure and land rights, women activities and rights within the communities, drought impacts and communities' actions to fight its effects. One of the major discussed points was related to the potential impact of project construction such as water harvesting and storage infrastructure, mini irrigation and water delivery systems that may affect private land. It was explained that the project will opt for state owned lands where possible, but if needs be, compensation measures will be arranged and consist mainly in IGAs and

small grants. The communities expressed their consent for being compensated given that the proposed activities are considered as major solutions for the challenges they are facing. Some of the consulted people expressed also their willingness to host on their land project related consecutions such as water points. It is also important to highlight the fact that the consultancies have been conducted in local language so that everyone who was attending has the same opportunity of understanding and expressing his objection if any.

d. ***Consent of Indigenous people and feedback and grievance mechanism*** represent the last step of the global FPIC process. In fact, after several exchanges on the above-mentioned points the consultant with the support of the local government representatives proceeded with the explanation of the consent procedures. They presented the content of the consent letter and the scope of the commitment that will result. The consent has been reached after a mutual agreement of all parties taking into consideration customary modes of decision-making and consensus-seeking (e.g. in Uganda representatives from the "karamajong" people approved the project and expressed their communities' involvement in its execution, since it addresses their main concerns). Finally, and as a proof of their involvement and approval of the project, letters of consent have been signed and delivered by the communities' representatives from all the beneficiary countries (Cf. Consultative Workshops Reports)

168. NB: After the stakeholder consultations in the various localities, the community leaders accented to the consultation process through signing a consent letters (annexed to the consultative reports attached to the proposal). Details of the proceedings of consultations, letters of consent endorsed by the community leaders the representatives of local communities and indigenous people, discussions and lists of the people consulted are indicated in a single report attached to the present proposal.

Regional Consultation

169. Care was taken to ensure participation and collaboration of all key stakeholders right from the pre-concept stage, concept level, up to full proposal stage and will be followed till the implementation stage. Among the key stakeholders that were consulted during the consultative meetings in the respective countries and final regional workshop held in Entebbe, were government officials from the Directorate of Rural Hydraulics for Djibouti, the Ministry of Environment and Forestry for Kenya, Ministry of Water Resources, Irrigation and Electricity for Sudan and the Ministry of Water and Environment for Uganda as well as officials from OSS and those at lower government levels. The national and regional workshop essentially allowed the participation of other stakeholders including non-governmental organizations (NGOs), the private sector, development partners, research/academics as well as farmers and pastoralists. This approach was intended to create ownership by the various stakeholders and ensure sustainability of project interventions by creating institutionalized systems. This is also expected to establish a mechanism for scaling-up similar approaches and interventions in the future once the project is approved and funded. The regional consultative workshop was held on 15th March 2019. The regional workshop aimed at sharing the results of the local and national consultative meetings, harmonize positions and integrate inputs from country representatives in an open and transparent manner and answer the remain questions to ably submit the proposal to the Adaptation Fund. The proceedings are also indicated in the consultative specific report and the main outcomes are as follow:

- Updated proposal;
- Project implementation arrangement validated;
- Specific Grievance Mechanism approved;
- Project priority intervention areas validated;
- Understanding the project's aspirations and the measures to be implemented to redress the effects of drought in the region harmonized;
- New activities and specific intervention areas incorporated;
- Integration of activity ideas, recommendations and comments from stakeholders into the draft proposal.

170. The process of consultations at the regional level with the different stakeholders at this stage has mainly focused on the project nature and its specific role in enhancing the resilience of the most vulnerable communities. During the consultative process activities and adaptation measures to be included in the project, defined key stakeholders, their roles, responsibilities, and contributions during project implementation were discussed; identified project management structures and issues of sustainability and ownership, especially by communities and local government. Others have included recognition of the role of women and youth in the implementation of the project, coordinating and collaborating with other existing projects, identification of priority problems/issues and possible solutions,

identification of risks and/or possible conflicts and resolution mechanisms as well as projects/initiatives for possible synergies.

171. Finally, the participatory and consultative process as described above will not only be applied during project preparation but will also constitute a project approach during implementation until closure. All the project components include specific consultation workshops and meetings that will ensure the activities ownership and the achievement of the expected outcomes.

172. In a more specific way and as part of the consultation process to be put in place during project implementation, it is important to take into account the seasonality of the activities of the socio-professional groups. Indeed, the transhumant breeders, the gatherers, the farmers depend largely on their activities' seasonality. In fact, this challenge will be mainly faced when dealing with transhumant. The project consultations and population-based activities will consider this issue and plan the execution according to all these aspects.

J. Full cost of adaptation reasoning

Increased use of cost-effective EWS by stakeholders: USD 2,387,100

173. Smallholder farmers and pastoralists face challenges of accessing timely and accurate climate information for planning and responding to drought risks. The current EWS are inadequate causing crop failure, the death of livestock, conflicts and food insecurity.

174. There is actually need to strengthen the capacity of existing EWS in the focal areas to be able to generate, analyze, package and disseminate timely early warning information to the farmers and pastoralists. This will enable them to plan their activities taking into account this information and increasing their resilience to drought.

175. The project will help to develop efficient and effective EWS systems by assessing the status of EWS in the target countries, equipping and upgrading selected weather stations, constructing, renovating and equipping EW information centers. DRESS-EA project will support the integration of traditional EWS with modern EW technologies, such as remote sensing derived products, time series of bioclimatic variables, as well as enabling project beneficiaries to access EW information (e.g. devices including, brochure, SMS, Radio etc.). It will also support the development of emergency drought management and response plans so that possibilities outside the drought management framework are will responded to.

176. The project will also strengthen institutional linkages for EW information where they exist and establish new ones where they don't exist. This will focus on: i) developing or reviewing EW information sharing frameworks at regional, national and sub-national levels, ii) developing and implementing strategy to operationalize the frameworks, iii) holding inter-ministerial and sectorial meetings for data sharing, iv) supporting national, regional and local EW information sharing Forums (including farmers and pastoralist associations) and v) supporting Incorporation of EW information into planning and budgeting processes of targeted countries.

177. In addition, a feedback mechanism for EW information will be developed through supporting regular stakeholder EW information feedback platforms for farmers and pastoralists. This feedback mechanism will consist on holding quarterly stakeholder meetings on EW information utilization for national and sub-national stakeholders, conducting KAP surveys on EW information as well as developing feedback user-friendly tools on accessing, utilizing and reporting EW information to mandated institutions.

Drought resilience capacity of key stakeholders at regional, national and local levels strengthened: USD 1,310,000

178. There is an inadequate capacity to integrate drought risk management interventions into development plans; concrete drought adaptation actions and responses at the community level with limited budget allocation for drought risk management at national level. Given this situation where Communities' drought coping mechanism is weak, the project plans to train various stakeholders. In this respect, the Training of Trainers (TOT) model (Table 3) will be applied. A training plan including the specific objectives, modules, methods and the persons to be trained is indicated in section A, under component two of this proposal. The training will cause a multiplier effect of the project interventions. Overall, the key stakeholders to be trained include: Regional Staff i.e. those involved in capacity building at regional level, gender and youth focal points and staff involved in development projects; National staff of the targeted countries- in the responsible ministries; Sub-national (local government staff and staff from selected civil society organizations working on similar interventions in the project areas of the countries.

179. To further increase uptake of project interventions, the project will support the establishment of Farmer and Pastoral Field Schools (F&PFS). These will be structures at the local level and a vehicle for inclusive participation of

communities. The FFS and PFS are aimed at creating a cohesive structure at local levels so they can share and learn from each other. This cross-learning will promote sustainability of project interventions.

180. This component aims at building the capacity of stakeholders to enhance their drought resilience at regional, national and local levels by improving the adaptive capacity of institutions, farmers, and pastoralists in drought management. This will be done through i) undertaking capacity needs assessment to identify gaps and hindrances to effective drought management, ii) developing capacity building plans for regional, national and sub-national levels, iii) developing capacity building curriculum and tools, iv) undertaking exchange visits and tours for cross-learning in areas with successful drought management innovations including best water management practices and v) supporting establishment and management of field learning centers. In addition to capacity building activities, the project will support; management of EW information centers, training, extension staff and artisans in drought adaptation interventions as well as facilitating community training workshops for farmers and pastoralists in drought risk management measures.

181. Furthermore, the project aims to develop or review drought management plans at regional, national and sub-national levels. It targets popularizing and integrating the drought management plans into the national strategies and development plans. The project will also lead to the formulation of bye-laws and ordinances at sub-national and lower political units. Regional and national drought management frameworks will be reviewed and strengthened and new ones developed where necessary, including regional and national drought management platforms to coordinate partner efforts. Finally, stock route agreements will be formulated and implemented to reduce conflicts among pastoralists.

Increased uptake and usage of drought adaptation actions: USD 6,279,920

182. Inappropriate and limited drought adaptation technologies are causing low crop and livestock food production levels leading to food insecurity and low incomes. Severe droughts seriously undermine crop and livestock production affecting yields and incomes of smallholder farmers and pastoralists. It affects the amount of water available for crop and animal production, the quality of rangelands and pastures and productivity of soils for crop production.

183. These will be addressed through: improving, developing and introducing innovative adaptation actions for soil and water conservation, water harvesting and storage structures, restoring and improving underground water sources, promoting adaptive agricultural practices in order to improve crop production, enhancing adaptive livestock and rangeland practices and creating an enabling environment for smallholder farmers and pastoralists adaptive activities. The Project will also support smallholder and pastoralists groups to undertake income generating activities (IGAs) including growing of sisal and *Aloe vera*, art crafts; beekeeping; briquette making; poultry and where applicable community tourism as well as provide competitive small grants targeting smallholder farmers and pastoralist associations to undertake IGAs or enhance their drought adaptation actions.

Increased awareness on drought risk management: USD 592,000

184. There is limited awareness on drought risks and adaptation actions amongst stakeholders leading to poor planning and responses to drought risks and disasters with low crop and livestock yields hence food insecurity and low incomes.

185. The project will support knowledge management and awareness creation through documentation of good practices and lessons on drought management. This will involve generating, packaging and disseminating EW information, documentation of lessons and best practices from project interventions. The knowledge and awareness raising component will allow packaging information dissemination materials in appropriate forms to ease uptake (e.g. policy briefs, brochures) and sharing and dissemination of knowledge and information through the use of existing and popular platforms e.g. electronic and print media, telecom that is easily accessible by the stakeholders.

186. In addition, the project will support existing channels/networks for information generation and dissemination (e.g. IDDRISI platform and national platforms), engage policymakers in the dissemination of drought management information and best practices as well as supporting drought management working groups to share and disseminate the information.

K. Project sustainability

187. The DRESS-EA project is built around creating and promoting activities that induce durable benefits at various aspects. To do so, the project sustainability will be reached through community participation which is built upon the basis of empowering and building capacity of different stakeholders. All project components are closely tied to each other and an entire component will be devoted specifically to train local staff at various levels. In addition, the planned interventions are structured in a progressive manner in order to provide conditions necessary for ensuring

sustainability through all beneficiaries at all levels throughout the period of execution of the project. It has to be noted, that given the existing status of involvement and commitment, it is mandatory to secure commitments, appropriation and quality of the project's outcomes by all parties. In the selected countries, water is indeed an important transboundary issue that needs concrete involvement of decision making, and activities should be entrusted to governments through ministries and directorates...etc. This regional project will then ensure that the transboundary aspect of the drought issue will be tackled via well-coordinated efforts between the various countries to manage the water resources properly -- ownership in the future and prolong the project efforts. Financially, the project closure will be handled via the appropriation of best practices of economic means such loans and small grants. Trained and sensitized communities will keep the project achievements durable. National institutions with deep involvement into the project will ensure activities to be maintained for the benefit of the local communities. This will be matter of decision makers where transboundary benefits will be taken into consideration. The project will finally involve drought and water managements committees at local, national and regional levels whose role will be the ability to control and coordinate similar. This project will allow through its planned activities, the creation of an inter-ministerial platform which will provide political support on the water issues within the region along and after the project duration.

188. As already introduced, the design of the project has considered the sustainability of all project interventions in all aspects including environmental, economic, technical, social and institutional sustainability. The design of the project has considered the sustainability of all project interventions in all aspects including environmental, economic, technical, social and institutional sustainability as follows:

189. ***Environmental sustainability:*** The project will ensure environmental sustainability through strengthening the resilience of smallholder farmers and pastoralists through the EWS and the adaptive infrastructure to be developed, will on the one hand, allow to cope with drought-related crisis situations and on the other hand to avoid overexploitation of natural resources to compensate losses due to drought impacts. As regards to the project implementation, an Environmental and Social Management Framework (ESMF) will be developed and will act as a guide on handling environmental and social issues. For activities that are anticipated to have significant social and environmental impacts, independent Environmental and Social Impact Assessments (ESIAs) will be undertaken and approval sought from relevant Environmental Authorities depending on the laws of each of the focal countries. The ESMF has an environmental and social monitoring plan that will guide periodic monitoring and evaluation to track changes that could have adverse environmental and social impacts and ensure adequate mitigation.

190. ***Economic sustainability:*** This will be promoted through supporting existing and or new community groups with small competitive grants that enable them to scale up the innovative drought adaptation actions that generate additional incomes. To ensure economic sustainability especially of the targeted communities, the smallholder farmers and pastoralists the project will support women and youth groups with income generating activities, support improved crop and livestock production with improved and drought-tolerant crop varieties and animal breeds as well as organizing the farmers and pastoralists in cooperatives or strengthening the existing ones and linking them to markets to be able to sell their products. In addition, the project will support the farmers and pastoralists to add value to their animal and crop products so that they can be able to fetch higher market prices as well as prolonging their shelf lives. All these will help the farmers and pastoralists to enhance their incomes, improve their livelihoods and ensure economic sustainability. However, to ensure that the infrastructure constructed by the project is economically/financially sustained and maintained a number of initiatives have been proposed. First of all, after project closure, Small scale infrastructure (i.e. weather monitoring stations, micro irrigation system, sand dams, solar irrigation system, watering points, bunds, water harvesting and storage facilities etc.) will be maintained by the farmer/pastoralist group committees. These committees will have some Memoranda of Understanding with local governments (including, County leaders, Wards or Local councils depending on the respective country) so that local people support little financial resources agreed upon by the groups to regularly maintain such infrastructure. Secondly, the project will train artisans amongst the community members and equip them with the knowledge and skill of repair and maintenance. The artisans to be trained will be carefully selected by the project in collaboration with the community leaders of the targeted sites. Training of artisans will be itemized based on the technology (i.e. infrastructures in place). This will enable the community to have a pool of artisans hence, minimizing shortage of them for a particular technology. In addition, the trained artisans will be linked to available local government service providers in the targeted areas. This way, they will be able to diversify their income which will enhance their motivation to continue undertaking repairs and maintenance within the community areas. Thirdly, the project intends to provide competitive small grants targeting smallholder farmers and pastoralists and their associations to undertake innovative water harvesting and storage infrastructure and innovative IGAs or drought adaptation actions.

It is expected that the competitive small grants will empower gender group associations or committees to have some money saved from IGAs investments, so that group/association members contribute little financial resources to ensure sustained maintenance of small-scale infrastructure developed during the lifespan of the project. This initiative is expected to demonstrate sustainable maintenance of small-scale infrastructure. Local governments could as well provide such associations or committees with little financial resources to ensure sustainable maintenance and management of such small-scale infrastructure. This will mainly apply to water infrastructure where all water users will be encouraged to form user associations with executive committees that will be charged with taking care of the constructed water sources. They also ensure that such and other infrastructure are regularly maintained and remain in good conditions. Alternatively, farmer and pastoralist group/cooperative members could be required to pay a small and affordable fee for maintenance of their water sources and other infrastructure. Given this, the project will establish community infrastructure maintenance fund. The fund will be generated through community contributions on a regular basis (e.g. Monthly). The project will support the establishment of community committees to oversee the infrastructure investment and as well collect the contributions from the users. The monthly fee will be designed in such a way that its negligible and affordable by the community users. The return due to establishment of the community infrastructure maintenance fund significant because the fund requires less manpower and no costs in terms of collecting it is required. Therefore, its appropriate to a community that has meagre income. At this stage, the Local governments as stakeholders could be explicitly required to budget for maintenance of such infrastructure such that this activity is budgeted for every year, post the project period. In fact, small scale infrastructure is established in areas under the political jurisdiction of local governments. Whatever project investments and developments undertaken at local levels should at least be known by such leaders. Local leaders have a role to ensure that development initiatives are well maintained and secured through established groups. Local leadership is mandated to support such group infrastructures with security against vandalism and any form of destruction. The leadership could therefore use small budget line to support such activities such as supporting groups to maintain existing developments such that they do not go to waste. Additionally, the committee members could seek for Memoranda of Understanding with Local Council leadership to be support in maintaining their infrastructure. Also, The local government leadership will be part of the project execution. This implies that, while the local governments are developing their sub-national development plans, they will include the project activities into their development plans. This process enhances ownership of the interventions and as such the local governments will be duty bound to continue their operations. It's the ownership of the intervention that will motivate the local government to allocate budget to maintain the infrastructure even after project closure. In addition, the proposed project under Activity 4.1.2.4: Facilitate empowerment of women and other vulnerable groups on water management in a context of drought.

191. ***Technical sustainability*:** The project design emphasizes development and upgrading new or existing EWS respectively for technological sustainability. It also proposes the capacity building of all stakeholders including technical staff handling collection analysis and dissemination of early warning information at regional, national and sub-national levels, extension staff as well as farmers and pastoralists especially in undertaking concrete adaptation actions. This will ensure enhanced resident capacity to process and disseminate early warning and drought-related information to key stakeholders as well as the technical capacity to undertake concrete adaptation actions even long after the project has ended.

192. ***Social sustainability:*** The project design has put emphasis on working with farmer and pastoralist groups as well as women and youth groups but within these same communities. The project will build the capacity of the existing groups and where they don't exist facilitate their formation. The farmer field schools' approach, the grants, the marketing initiatives including cooperatives as well as the value addition initiatives will be based on these groups. These will enhance cohesion amongst these groups and as well as social sustainability that will ensure projects' results conservation and valorization even after its end date.

193. ***Institutional sustainability:*** The project design will ensure that *the* project will be implemented using the already existing government structures at regional, national and sub-national levels. At the regional level, the project will be executed by Global water partnership Eastern Africa based in Entebbe Uganda**.** At country level the project will be implemented using the structures of the focal ministries i.e. Ministry of Agriculture Water Fisheries and Livestock for Djibouti, the Ministry of Environment and Forests for Kenya, Ministry of Water Resources, Irrigation and Electricity for Sudan and the Ministry of Water and Environment for Uganda. This coupled with the capacity building of the officials who will be involved in project implementation will ensure that resident capacity will be built within the existing structures and ensure sustainability of project interventions after the project has ended. The development

and integration of the drought management plans into country-specific and lower level development plans will also ensure that the activities initiated by the project will continue to receive funding beyond the project lifespan.

L. Environmental and Social impacts and risks

194. Like any project that involves activities with strong interactions with ecosystems and the population, DRESS EA project could have environmental and social impacts. This project was developed in compliance with 15 principles of the Adaptation Fund Environmental and Social Policies. It is important to identify at this stage, the possible negative impacts in order to foresee the necessary mitigating measures. The table below sums up the impacts/risks' evaluation against the AF Environmental and social principles. Appropriate mitigation measures for each identified impact / risk are detailed later in the section C part III.

Table 7: Adaptation Fund E&S checklist

Checklist of environmental and social principles	No additional assessment is required for conformity	Potential impacts and risks - additional assessment and management required for the conformity
Compliance with the law		X (*compliance with the national laws is supported by the delivery of conformity certificates by the four national authorities in charge of environmental and social issues*)
Access and Equity	X	
Marginalized and vulnerable groups		X
Human rights	X	
Gender Equality and Women's empowerment	X *(Gender Analysis study has been conducted during the preparation of the Full Proposal)*	
Core Labour Rights	X	
Indigenous People		X (Consent letters signed by the representatives of the indigenous people has been delivered and further detailed analysis will be conducted)
Involuntary Resettlement	X	
Protection of natural habitats	X	
Biodiversity conservation	X	
Climate change	X *(Climate Change vulnerability study has been conducted during the preparation of the Full Proposal)*	
Pollution prevention and resource efficiency	X	
Public health	X	
Physical and Cultural Heritage	X	
Soil and land conservation	X	

P1- Conformity with the law

195. The project proposal has been developed in alignment with a number of national and regional priorities, policies, plans, and national technical standards for sustainable development and adaptation to climate change. It will also take into account the international and national standards related to biodiversity, land conservation, water resources, ecosystem management and poverty alleviation. With regards to the Environmental and Social Assessment, and following discussions conducted during the several consultations workshops, the national executing entities have submitted the ESIA to their national authorities for review and approval. This process is underway and the delivery of conformity certificates by the four national authorities in charge of environmental and social issues is ongoing. At this stage of full proposal development, some activities/ sub-projects are still unidentified and so are their impacts such as the component 3 Income-Generating Activities (IGAs), therefore they may require EIA depending on the size and the location of their implementation. The risk screening procedure that will be applied should take into account the conformity of these activities with the national laws and technical standards. In fact, these unidentified activities / sub-projects will need to be subject to a review of impacts and risks, a public consultation process, and development of safeguarding measures in order to obtain certificates of conformity.

P2- Access and Equity

196. In general, the project will provide fair and equitable access to benefits for all beneficiaries including the most marginalized and vulnerable groups through the provision of water, sustainable livelihoods, solar energy, updated and accurate alert messages and effective knowledge. Under Component 3 and during the implementation of socioeconomic activities to enhance communities' livelihoods, local authorities at each of the project sites and in the

beneficiary, communes will ensure that sub-project activities will be equitable. Knowing that project beneficiaries will be in general rural people (pastoralists and smallholder farmers), they have difficulties to access to the decision-making process. According to the gender assessment, and particularly for women and youth, it was evident in the proposed sites that despite the important role of women's labor force in the agricultural sector, few (less than 1%) own and control land resources including food crops. Women have very little power to access to resources and are not the main decision makers. Similarly, despite the numerical strength of the youth, their representation in socio-economic development processes and activities is still low. They are characterized by poor access to land and related resources and access and decision-making powers over agricultural production. These findings imply that there is limited capacity to cope due to high levels of poverty and dependency among the women and youth that render them more susceptible to the damaging effects of drought and climate change and may limit their opportunities to benefit from projects outcomes. Consequently, consultation workshops will be held to enhance the participatory decision making as well as ensure a close monitoring targeting all the project beneficiaries to enhance equal access of men; women, youth and the most vulnerable. In addition, OSS, as a regional implementing entity and in accordance with its practices, makes available to all direct and indirect beneficiaries of the project a grievance mechanism that will inform about conflict situations and will ensure access and equity.

P3- Marginalized and vulnerable groups

197. The project will provide opportunities for strengthening the resilience of the local population. A gender study has been established as well for a better understanding of the social construction. Besides, according to the project components, marginalized and vulnerable groups will be encouraged to participate in the decision-making processes at the local and communal level. In fact, during the several consultation workshops, representatives from the several target groups were invited to take part in some activities design. Additionally, as detailed in the component 3, they will be supported to improve their livelihoods by supporting them to undertake concrete innovative and appropriate sustainable land, water, crops and livestock management measures or technologies. Some of the specific climate change and drought adaptation interventions include developing soil and water conservation, water harvesting and storage structures, mini-irrigation systems to support crops, underground water sources, drought resistant pastures and crops promotion and IGAs enhancement among other things. So impacts on these groups will be positive particularly women and youth. During the first steps of project implementation, additional assessment (e.g land right) will be carried out, to avoid exclusion of marginalized groups and to minimize potential impacts related to the project activities. In fact, some risks can be identified related to the insufficient knowledge and access/use of technological devices such as mobile phones or lack of good cellular connectivity specially required in component 1 on Early Warning System design and implementation. In order to avoid the exclusion of these communities and to broadcast the warning messages, local radio stations and traditional practices such as criers, maps and sirens will be put in place to reach them. In addition, the component 3 will focus on improving livelihoods for farmers and pastoralists contributing to improve their resilience by constructing, among other things, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams) and mini-irrigation and water delivery systems. But, there is a risk of reducing or prohibiting, the temporary access during construction activities of certain populations, especially women, to the resources on which they depend (pastures, water, fruit trees, crops, fishing grounds, forest, public services). Thus, it is planned to organize consultation meetings with local administrative and customary authorities and steering committees representing communities and indicate that any activity limiting access to resources or sources of income or excluding vulnerable groups such as women will not be analyzed and lead to an agreed community plan for work/construction implementation. All activities implementation must be decided in common with consultation of all concerned communities. In addition, the activity 3 involves setting up a competitive small grant scheme (CSGS) for undertaking innovative climate change adaptation interventions. The CSGS funds are aimed at supporting the populations facing drought medium risk in the project areas. Given the funds available dedicated to the small grants it is hard to cover all the beneficiaries. That's why funds distribution will be based on a set of agreed community selection criteria to avoid exclusion and inequity. OSS, as a regional implementing entity and in accordance with its practices, makes available to all direct and indirect beneficiaries of the project a grievance mechanism that will inform about conflict situations if any.

P4- Human rights

198. No further assessment is required. No activities are identified whose execution does not respect international human rights. The project objectives aim at promoting fundamental human rights for equitable access to services, water for irrigated agriculture, capacity building, and information. The project will respect the human rights of all actors and local population in accordance with its objectives and scope. Moreover, and particularly for this project, the regional

approach will provide an adequate framework to ensure respect for human rights at the level of each country. The proposed project will promote the basic human rights of access to food, water, and information.

P5- Gender Equality and Women's empowerment

199. During project design, a gender assessment study has been conducted as a preparatory step to elaborate the project proposal. In fact, gender mainstreaming in project activities aims at analyzing gender and youth relationships as well as advocating the full development of all women and men. Therefore, gender equality is a prerequisite in the implementation of concrete adaptation actions and is the baseline for communication, training, and awareness raising activities to be undertaken within the framework of the project. Indeed, component 2 aims at strengthening and improving the adaptive capacity of various stakeholders including women and youth that are affected and contribute to drought adaptation and resilience in various ways. Besides, project activities under the component 3 aim at establishing an innovative competitive grant scheme targeting household value in addition to food crops and food crop and livestock products among other things. The competitive small grants scheme will focus on encouraging and rewarding the efforts of the most vulnerable among smallholder farmers and pastoralists such as the women, youth and elderly. So, women will be involved in the design and the decision-making processes. In addition, they will be considered in the livelihood improvement activities (e.g. IGAs) as well as the capacity building and information just like men. Thus, women will ensure their income, living conditions and the sustainability of the promoted activities. In the proposed project sites, gender balance in leadership, governance and decision-making over drought management and control of resources remains very low in the proposed project sites. They are characterized by poor access to land and related resources and access and decision-making powers over agricultural production. There is therefore a risk that women may not benefit equitably from proposed adaptation measures, capacity building interventions and gender equality in employment due to male domination. So, gender mainstreaming is vital for successful design and implementation of the proposed project activities including in the consultation process, IGAs and small grants (among other). Furthermore, according to the gender assessment there is a difficult and unequal access to finance between men and women related to local discriminative eligibility criteria that require security in form of yields, productivity, and contributions in the four countries. Under component 3, it is intended to provide competitive small grants targeting small holder farmers and pastoralist associations including women to improve their livelihoods. However, gender inequality could be exacerbated if the Fund does not provide facilities for women's access to the scheme due to social norms and pressures linked to men leaderships. A series of measures (e.g. involvement in consultation process, selection criteria) should be incorporated to ensure that both, men and women, have access to this scheme, taking into account that, traditionally, women have less access to control of economic resources. Additionally, although the project proposal development provides an overview of the expected impacts of the project on the gender aspect basing on the conducted study findings. It is also planned (i) to carry out Communication and sensitization of populations on the gender issue to ensure gender equality in income-generating activities, (ii) to strengthen the representation of women and youths in the various consultation workshops, and (iii) make available a grievance mechanism that can be used by women and youth to complaint about being affected by certain project activities.

P6- Core Labor Rights

200. As a global framework related to the fundamental rights of work, the four project's beneficiary countries have ratified the eight ILO Conventions. Additionally, during the project design stage were national and regional stakeholders have been involved, the core labor rights have been highlighted. So, the project will be implemented and managed in compliance with the international and the countries designated labor laws. As a result, compliance with fundamental labor rights will be ensured in all the proposed project activities and especially the community-based ones. In fact, the component 3 that encompasses the adaptation actions implementation where communities will provide the local labor force, core labor rights compliance will be mandatory. Concretely, it is intended to establish contacts with representatives of the local communities responsible for carrying out some activities, where their mandate and their rights will be clearly explained. Besides, during activities execution, the national executing agencies will be in charge of the follow-up and monitoring of the worksites including activities progress and the respect of the labor and safety rights of workers. With regards to the potential risks, it is likely that accidents or occupational hazards during the project preparation or implementation could occur. In addition, there is a risk of late or unpaid salaries or remuneration non- compliant with the countries labor legislations and laws. Finally, children's labor will be forbidden as well as remuneration inequity between men and women. Consequently, it is planned to (i) provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable, (ii) Sensitize workers and populations to the risks related to the undertaken activities, and (iii) design and

implement safety measures and emergency plans to contain accidents risks and ensure the application of safety standards by companies (equipment, signs, training, etc.). Finally, there will be a close follow-up and monitoring of the worksites by the national executing entities including schedules, activities progress, respect of the labor and safety rights of workers and conformity with national labor codes.

P7- Indigenous People

201. As part of the elaboration of the project's contextual framework and the environmental and social assessment of the project's intervention areas, the composition of local populations and communities was defined. Indeed, the 4 beneficiary countries of the project are concerned by the presence of indigenous peoples in the selected project sites, as presented in Part I Title 1.2.5. It is important to notice that the project beneficiary countries are members of the ILO Convention (Djibouti Member since 03.04.1978, Kenya Member since 13.01.1964, Sudan Member since 12.06.1956 and Uganda Member since 25.03.1963). Based on this finding, it is important to point out that the involvement of representatives of the local communities and especially the indigenous peoples during the preparatory phase of the project has been at the center of the concerns of the executing and implementing entities. Indeed, based on the principle of Free, Prior and Informed Consent (FPIC), since the first preparatory activities of the project (workshop, meetings, field visits, etc) the active participation of the representatives of the indigenous peoples has been assured. They have been informed of the project details, the potential impacts, the mitigation measures and the grievance mechanism. They also expressed their needs and expectations (cf. consultative process). Moreover, as proof of their involvement and approval of the project, letters of consent has been signed by their representatives and delivered. As regards the project impacts on indigenous people, they will be the same as on all the other communities. There will be no major risk on their assets, resources, culture, land and rights. The project intervention will not affect indigenous groups or territories since construction works will be executed outside indigenous territories. The main risks that could raise are related to the ways they use water resource, transhumance routes, livestock management, agricultural practice etc. Therefore, a detailed analysis will be carried out by local and national agencies to understand the traditional use of natural resources especially regarding to water and land use. This will be the major project challenge and to cope with this the participatory approach will be applied. They will be involved at all stages of the project implementation to allow a better ownership of the project outcomes by these populations. The traditional knowledge of indigenous people on drought will be useful when preparing the drought Management Plans and the early warnings and information dissemination.

P8- Involuntary resettlement

202. Basically, the project activities will not lead to removing local populations or even losing their land use rights and will not include community resettlement activities. However, the construction of appropriate and innovative water harvesting and storage infrastructure as well as mini-irrigation and water delivery systems will occupy spaces and may affect private lands or related activities. The choice of these areas will include strict criteria that stipulate no population resettlement through giving priority to state-owned lands. In the case that there is no choice but to opt for private lands, compensation measures will be arranged.

P9- Protection of natural habitats

203. Given the project activities nature and the intervention sites characteristics, only indirect risks related to the protection of ecosystems and to the natural habitats may occur. These are related to the implementation of solar-pumped boreholes, water harvesting and storage infrastructure (e.g simplified water tanks, water jars, sunken dams, micro-dams, sand dams, and water pans) as well as micro-irrigation systems can result in the vegetation and wildlife habitats destabilization in the implantation site. Also, the presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have an impact on the fauna and flora of certain intervention sites. So, to face up these risks, a close follow-up of the project activities implementation must be arranged including (i) follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats, (ii) establishment of E&S Impact Assessment Studies as applicable according to the size of the construction to be undertaken, (iii) policies and laws to protect natural habitats will be screened with the stakeholders to ensure that the critical habitats are legally protected, and (iv) sensitization sessions to local populations on good environmental practices and the protection of natural habitats.

P10- Biodiversity conservation

204. The protection of ecosystems and their biological diversity is an essential objective of components 1, 2, 3 and 4 of the project. They will provide opportunities to promote planning for biodiversity conservation activities, such as reforestation and capacity building to strengthen the efficient management of natural resources. As part of the implementation of some activity, vegetation clearance for water harvesting and storage sites construction may represent a form of disturbance for bird habitat and wildlife. Consequently, to mitigate these risks, it is intended to (i) follow-up and monitor the implementation of all activities related to the protection and management of ecosystems, (ii) minimize vegetation clearance as Low as Reasonably Practical (ALARP), (iii) pre-survey the proposed construction site areas to avoid sensitive habitats that have high diversity of indigenous plants, and (iv) promote awareness sessions, capacity building and peer learning to strengthen the efficient management of natural resources, including aquatic species, animals and forests. With regard to tree removal, it will be recommended to avoid cutting large trees with a diameter >20cm and compensatory reforestation will be executed where needed.

P11- Climate change

205. The project will increase the resilience of the ecosystems and the adaptation capacity of the local population. Climate change vulnerability study has been conducted during the preparation of the Full Proposal. According to this study, the adverse effects of climate change are being felt moderately both on the natural ecosystems and on the livelihoods of communities. The proposed project activities are mainly on adaptation. Indeed, the component 1 is dedicated to establish the early warning system to prevent natural disasters risks and impacts whereas through its component 3, the project aims at increasing the adaptive capacity of the local population and the resilience of ecosystems to climate change adverse effects. Finally, the component 4 is devoted to information and stakeholder's capacity building on climate change. A potential change of the land use due to the field clearing to construct innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, etc.) under component 3 may generate sequestration decrease. So, it is intended to promote reforestation to offset these lands.

P12- Pollution prevention and resource efficiency

206. The project will contribute to the energy efficiency through the interventions on alternatives energy sources such as solar and the introduction of the improved economic stoves. Additionally, it will enhance the efficient use of water through the small irrigation techniques and the water storage constructions establishment. Moreover, projects activities advocates the prevention of air, water, and soil pollution by controlling bushfires through the EWS technology and monitoring the water harvesting through the component 3 that undertakes these activities more in detail. Finally, the project will create awareness, strengthen technical capacities and provide support on water management for users at different levels (component 4). Although the importance of its interventions, the project proposal has not been identified as huge energy demanding or big consumers of natural resources and therefore would require measures for their efficient use. Minor risks related to potential water contamination of water reservoir through introduction of impurities, wastewater and solid waste is possible. That's why, it will be important to conduct regular water quality monitoring and maintenance of the water supply system as well as ensure the monitoring of water quality by chemical analysis, improve the awareness on water resource management and conservation through consultation workshops, and finally separate the infrastructures for human and animal use and provide a specific installation for the watering of livestock near the tanks. Besides, increase in dust levels and air pollution by gas emissions from machinery during field work or consultants and various stakeholders' vehicles during workshops and field visits could occur. Thus, it is intended to limit levels of dust through good practice such as watering of access routes, construction sites, and other disturbed sites and cover lorries transporting construction materials, (ii) reduce gaseous emissions by selection of appropriate machinery and regular servicing of vehicles and (iii) Incite to use a good quality fuel meeting the standards. With regards to the micro-irrigation systems establishment, vandalism of water pipelines infrastructure, wastage of water and leakages at consumer points as well as over abstraction of water can be risks. So, creation of awareness on water resource management and conservation through consultation workshops, creation and implementation of a Social Engagement Plan – SEP, monitoring of the irrigation system installed as well as the irrigation schedule should be undertaken. Finally, the execution of the project different activities may generate waste related to the presence of the workers, construction engines, and equipment, etc. It will be recommended to proceed to waste management plans in the construction sites, think to waste recycling / composting in the USPs.

P13- Public health

207. The project will contribute to improving the sanitary conditions of communities by monitoring ecosystems, water, and soil quality, to prevent the population from natural disasters through the EWS and to improve their incomes for easier access to health facilities. Water storage constructions may lead to water-related diseases (such as Malaria) increase, so, it is mandatory to raise awareness and support mechanisms to implement disease awareness and management programme for Malaria and Bilharzia. Additionally, results related to the demographic composition in the proposed project sites show that most vulnerable members of communities among the smallholder farmers and pastoralists in the proposed project areas are women, youth and People Living with HIV/AIDS (PLWHAs). Then, it is important to prevent and control spread of HIV/AIDS among the program workers and local communities by organizing sensitization sessions and distributing prevention kits. Additionally, construction activities may lead to noise and odor nuisance as well as increase the dust levels. To face this risk, it is intended to (i) select appropriate machinery and regular servicing of machinery and vehicles, (ii) use and ensure the application of security measures by companies such as ear plugs and ear muffs among workers when noise levels exceed 80 dBA for 8 hours and limit the hours of exposure of workers, (iii) apply a noise mitigation policy for all operations in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) and iv) workers will be provided with appropriate dust protective gear including masks and overalls. With regards to the persons safety in maintaining the tanks or dams (in particular risk of fall of man or cattle), security will be ensured at the reservoirs especially at the dams' area by providing adequate protective equipment (e.g protective mesh). Finally, health problems due to tank water low quality or the proliferation of insects near the water points could occur. Thus, it will be recommended to (i) not collect the first runoff that is often heavily loaded or provide a decanter for tanks to improve the water quality, (ii) train communities that tank water is not consumed by the population without adequate treatment (after boiling or treatment), and (iii) Provide family sanitary kits (filters and disinfectants).

P14- Physical and Cultural Heritage

208. The project will enhance and promote the protection of physical and cultural heritage. In fact participatory workshops to identify areas of physical and cultural will be organized and traditional and ancestral knowledge will be preserved.

P15 -Soil and land conservation

209. The project will promote the conservation of soil and land resources as detailed in the component 3, especially through the improvement of agricultural good practices such as reforestation, restoration and rehabilitation of degraded lands. Besides, component 4 undertakes activities that aims at building farmers and technicians' capacities in order to enhance environmental awareness and soil and land better management solutions. Furthermore, livelihood diversification through the promotion of several IGA will help reduce farmers' pressure on forest soils. However, there is a potential risk of soil erosion. So, where applicable, it will be recommended to install specific measures to combat erosion (dry rock, gabions, stone bunds) and plant sediment binding grasses, shrubs and trees on the exposed slopes and other surfaces as found appropriate. Soil compaction by the machinery during construction or maintenance may occur. Thus, to face up to these risks, sustainable techniques to refresh the affected lands will be boosted. It is also intended to promote awareness sessions with the workers and the local population to strengthen the effective management of soil and land.

III. PART III: IMPLEMENTATION ARRANGEMENTS

A. Project management arrangements

Implementing Entity

210. The project will be implemented by the Sahara and Sahel Observatory (OSS) who will serve as the Regional Implementing Entity (RIE) and will be in charge of all financial, monitoring and reporting aspects to the Adaptation Fund. The OSS will also provide administrative and management support to the regional executing entity and will be responsible for reporting project related information to the Adaptation Fund.

Executing Entity

211. The project execution will involve stakeholders at the regional, national and local level, as follow:

At the regional level

212. Global Water Partnership Eastern Africa (GWPEA) with significant experience coordinating regional development projects will execute the project. GWPEA as a Regional Executing Entity will benefit the DRESS-EA project through mobilizing GWP's extensive experience in demonstrating, documenting and partnership building on water resources management, climate resilience, and drought management. Specifically, GWPEA will support the national Executing Entities in terms of capacity building and knowledge management, creating a cross-learning environment and strengthening the regional partnership building aspect.

213. The role of GWPEA will be to provide management support (technical and financial) and as well consolidate reports from the executing countries. In addition, GWPEA will support monitoring interventions and specifically, ensure that the regional aspect of the project is well articulated and fulfilled. To guarantee the regional aspect, the project entails the following rules/steps; first, Cooperation/coordination in data and information sharing; secondly, sharing available technology and expertise; thirdly, minimizing and /or eliminating duplication of efforts and fourthly, contributing to regional frameworks in the IGAD region.

At national level

214. Four National Executing Entities (NEE) will execute the project. The NEE for the project will be i) the Ministry of Agriculture, Water Fisheries and Livestock of Djibouti, ii) Ministry of Environment and Natural Resources-Climate Change Directorate for Kenya, iii) Ministry of Water Resources and Electricity of Sudan and iv) Ministry of Water and Environment- Directorate of Water Resources Management of Uganda. The NEE will be responsible to consolidate the results from the project sites within their respective countries for onward transmission to the Regional Executing Entity. In order to ensure cross-fertilization of project interventions and increase their ownership by stakeholders, the NEE will execute the project in partnership with strategic stakeholders. Each of the Executing Entities has lower established governance units through which project activities will be executed.

215. The NEE will collaborate with institutions in the respective countries during the project activity execution. These include the Designated National Authorities. Ministries, Departments and Agencies (MDA) that are mandated to support climate resilience and livelihood improvement- these include Ministries of Agriculture, Ministry of Water and ministries in charge of disasters/drought in the country. In some instances, higher political offices e.g. Office of the Prime Minister (OPM) in Uganda as an overseer and overall coordinator of government ministries may be involved. It has to be mentioned, that the project will collaborate with NIEs accredited by the Adaptation Fund in the target countries to ensure synergies with other potential projects funded by the Fund as well build their capacities on climate related projects. For this project, only two countries have their NIEs, particularly Uganda and Kenya. The Ugandan NIE is the Ministry of Water and Environment and the EE for this project while NIE in Kenya is the National Environment Management Authority (NEMA) whose role is to contribute to activities linked to social and environmental aspects such as delivering conformity certificates for USPs impact assessments and being part of the national steering committee. It will ensure an advisory role for the implementation of the project activities.

216. For example, the local government, lower political units, and community structures/committees. Table 10 summarizes executing entities by country and their respective potential partners.

At the local level

217. The project execution offices will be based at local government offices of the selected project sites in the respective countries. The project execution offices will closely collaborate with local government structures in the execution of the project interventions following the local authorities planning guidelines.

Table 8: National Executing Entities

Country	Ministries	National Executing Entity/ Institutions to partner	Role of the institution as a partner
Djibouti	Ministère de l'Agriculture, de l'élevage et de la mer chargé de l'hydraulique	Directorate of Rural Hydraulics Executive Secretariat for Risk and Disaster Management (SEGRC)	Advises the national committee on natural disaster
Kenya	Ministry of Environment and Forestry	Climate Change Directorate Kenya Meteorological Department Ministry of Water and Irrigation National Environment Management Authority (NEMA)	
Sudan	Ministry of Water Resources, Irrigation and Electricity	Ministry of Environment and Physical Development Higher Council for Environment and Natural Resources	
Uganda	Ministry of Water and Environment	Directorate of Water Resources Management DWRM National Environment Management Authority Department of Disaster Preparedness and Management- Office of the Prime Minister Uganda National Meteorology Authority Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) District Disaster Management Committees (DDMC)	Coordinates and response to drought-related emergencies including supporting a number of community-based programs

218. Other partners such as IGAD Secretariat/ICPAC (IGAD Climate and Prediction Application Center) will be involved in providing political support and technical backstopping respectively. IGAD secretariat is coordinating drought activities in the region through the "IGAD Drought Disaster Resilience and Suitability Initiative (IDDRSI) framework.

219. The DRESS-EA project objectives are consistent with the overall objective of IDDRSI and will, therefore; contribute to the framework goal, which is attaining drought disaster resilient communities, institutions, and ecosystem in ASALs38 of IGAD by 2027. ICPAC is the technical arm of IGAD through which the DRESS-EA project will benefit from enormous data/information and experience in seasonal forecasting and drought characterization.

220. The project organogram below indicates the management structures for the project and how these will interact with each other and at the different levels.

221. The roles and responsibilities of each entity are presented in Figure 20.

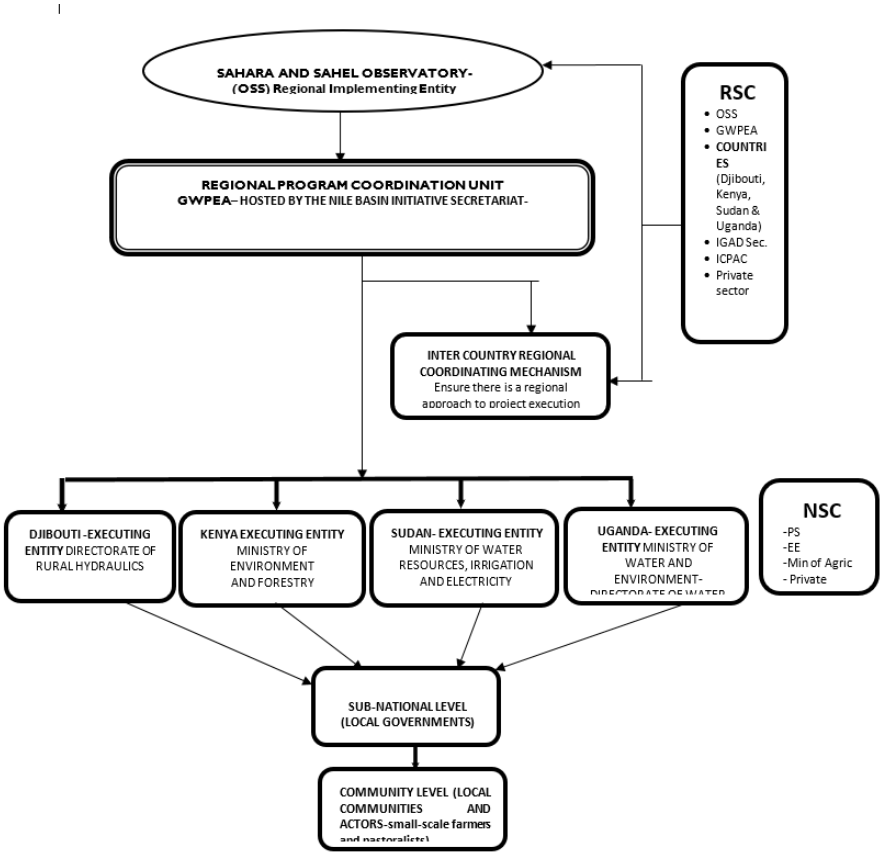


Figure 15: Project Implementation arrangements

Table 9: The key implementing and executing entities and their roles

No	Entities	Role and functions
1	**Sahara and Sahel Observatory (OSS)**: Regional Implementing Entity (RIE)	• Oversee overall financial and monitoring aspects of the DRESS-EA project • Reporting of project consolidated results to the Adaptation Fund • Approval of project annual work plan and budget at the regional level • Approval of annual financial and technical reports • Provide administrative and management support to the regional executing entity
2	**Global Water Partnership Eastern Africa (GWP-EA):** Regional Executing Entity – (REE)	• Project management and execution at the regional level (IGAD region) • Ensure compliance with the project regional dimension • Provide Technical Advice, guidance and support to the project • Communication, networking and partnership building • Supporting executing entities during operationalization of activities at country level • Support in policy influencing at the regional level/ also at country level through Country Water partnerships[39] • Monitoring and evaluation at the regional level and M&E data collecting from NEEs • Providing technical and financial reports to OSS based on national reports • Will be constituted a Regional Implementation Unit (RIU) composed of a Regional Project Manager, Finance Officer, Communication Officer, Monitoring, and Evaluation Officer. The roles of the RIU include: **Regional Project Manager** • Program management (Ensure that project activities are on track and that key results are achieved) • Provide guidance on linkage and consistency of project activities in countries • Communication, networking and Partnership building • Supporting countries in project implementation **Finance Officer** • Support in project financial management • Monitor budgeting and financial expenditures • Ensure correct financial reporting of the executing entities **Communication Officer** • Develop project communication materials

		• Ensure project publicity and visibility • Networking and partnership building on the international level **Monitoring and Evaluation Officer.** • Design the project's M&E system in consultation with the stakeholders • Review and revise the project M&E tools • Design additional M&E tools, as and when required • Maintain an up-to-date catalog of all project M&E tools and forms • Ensure that all project reports are sent to the correct people and maintain distribution lists for various reports • Conduct secondary verification of all results data received from partners countries and or stakeholders, including conducting verification visits, as appropriate. • Ensure that partners submit reports within the agreed time schedule • Ensure quality of narrative reports prepared by DRESS-EA project partners • Monitor quality of activities within the project by conducting site visits, as appropriate • Analyze the project's M&E data and make recommendations to the project management team
3	Executing countries: Djibouti, Kenya, Sudan and Uganda)	• Support project management and execution at the national level, • Ensuring the project creates a positive impact on the beneficiaries • Consolidation the results from the project sites and link with the REE • Ensure cross-fertilization of project interventions and increase their ownership at the national level • Monitoring and evaluation at national level • Providing technical and financial reports to REE (GWPEA)
4	Local governments (sub-National Level)	• Create a conducive environment for the program execution especially by mobilizing communities and technical experts at the sub-national level • Provide political support and advocacy • Ensure ownership and sustainability
5	Community structures	• Key partners and implementers of the program at the local level • Labor and local material contribution for program activities (in-kind contribution to the project) • Ownership and sustainability by establishing community management structures
Other: Regional level		
6	Regional Steering Committee	• Meet twice a year and provide strategic direction for the project at the regional level. • Meetings will be organized back-to-back with other technical meetings
7	Regional Technical Advisory Committee/ Inter-Country Coordinating Committee	The committee will be constituted by the technical experts from the executing entities- and will include Djibouti, Kenya, Sudan and Uganda. Also, GWPEA and ICPAC will be part of the committee. • Meet twice a year • Provide technical guidance to the project • Provide technical support to the implementation of the project • Ensure that the regional aspect of the project is realized
Other-Country level/National Executing Entities		
8	National Project Steering Committee	The NPSC will meet twice a year and will be composed of multi-sectoral stakeholders including Ministry of Agriculture, National Environment Authorities/agencies, National Designated Authorities, climate change departments or directorate, ministry in charge of disasters or droughts. Each of the executing countries will have steering committee structure based on the nomenclature of the ministries, departments, and agencies in the country. • Provide strategic direction for the project at the country level • Meetings will be organized back-to-back with other technical meetings
9	Project Management - Program management at country level-	• Provide guidance on linkage and consistency of project activities in the countries • Communication, networking and Partnership building • Supporting countries in project implementation Overall, project management at country level will be as follows: A Project Manager will be appointed and stationed at the project focal point in the country (for example- for Djibouti, the project manager will be someone appointed from the Ministry of Agriculture Water Fisheries and Livestock to ensure liaison on project activities among and between the ministry and other institutions and stakeholders such as at sub-national level, field offices, and targeted communities. The project will be implemented within the government/ministry framework to avoid duplication. But also, the project interventions are directly contributing to the government overarching goal, therefore, this structure ensures ownership.

222. **N.B:** IGAD secretariat and ICPAC will be strategic partners. The role of IGAD secretariat will be to ensure collaboration for regional program activities such as capacity building, information sharing, partnership building and policy support. While ICPAC will support technical backstopping. This will include enhancement of capacity on early warning information and sharing experiences in seasonal forecasting and drought characterization.

223. The overall highest decision-making body of the DRESS-EA project is the Regional Steering Committee (RSC) composed of key stakeholders mentioned in Table 11. The RSC will meet twice a year. The RSC is a policy and oversight committee that will supervise the project at the regional level. It is composed of two members from each of the executing countries (Djibouti, Kenya, Sudan and Uganda), one committee member will represent the project from the Country executing entity and another representative will come from the sub-national levels- where activities are undertaken on the ground. Overall, the composition of the RSC will be 13 and is shown in Table 12, one from the Regional Executing Entity REE (GWPEA) and one from the Regional Implementing Entity (OSS). Also, the RSC will be composed of one member each from Regional Economic Community representation (IGAD) and its technical wing (ICPAC) and from the private sector. Therefore, the total RSC membership will be Thirteen (13).

Table 10: Summary of RSC DRESS-EA composition

No	Institution Committee composition	Number
1	RIE- OSS	1
2	REE-GWPEA	1
3	Djibouti (one committee member from the Executing entity and another from the sub-national level)	2
4	Kenya- same as above	2
5	Sudan- same as above	2
6	Uganda- same as above	2
7	IGAD Secretariat	1
8	ICPAC	1
9	Private Sector	1
	Total	**13**

224. At the country level, each executing entity will have a Project National Steering Committee (PNSC). The PNSC will be composed of representative stakeholders from the following institutions*:* Executing Entity (secretary to the committee), NDA, National Environment Agency, Ministry of Agriculture, Climate Change Directorate, and Ministry in charge of Drought/disasters. To involve support and contribution from the private sector, it is proposed that the PNSC includes a private sector member on the steering. To ensure gender equality, the composition of the Project National Steering committee will have at least 40% representation by women. This will empower women by providing them with an opportunity in decision making.

B. Financial and risk management measures

225. The fact that the project is multinational in nature, its anticipated that there will be both financial and project management risks during its implementation. Due to different political and geographical context of the countries, it is expected that they may face challenges /risks that are either similar or different. Overall, the anticipated project risks are summarized by country in the table below:

Table 11: Project Risks and their Mitigation measures

Risk	Country	Rating	Risk Mitigation Measure
Political conflicts in some countries.	Sudan	Medium	-The project will identify and work in relatively safe regions of the country -From the financial perspective, funds will be disbursed in small tranches to reduce the risk of having large project funds being trapped in a political conflict. - Each disbursement must be justified in order to proceed with the next disbursement.
Inter-clan/tribe conflicts in pastoral areas	Djibouti, Kenya, Sudan, Uganda	high	-Involvement of traditional leaders in planning, implementation, monitoring and evaluation processes of the project -Massive sensitization on the relevance of the project at the project initiation stage. This will be done through portable mobile loudspeakers to raise awareness.
Low collaboration amongst the relevant technical institutions	Djibouti, Kenya, Sudan Uganda	Low	-The relevant institutions have been identified and more will be identified during the project baseline development stage. The institutions will be engaged in the early stages of project implementation, during progress reviews, reporting, and another vital process

Local communities (small-scale farmers and pastoralists) with limited participation and willingness to promote project initiatives	Djibouti, Kenya, Sudan Uganda	Low	-The project plans sensitization at local community level and ensuring active involvement of community leaders especially the target audiences i.e. the farmers and pastoralists. -Community-Based Organizations (CBO) in the targeted sites will be sensitized on the project relevance and they will be engaged with the purpose to create linkages in project implementation
Poor monitoring and evaluation and delayed delivery of outputs	Djibouti, Kenya, Sudan Uganda	Low	-The project will develop a detailed participatory M&E framework with the key project partners -Regular follow-ups and timely continuous monitoring and evaluation
Limited capacity, especially in areas of water security and integrated drought management in the targeted sites	Djibouti, Kenya, Sudan Uganda	Medium	-Capacity building components within the project to have aspects of water security and integrated drought management. This will be done by training targeted audiences in Integrated Water Resources Management tools for drought risk management. -Linkages of project beneficiaries to on-going capacity development efforts of resilience building in the region and countries. In this way, project beneficiaries will be connected to successful on-going capacity building initiatives in the region and focal countries that will be identified.
Management of funds by countries- accountability etc.	Djibouti, Kenya, Sudan, Uganda	Low	-The project will undertake training in financial management targeting the financial managers and project managers in the countries. -Training on finance to non-finance personnel will be organized to provide basic knowledge in the financial handling of project funds. It is proposed that the slot to support financial management will be incorporated as part of M&E
High expectations by the targeted audiences (small-scale farmers and pastoralists)	Djibouti, Kenya, Sudan Uganda	High	More awareness raising tailored to the targeted audiences- on the objectives and expected outputs and outcomes of the project.
Dependence on handouts- NGO's in the project site providing free materials without ensuring ownership	Djibouti, Kenya, Sudan Uganda	Medium	- The project requires to establish multi-stakeholder's forum in the targeted sites and share the mode of operations and codes of conduct in service delivery. - Project to support meetings with the purpose to harmonize the emerging challenges that may result from supporting communities through the provision of handouts. There are some projects/institutions in the targeted sites supporting similar interventions and to provide 100% of support including what would be the in-kind contribution of targeted communities. This can potentially promote laziness amongst the communities. The project proposes to collaborate with existing such institutions with aim of streamlining the support to communities, encouraging them to be more productive using the project catalytic funds
Project financial management	Djibouti, Kenya, Sudan Uganda	Medium	-Strengthen the project financial management and accountability systems through using the proper and approved procedures- in compliance with Adaptation Fund and OSS regulations and standards. -Separation of roles in financial management will strictly be enforced and adhered to.
Communication in the project	Djibouti, Kenya, Sudan Uganda	Low	-The project will ensure that some of the project staff within National Executing Entities are fluent in the local language of the project areas. -As a bilingual organization, OSS can facilitate the exchange and sharing of information between the Francophone country (Djibouti) and the Anglophone countries (Kenya, Sudan, Uganda) of the project.

C. Environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

226. During the development of the Project full proposal a first and global environmental and social impacts and risks assessment has been developed according to the national standards (the fourth beneficiary countries). Approval letters are provided by national environment authorities.The DRESS-EA project environmental and social risks analysis indicate limited significant environmental or social impacts as per the Environmental and Social Policy of the Adaptation Fund. The impacts levels are evaluated to be low or medium risks. Thus, the project is classified under Category B of risk. This means that the project activities have small-scale impacts, limited to the project area and easily mitigated through good environmental and social management practices.

227. Besides, the project will undertake environmental and social impact assessment reviews as applicable (depending on the scale of the project activities to be undertaken).

Table 12: Mitigation measures for the E&S identified risks

Checklist of environmental and social principles	Risk identification per E & S Principles	Mitigation measures per E & S Principles
Conformity with the law	The fully identified project activities will not generate risks. Only unidentified activities or sub-projects particularly Income Generating Activities (IGAs) undertaken in the component 3 may require a specific EIA depending on the size and the location of the implementation to comply with national standards and laws.	- The fully identified project activities do not generate risks related to conformity with the law so there are no mitigation measures to plan.
Access and Equity	Knowing that the project beneficiaries will be generally rural people (pastoralists and smallholder farmers) who have difficulties to access decision-making process; There is a risk that this may limit their opportunities to benefit from projects outcomes.	- Consultation workshops will be held at implementation stage to kick start the project; - Close monitoring and reporting of the project beneficiaries to ensure equal access of men; women, youth and the most vulnerable; - Grievance mechanism.
	Women and youth are characterized by poor access to land and related resources over agricultural production. These findings imply that there is limited capacity to cope due to high levels of poverty and dependency among the women and youth and may limit their opportunities to benefit from projects outcomes.	
Marginalized and vulnerable groups	Insufficient knowledge and access/use of technological devices such as mobile phones or lack of good cellular connectivity specially required in component 2 on Early Warning System design and implementation.	- To avoid the exclusion of marginalized and vulnerable communities in order to disseminate and broadcast the warning messages in case of natural disaster, local radio channels and traditional practices such as speakers, maps and sirens will be implemented to reach them. - Grievance mechanism
	During construction activities, risk of reducing or prohibiting the temporary access of certain populations, especially women, to the resources on which they depend (pastures, water, fruit trees, crops, fishing grounds, forest, public services)	- Organize consultation meetings with local administrative and customary authorities and steering committees representing communities and indicate that any activity limiting access to resources or sources of income will be analyzed and lead to an agreed community plan for work/construction implementation. All activities implementation must be decided in common with consultation of all concerned communities; - Grievance mechanism
	Component 3 involves setting up a competitive small grant scheme (CSGS) for undertaking innovative climate change adaptation interventions. Given the funds available dedicated to the small grants, it is hard to cover all the beneficiaries.	- Funds distribution will be based on a set of agreed community selection criteria to avoid exclusion and inequity - Grievance mechanism
Human rights	The project activities do not generate risks related to human rights.	- The project activities do not generate risks related to human rights so there are no mitigation measures to plan.
Gender Equality and Women's empowerment	The cultural and social norms of the project region lead to a greater role for women to question male dominance and claim their role in decision-making. So, there is a risk that women will not benefit equitably from the proposed adaptation measures	- - Ensure the presence of women and young people in workshops and trainings;

	and the capacity building interventions due to men leadership.	- -Communication and sensitization of the population on the gender issue to ensure gender parity in income-generating activities - - Grievance mechanism.
	Under component 3, it is intended to provide competitive small grants targeting small holder farmers and pastoralist associations including women to improve their livelihoods. There is a risk of gender inequality if the Fund does not provide facilities for women's access to the scheme due to social norms and pressures linked to men leaderships.	- A series of measures (e.g. involvement in consultation process, selection criteria) will be incorporated to ensure that both, men and women, have access to this scheme, taking into account that, traditionally, women have less access to control of economic resources. - Grievance mechanism
Core Labor Rights	Risk of accidents and occupational hazards during the project preparation and implementation.	- Sensitize workers and populations to the risks related to the undertaken activities; - Design and implement safety measures and emergency plans to contain accidents risks and ensure the application of safety standards by companies (equipment, signs, training, etc.) - Provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable
	Risk of late or unpaid salaries or remuneration non-compliant with the countries labor legislations and laws. Risk of Children's labor. Risk of Remuneration inequity between men and women.	- Salaries in line with regional practices and defined with national entities - Close follow-up and monitoring of the worksites by the national executing entities including schedules, activities progress, respect of the labor and safety rights of workers and conformity with national labor codes.
Indigenous People	The project activities will generate the same risks on Indigenous people as the risks on all project communities. There will be no major risk on their assets, resources, culture, land and rights. The main risks that could raise are related to the ways they use water resource, transhumance routes, livestock management, agricultural practice etc.	- -Involvement of indigenous people representatives at all project stages (development, implementation, monitoring and decision-making process) - -Detailed analysis will be carried out by local and national agencies to understand the traditional use of natural resources especially regarding to water and land use.
Involuntary Resettlement	The construction of appropriate and innovative water harvesting and storage infrastructure as well as mini-irrigation and water delivery systems will occupy spaces and may affect private lands or related activities.	The review process for these activities will include criteria that stipulate no resettlements. The project will opt for state-owned lands and if needs be, compensation measures will be arranged for used private lands owners.
Protection of natural habitats	The presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have an impact on the fauna and flora of certain intervention sites. The implementation of solar-pumped boreholes, water harvesting and storage infrastructure (e.g simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, etc) can result in the vegetation and wildlife habitats destabilization in the implantation site.	- Follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats - Establishment of E&S Impact Assessment Studies - Policies and laws to protect natural habitats will be screened with the stakeholders to ensure that the critical habitats are legally protected - Sensitization sessions to local populations on good environmental practices and the protection of natural habitats.

Biodiversity conservation	Vegetation clearance for water harvesting and storage sites construction may represent a form of disturbance for bird habitat and wildlife	- Follow-up and monitor the implementation of all activities related to the protection and management of ecosystems; - Minimize vegetation clearance as Low as Reasonably Practical (ALARP) - Avoid cutting large trees with a diameter >20cm - Pre-survey the proposed construction site areas to avoid sensitive habitats that have high diversity of indigenous plants - Promote planning for activities of biodiversity conservation such as Compensatory reforestation - Promote awareness sessions, capacity building and peer learning to strengthen the efficient management of natural resources, including aquatic species, animals and forests.
Climate change	A potential change of the land use due to the field clearing to construct innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, etc) the may generate the sequestration decrease.	- Promote reforestation to offset these used lands
Pollution prevention and resource efficiency	Potential contamination of water reservoir through introduction of impurities, wastewater and solid waste.	- Conduct regular water quality monitoring and maintenance of the water supply system as well as ensure the monitoring of water quality by chemical analysis; - Awareness improvement on water Resource management and conservation through consultation workshops; - Separate the infrastructures for human and animal use and provide a specific installation for the watering of livestock near the tanks.
	Increase in dust levels	- Limit levels of dust through good practice such as watering of access routes, construction sites, and other disturbed sites - Cover lorries transporting construction materials
	Vandalism of water pipelines infrastructure, Wastage of water and leakages at consumer points	- Creation of awareness on water Resource management and conservation through Consultation workshops; - Creation and Implementation of a Social Engagement Plan – SEP;
	Over abstraction of water	- Irrigation system installed and fully monitored - Irrigation schedule controlled
	Air pollution by gas emissions from machinery during field work or consultants and various stakeholders' vehicles during workshops and field visits.	- Reduce gaseous emissions by selection of appropriate machinery and regular servicing of vehicles - Incite to use a good quality fuel meeting the standards.
	Generation of waste related to the presence of the workers, construction engines, and equipment, etc. during the execution of the project different activities.	- Recycling wastes/ recycling and composting could be an USP - Waste management plans for construction sites.

Public Health	Water storage constructions may lead to water-related diseases (such as Malaria) increase	- Raise awareness and support mechanisms to prevent and control spread of water related diseases such as Malaria and Bilharzia among the program workers and local communities - Implement disease awareness and management programme for Malaria and Bilharzia
	The presence of workers at construction sites near the project beneficiary villages could increase the risk of spread of sexually transmitted diseases (STD) especially that most vulnerable members of communities among the smallholder farmers and pastoralists in the proposed project areas are women, youth and People Living with HIV/AIDS (PLWHAs).	- Prevent and control spread of HIV/AIDS among the program workers and local communities, by organizing sensitization sessions and distributing prevention kits.
	Noise and odor nuisance	- Selection of appropriate machinery and regular servicing of machinery and vehicles. - Use and ensure the application of security measures by companies such as ear plugs and ear muffs among workers when noise levels exceed 80 dBA for 8 hours and limit the hours of exposure of workers - Apply a noise mitigation policy for all operations in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution)
	Increase in dust levels	Provide workers with appropriate dust protective gear including masks and overalls.
	Risk of persons safety in maintaining the tanks or dams (in particular risk of fall of man or cattle)	- Ensure security at the reservoirs especially at the dams' area by providing adequate protective equipment (e.g protective mesh).
	Risks of health problems due to tank water low quality or the proliferation of insects near the water points	- Do not collect the first runoff that is often heavily loaded or provide a decanter for tanks to improve the water quality; - Train communities that tank water is not consumed by the population without adequate treatment (after boiling or treatment); - Provide family sanitary kits (filters and disinfectants)
Physical and Cultural Heritage	The project activities do not generate risks related to physical and cultural heritage	The project activities do not generate risks related to physical and cultural heritage so there are no mitigation measures to plan.
Soil and land conservation	Risk of soil erosion	- Where applicable install specific measures to combat erosion (dry rock, gabions, stone bunds) - Plant sediment binding grasses, shrubs and trees on the exposed slopes and other surfaces as found appropriate.
	There is a minimal risk of soil compaction by the machinery during construction or maintenance.	- Refresh the deteriorate lands - Raise the local population awareness to strengthen the effective management of soil and land; - A close follow-up and monitoring of the implementation of all activities related to the soil and land conservation.

Unidentified Sub-Projects (USPs): Methodology of Impact Assessment and Risk Management

228. The ESIA of the project activities has been established to ensure that the potential impacts are identified, their significance is assessed, and appropriate mitigation measures are proposed to minimize or eliminate such impacts during a fair and visible time frame with the consideration of the investment which has to be taken. Nevertheless, the project includes a number of activities that have not yet been identified to the stage where effective ESP risks identification is possible (so called unidentified sub-projects USPs). These USP are related mainly to the IGA including agricultural or related field activities such as agroforestry, livestock farming that will not generate major negative impacts.

229. Given this, additional environmental and social impact assessment for each sub-project will be required and ensured by the REE. The screening system will ensure that each sub-project adheres to the environmental and social principles of the AF and of the OSS E&S Policies as well as national policies and procedures.

230. In fact, during project implementation and when the USPs will be clearly identified once the E&S and Gender screening will be conducted, a focus on the relevant national technical standard will be made. It is however important to note that the USPs will be only activities related to similar ones that are already known at this stage of project development. Most of the expected project' USPs will be dealing with agriculture activities such as breeding small ruminants, Medicinal and aromatic plants distillation, etc. Given this, the technical standards presented above and which are relevant with the project activities will be applied for the USPs if relevant and additional Standards could be identified and referred to if required according to the USP's specificities.

231. Furthermore, assessed sub-projects that may present significant environmental and social risks will not be implemented unless a comprehensive risk management plan is developed and where the impacts and risks are important, no sub-project or activity will be carried out without the approval of the relevant national authorities.

232. For each sub-project, ESIA will be carried out to predict and assess the potential environmental and social impacts and design appropriate mitigation, management and monitoring measures. The process will be in compliance with national standards, AF and OSS Policies and will include the following steps:

- **Screening**: It is a tool for predicting, understanding and assessing potential sub-project/activity impacts. In other words, it aims to determine if a sub-project/ activity is likely to have significant environmental and social effects. Basing on the 15 principles of the AF, the purpose of Screening is to determine whether or not an EIA is required;
- **Scoping**: If a full ESIA is required, scoping establishes the studies that will be required as part of the ESIA process including the identification of data availability and gaps. It determines the appropriate spatial and temporal scopes for the assessment and suggests suitable survey and research methodologies;
- **Impact Prediction and Evaluation**: is the heart of the ESIA and involves analyzing the impacts identified in the scoping to determine their nature, temporal and spatial scale, extent and effect. Impact analysis requires input from relevant experts, including ecologists, biologists, sociologists and economists. Once the potential impacts are fully understood, it is necessary to judge the significance of each impact, to determine whether it is acceptable, requires mitigation or is unacceptable. Consultations with local stakeholders is vital at this stage, and particular attention should be given to vulnerable and disadvantaged communities and risks arising from involuntary resettlement. Successfully identifying and addressing significant impacts at this stage can be key to obtaining both a formal and informal license to operate;
- **Mitigation**: aims to eliminate or reduce negative sub-project/activity impacts through suggesting appropriate measures;
- **Social and Environmental Management Plan (SEMP) and monitoring**: Also called an Environmental Action Plan (EAP), it defines resources, roles and responsibilities required to manage sub-project/activity impacts and implement mitigation measures. The SEMP forms a link between the ESIA and the Social and Environmental Management System/entity. The central elements of a SEMP should include a detailed description of the activities planned to mitigate impacts, a time line and identification of resources to ensure the SEMP can be delivered, and a communication plan that indicates how progress in the implementation of the SEMP will be disclosed. The SEMP should also define monitoring requirements or indicators to determine whether mitigation is successful;

- **Evaluation**: Also called The Environmental Impact Statement (EIS), is the physical report on the ESIA process and findings. The EIS should provide a clear review of potential impacts and how they have been or will be mitigated. The report often forms the basis of public consultation activities and is the document that is presented to regulatory authorities as the basis for decision making.

233. However, as part of AF quality assurance role, AF requires adherence to the ESP for Project activities implemented using funds channeled through AF accounts. So, all proposed Projects are required to be screened according to the 15 principles as given in the table below.

Table 13: Checklist for preliminary risk screening and project categorization according to the AF principles

234. Besides, OSS, as the project implementation entity, is also provided of its specific E&S policies describing principles

Checklist of environmental and social principles	No additional assessment is required for conformity	Potential impacts and risks - additional assessment and management required for the conformity
Compliance with the law		
Access and Equity		
Marginalized and vulnerable groups		
Human rights		
Gender Equality and Women's empowerment		
Core Labour Rights		
Indigenous People		
Involuntary Resettlement		
Protection of natural habitats		
Biodiversity conservation		
Climate change		
Pollution prevention and resource efficiency		
Public health		
Physical and Cultural Heritage		
Soil and land conservation		

and procedures for the environmental, social and gender impacts screening/assessment during the preparation and implementation of projects. In addition, the USPs environmental screening and potential ESIA should be in line with national laws and regulations as the activities will be executed at national level. If some of the USPs require detailed assessments the involvement of National authorities in charge of environment will be necessary.

OSS Environmental and Social Safeguard

Environmental and Social Safeguard of DRESS-EA project is ensured through OSS policies and procedures which are based on the International Finance Corporation (IFC) Environmental and Social sustainability Framework. This ensures that potential risks and impacts are iteratively identified, mitigated and monitored throughout the life-cycle of the Project. The Environment and Social risk management is completed through two main stages: 1- Preliminary Risk Screening with respect to the ten Performance Standards (PS) prescribed in OSS E&S policy that all projects should comply with. This phase is implemented during project preparation and leads to a categorization of the project according to its risk level.

In compliance with OSS Environmental and Social policy, a preliminary risk screening was conducted from the earliest stages of DRESS-EA project preparation. Pre-screening of the concept note and early drafts of the project document using OSS' procedure for risk and project categorization helped to ensure that social and environmental sustainability issues are considered and integrated into the project' design. 2- On-going Risk Screening of the project interventions during the implementation phase. Activity-wise risk management is governed by OSS' risk management procedure which is in line with the internationally recognized standards, and more specifically the ISO 31000:2009, Risk management — Principles and guidelines. In addition to the preliminary and overall risk screening conducted at the preparation phase, operational procedures will be implemented to ensure a continuous screening of all project activities and interventions for the identification of arising risks and impacts. If these impacts or risks are determined significant, activity-wise environmental and social assessment will be conducted which, in turn, will lead to the identification of activity' specific environmental and social management measures that need to be incorporated into the project. Identification, treatment and monitoring of identified risk and mitigation measures for DRESS-EA project will be managed using a Risk Register. The process will be governed by the Risk Management Procedure of the AF and OSS.

235. Moreover, in monitoring of the mitigation measures, corrective actions identified to manage activities with significant Environmental and social impact will be monitored using operational rules set out in the monitoring and review procedure of OSS. In this respect, OSS will monitor and review the implementation of corrective action plans, which range from simple mitigation measures to detailed management plans with actions that can be measured quantitatively or qualitatively. Then, once the ESIA is conducted, a detailed ESMP will be developed in each sub-project site and will include a mitigation and monitoring plans, institutional arrangements, with capacity building and associated costs. It will specify how, at what stage and by whom during project implementation for each sub-project risks of negative environmental and social impacts will be identified according to the 15 principles of the AF' ESP.

Institutional arrangements for ESIA

Implementing Entity

236. The E&S committee of the OSS, the Implementing Entity, will be responsible for ensuring the implementation of the ESMP and the application of the methodology described here above.
237. Besides, for the USPs, this committee will be in charge of deciding whether ESIA studies are necessary or not when risks happen and this according to its Environmental and Social principles as well as those of the AF. Additionally, National Environmental Authorities may be involved to deliver conformity certificates (if applicable) and/or just for seeking opinion and comments.
238. Finally, OSS will ensure the effective implementation of the mitigation measures identified in the ESMP during its supervision missions. Nevertheless, it could organize specific assignments to assess the complaints submitted by local communities.

Regional Executing Entity (REE)

239. The regional monitoring of the project activities will be carried out by the GWP-EA. This REE will be responsible for the supervision of the National Executing Entities activities related to monitoring the ESMP at local level. On a quarterly basis, the REE will gather the reports from the National Executing Entities, who will rely on a bottom up feedback system based also on community inputs. In order to ensure a relevant monitoring regular field visits to inspect and verify on the one hand the efficiency of the mitigation measures and on the other hand to check the extent of the foreseen impacts. A yearly monitoring report will be developed and submitted to OSS as a RIE.

National Executing Entities (NEE)

240. The NEE will be responsible for coordinating and monitoring environmental and social indicators. The NEE will be also in charge of analyzing data, managing local information systems and supervising the baseline establishment at project starting phase. As regards to the unidentified sub-projects the NEE will be responsible for conducting the ESIA according to the national standards and laws and will then work closely with local authorities to develop the relevant ESMPs for each intervention sites. Finally, the NEE will prepare quarterly based reports and submit them to the REE.

Local Communities

241. The ESIA monitoring will also include a community-based component. In fact, the project plans to carry out training and capacity building sessions for the benefit of local agents and communities, in data collection and monitoring.
242. During all the consultative workshops and meetings related to activities execution, capacity building and training the representatives of ethnic groups and indigenous people will be involved in an active way. They will be informed about the activity risks and will be involved in the implementation and monitoring of mitigation measures.

Table 14: Operational arrangements for ESP & GP

Actor Involved	Responsibility/Role
Implementing Entity (OSS)	OSS will be committed to adherence to AF standards and ESP principles and will implement mitigation measures as part of the ESMP.
Regional Executing Entity (GWP-EA)	Monitor and disseminate the ESIA / ESMP, in particular its grievance mechanism, among relevant stakeholders and beneficiaries. Ensure that the implementation of the project complies with applicable national and standard regulatory frameworks. And monitor the implementation of ESMP activities and evaluate the effectiveness of the mitigation measures put in place.
National Executing Entities (Ministries)	The project coordinator at the national level will direct the day-to-day implementation of the project and ensure regular monitoring, identifying any new potential risks for society and / or the environment during the project implementation, so that measures of support and appropriate attenuation can be implemented to be adopted on time.
Local Communities/ Project Partners	Provide information on potential new social / environmental risks that may arise during the implementation of the project. Assist in the implementation and monitoring of mitigation measures based on their expertise.

Grievance mechanism

Project description

243. During project preparation, consultations and studies were carried out to take into account the needs of local populations and to prevent environmental and social risks that could be linked to the implementation of the planned activities. In order to prevent and manage potential grievances that may arise during and after its implementation, the DRESS-EA project will make available a grievance mechanism. This mechanism provides an access point for individuals, communities and other relevant stakeholders to submit complaints. It will also record and process all complaints relating to the project's activities, results or impacts. The proposed mechanism is intended to be rapid, effective, participatory and accessible to all stakeholders including the vulnerable and marginalized groups, to prevent or resolve conflicts through negotiation, dialogue, joint investigation, etc. It will handle complaints related to the compliance of the project activities and impacts with environmental and social safeguards and gender aspects as well as fiduciary and legal ones (grant agreements, contracts, etc.).

244. Given the location of the project's intervention areas far from the usual facilities and means of communication, the existence of the project's grievance mechanism was disseminated. Indeed, during the preparation phase of the project document during the various consultation meetings with the local authorities as well as with the populations, the emphasis was placed on two essential aspects, namely:

- The environmental and social risks related to project implementation as well as the planned mitigation measures and their relevance;
- The opportunity to speak out and complain about the project activities and its stakeholders if impacts are felt;

245. The exchanges with the local populations were all conducted in the presence of local authorities, village chiefs and tribal or ethnic group's chiefs with their strong involvement in all the discussions. This will allow communities to address these same persons in the event of any grievances. As agreed during consultation with indigenous people, the project will put in place publicly advertised procedures, identifying the means for submitting grievances, setting out the length of time users can expect to wait for acknowledgment, response, and resolution of their grievances, descriptions of the transparency of the procedures, and the governing and decision-making structures.

246. The mechanism will be presented during the launching workshops and during the consultative public workshops and meetings at the local level to allow a large diffusion. The feature of this mechanism is that it will be built on those already existing at the national level and whose management is well apprehended by the population and the authorities.

Objectives

247. This mechanism aims at providing individuals or communities affected or likely to be affected by the project activities with accessible, timely, effective and culturally appropriate opportunities to submit their grievances in accordance with the planned commitments. It will identify and propose fair and appropriate solutions in response to the complaints raised.

Principles

248. The various stakeholders in charge of the grievance management must rigorously respect the fundamental principles of the complaint mechanism described in the table below.

Principles	Implementing measures	Indicators
Security and confidentiality	- Protect the anonymity of complainants if necessary, - Ensure the confidentiality in the event of sensitive complaints, - Limit the number of people with access to sensitive information	No retaliation for denunciations
Accessibility and context	- Widely disseminate the mechanism to target groups, overcoming barriers as linguistic, geographical, intellectual and other - Clearly explain the complaint procedures, - Diversify the possibilities for filling plaints, - Assist people with special access problems...	Variety of sources of complaints, Rate of eligible complaints
Predictability	- Respond promptly to all complainants, - Present a clear process, with deadlines for each step	Average processing time, Response rate
Impartiality	- Ensure the impartiality of those involved in investigations - Ensure that no person with a direct interest in the outcome of the investigation is involved in the handling of the complaint concerned	Challenges of members of the
Transparency	- Inform the parties concerned about the progress and results of the complaint processing	Management team

Specificities of the DRESS-EA project Grievance Mechanism

249. The grievance mechanism put in place for the project is easy to use and takes into account the particularities of the beneficiary communities. Since the project is regional and some countries, such as Uganda and Kenya, already have operational mechanisms, it is important to take it into account in the framework of the project to ensure the ownership of these mechanisms by the countries. In addition to the language barrier, the particularities of certain peoples mean that the most appropriate communication channel is the local authority. These communities do not have the possibility to send the information back to the REE and the RIE and Adaptation Fund without going through the local authorities. For those who do not have a national mechanism (Sudan and Djibouti) they will use that of the project which will be based on the involvement of local authorities for the same reasons mentioned above. In addition, the project specific grievance mechanism will be communicated during all consultative workshops and meetings at all levels. This has been done during the national and regional consultative workshops at the full proposal development stage.

How it works

250. The proposed grievance mechanism for the project will involve the different institutional levels concerned. At the regional level, the project grievance mechanism will be coordinated by both the GWPEA as a Regional Executing Entity and the OSS as a Regional Implementing Entity through its Environmental and Social Committee.

251. **At national level** where the project will be executed, the project specific grievance mechanism will be mainly based on the countries existing mechanisms and communication channels in addition to some project specific components. The project specific grievance mechanism has been presented to the various stakeholders and will be again disseminated and shared since the project launch. This approach will ensure the ownership of this mechanism and the continuity of a process that in some countries is already operational (Uganda and Kenya) as well as the development of a project specific grievance mechanism. **At local level** the project specific grievance mechanism will present different ways in which population including indigenous peoples, women, and youth can submit their grievances, and taking into account language barriers/limitations and the need for anonymity if a complainant fears retaliation or submission by an authorized representative or civil society organization.

252. As an implementing entity, the OSS will use its grievance mechanism to manage complaints that arise during the preparation, the execution and after the project completion. Affected communities or other stakeholders who will be affected by the project may file complaints directly to the OSS or through the GWPEA secretariat or through the national project management unit. They may also be sent to the Secretariat of the Adaptation Fund, if necessary. The full addresses of the three entities are listed below:

Sahara and Sahel Observatory Boulevard du Leader Yasser Arafat BP 31 Tunis Carthage 1080 Tunisia Tel: (+216) 71 206 633/634 Fax: (+216) 71 206 636 Email: doleances@oss.org.tn or boc@oss.org.tn	Global Water Partnership – East Africa Regional Secretariat POBOX 192 Entebbe, Uganda Tel : +256 (414) 321 424 /+256 (417) 705000 Email : info@gwpea.org	Adaptation Fund Board Secretariat Mail stop: MSN P-4-4-400 1818 H Street NW Washington DC 20433 USA Tel : 001-202-478-7347 Email : afbsec@adaptation-fund.org

National specificities for handling complaints

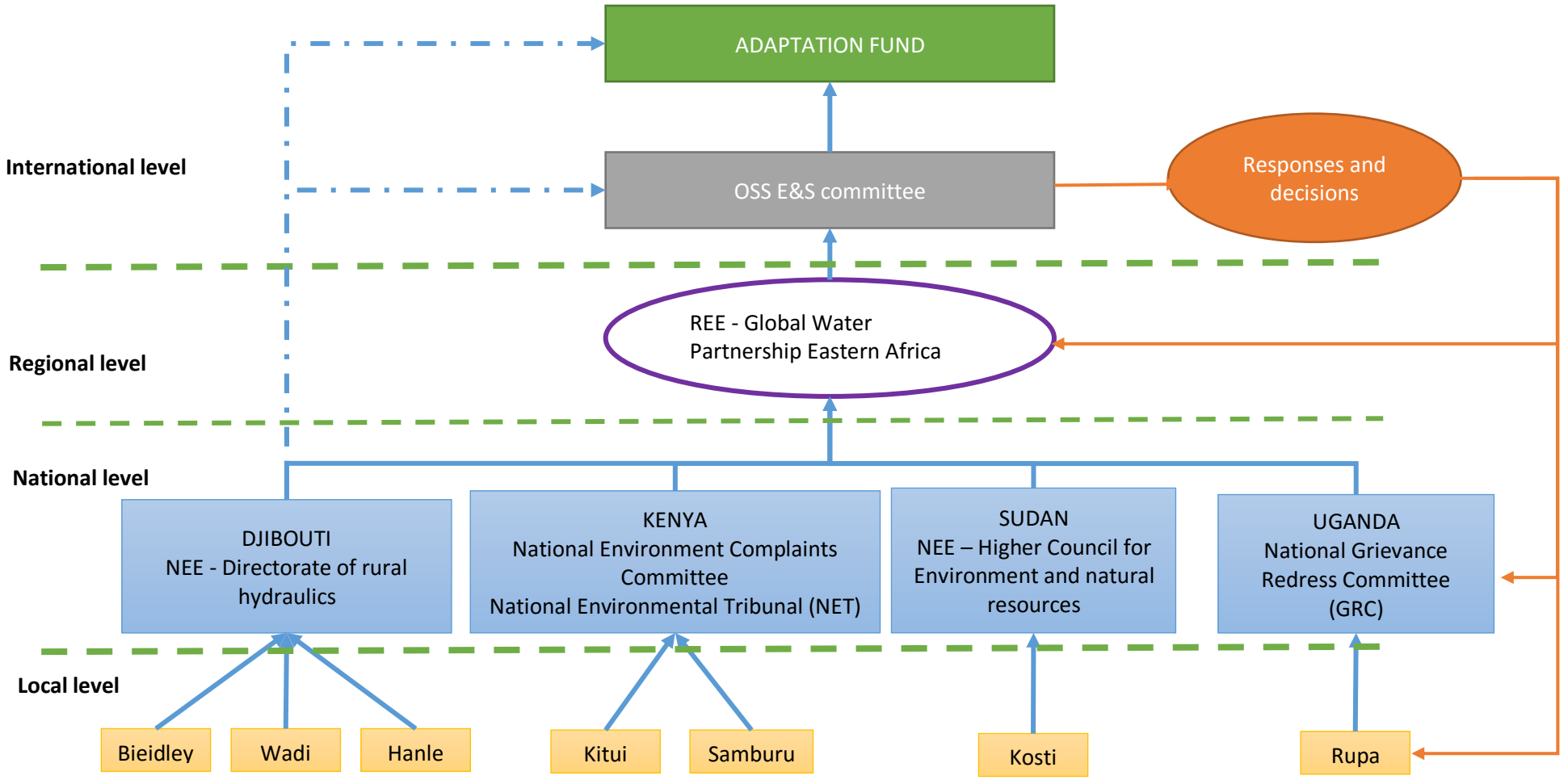
Grievances can be handled depending on the community in which the complainant emanates from. In **Djibouti** for instance, most members belong to different community groups such as savings and credit cooperatives. Errant members or members with grievances report their issues to the executive committee. The executive committee is composed of leaders including the Chairman, Secretary, Treasurer and other representatives. It is this structure that attends to specific grievances guided by the governing rules or Memoranda of understanding within the organization or cooperative structure. For members outside community groups or cooperatives, grievances are reported to the Elders' council that summons the conflicting parties to a meeting or session. It is during such a session that conflicts are resolved. Beyond the Elders' council, grievances are handled at local government structures that are linked directly to the Ministries and Directorates.

In **Kenya**, conflict resolution starts from the traditional leaders headed by the elders that listen and arbitrate between the grieving parties until an amicable solution is reached. For unresolved conflicts, the grieving parties can file their complaints to the Administrative Chief at the County Offices. Beyond this level complaints go the courts and can be determined by the Judges. Ministries also direct complaints to the courts once efforts to resolve conflicts have failed at the lower/community levels.

In **Sudan**, grievances are handled in accordance with the local government administrative structure.

In **Uganda**, generally, complaints are first reported to the local council (village level). Once the issues are not addressed or the grieving parties are not satisfied with the verdicts and advice, they proceed to local council two (parish level), then to local council three (LC III) at the Sub county level. Eventually to the district and then to the courts governed by Magistrates or Judges depending on the gravity of the conflict or case/grievance. However, specifically to the Karamoja region, there exists Elders' club /council with clan heads. These constitute the first line of filing, and handling grievances. Once such grievances are not handled at the Elders' level, they proceed to the lower local governments, LC I, LC II, LC III, district and courts accordingly.

Organizational framework



What to do

253. The project grievance mechanism will go through 5 main stages, as follows:

➢ Filing out a complaint: Anyone or communities affected by project activities can fill in their complaint or claim in several forms and in several ways. In accordance with the principle of accessibility and depending on the context, the method of filing complaints will be diversified.

i) At the national or regional level, complaints will be addressed directly to the OSS or to the adaptation fund via the contacts presented above and via social networks.

ii) At the local level, complaints can be addressed to local authorities (mayors, prefects, etc.) or customary authorities (village councilor, village chief, etc.), which will refer them to local technical services or local complaint management units. Complainants can also fill in their complaint directly with local complaint management units or NEEs. Contacts of local complaint management units and NEEs will be made public at the beginning of the project execution. The mechanism will use all possible means and channels (traditional and modern) to receive complaints or claims (anonymous or not). These will include, among others:

- Telephone call;
- School when children go there;
- Word of mouth, crier, and exchanges in local markets;
- Broadcasting through local and community radio stations;
- Self-referral to the Complaints Management Committee during supervision missions,
- Facts noted during meetings or a field visit...;
- Mail via complaint boxes in the localities concerned by the project;
- Social networks or the OSS website, if applicable.

➢ Receipt and registration of complaints: this is ensured by the NEEs which is responsible for receiving all complaints related to the project activities and impacts. Complaints received will be recorded upon receipt and the traceability procedure will be established. They are generally classified into 2 groups:

- Non-sensitive complaints related to the implementation process, including choices, methods, and results achieved, etc.;
- Sensitive complaints generally related to personal misconduct such as corruption, sexual abuse, discrimination, etc.;

The NEEs will send an acknowledgment letter within a maximum of one week. In this letter, the recipient will be informed of the next steps and if necessary, he/she will be asked to provide clarifications or additional information for a better understanding of the problem.

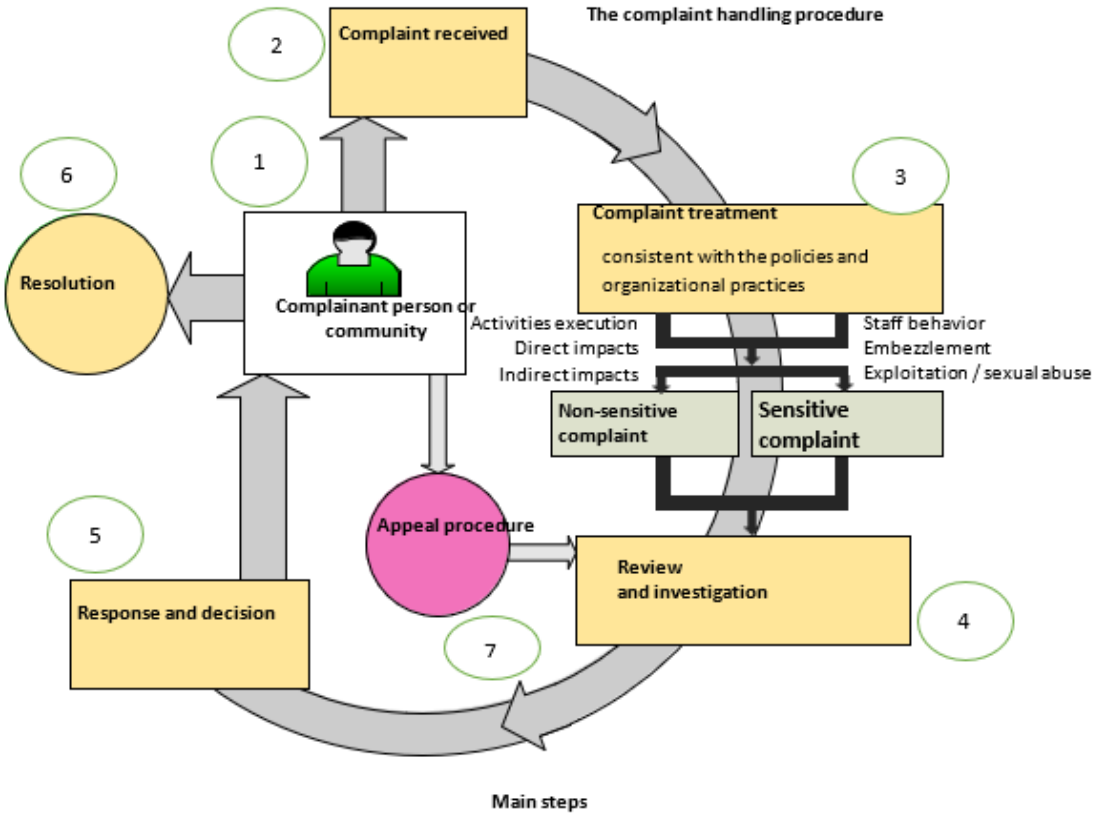
➢ Complaint handling: involves verifying the eligibility of the complaint to the mechanism and ensuring that the complaint is related to the project's activities or commitments. The aim will be to establish the link between the facts denounced and the project's activities and impacts. The eligibility assessment will also determine whether the case should be dealt with under the Project specific grievance mechanism or referred to other mechanisms (whistleblowing, etc.).

In the case of unfounded complaints, due to a lack of necessary information or the result of rumors or malicious persons, which may harm the proper conduct of the project, it is essential to conduct the necessary investigations to preserve the project reputation. This task is the responsibility of the national and the regional management units.

254. In the case of well-founded complaints, two kind of responses can be applied:

(i) direct response and action by the Complaints Management Committee to resolve the complaint.

(ii) broad and thorough audit is required, and joint investigations, dialogues, and negotiations could be conducted to reach a substantial resolution. This may involve extending the team to national and local services, as well as additional time. For sensitive cases, the CMC may use an investigation to reach an appropriate resolution based on expert advice.



255. Following the audit and investigations, a contextually appropriate explanatory letter is sent to the complainant. It should include the procedures to be followed by the NEEs to manage the complaint or propose the appropriate bodies to be contacted for cases that does not fall into the Project management unit's responsibilities.

256. If agreed with the complainant, the proposed responses are implemented by the Complaints Management Committee, the latter will monitor the whole process of the complaint treatments in all cases.

- Implementation of measures: if the CMC and the complainant agree to implement the proposed response, a plan will be developed involving all stakeholders. The CMC should document all discussions and choices available.
- Appeal procedure: If the measure proposed by the CMC does not satisfy the complainant, the latter may initiate the appeal procedure at the level of the OSS or a higher court (Adaptation Fund for example).
- Closing the grievance: The procedure will be closed if the mediation is satisfactory to the parties and leads to an agreement. It is necessary to track the number of complaints by the identity of the complainants, background, period, theme and final outcome. The satisfactory resolution and lessons learned should be documented.
- Publication of complaint result: all well-founded complaints will be made publically available by different communication means. The publication will include the type of complaint, its origin and impact, the treatment procedure and its results, including the complainant level of satisfaction.

D. Monitoring and evaluation arrangements and budgeted M&E plan

257. The project Monitoring and Evaluation (M&E) arrangements will aim at providing a regular overview of the progress of implementation of activities in terms of input delivery, work schedules and planned outputs/targets. It will involve routine information gathering, analysis and reporting to partners, executing institutions, communities, and other stakeholders. The evaluation component shall represent a systematic and objective assessment of project components or activities in terms of their design, implementation, and results. In addition, the project evaluation will deal with strategic issues such as project relevance, effectiveness, and efficiency, as well as impact and sustainability, considering specified expected outcomes.

Scope of Monitoring and Evaluation

258. There will be a robust and comprehensive monitoring and evaluation of the project by DRESS-EA team and partners. In this case, strict adherence to the approved monitoring plan will be ensured. Moreover, the M&E activities will be

participatory and will involve all the key stakeholders. Information on key stakeholders will be gathered through the stakeholder analysis. M&E will be carried out from the onset of project implementation up to the end of the project when the evaluation will be carried out. The M&E activity will be carried out at both the national and regional levels. Under DRESS-EA project the M&E will be conducted at two levels; **first**, assessing the extent of implementation of planned activities and **secondly**, assessing the achievement of results (outputs, outcomes, and impacts). Since the project will be implemented for four years, there is anticipation that some impacts will be achieved in the final years of the project i.e. before project termination.

259. The ***first level*** *M&E* will involve;

- Assessing whether activities are implemented in accordance with timeframe as contained in the project work plan
- Examining whether activities are being implemented with high quality, quantity and with the right target group

260. While for the ***second level***, it will entail;

- Assessing the extent to which the project expected results have been achieved including documenting unexpected results.
- Assessing whether the planned activities contributed to the project results.
- Assessing the relevance of the project design, effectiveness of the interventions, efficiency, sustainability, and impact of the project

Monitoring and Evaluation entities

261. The M&E system to be developed under the DRESS-EA project will be managed by different entities in order to have maximum information and data interpretation for an optimal monitoring. These entities will have the following roles and responsibilities:

Entities	**Roles and responsibilities**
Regional Implementing Entity (OSS)	- Review and approval of annual work plan & budget; - Review and approval of quarterly reports; - Review and approval of annual progress and completion reports; - Monitoring of the recommendations' implementation; - Review of project activities progress during supervision mission; - Monitoring of the recommendations' implementation; - Orientation and/or management decision-making.
Regional Executing Entity (GWPEA)	- Development of the project's operations plan and the annual work plan and budget; - Follow-up of the project's operations plan and the annual work plan and budget execution; - Development of data collection, treatment, analysis and dissemination tools; - Coordination of collection, treatment, analysis and dissemination of data and information; - Preparation and consolidation of quarterly activity reports, annual progress reports, and project completion report; - Dissemination of project evaluation and monitoring reports; - Implementation of decisions and corrective actions.
National Executing Entity (Countries: Djibouti, Kenya, Sudan and Uganda)	- Participation to the validation of project annual work plan and budget; - Monitoring of the project implementation at national level; - Gathering, treatment, analysis and management of project data; - Monitoring and specific studies activities supervision; - Preparation and transmission of quarterly reports and annual progress reports to the Regional Unit; - Contribution to the diffusion of project's monitoring and evaluation reports; - Implementation of recommendations and decisions at national and local level

Monitoring and Evaluation Work plan

262. The DRESS-EA project monitoring work plan will guide the data/information to be collected for monitoring. Table 17 shows the M&E activities and their budget implication.

263. The Regional and National Project Management Units will coordinate to organize preparatory mission of key project stakeholders to develop a Project M&E framework. The stakeholders will include the Regional Implementing Entity (OSS) and Executing Entities - who include the Regional Executing Entity (GWPEA) and National Executing Entities of Djibouti, Kenya, Sudan and Uganda. The stakeholders to undertake monitoring and evaluation exercise have to visit the project sites and interact with the targeted key stakeholders for feedback about the project execution.

264. The project M&E activities will include several steps and a regular feedback system, as follow:

Project start:

265. A Project inception workshop will be organized in the first quarter of project start. The workshop will involve diverse stakeholder base from the entire project chain (local communities, sub-national, national and regional stakeholders). Also, this workshop is critical to building ownership from the start of project implementation. Furthermore, the workshop will address the following key issues, including:

- Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of OSS and GWPEA staff with the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution and grievance redress mechanisms which includes regional and national channels. The Terms of Reference for project staff will be discussed again as needed.
- Based on the project results framework, share and validate the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide and discuss the Project Implementation Manual, the Annual Work Plan and Budget, and the Project team composition and responsibilities.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule Project Regional Steering Committee meetings, National Steering Committee meetings and Inter Country Regional Coordination Mechanism meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.
- Provide among other things, the following: The M&E activities which include the annual M&E work plan, stakeholders identified for M&E activities, M&E tools, and the expected deliverables of the M&E exercise.

N.B: ***Monitoring will be done at quarterly at national levels and aggregated semi-annually to generate a semi-annual report.***

Quarterly monitoring

266. During project implementation and in accordance with the PIM a quarterly monitoring report will be developed by the national project units and aggregated by the regional project unit then submitted to OSS for review and follow up as an implementing entity. This report will include the extent of project activity execution during the quarter, the results generated in the short-term (on a quarterly basis) and record early lessons and best practices on a cumulative basis. It will also be composed by technical and financial monitoring as well as E&S risks mitigation activities.

Annual monitoring

267. The annual monitoring report will be develop based on the four quarterly reports and will consist of an annual review of the project implementation status including extent of implementation of the annual work plan against the set targets and outputs as well as a verification of achievement extent of the results framework. This report will cover also the monitoring of the technical and financial project progress and the planned activities for the upcoming year. The detailed content of the project will be agreed on in the PIM during the project preparation and launch. Based on the same frequency and content a PPR (Project Performance Report) will be developed by OSS and submitted to the Adaptation Fund for follow up.

Annual reflection workshop:

268. At regional level a reflection workshop on monitoring results and M&E system will be organized annually and will target key project stakeholders. The aim of the workshop is to disseminate the results of the annual monitoring exercise. The workshop is important to validate the annual results and cascade the results to a wider network to increase on project ownership. This workshop could be organized back to back with the project regional Steering Committee meeting.

Mid-Term Evaluation/Review

269. The mid-term review will identify progress made toward the achievement of the results and will determine the necessary correction and mitigation action if necessary. It will focus on the effectiveness, efficiency, and timeliness of project implementation. This evaluation (MTR) will focus on issues requiring decisions and actions, and will present the first lessons learned from designing the project, its implementation, and management. The purpose of the mid-term exercise is to determine progress towards achieving the project outcomes on the one hand and will identify weaknesses of project implementation, on the other hand. The elements that are not very successful at this stage but show promise will be modified for improvement in a participatory manner.

270. The mid-term evaluation will take place after two years of project start, and will be ensured by an external consultant hired by OSS as an AE of the project. Thus, the terms of reference of this mission will be developed according to

international standards, in due time. The results of this review will be considered as recommendations for better implementation during the last two years of the project's duration.

Terminal Project Evaluation

271. At project end, there will be an independent third-party evaluation. This evaluation will take place three months before the last meeting of the Steering Committee and will be undertaken in accordance with OSS and AF regulations. The main focus of this evaluation is to assess the project results against the set targets in the results framework, the delivery of project's results as originally planned (and reviewed after the midterm review, if such a review has occurred, accordingly it will ensure that the modifications made at the mid-term review have been incorporated. The final evaluation will focus on the project impacts and sustainability of results, including the contribution to the capacity development and the achievement of global environmental objectives. Same as the MTR, the terms of reference for this evaluation will be prepared by the OSS based on the guidance of the Regional Coordination Unit. The results of the final evaluation should be presented during the project closure workshop and should also provide recommendations for a future project or for project results up-scaling and replication.

Final report:

272. During the last three months, the project's team will prepare the project final report. This comprehensive report summarizes the results obtained (objectives, products, axes), the lessons learned, the challenges encountered and the areas where the results may not have been achieved. The project final report will be presented during the project's closure workshop and will also prepare recommendations for further steps that may need to be taken to ensure the sustainability and replicability of project's results.

M&E Communication plan

273. The M&E communication plan will monitor communication actions on project achievements. Also, the plan will target disseminating M&E results to stakeholders within and outside the DRESS-EA project is a key priority in this monitoring plan. DRESS-EA will disseminate findings and recommendations to major stakeholders involved. The project results are important for a diversity of audiences including the vulnerable persons such as women, children, and disabled and elderly groups. Furthermore, M&E project information may be of interest among community organizations, small-scale farmers, pastoralists, youth, media, government officials and social service agencies at the national level. While at the regional level, the teams in the Regional Economic community and lake/river basin organization and other stakeholders may need to learn of the results for purposes of improvement in their institutions. Furthermore, the project will participate in relevant conferences and workshops to share the lessons and best practices from the interventions. This arrangement is useful because it causes a multiplier effect and leads to replication of best practices. The project is complementary to the already existing efforts in the region, as such a two-way flow of information between DRESS-EA and the identified projects in the region is proposed. This will help concretize and interventions as well as contribute to learning and knowledge sharing.

Table 15: Monitoring & Evaluation Work Plan and Budget

Type of M&E Activity	Responsable Parties	Budget (US$)	Timeframe																Notes
			2020				2021				2022				2023				
			Quarters				Quarters				Quarters				Quarters				
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Initial studies to improve baseline, gender analyses, land rights analyses and environmental and social impact assessment	GWPEA and Project National Focal point	55.000																	*Within the first quarter of project start.*
Design of an M&E System for the project including ESMP and monitoring outputs by project team	Focal points of key institutions: OSS and the executing entities (GWPEA, Djibouti, Kenya, Sudan and Uganda)	100.000																	*Quarterly*

Field visits for measuring the project results for each target and reporting on activities as well as gender issues	Focal points of key institutions: the executing entities (GWPEA, Djibouti, Kenya, Sudan and Uganda)	100.000																			*Quarterly*
Field visits for joint review of the project results, progress and activities	Focal points of key institutions: OSS and the executing entities (GWPEA, Djibouti, Kenya, Sudan and Uganda)	80.000																			*Yearly (every year for project period)*
Annual monitoring report	Project Management Units at Regional and National Levels M&E Officer	20.000																			*Yearly (every year for project period)*
Annual reflection workshop on monitoring results and M&E system	Project Management Units at Regional and National Levels M&E Officer -M&E Officer	40.000																			*Yearly (every year for project period)*
Mid-term evaluation	Implementing entity OSS - External Evaluators	20.000																			*At mid-point of project execution*
Terminal Project Evaluation	Implementing entity OSS -External Evaluators	20.000																			*At least three months before the end of the project*
Terminal Project Audit	Implementing entity OSS-External Evaluators	10.000																			*At least three months before the end of the project*
Terminal Project report	Focal points of key institutions: OSS and the executing entities (GWPEA, Djibouti, Kenya, Sudan and Uganda)	20.000																			*At least three months before the end of the project*
Total cost		**465.000**																			

E. Results framework, including milestones, targets, and indicators

Result	Indicators	Baseline	Milestones (After 2 years)	End of Project Targets	Means of Verification	Responsible Parties	Risks and Assumptions
Objective: To increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region.	• Number of EWS beneficiaries and users • Number of beneficiary communities of adaptation measures • Proportion (%) of smallholder farmers and pastoralists with increased incomes.	*(To be determined at baselines)*	• Number of EWS beneficiaries and users (to be determined) • Number of beneficiary communities of adaptation measures (to be determined) • At least 20% of smallholder farmers and pastoralists with increased incomes.	Number of EWS beneficiaries and users (*to be determined*) Number of beneficiary communities of adaptation measures (*to be determined*) At least 60% of smallholder farmers and pastoralists with increased incomes.	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	OSS, GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	• Inter-tribal conflicts based on water and other resources access and use • Adequate security to enable project implementation (Assumption) • Political will
Component 1: Development and enhancement of a regional Drought Early Warning System (Investments in Early warning)							
Outcome 1.1 Increased use of effective Early Warning Systems by stakeholders	• Proportion of targeted farmers and pastoralists that access and integrate EW information into seasonal calendars	Most smallholder farmers and pastoralists do not utilize EWS in their seasonal calendars thus have suffered crop and livestock losses during drought.	At least 30% of targeted smallholder farmers and pastoralists access and integrate EW information into seasonal calendars	At least 70% of targeted smallholder farmers and pastoralists access and integrate EW information into seasonal calendars	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	OSS, GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	• EW systems are functional • Smallholder farmers and pastoralists receive EW information timely
Output 1.1.1 Efficient and effective EWS in place/developed	• EWS status report • Number of weather stations set up and upgraded with Remote sensing derived products, time series of bioclimatic variables, • Number EW prototypes at national and regional levels developed • Number of EW information centers constructed, renovated and equipped • Number of times EW information has been released by mandated institutions as planned • Number of farmers and pastoralists utilizing EW information • Number of baseline reports	• Poor early warning systems exist in the focal countries • EW information rarely received	• An EWS status report • One EW prototype at national and regional levels developed • At least modern weather station set up in project sites of each country • At least one existing weather station upgraded in project sites of each country • One EW information center constructed/renovated in project sites of each country • At least 20% of farmers and pastoralists utilize EW information in their farming calendars • 4 baseline report	• An EWS status report per country • One EW prototype at national and regional levels developed • Two modern weather station set up in project sites of each country • Two existing weather station upgraded in project sites of each country • One EW information center constructed/renovated in project sites of each country • At least 70% of farmers and pastoralists utilize EW information in their farming calendars • 4 baseline report	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	Timely release of project funds
Output 1.1.2 Institutional linkages for EW information established	• Framework agreement document • A strategy document • Minutes of meetings • Approved plan (document) incorporating EW information	Weak or non-existing EW information in project sites	• 1 EW information framework agreement developed/reviewed in each country • 1 strategic document developed • 1 inter-ministerial Meeting minutes at regional; • 16 meetings minutes at national level (4 per country) and • 16 meetings minutes at the sub-national level (4 per country)	• 1 EW information framework agreement developed/reviewed in each country • One strategic document developed • 1 inter-ministerial Meeting minutes at regional; • 32 meetings minutes at the national level (8 per country) and • 32 meetings minutes at the sub-national level (8 per country).	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	Cooperation among project partner countries

			• 2 meetings minutes at regional level (fora) • 16 meetings minutes at national level (fora) • 16 meetings minutes at sub-national level (fora) • 4 document copy of approved plans incorporating EW information	• 3 meetings minutes at regional level (fora) • 24 meetings minutes at national level (fora) • 24 meetings minutes at sub-national level (fora) • 4 document copy of approved plans incorporating EW information			
Output 1.1.3 Feedback mechanism for EW information developed.	• Minutes of stakeholder meetings • Number of information sharing platforms established • Number of Press releases • KAP survey report • A tool for accessing, utilizing and reporting EW information developed	Poor feedback mechanism from users to mandated institutions	• 32 copies of Minutes (8 meetings per country) • 16 copies of Minutes (4 Joint meetings per country) • 4 KAP survey report • At least 8 press releases per country • A tool for accessing, utilizing and reporting	• 64 copies of Minutes (16 meetings per country) • 32 joint meetings per country • 4 KAP survey report • At least 16 press releases per country • A tool for accessing, utilizing and reporting	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 1.1.4 Emergency plan for Drought management is put in place.	• Number of emergency response plan for Drought disasters at the regional and national levels. • Percentage of the equipment needed for the contingency response is acquired by the end of the project • Number of blank operations (including regional and national levels) • Number of warning messages dissemination kit (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)	Poor feedback mechanism from users to mandated institutions	• 5 emergency response plan for Drought disasters at the regional and national levels. • 40 % of the equipment needed for the contingency response is acquired by the end of the project • 1 of blank operations (including regional and national levels) • 4 warning messages dissemination kit (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)	• 5 emergency response plan for Drought disasters at the regional and national levels. • 80 % of the equipment needed for the contingency response is acquired by the end of the project. • 2 of blank operations (including regional and national levels) • 4 warning messages dissemination kit (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Component 2: Strengthening capacities of key stakeholders at regional, national and local levels (Strengthening the capacity of stakeholders)							
Outcome 2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened	• Number of staff in targeted institutions at regional and national and local level with enhanced capacity in drought management • Percentage of farmers and pastoralists with increased knowledge and skills in drought adaptation actions	Inadequate capacity of institutions, farmers, and pastoralists to undertake drought adaptation measures	• Number of staff in targeted institutions trained (to be determined) • At least 30% of targeted farmers and pastoralists trained	• Number of staff in targeted institutions trained (to be determined) • At least 80% of targeted farmers and pastoralists trained	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 2.1.1: Drought management plans (DMPs) developed	• Number of DMP,s • Number of DMPs translated and distributed • Number of national and sub-national plans with DM component integrated • Bye-laws and ordinances formulated	No outstanding drought adaptation and management components in national and sub-national plans	• At least 1 national and 1 sub-national plans reviewed/developed per country • At least 1 national and 1 sub-national plans translated • At least 1 DMP, integrated into national and sub-national plans per country • At least 1 Bye-law and 1 ordinance formulated per country	• At least 1 national and 1 sub-national plan reviewed/developed per country being implemented • At least 1 national and 1 sub-national plans translated per country • At least 2 DMPs, integrated into national and sub-national plans per country • At least 2 Bye-laws and 2 ordinances formulated per country	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 2.1.2: Adaptive capacity of institutions, farmers, and pastoralists in	• Capacity needs assessment report • Copies of capacity building plans, • Copies of training manuals • Number of stakeholders trained	Farmers and pastoralists have inadequate knowledge and skills to undertake drought adaptation actions	• 4Capacity needs assessment report • 4 Copies of capacity building plans	• 4 Capacity needs assessment report • 4 Copies of capacity building plans	• Project implementation reports • Field visits	GWPEA and Focal Ministries in Djibouti,	

drought management improved	• Number of learning centers established		• 4 Copies of training manuals • 8 exchange visits (2 per country) • 4 trainings for staff managing EW information centers (1 per country) • 24 trainings for extension staff and artisans in drought adaptation (6 per country) • 64 community training workshops (16 per country) • At least30% of targeted stakeholders trained • 4 learning centers for farmers and pastoralists established per country	• 4 Copies of training manuals • 12 exchange visits (3 per country) • 8 trainings for staff managing EW information centers (2 per country) • 36 trainings for extension staff and artisans in drought adaptation (9 per country) • 96 community training workshops (24 per country) • At least 80% of targeted stakeholders trained • 12 learning centers for farmers and pastoralists established per country	• M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	Kenya, Sudan and Uganda	
Outcome 2.2: Partnerships for drought management at regional, national and local levels strengthened	• Number of Functional frameworks for drought management at different levels per country	The existing frameworks are not fully utilized to undertake drought adaptation measures. In some areas, partnerships are lacking.	At least 3 Functional frameworks for drought management established	At least 6 Functional frameworks for drought management established	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 2.2.1: New/existing regional and National arrangements /networks for drought management supported	• Number of minutes of regional meeting • Number of minutes for national and sub-national meetings • Number of platform events organized and press releases on drought management issues • Number of partnership agreements or MOUs reviewed or developed • Number of Platforms • Number of drought adaptation proposals developed jointly	Regional and national arrangements/networks for drought management are either weak, dysfunctional or lacking	• 1 copies of Minutes of regional meeting • 8 copies of meetings Minutes (1 national and 1 sub-national meetings per country) • At least 2 press releases each year per country • At least 2, partnership agreements/MOUs, • 2 platform events each year per country • At least 2 regional proposals	• 3 copies of Minutes of regional meeting • 24 copies of meetings Minutes (3 national and 3 sub-national meetings per country) • At least 8 press releases each year per country • At least 4, partnership agreements/MOUs, • 4 platform events each year per country • At least 4 regional proposals developed and submitted for funding	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Component 3: Supporting innovative drought adaptation actions (Drought and climate change adaptation actions)							
Outcome 3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	• Percentage of farmers and pastoralists undertaking drought adaptation actions • Percentage increase in crop and livestock production	There are limited opportunities and options for undertaking drought adaptation actions for farmers and pastoralists	• At least 30% of farmers and pastoralists are undertaking drought adaptation actions • At least 30% of smallholder farmers and pastoralists have alternatives	• At least 60% of farmers and pastoralists are undertaking drought adaptation actions • At least 60% of smallholder farmers and pastoralists have alternatives	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 3.1.1: Innovative water and soil conservation structures constructed	• Number of assessment reports on surface water potential and WMP • Number of water harvesting and storage structures constructed • Number of mini-irrigation systems constructed • Number of water wells and springs protected • Number of Soil and water conservation measures	Farmers are constrained by high water losses due to limited technologies for water storage	• 4 assessment reports on surface water potential and WMP • At least 5 water harvesting and storage units constructed • At least 2 mini-irrigation systems constructed • At least 3 water well/spring/oasis protected	• 4 assessment reports on surface water potential and WMP • 32 Units of water harvesting and storage constructed (Djibouti 2 units; Kenya 10 Units; Sudan 12 units and Uganda 8 Units) • 14 mini-irrigation systems constructed (Djibouti 3	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	

	• Number of farmers and pastoralists undertaking soil and water conservation technologies		• At least 3 Soil and water conservation measures promoted • At least 30% of smallholder farmers and pastoralists undertaking water and soil conservation measures	units; Kenya 4 Units; Sudan 4 units and Uganda 3 Units) • 9 water wells, springs/oases protected (Djibouti 0 unit; Kenya 3 Units; Sudan 3 units and Uganda 3 Units) • At least 12 Soil and water conservation measures promoted • At least 70% of smallholder farmers and pastoralists undertaking water and soil conservation measures			
Output 3.1.2: Groundwater sources established/ improved	• A report on groundwater assessment • A report/Guidelines/regulation on groundwater resources developed • Area (acreage) of degraded site restored	Information on groundwater sources is inadequate Guidelines/regulations for protection and management of groundwater sources are lacking	• 4 Groundwater assessment report • At least 4 sets of Guidelines for groundwater regulation (1 per country developed) • At least 20% of the degraded sites restored	• 4 Groundwater assessment report • At least 8 sets of Guidelines for groundwater regulation (2 per country being implemented) • At least 60% of the degraded sites restored	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 3.1.3: Adaptive agricultural practices for improving crop production promoted	• Number of farmers and pastoralists supported with crop varieties, • Kilograms of seed/cuttings of drought-resistant crop varieties bought and distributed • Number of agroforestry tree seedlings bought and distributed • Quantities of inputs for irrigated agriculture • Number of small irrigation units • Number of CSA Units • Number of farmers engaged in climate-smart agricultural practices	• Crops varieties being grown are susceptible to drought conditions • Degraded landscapes that have reduced the ground recharge capacity of water catchment areas • There are limited/no small irrigation schemes • Climate adaptive agricultural practices are inadequate	• At least 20% of the target farmers have accessed improved and drought-resistant crop varieties • At least 9 tons of seeds/cuttings for drought-resistant crop varieties distributed in each country • At least 20% of the target pastoralists have accessed drought tolerant and fast growing pasture seeds • At least 30 hectares of degraded landscapes restored in each country • At least 6 irrigation units • At least 5 Climate smart agricultural units are developed • At least 20% of targeted farmers undertake Climate-Smart Agriculture (CSA)	• At least 70% of the targeted farmers and pastoralists have accessed drought-resistant crop varieties • At least 15 tons of seeds/cuttings for drought-resistant crop varieties distributed in each country • At least 50% of the target pastoralists have accessed drought tolerant and fast growing pasture seeds • At least 100 hectares of degraded landscapes restored in each country • At least 36 irrigation units (Djibouti 10 units; Kenya 8 Units; Sudan 10 units and Uganda 8 Units) • At least 28 Climate smart agricultural units are developed (Djibouti 6 units; Kenya 6 Units; Sudan 8 units and Uganda 8 Units) • At least 60% of targeted farmers undertake Climate-Smart Agriculture (CSA)	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 3.1.4: Adaptive livestock and rangeland practices enhanced	• Number of stock routes agreements • Area/acreage of rangeland improved with rangeland management practices • Number of pastoralists supported with improved animal breeds • Livestock numbers bought and distributed • Percentage reduction in mortality of livestock • Number of hydroponic units established • Quantities of improved grass varieties seed	• Low drought tolerance capacity of the current animal breeds • Poor quality of varieties of animal feeds • Conflicts amongst neighboring communities due to inadequate water and pastures in different rangelands	• At least one stock agreement signed per country • About 15% Area/acreage of rangeland improved with rangeland management practices • 40 pastoralists supported with improved livestock breeds per country • 60 Livestock bought and distributed in each country	• At least 4 stock route agreements signed per country • About 40% Area/acreage of rangeland improved with rangeland management practices • 160 pastoralists supported with improved livestock breeds per country • 170 livestock bought and distributed in each country	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	

	• Number of households with improved feeds and pastures • Number of meetings of associations/groups/cooperatives of livestock		• At least 20% of the target pastoralists supported with high value silage • Livestock mortality attributed to drought-reduced by 5% • 20 hydroponic units established per country • At least 4 tonnes of improved grass varieties distributed in each country • At least 20 households with improved feeds and pastures • 6 meetings for at least 4 associations per country	• At least 70% of the target pastoralists supported with high value silage • Livestock mortality attributed to drought-reduced by 10% • 80 hydroponic units established per country • At least 16 tonnes of improved grass varieties distributed in each country • At least 80 households with improved feeds and pastures • 12 meetings for at least 5 associations per country			
Output 3.1.5: Enabling environment for smallholder farmers and pastoralists adaptive activities created	• Number of pastoralists and smallholder farmers accessing Index-based weather insurance • A report on drought risk assessments on the agriculture value chain • Minutes of meetings and workshops for farmer and pastoralists associations/cooperatives meetings	• Index-based weather insurance is lacking • High crop and livestock losses due to weather-related events • Functional Farmers and Pastoralists associations and cooperatives are lacking	• At least 5% of targeted smallholder farmers and pastoralists have an Index-based weather insurance scheme • 4 report on drought risk assessments on the agriculture value chain • 4 meetings for at least 4 farmer and/or pastoralist associations or cooperatives in each country	• At least 15% of smallholder farmers and pastoralists have an Index-based weather insurance scheme • 4 report on drought risk assessments on the agriculture value chain • 12 meetings for at least 5 farmer and/or pastoralist associations or cooperatives in each country	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	
Output 3.1.6: Environmentally friendly IGAs ([e.g., Pottery, Beekeeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted	• Number of business enterprises promoted by women and youth groups • Number of households undertaking IGAs • Number of groups supported by grants • Number of groups/cooperatives supported to undertake value addition for their agricultural products	• Inadequate opportunities and resources especially for youth and women groups to undertake IGAs	• At least 1 IGAs undertaken by households, women and youth groups in each country • At least 80 Households supported to undertake IGAs per country • At least 5 women and youth groups were given grants to undertake adaptation actions per country • At least 3 cooperatives supported to add value to their crop and livestock products for each country	• At least 9 IGAs undertaken by households, women and youth groups in each country • At least 240 Households supported to undertake IGAs per country • At least 10 groups given grants to undertake adaptation actions per country • At least 9 cooperatives supported to add value to their crop and livestock products for each country	• Project implementation reports • Field visits • M&E reports Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda Farmers and pastoralists	
Component 4: Knowledge management and information sharing (Knowledge management)							
Outcome 4.1: Knowledge and awareness on drought risk management Increased	• Percentage of households of targeted farmers and pastoralists practicing drought adaptation actions	Small percentage of farmers and pastoralists with access to adequate information and knowledgeable in drought management issues and interventions	At least 30% of the targeted actors participating in regional information sharing platforms	At least 80% of the targeted actors participating in regional information sharing platforms	• Project implementation reports • •Field visits • •M&E reports • •Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	Partners at the regional level are willing to engage with the project and each other
Output 4.1.1 Good practices and lessons on drought management, EWS, and Climate Change impacts documented and disseminated	• Number of knowledge products e.g. documents on lessons and best practices from project interventions • Number of case studies and lessons learned documented and shared projects	Limited information on successful cases studies and documentation of lessons learned learned from implementation of drought management projects in the region	• 2 brochures, 2 publications (documents) on lessons and best practices from project interventions per country • At least 4 case studies /lessons on drought management, EWS and CC impacts learned	• 4 brochures, 4 publications (documents) on lessons and best practices from project interventions per country • At least 8 case studies /lessons learn documented, packaged and shared with	• Project implementation reports • Field visits • M&E reports • Interviews with smallholder farmers	GWPEA, and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	Target projects are willing to share information

			documented, packaged and shared with key stakeholders for upscaling and informing project interventions	key stakeholders for upscaling and informing project interventions	and pastoralists and community leaders		
Output 4.1.2 Drought information management strengthened	• Number of meetings for information generation and sharing • Number meetings on policy engagement at the national level • Number of platforms or fora organized jointly • Number of information sharing events organized at regional level • A gender responsive and scale-up strategy document for drought, CC and early warning technologies for vulnerable groups	• Limited opportunities including platforms and forums for information sharing drought management information • No existing/updated gender responsive and scale-up strategy document for drought, CC and early warning technologies for vulnerable groups in the region	• Minutes of 2 regional meetings held for information generation and sharing • Minutes of 4 meetings on policy engagement at the national level • At least 4 information sharing events organized at regional level	• Minutes of 4 regional meetings held • Minutes of 8 meetings on policy engagement at the national level • At least 8 information sharing events organized et regional level • A gender responsive and scale up strategy per country	Project implementation reports •Field visits •M&E reports •Interviews with smallholder farmers and pastoralists and community leaders	GWPEA and Focal Ministries in Djibouti, Kenya, Sudan and Uganda	

Adaptation Fund Core indicators for the project:

274. Three Adaption Fund Core Indicators will be monitored for the project as per the tables below.

Table 16: Core indicators for the project

Adaptation Fund Core Impact Indicator:"Number of Beneficiaries"				
Date of Report	OCTOBER 2019			
Project Title	STRENGTHENING DROUGHT RESILIENCE FOR SMALL HOLDER FARMERS AND PASTORALISTS IN THE IGAD REGION			
Country	DJIBOUTI, KENYA, SUDAN AND UGANDA			
Implementing Agency	OSS – SAHARA AND SAHEL OBSERVATORY			
Project Duration	4 YEARS			
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Direct beneficiaries supported by the project	0	701,624		
Female direct beneficiaries	0	290,397		
Youth direct beneficiaries	0	123,215		
Indirect beneficiaries supported by the project	0	70,162		
Female indirect beneficiaries	0	29,040		
Youth indirect beneficiaries	0	12,322		
Adaptation Fund Core Impact Indicator: "Early Warning Systems"				
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Adopted Early Warning Systems *(Category targeted – 1, 2, 3, 4; and absolute number)* *(1) risk knowledge,* *(2) monitoring and warning service,* *(3) dissemination and communication,* *(4) response capability.*	Most smallholder farmers and pastoralists do not utilize EWS in their seasonal calendars thus have suffered crop and livestock losses during drought.	At least 70% of targeted smallholder farmers and pastoralists access and integrate EW information into seasonal calendars. (i.e. 674,811 persons)		
Drought resilience improvement	Inadequate capacity of institutions, farmers, and pastoralists to undertake drought adaptation measures	At least 80% of targeted farmers and pastoralists trained (i.e. 771,212 persons)		
Drought adaptation actions undertaken	There are limited opportunities and options for undertaking drought adaptation actions for farmers and pastoralists	At least 60% of smallholder farmers and pastoralists have alternatives (i.e.578,409 persons)		
Knowledge, Dissemination and communication	Small percentage of farmers and pastoralists with access to adequate information and knowledgeable in drought management issues and interventions	At least 80% of the targeted actors participating in regional information sharing platforms (i.e. 771,212 persons).		
Hazard	DROUGHTS	DROUGHTS	DROUGHTS	DROUGHTS
Geographical coverage *(km2)*	Dikhil: 0 Biedley: 0 Kitui: 0 Samburu: 0 Kosti/ElSalam: 0 Rupa: 0	Dikhil:62,264 Biedley: 5,600 Kitui: 336,897 Samburu: 156,800 Kosti/ElSalam: 95,200 Rupa: 18,050		
Number of municipalities *(number)* *(report for each project component)*	NA	NA	NA	NA

Adaptation Fund Core Impact Indicator: "Assets Produced, Developed, Improved, or Strengthened"				
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Sector (Component 3) Drought and climate change adaptation actions				
Targeted Asset 1) Health and Social Infrastructure *(developed/improved)* *i) Index-based insurance* ii) *IGAs* iii) *Provision of Small competitive grants* 2) Physical asset *(produced/improved/strengthened)* *i) Innovative water harvesting and storage infrastructure produced* *ii) Mini-irrigation and delivery system produced* *iii) Water wells improved* **iv)** *Groundwater sources improved* **v)** *Agrisilvopastoral system improved* **vi)** *Climate smart agricultural infrastructure*				
Changes in Asset *(Quantitative or qualitative depending on the asset)* **1)** Health and Social Infrastructure *(developed/improved)*				
i) Index-based insurance developed	0	3- Moderatly improved		
ii) *IGAs developed*	0	960 Households (approx.4800 persons; 50% for women and youth; 480.000 USD)		
iii) *Provision of Small competitive grants developed*	0	40 Groups (approx.800 persons; 60% for women and youth; 480.000 USD)		
2) Physical asset *(produced/improved/strengthened)*				
i) Innovative water harvesting and storage infrastructure produced	0	32		
ii) Mini-irrigation and delivery system produced	0	50		
iii) Water wells improved	0	9		
iv) Groundwater sources improved	0	3- Moderatly improved		
v) *Agrisilvopastoral system improved*	0	60 Tons of seeds/cuttings for drought resistant crop varieties produced 400 Ha restored		
vi) Climate smart agricultural infrastructure produced	0	28 units developed		

F. The project alignment with the Results Framework of the Adaptation Fund

Table 17: DRESS-EA project alignment with the AF Results Framework

Project Objective(s)[40]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems (EWS) and implementation of drought adaptation actions	Number of EWS beneficiaries/users	**Outcome 1:** Reduced exposure at the national level to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	**11,009.02**
		Outcome 2: Strengthened institutional capacity to reduce risks associated with Climate-induced socio-economic and environmental losses	2.Capacity of staff to respond to and mitigate impacts of, climate related invents from targeted institutions increased	
	Number of direct and indirect beneficiaries of climate change adaptation interventions	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at the local level	3.1. Percentage of the targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
			3.2. Modification in the behavior of the targeted population	
		Outcome 4: Increased adaptive capacity within the relevant development and natural resource sectors	4.1. Development sectors' services responsive to evolving needs from changing and variable climate	
			4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	
	Proportion (%) of smallholder farmers and pastoralists with increased incomes	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets	
			6.2. Percentage of targeted population with sustained climate-resilient livelihoods	
		Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1.1 Increased use of effective Early Warning Systems by stakeholders	Proportion of targeted farmers and pastoralists that access and integrate EW information into seasonal calendars	**Output 1:** Risk and vulnerability assessments conducted and updated at a national level	1.1. No. and type of projects that conduct and update risk and vulnerability assessments	**2,387.10**
			1.2 Development of early warning systems	
Outcome 2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened	Number of staff in targeted institutions at regional and national and local level with enhanced capacity in drought management	**Output 2.1:** Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events	**1,310.00**
	Percentage of farmers and pastoralists with increased knowledge and skills in drought adaptation actions	**Output 2.2:** Targeted population groups covered by adequate risk reduction systems	2.2.1. Percentage of population covered by adequate risk-reduction systems	
			2.2.2. No. of people affected by climate variability	

	Number of national and sub-national plans with Drought Management component integrated	**Output 7**: Improved integration of climate resilience strategies into country development plans	7.2 Number of targeted development strategies with incorporated climate change priorities enforced	
Outcome 2.2: Partnerships for drought management at regional, national and local levels strengthened	Number of Functional frameworks for drought management at different levels per country	**Output 2.1:** Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events	**440.00**
Outcome 3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	Percentage of farmers and pastoralists undertaking drought adaptation actions	**Output 4:** Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of health or social infrastructure developed or modified to respond to new conditions resulting from climate variability and change (by type)	**6,279.92**
			4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)	
	Percentage increase in crop and livestock production	**Output 6:** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of an individual or community-livelihood strategies	
			6.1.2. Type of income sources for households generated under climate change scenario	
Outcome 4.1: Knowledge and awareness on drought risk management Increased	Percentage of households of targeted farmers and pastoralists practicing drought adaptation actions	**Output 3:** Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. and type of risk reduction actions or strategies introduced at the local level	**592.00**
			3.1.2 No. of news outlets in the local press and media that have covered the topic	

NB: *During project launch and inception phase the baseline studies that will be carried out will allow a better knowledge about the exact number of direct beneficiaries including among others, pastoralists, farmers, women groups, and households.*

G. Detailed budget

Component/Outcome/Output/Activity	Djibouti	Kenya	Sudan	Uganda	Regional	Total Budget	Budget notes
COMPONENT 1: Development and enhancement *of a regional Drought Early Warning* System	438 500	438 500	438 500	438 500	633 100	2 387 100	
Outcome 1.1: Increased use of effective Early Warning Systems by stakeholders	438 500	438 500	438 500	438 500	633 100	2 387 100	
Output 1.1.1: Efficient and effective EWS in place/developed	149 000	149 000	149 000	149 000	167 000	763 000	
Activity 1.1.1.1 Assess the status of EWS in the target countries and update options of traditional EWS with modern EW technologies	9 000	9 000	9 000	9 000	12 000	48 000	*Studies assessed @20-man days @ USD 300/day and validation workshops fees @ USD 3,000 in each Country* *Studies compilation @10-man days @ USD 300/day and regional restitution workshop @ USD 9,000*
Activity 1.1.1.2 Develop an EWS prototype to be used at the regional and national levels					100 000	100 000	*Studies assessed @200-man days @ USD 300/day* *National meetings fees @ USD 5,000 in each Country for prototype validation* *Regional workshop fees @ USD 20,000 for prototype validation*
Activity 1.1.1.3 Equip/upgrade selected weather stations and Remote sensing derived products, time series of bioclimatic variables,	70 000	70 000	70 000	70 000		280 000	*Set up two modern weather station @USD 25,000 each and upgrade two other weather stations @USD 10,000 @in each Country*
Activity 1.1.1.4 Construct/renovate and equip EW information centers including data base	40 000	40 000	40 000	40 000		160 000	*The EW Information centers should be constructed or renovated maximum by the project second year so their related expenses must be scheduled for 2 years*
Activity 1.1.1.5 Support/Equip project beneficiaries (pastoralist, farmers and extension agents) to access EW information (e.g. devices including, brochure, SMS, Radio etc.)	30 000	30 000	30 000	30 000		120 000	*Involves buying EW information devices for targeted pastoralist, farmers and extension agents*
Activity 1.1.1.6 Conduct a baseline study					55 000	55 000	*Studies assessed @160-man days @ USD 300/day and related fees @USD 7,000*
Output 1.1.2: Institutional linkages for EW information established	49 000	49 000	49 000	49 000	205 000	401 000	
Activity 1.1.2.1 Develop/Review EW information sharing frameworks at regional. National and sub-national levels	10 000	10 000	10 000	10 000	40 000	80 000	*At least one EW information framework @ USD 10,000 e.g. agreement developed/reviewed in each country with support at regional level (workshop and travel)*
Activity 1.1.2.2 Develop an implementation action plan to operationalize the frameworks	12 000	12 000	12 000	12 000		48 000	*Consultancy @30-man days @USD 300 and associated costs of USD 3,000 for each country (workshop for validation of action plan)*
Activity 1.1.2.3 Hold inter-ministerial and sectoral meetings for data sharing					120 000	120 000	*One inter-ministerial regional meeting @USD 20,000* *Two sectoral national meetings per year in each country and Two sub-national meetings per year @USD 25,000 in each country (each country will organize 4 meetings per year = 16 meetings per year for all the countries)* *all the meetings are managed centrally at regional level.*
Activity 1.1.2.4 Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)	15 000	15 000	15 000	15 000	45 000	105 000	*One meeting at regional level @USD 20,000 per year; 2 meetings at national level @USD 4,000 per year and 2 meetings at sub-national level @USD 1,000 per year in each country for three years. (each country will organize 4 meetings per year = 12 meetings per year for all the countries + one regional workshop per year for three years)*
Activity 1.1.2.5 Support Incorporation of EW information into planning and budgeting processes of targeted countries	12 000	12 000	12 000	12 000		48 000	*Two meetings per country per year @USD 3,000 for the first two years.*
Output 1.1.3: Feedback mechanism for EW information developed	68 000	68 000	68 000	68 000	44 000	316 000	
Activity 1.1.3.1 Support regular stakeholder EW information feedback platforms for farmers and pastoralists	20 000	20 000	20 000	20 000		80 000	*Four meetings per year @USD 1,250 for farmers and pastoralists in each country*
Activity 1.1.3.2 Hold quarterly stakeholder meetings on EW information utilization for national and sub-national stakeholders	33 000	33 000	33 000	33 000		132 000	*Four joint national and sub-national level meetings per year @USD 4,125 for two years in each country*
Activity 1.1.3.3 Conduct KAP surveys on EW information	15 000	15 000	15 000	15 000		60 000	*Studies @ 30 man/days @USD 300 and associated costs of USD 6,000 per country*
Activity 1.1.3.4 Develop periodic feedback user friendly tools on accessing, utilizing and reporting EW information to mandated institutions					44 000	44 000	*One meeting to develop the tool @ USD 5,000 and subsequent meetings to review the tool @USD 2,000 per country for three years.*
Output 1.1.4: Emergency plan for Drought management is put in place	172 500	172 500	172 500	172 500	217 100	907 100	
Activity 1.1.4.1 Develop an emergency response plan for Drought disasters at the regional and national levels.	20 000	20 000	20 000	20 000	20 000	100 000	*Studies assessed @50-man days @ USD 300/day and validation workshops fees @ USD 5,000 in each Country* *Studies compilation, designing, printing @ USD 20,000*
Activity 1.1.4.2 Monitoring the EWS, feedback mechanism and its contingency plan at regional level.					67 100	67 100	*Studies @ 200 man/days @USD 300 and associated costs of USD 7,100*

Activity 1.1.4.2 Organize training sessions on the use of the intervention plan for the benefit of the different actors involved at national and regional level	10 000	10 000	10 000	10 000	20 000	60 000	*One meeting at regional level@ USD 10,000 per year; 2 meetings at national level @USD 5,000 per year in each country for two years. (each country will organize 2 meetings per year = 8 meetings per year for all the countries + one regional workshop per year for two years)*
Activity 1.1.4.3 Acquire equipment for Drought management (machines/pickup, bicycles, motorcycles…)	115 000	115 000	115 000	115 000		460 000	*Equipment Lot @ USD 115,000 per country*
Activity 1.1.4.4 Implement two (2) blank operations (including regional and national levels)					110 000	110 000	*One blank operation (including regional and national levels) @ USD 55,000 and subsequent meetings per year for two years.*
Activity 1.1.4.5 Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio …)	27 500	27 500	27 500	27 500		110 000	*One warning messages dissemination kit (beacons, flags, sirens, signaling, speakers, telephone, local radio …) made available @ USD 27,500 per country.*
COMPONENT 2: Strengthening capacity of stakeholders to manage drought risks due to Climate Change effects	293 500	293 500	293 500	293 500	576 000	1 750 000	
Outcome 2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened	248 500	248 500	248 500	248 500	316 000	1 310 000	
Output 2.1.1: Drought management plans (DMPs) integrating CC aspects and adaptation actions developed	90 000	90 000	90 000	90 000	-	360 000	
Activity 2.1.1.1 Develop/update existing DMPs at national and sub-national levels integrating CC aspects and adaptation actions	30 000	30 000	30 000	30 000		120 000	*Consultancy @ 60-man days spread over one year @USD 300 and associated costs of USD 12,000 per country*
Activity 2.1.1.2 Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists	12 000	12 000	12 000	12 000		48 000	*This involves translating DMPs, printing and dissemination @USD 4,000 per year for three years*
Activity 2.1.1.3 Support integration of DMPs into the national and sub-national development plans	18 000	18 000	18 000	18 000		72 000	*Consultancy of 30-man days @USD 300 and associated costs (two workshops) of USD 9,000 per country*
Activity 2.1.1.4 Support formulation of bye-laws and ordinances at sub-national and lower political units	30 000	30 000	30 000	30 000		120 000	*Involves hiring a facilitator @60-man days @USD 300 spread in two years and holding 4 consultative meetings per year @USD 1,500*
Output 2.1.2: Adaptive capacity of institutions, farmers and pastoralists in drought management improved	158 500	158 500	158 500	158 500	316 000	950 000	
Activity 2.1.2.1 Undertake a capacity needs assessment to identify gaps and hindrances to effective drought management					120 000	120 000	*Studies assessed @60-man days @ USD 300/day and associated costs of USD 12,000 per country*
Activity 2.1.2.2 Develop capacity building plans for regional, national and sub-national levels					48 000	48 000	*Consultancy @20-man days @USD 300 and associated costs of USD 6,000 per country*
Activity 2.1.2.3 Develop capacity building materials					28 000	28 000	*Consultancy @10-man days @USD 300 and associated costs of USD 4,000 per country*
Activity 2.1.2.4 Undertake exchange visits and learning tours for cross learning in areas with successful drought management innovations including ground water management initiatives					120 000	120 000	*Exchange visits and learning tours @USD 10,000 per year per country for three years*
Activity 2.1.2.5 Train staff managing EW information centers	20 000	20 000	20 000	20 000		80 000	*Involves an initial and follow up training @USD 10,000 per country for two years*
Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions	30 000	30 000	30 000	30 000		120 000	*Involves three annual trainings @USD 10,000 per country for three years*
Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach	60 000	60 000	60 000	60 000		240 000	*Two quarterly community trainings@ USD 2,500 for three years in each country*
Activity 2.1.2.8 Support farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services	48 500	48 500	48 500	48 500		194 000	*This involves construction of 4 learning centers for farmers and pastoralists @USD 5,000 per learning center and USD 9,500 for operational costs per country for three years.*
Outcome 2.2: Partnerships for drought management at regional, national and local levels strengthened	45 000	45 000	45 000	45 000	260 000	440 000	
Output 2.2.1: New/existing regional and National arrangements /networks for drought management supported	45 000	45 000	45 000	45 000	260 000	440 000	
Activity 2.2.1.1 Support review/development of MoUs, protocols and stock route agreements for Drought Management and reducing conflict between farmers and pastoralists	45 000	45 000	45 000	45 000	60 000	240 000	*1 Consultative meetings and workshops at regional @USD 20,000 per year for three years 1 national @USD 10,000 and 1 local levels @ USD 5,000 per year per country for three years (each country will organize 2 meetings per year = 8 meetings per year for all the countries + one regional workshop per year for three years)*
Activity 2.2.1.2 Facilitate establishment of regional and national drought management multi-sectoral/stakeholder platforms to coordinate partner efforts					120 000	120 000	*Involves coordination of regional and national partners to dialogue on drought management aspects @USD 30,000 per platform per year for the project duration of 4 years*

Activity 2.2.1.3 Support regional and national partners to jointly mobilize resources for Drought Management in a changing climate context					80 000	80 000	*Involves Coordination of partners to mobilize resources @USD 20,000 per year*
COMPONENT 3: Drought and Climate Change adaptation actions	1 492 480	1 577 480	1 667 480	1 542 480	-	6 279 920	
Outcome 3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	1 492 480	1 577 480	1 667 480	1 542 480	-	6 279 920	
Output 3.1.1: Innovative water and soil conservation structures constructed	315 000	420 000	460 000	355 000	-	1 550 000	
Activity 3.1.1.1 Undertake assessment on surface water utilization/potential/availability and develop water Management Plans in project sites	30 000	30 000	30 000	30 000		120 000	*Studies assessed @60-man days @ USD 300/day and associated costs of USD 12,000 per country*
Activity 3.1.1.2 Construct appropriate, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, valley dams, rock water harvesting, roadside water harvesting facilities, water ponds, and locally dug underground tanks, deep and shallow wells	165 000	200 000	240 000	160 000		765 000	*Innovative water harvesting and storage infrastructure: Djibouti 2 units; Kenya 10 Units; Sudan 12 units and Uganda 8 Units @ unit @USD 20,000*
Activity 3.1.1.3 Construct mini-irrigation and water delivery systems (e.g. gravity flow scheme, micro-irrigation systems, check dams, drip irrigation borehole irrigation and solar powered irrigation systems)	75 000	100 000	100 000	75 000		350 000	*Mini irrigation and delivery system: Djibouti 3 units; Kenya 4 Units; Sudan 4 units and Uganda 3 Units @ unit @USD 25,000*
Activity 3.1.1.4 Support protection of water wells and springs to ensure quality, quantity and efficient water use		45 000	45 000	45 000		135 000	*Protection of 3 water wells springs and oases: Djibouti 0 unit; Kenya 3 Units; Sudan 3 units and Uganda 3 Units @ USD 15,000 per unit*
Activity 3.1.1.5 Promote appropriate soil and water conservation measures (e.g. terraces, contours, conservation/minimum tillage, pit gardening, Zai pits and home gardening)	45 000	45 000	45 000	45 000		180 000	*Soil and water conservation measures estimated @USD 45,000 per country*
Output 3.1.2: Ground water sources established/ improved	115 000	115 000	115 000	115 000	-	460 000	
Activity 3.1.2.1 Undertake assessment on ground water utilization/potential/availability and develop groundwater Management Plans in project sites	30 000	30 000	30 000	30 000		120 000	*Studies assessed @60-man days @ USD 300/day and associated costs of USD 12,000 per country*
Activity 3.1.2.2 Review/develop regulatory framework and guidelines on ground water sources	40 000	40 000	40 000	40 000		160 000	*Consultative meetings and workshops at regional @USD 5,000, national @USD 10,000 and local levels @ USD 5,000 per year per country for two years*
Activity 3.1.2.3 Restore degraded water catchments to improve recharge rates of ground water	45 000	45 000	45 000	45 000		180 000	*This involves improving ground cover e.g. planting of grasses, shrubs and some trees @USD 15,000 per country for 3 years*
Output 3.1.3: Adaptive agricultural practices for improving crop production promoted	280 000	260 000	310 000	290 000	-	1 140 000	
Activity 3.1.3.1 Promote fast growing and drought resistant crop varieties (e.g. varieties in Graminae and Leguminoceae families	60 000	60 000	60 000	60 000		240 000	*Cost of buying and distributing drought resistant crops seeds/cuttings @USD 20,000 per country for three years (Create resistant crop varieties nurseries for the benefit of smallholder farmers)*
Activity 3.1.3.2 Promote agro-silvo-pastoral systems (dryland agroforestry) (e.g. fast-growing multi-purpose tree species such as *Acacia mearnsii*, integrated with crops and livestock rearing)	30 000	30 000	30 000	30 000		120 000	*Involves costs for agroforestry tree/shrub seeds/seedlings and associated components @USD 10,000 per country for three years (Create agrisilopastoral seeds nurseries for the benefit of smallholder farmers, to restore degraded landscapes)*
Activity 3.1.3.3 Provide in puts for irrigated agriculture technologies (Drip irrigation, small irrigation etc.)	100 000	80 000	100 000	80 000		360 000	*Drip irrigation and small-scale irrigation infrastructure: Djibouti 10 units; Kenya 8 Units; Sudan 10 units and Uganda 8 Units @ unit @USD 10,000*
Activity 3.1.3.4 Promote climate smart agricultural practices	90 000	90 000	120 000	120 000		420 000	*Climate smart agricultural infrastructure: Djibouti 6 units; Kenya 6 Units; Sudan 8 units and Uganda 8 Units @ unit @USD 15,000*
Output 3.1.4: Adaptive livestock and rangeland practices enhanced	261 010	261 010	261 010	261 010	-	1 044 040	
Activity 3.1.4.1 Promote improved rangeland management practices (e.g. developing of rangeland management plans, reduction livestock stocking, integrated pest and disease management)	60 000	60 000	60 000	60 000		240 000	*Consultancy for rangeland management planning @ 30-man days @USD 300 and associated costs of USD 6,000 per country; and meetings and workshops @ USD 15,000 per country per year for three years*
Activity 3.1.4.2 Support introduction of drought tolerant livestock breeds	90 000	90 000	90 000	90 000		360 000	*This involves cost of buying drought tolerant livestock breeds (@USD 30,000 per country per year for three years*
Activity 3.1.4.3 Promote hydroponic systems for growing nutritious fast-growing cereals for livestock (animal feeds)	40 000	40 000	40 000	40 000		160 000	*This involves the cost of an average household hydroponic unit and seed for the fast-growing cereals @USD 2,000 for 10 households per year per country for two years*
Activity 3.1.4.4 Support farmers and pastoralists to prepare high value silage and hay for livestock during dry spells	36 000	36 000	36 000	36 000		144 000	*This involves the costs of farmer trainings, buying seed and construction of hay and silage storage units, @USD 12,000 per year per country for three years*
Activity 3.1.4.5 Support formation/facilitate existing livestock associations/groups/cooperatives at community level	35 010	35 010	35 010	35 010		140 040	*This involves meetings and workshops @USD 11,670 per country per year for three years*

Output 3.1.5: Enabling environment for smallholder farmers and pastoralists adaptive activities created	156 400	156 400	156 400	156 400	-	625 600	
Activity 3.1.5.1 Introduce and promote Index-based weather insurance in partnership with insurance companies	30 000	30 000	30 000	30 000		120 000	*This involves seed money for insurance premiums and operations @USD 10,000 per country per year for three years*
Activity 3.1.5.2 Conduct drought risk assessments on the agriculture value chain	30 000	30 000	30 000	30 000		120 000	*Studies assessed @60-man days @ USD 300/day and associated costs of USD 12,000 per country*
Activity 3.1.5.3 Facilitate farmer and pastoralists associations/cooperatives to generate, analyze and share market information.	56 400	56 400	56 400	56 400		225 600	*This involves meetings and workshops @USD 18,800 per country for three years*
Activity 3.1.5.4 Create linkages between farmer and pastoralists associations/cooperatives at regional, national and sub-national levels to enable sharing of market information	40 000	40 000	40 000	40 000		160 000	*This involves costs for meetings and workshops at different levels @USD 20,000 per country for two years*
Output 3.1.6: Environmentally friendly IGAs ([e.g., Pottery, Bee keeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted	365 070	365 070	365 070	365 070	-	1 460 280	
Activity 3.1.6.1 Support women and youth groups within puts for IGAs including (e.g. growing of sisal and *Aloe vera* to support rope production and art crafts; bee keeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism	120 000	120 000	120 000	120 000		480 000	*This involves the cost of inputs for the selected enterprises, meetings and workshops all estimated @USD 40,000 per year per country for three years*
Activity 3.1.6.2 Provide competitive small grants targeting small holder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions	120 000	120 000	120 000	120 000		480 000	*This involves a fund set aside for farmer and pastoralist groups with innovative drought adaptation actions to compete for and be supported by the project. It is estimated @USD 60,000 per year per country for two years.*
Activity 3.1.6.3 Provide inputs for value addition crop and livestock products	125 070	125 070	125 070	125 070		500 280	*This involves costs for buying equipment and materials for value addition for the respective crop and livestock enterprises estimated @USD 41,690 per country per year for three years*
COMPONENT 4: Knowledge management and awareness creation	87 000	87 000	87 000	87 000	244 000	592 000	
Outcome 4.1: Knowledge and awareness on drought risk management Increased	87 000	87 000	87 000	87 000	244 000	592 000	
Output 4.1.1 Good practices and lessons on drought management, EWS and Climate Change impacts documented and disseminated	57 000	57 000	57 000	57 000	76 000	304 000	
Activity 4.1.1.1 Document lessons and best practices from project interventions	27 000	27 000	27 000	27 000	40 000	148 000	*These are costs for 60 consultancy man days @USD 300 and associated costs of USD 9,000 for three years per country* *Regional compilation of lessons and best practices@ USD 30,000 and associated costs of USD 10,000 for three years*
Activity 4.1.1.2 Generate and package information dissemination materials on EW, CC and drought adaptation actions in forms for easy uptake (e.g. policy briefs, brochures) adapted to the various stakeholders	15 000	15 000	15 000	15 000	16 000	76 000	*Cost of developing at 30-man days @USD 300, printing the materials estimated @USD 6,000 per country for four years.* *Regional cost of developing at 20-man days @USD 300, printing the materials estimated @USD 10,000*
Activity 4.1.1.3 Disseminate/share knowledge and information through use of existing and popular platforms e.g. electronic and print media, telecoms that are easily accessible by the stakeholders.	15 000	15 000	15 000	15 000	20 000	80 000	*Costs of using various communication platforms and channels estimated @USD 15,000 per country for four years* *Regional costs of using various communication platforms and channels estimated @USD 20,000 for four years*
Output 4.1.2 Drought information management strengthened	30 000	30 000	30 000	30 000	168 000	288 000	
Activity 4.1.2.1 Support existing channels/networks for information generation and dissemination at regional level (e.g. GHACOF for EW and IDDRISI for drought management platform and national platforms)					56 000	56 000	*Costs of meetings, workshops and coordination estimated @USD 14,000 per year for four years*
Activity 4.1.2.2 Engage policy makers in dissemination of drought management information and best practices					80 000	80 000	*Costs of meetings, workshops and travel estimated @USD 20,000 per year for four years*
Activity 4.1.2.3 Support drought management working groups to share and disseminate the information					32 000	32 000	*Costs of meetings, workshops and travel estimated @USD 8,000 per year for four years*
Activity 4.1.2.4 Facilitate empowerment of women and other vulnerable groups on water management in a context of drought	30 000	30 000	30 000	30 000		120 000	*This involves cost of buying equipment and tools for water purification (@USD 30,000 per country)*
Project activities Total Budget (component 1, 2, 3, 4)	2 311 480	2 396 480	2 486 480	2 361 480	1 453 100	11 009 020	
Execution costs (Regional Implementing Entity-GWPEA and national entities in the four countries)	95 000	95 000	95 000	95 000	665 860	1 045 860	
Project inception launch activities	20 000	20 000	20 000	20 000	60 000	140 000	*Consultancies, Workshop and travel*
Project Co-ordination and management fees	30 000	30 000	30 000	30 000	260 000	380 000	*Salaries and management fees*

Operating costs	35 000	35 000	35 000	35 000	230 860	370 860	*Travel, DSA, printing, support staff*
Equipment	10 000	10 000	10 000	10 000	15 000	55 000	*Equipment*
Monitoring and evaluation					100 000	100 000	*Consultancies*
Implementation costs (Implementing Entity -OSS)						1 024 660	
▪ Implementation and Coordination Management Fees: salaries and fees of experts in charge of the project for planning, daily management, M&E, and implementation, as well as equipment and consumables, etc.						550 000	*Salaries and management fees*
▪ Assessment, supervision and travel expenses for monitoring: Costs of supervision missions, participation in steering committee meetings, mid-term and final evaluation and participation in workshops.						324 660	*Travel, DSA, printing, consultancies*
▪ Financial management, accounting, administrative follow-up and financial audit: Financial management monitoring fees in line with the requirements of the Adaptation Fund, financial reports, procurement procedures, accounting, audits, etc. Bank charges related to banking transactions and transfers of funds						150 000	*Consultancies, management fee*
Grand total						13 079 540	

H. Disbursement schedule with time-bound milestones

Component/Outcome/Output/Activity	Year 1	Year 2	Year 3	Year 4	Total
COMPONENT 1: Development and enhancement *of a regional Drought Early Warning* System	824 910	1 253 810	241 600	66 780	2 387 100
Outcome 1.1: Increased use of effective Early Warning Systems by stakeholders	824 910	1 253 810	241 600	66 780	2 387 100
Output 1.1.1: Efficient and effective EWS in place/developed	448 550	314 450	-	-	763 000
Activity 1.1.1.1 Assess the status of EWS in the target countries and update options of traditional EWS with modern EW technologies	48 000				48 000
Activity 1.1.1.2 Develop an EWS prototype to be used at the regional and national levels	100 000				100 000
Activity 1.1.1.3 Equip/upgrade selected weather stations and Remote sensing derived products, time series of bioclimatic variables,	165 550	114 450			280 000
Activity 1.1.1.4 Construct/renovate and equip EW information centers including data base	80 000	80 000			160 000
Activity 1.1.1.5 Support/Equip project beneficiaries (pastoralist, farmers and extension agents) to access EW information (e.g. devices including, brochure, SMS, Radio etc.)		120 000			120 000
Activity 1.1.1.6 Conduct a baseline study	55 000				55 000
Output 1.1.2: Institutional linkages for EW information established	137 000	169 000	65 000	30 000	401 000
Activity 1.1.2.1 Develop/Review EW information sharing frameworks at regional. National and sub-national levels		80 000			80 000
Activity 1.1.2.2 Develop an implementation action plan to operationalize the frameworks	48 000				48 000
Activity 1.1.2.3 Hold inter-ministerial and sectoral meetings for data sharing	30 000	30 000	30 000	30 000	120 000
Activity 1.1.2.4 Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)	35 000	35 000	35 000		105 000
Activity 1.1.2.5 Support Incorporation of EW information into planning and budgeting processes of targeted countries	24 000	24 000			48 000
Output 1.1.3: Feedback mechanism for EW information developed	92 570	98 570	104 860	20 000	316 000
Activity 1.1.3.1 Support regular stakeholder EW information feedback platforms for farmers and pastoralists	20 000	20 000	20 000	20 000	80 000
Activity 1.1.3.2 Hold quarterly stakeholder meetings on EW information utilization for national and sub-national stakeholders		66 000	66 000		132 000
Activity 1.1.3.3 Conduct KAP surveys on EW information	60 000				60 000
Activity 1.1.3.4 Develop periodic feedback user friendly tools on accessing, utilizing and reporting EW information to mandated institutions	12 570	12 570	18 860		44 000
Output 1.1.4: Emergency plan for Drought management is put in place	146 790	671 790	71 740	16 780	907 100
Activity 1.1.4.1 Develop an emergency response plan for Drought disasters at the regional and national levels.	100 000				100 000
Activity 1.1.4.2 Monitoring the EWS, feedback mechanism and its contingency plan at regional level.	16 790	16 790	16 740	16 780	67 100
Activity 1.1.4.2 Organize training sessions on the use of the intervention plan for the benefit of the different actors involved at national and regional level	30 000	30 000			60 000
Activity 1.1.4.3 Acquire equipment for Drought management (machines/pickup, bicycles, motorcycles...)		460 000			460 000
Activity 1.1.4.4 Implement two (2) blank operations (including regional and national levels)		55 000	55 000		110 000
Activity 1.1.4.5 Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)		110 000			110 000
COMPONENT 2: Strengthening capacity of stakeholders to manage drought risks due to Climate Change effects	420 000	576 670	418 670	334 660	1 750 000
Outcome 2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened	370 000	446 670	288 670	204 660	1 310 000
Output 2.1.1: Drought management plans (DMPs) integrating CC aspects and adaptation actions developed	132 000	144 000	84 000	-	360 000
Activity 2.1.1.1 Develop/update existing DMPs at national and sub-national levels integrating CC aspects and adaptation actions	60 000	60 000			120 000
Activity 2.1.1.2 Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists	12 000	12 000	24 000		48 000
Activity 2.1.1.3 Support integration of DMPs into the national and sub-national development plans		72 000			72 000
Activity 2.1.1.4 Support formulation of bye-laws and ordinances at sub-national and lower political units	60 000		60 000		120 000
Output 2.1.2: Adaptive capacity of institutions, farmers and pastoralists in drought management improved	238 000	302 670	204 670	204 660	950 000
Activity 2.1.2.1 Undertake a capacity needs assessment to identify gaps and hindrances to effective drought management	120 000				120 000
Activity 2.1.2.2 Develop capacity building plans for regional, national and sub-national levels	24 000	24 000			48 000
Activity 2.1.2.3 Develop capacity building materials	14 000	14 000			28 000

Activity 2.1.2.4 Undertake exchange visits and learning tours for cross learning in areas with successful drought management innovations including ground water management initiatives	40 000	40 000	20 000	20 000	120 000
Activity 2.1.2.5 Train staff managing EW information centers		40 000		40 000	80 000
Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions	40 000	40 000	40 000		120 000
Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach		80 000	80 000	80 000	240 000
Activity 2.1.2.8 Support farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services		64 670	64 670	64 660	194 000
Outcome 2.2: Partnerships for drought management at regional, national and local levels strengthened	50 000	130 000	130 000	130 000	440 000
Output 2.2.1: New/existing regional and National arrangements /networks for drought management supported	50 000	130 000	130 000	130 000	440 000
Activity 2.2.1.1 Support review/development of MoUs, protocols and stock route agreements for Drought Management and reducing conflict between farmers and pastoralists		80 000	80 000	80 000	240 000
Activity 2.2.1.2 Facilitate establishment of regional and national drought management multi-sectoral/stakeholder platforms to coordinate partner efforts	30 000	30 000	30 000	30 000	120 000
Activity 2.2.1.3 Support regional and national partners to jointly mobilize resources for Drought Management in a changing climate context	20 000	20 000	20 000	20 000	80 000
COMPONENT 3: Drought and Climate Change adaptation actions	143 340	1 273 790	3 015 960	1 846 830	6 279 920
Outcome 3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	143 340	1 273 790	3 015 960	1 846 830	6 279 920
Output 3.1.1: Innovative water and soil conservation structures constructed	60 000	319 530	733 600	436 870	1 550 000
Activity 3.1.1.1 Undertake assessment on surface water utilization/potential/availability and develop water Management Plans in project sites	60 000	60 000			120 000
Activity 3.1.1.2 Construct appropriate, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, valley dams, rock water harvesting, roadside water harvesting facilities, water ponds, and locally dug underground tanks, deep and shallow wells		119 530	358 600	286 870	765 000
Activity 3.1.1.3 Construct mini-irrigation and water delivery systems (e.g. gravity flow scheme, micro-irrigation systems, check dams, drip irrigation borehole irrigation and solar powered irrigation systems)		50 000	225 000	75 000	350 000
Activity 3.1.1.4 Support protection of water wells and springs to ensure quality, quantity and efficient water use		45 000	45 000	45 000	135 000
Activity 3.1.1.5 Promote appropriate soil and water conservation measures (e.g. terraces, contours, conservation/minimum tillage, pit gardening, Zai pits and home gardening)		45 000	105 000	30 000	180 000
Output 3.1.2: Ground water sources established/ improved	60 000	170 000	170 000	60 000	460 000
Activity 3.1.2.1 Undertake assessment on ground water utilization/potential/availability and develop groundwater Management Plans in project sites	60 000	60 000			120 000
Activity 3.1.2.2 Review/develop regulatory framework and guidelines on ground water sources		80 000	80 000		160 000
Activity 3.1.2.3 Restore degraded water catchments to improve recharge rates of ground water		30 000	90 000	60 000	180 000
Output 3.1.3: Adaptive agricultural practices for improving crop-production promoted	-	195 000	605 000	340 000	1 140 000
Activity 3.1.3.1 Promote fast growing and drought resistant crop varieties (e.g. varieties in Graminae and Leguminoceae families		40 000	120 000	80 000	240 000
Activity 3.1.3.2 Promote agro-silvo-pastoral systems (dryland agroforestry) (e.g. fast-growing multi-purpose tree species such as *Acacia mearnsii*, integrated with crops and livestock rearing)		20 000	60 000	40 000	120 000
Activity 3.1.3.3 Provide in puts for irrigated agriculture technologies (Drip irrigation, small irrigation etc.)		60 000	200 000	100 000	360 000
Activity 3.1.3.4 Promote climate smart agricultural practices		75 000	225 000	120 000	420 000
Output 3.1.4: Adaptive livestock and rangeland practices enhanced	23 340	210 680	562 020	248 000	1 044 040
Activity 3.1.4.1 Promote improved rangeland management practices (e.g. developing of rangeland management plans, reduction livestock stocking, integrated pest and disease management)		40 000	120 000	80 000	240 000
Activity 3.1.4.2 Support introduction of drought tolerant livestock breeds		60 000	180 000	120 000	360 000
Activity 3.1.4.3 Promote hydroponic systems for growing nutritious fast-growing cereals for livestock (animal feeds)		40 000	120 000		160 000
Activity 3.1.4.4 Support farmers and pastoralists to prepare high value silage and hay for livestock during dry spells		24 000	72 000	48 000	144 000
Activity 3.1.4.5 Support formation/facilitate existing livestock associations/groups/cooperatives at community level	23 340	46 680	70 020		140 040
Output 3.1.5: Enabling environment for smallholder farmers and pastoralists adaptive activities created	-	215 200	215 200	195 200	625 600
Activity 3.1.5.1 Introduce and promote Index-based weather insurance in partnership with insurance companies		20 000	60 000	40 000	120 000
Activity 3.1.5.2 Conduct drought risk assessments on the agriculture value chain		120 000			120 000
Activity 3.1.5.3 Facilitate farmer and pastoralists associations/cooperatives to generate, analyze and share market information.		75 200	75 200	75 200	225 600
Activity 3.1.5.4 Create linkages between farmer and pastoralists associations/cooperatives at regional, national and sub-national levels to enable sharing of market information			80 000	80 000	160 000
Output 3.1.6: Environmentally friendly IGAs ([e.g., Pottery, Bee keeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted	-	163 380	730 140	566 760	1 460 280
Activity 3.1.6.1 Support women and youth groups within puts for IGAs including (e.g. growing of sisal and *Aloe vera* to support rope production and art crafts; bee keeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism		80 000	240 000	160 000	480 000
Activity 3.1.6.2 Provide competitive small grants targeting small holder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions			240 000	240 000	480 000
Activity 3.1.6.3 Provide inputs for value addition crop and livestock products		83 380	250 140	166 760	500 280

COMPONENT 4: Knowledge management and awareness creation	81 000	100 730	279 940	130 330	592 000
Outcome 4.1: Knowledge and awareness on drought risk management Increased	81 000	100 730	279 940	130 330	592 000
Output 4.1.1 Good practices and lessons on drought management, EWS and Climate Change impacts documented and disseminated	39 000	58 730	117 940	88 330	304 000
Activity 4.1.1.1 Document lessons and best practices from project interventions		19 730	78 940	49 330	148 000
Activity 4.1.1.2 Generate and package information dissemination materials on EW, CC and drought adaptation actions in forms for easy uptake (e.g. policy briefs, brochures) adapted to the various stakeholders	19 000	19 000	19 000	19 000	76 000
Activity 4.1.1.3 Disseminate/share knowledge and information through use of existing and popular platforms e.g. electronic and print media, telecoms that are easily accessible by the stakeholders.	20 000	20 000	20 000	20 000	80 000
Output 4.1.2 Drought information management strengthened	42 000	42 000	162 000	42 000	288 000
Activity 4.1.2.1 Support existing channels/networks for information generation and dissemination at regional level (e.g. GHACOF for EW and IDDRISI for drought management platform and national platforms)	14 000	14 000	14 000	14 000	56 000
Activity 4.1.2.2 Engage policy makers in dissemination of drought management information and best practices	20 000	20 000	20 000	20 000	80 000
Activity 4.1.2.3 Support drought management working groups to share and disseminate the information	8 000	8 000	8 000	8 000	32 000
Activity 4.1.2.4 Facilitate empowerment of women and other vulnerable groups on water management in a context of drought			120 000		120 000
Project activities Total Budget (component 1, 2, 3, 4)	1 469 250	3 205 000	3 956 170	2 378 600	11 009 020
Execution costs (Regional Implementing Entity-GWPEA and national entities in the four countries)	398 750	220 000	201 830	225 280	1 045 860
▪ Project inception launch activities	140 000				140 000
▪ Project Co-ordination and management fees	95 000	95 000	95 000	95 000	380 000
▪ Operating costs	83 750	100 000	81 830	105 280	370 860
▪ Equipment	55 000				55 000
▪ Monitoring and evaluation	25 000	25 000	25 000	25 000	100 000
Implementation costs (Implementing Entity -OSS)	232 000	275 000	242 000	275 660	1 024 660
▪ Implementation and Coordination Management Fees: salaries and fees of experts in charge of the project for planning, daily management, M&E, and implementation, as well as equipment and consumables, etc.	130 000	140 000	140 000	140 000	550 000
▪ Assessment, supervision and travel expenses for monitoring : Costs of supervision missions, participation in steering committee meetings, mid-term and final evaluation and participation in workshops	72 000	90 000	72 000	90 660	324 660
▪ Financial management, accounting, administrative follow-up and financial audit : Financial management monitoring fees in line with the requirements of the Adaptation Fund, financial reports, procurement procedures, accounting, audits, etc. Bank charge related to banking transactions and transfers of funds	30 000	45 000	30 000	45 000	150 000
Grand total	2 100 000	3 700 000	4 400 000	2 879 540	13 079 540

Disbursement summary tab according to AF template:

	Upon Agreement signature	One Year after Project Start[a/]	Year 2[b/]	Year 3	**Total**
Scheduled Date	Decembre 2019	June 2021	June 2022	June 2023	
Project Funds	1 868 000	3 425 000	4 158 000	2 603 880	12 054 880
Implementing Entity Fee	232 000	275 000	242 000	275 660	1 024 660
Total	**2 100 000**	**3 700 000**	**4 400 000**	**2 879 540**	**13 079 540**

IV - PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY TH E IMPLEMENTING ENTITY

- **Record of endorsement on behalf of the government[1]:**

Kenya **Dr. Ibrahim M. Mohamed, CBS** Principal Secretary Ministry of Environment and Forestry Office of the Principal Secretary	**March 14, 2019**
Djibouti **Mr. Dini Abdallah Omar** Secretary General Ministry of Environment	**March 28, 2019**
Sudan **Dr. Noureldin Ahmed Abdalla** Secretary General - Higher Council for Environment and Natural Resources (HCENR) UNFCCC national focal point	**April 03, 2019**
Uganda **For/Mr. Keith Muhakanizi** Permanent Secretary/Secretary to the Treasury Ministry of Finance, Planning and Economic Development	**June 05, 2019**

- **Implementing Entity certification**

I certify that this proposal has been prepared in accordance with the guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Country programming papers (CPPs), **Djibouti'**s Public Investment Plan and the National Plan for Climate Change Adaptation; **Kenya**'s National Disaster Management Policy and National Climate Change response Strategy, **Sudan**'s regulatory policy frameworks related to drought and **Uganda**'s National Policy for Disaster Preparedness and management) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and to the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project.

Mr. Khatim Kherraz– Executive Secretary of the Sahara and Sahel Observatory (OSS) as the Implementing Entity Coordinator

Date: August 05, 2019	Tel.: (+216) 71 206 633 Email: boc@oss.org.tn

Project Contact Person: **Mr. Nabil BEN KHATRA**

Tel. and Email: (+216) 71 206 633; nabil.benkhatra@oss.org.tn

[1]Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities

ANNEXES

List of Annexes

Annex 1: ENDORSEMENT LETTERS

Telephone : 256 41 4707 000
: 256 41 4232 095
Fax : 256 41 4230 163
: 256 41 4343 023
: 256 41 4341 286
Email : finance@finance.go.ug
Website : www.finance.go.ug

In any correspondence on
this subject please quote No. ALD 79/251/02

THE REPUBLIC OF UGANDA

Ministry of Finance, Planning &
Economic Development
Plot 2-12, Apollo Kaggwa Road
P.O. Box 8147
Kampala
Uganda

5th June 2019

The Adaptation Fund Board
C/o Adaptation Fund Board Secretariat
Email: secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

ENDORSEMENT FOR A REGIONAL PROJECT: STRENGTHENING DROUGHT RESILIENCE FOR SMALL HOLDER FARMERS AND PASTORALISTS IN THE IGAD REGION.

I have the honor to refer to the above mentioned subject.

In my capacity as the Designated Authority for the Adaptation Fund in Uganda, I confirm that the above regional project proposal is in accordance with the national and regional climate Adaptation priorities of the Government of Uganda.

Accordingly, I am pleased to endorse the full project proposal for support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by Ministry of Water and Environment of Uganda in partnership with the Global Water Partnership Eastern Africa (GWP-EA).

Keith Muhakanizi
PERMANENT SECRETARY/ SECRETARY TO THE TREASURY/ DESIGNATED AUTHORITY FOR CLIMATE CHANGE

Copies to: The Permanent Secretary, Ministry of Water and Environment.
Kampala, Uganda.

The Regional Coordinator, Global Water Partnership, Eastern Africa
Entebbe, Uganda.

The Executive Secretary, Sahara and Sahel Observatory
Tunis, Tunisia.

596 VOL II

MINISTRY OF ENVIRONMENT AND FORESTRY
Office of the Principal Secretary

Telegrams: "NATURE", Nairobi
Telephone: +254-20-2730808/9
Email: psoffice@environment.go.ke
Website: www.environment.go.ke

N.H.I.F. Building
Ragati Road
P. O. Box 30126 – 00100
NAIROBI

Ref: DENR/EMC/6/VOL.III/45

14th March 2019

The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 52 3240/5

ENDORSEMENT FOR A PROJECT
"STRENGTHENING DROUGHT RESILIENCE FOR SMALL HOLDER FARMERS AND PASTORALISTS IN THE IGAD REGION"

In my capacity, as designated authority for the Adaptation Fund in Republic of Kenya, I confirm that the above regional project proposal is in accordance with the Government's National and Regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Kenya and the IGAD region.

Accordingly, I am pleased to endorse the above project full proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by the Climate Change Directorate, Ministry of Environment and Forestry of Kenya in partnership with the Global Water Partnership Eastern Africa (GWP-EA).

Dr. Ibrahim M. Mohamed, CBS
PRINCIPAL SECRETARY

REPUBLIQUE DE DJIBOUTI
UNITE – ÉGALITE – PAIX

MINISTERE DE L'HABITAT,
DE L'URBANISME ET DE
L'ENVIRONNEMENT

LE SECRÉTAIRE GÉNÉRAL

N° 198/ SG/2019
Djibouti, le 28 MARS 2019

MHUE

جـمـهـورية جيبوتي
الوحدة - المساواة - السلام

وزارة الإسكان والتعمير والبيئة

الأمين العام

رقم
جيبوتي في

To : The Adaptation Fund Board
C/o Adaptation Fund Board Secretariat
Emai l : Secretariat@Adaptation-Fund.org
Fax : 202 522 324015

Subject: Endorsement for a project ***"strengthening Drought Resilience for small holder farmers and pastoralists in the IGAD region"***

In my capacity, as designated authority for the Adaptation Fund in Djibouti, I confirm that the above regional project proposal is in accordance with the government's national and regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Djibouti and the IGAD region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by the Ministry of Agriculture, Water, Fisheries and Livestock of Djibouti in partnership with the Global Water Partnership Eastern Africa (GWP-EA).

Sincerely,

Dini Abdallah Omar
Secretary General of the Ministry of Environment

+253 35-85-22 +253 35-16-18 BP 11 dini.omar12@gmail.com

جمهورية السودان
Republic of Sudan
المجلس الأعلى للبيئة والموارد الطبيعية
The Higher Council for Environment and Natural Resources
General Secretariat
الأمانة العامة

Date: 03/04/2019

To: The Adaptation Fund Board
C/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for a project "***Strengthening Drought Resilience for small holder farmers and pastoralists in the IGAD region***"

In my capacity, as designated authority for the Adaptation Fund in **Republic of Sudan**, I confirm that the above regional project proposal is in accordance with the government's national and regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Sudan and the IGAD region.

Accordingly, I am pleased to endorse the above project full proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Sahara and Sahel Observatory (OSS) and executed by Ministry of Water Resources and Electricity of Sudan in close collaboration with the Higher Council of Environment and Natural Resources (HCENR) and in partnership with the Global Water Partnership Eastern Africa (GWP-EA).

Sincerely,

Dr. Noureldin Ahmed Abdalla
Secretary General (HCENR)
and National UNFCCC Focal Point

P.O.Box: 10488 - Tel:+249 183 784279 - Fax:+249 183 787617
Website:www.hcenr.gov.sd - E-mail:hcenr2005@yahoo.com
Gamaa Street, Khartoum, Sudan

Annex 2: LIST OF ACRONYMS AND ABBREVIATION USED IN THIS DOCUMENT

ADC	Africa Drought Conference
ASALs	Arid and Semi- arid lands
CC	Climate Change
DMPs	Drought Management Plans
DRESS-EA	Strengthening Drought Resilience of Smallholder farmers and Pastoralists in the IGAD Region
EIAs	Environmental Impact Assessments
ESIAs	Environmental and Social Impact Assessments
ESMF	Environmental and Social Management Framework
GCM	Global Circulation Models
GWPEA	Global Water Partnership East Africa
HOA	Horn of Africa
IDMP HOA	Integrated Drought Management Program in the Horn of Africa
IGAs	Income Generating Activities
IGAD	Inter-Governmental Authority on Development
IDDRSI	IGAD Drought Disaster Resilience and Sustainability Initiative
MOU	Memorandum of Understanding
MWE	Ministry of Water and Environment, Uganda
NAPs	National Adaptation Plans
NDCs	Nationally Determined Contributions
SDGs	Sustainable Development Goals
SNAPA	Sudan National Adaptation Programme of Action
UNCCP	Uganda National Climate Change Policy
USPs	Unidentified sub-projects
WACDEP	Water, Climate and Development Programme
WMP	Water Management Plan
WNS	White Nile State

Annex 3: GENDER ASSESSMENT & ACTION PLAN for DRESS-EA Project

Contents

1. Rationale for the Gender assessment

The purpose of this document is to make a diagnosis with a particular focus on drafting up a framework for the design and implementation of a gender-focused ***"Strengthening drought resilience for small holder farmers and pastoralists in the IGAD region -DRESS-EA"*** project that is in line with the Adaptation Fund´s own Gender Policy. The four countries (Djibouti, Kenya, Sudan and Uganda) have fully endorsed the project due to current challenges in their countries and have expressed support to undertake the proposed interventions. Understanding the different needs and capacities of women and men is critical to effective project implementation. It is against this background that a gender analysis was conducted to analyze the gender group differences in terms of their vulnerability, roles and responsibilities as well as challenges and opportunities; mitigate or gender mainstream into project activities and draw a gender-based action plan for project implementation. An overview of the main Gender-focused regulatory and socio-economic issues in each of the four countries is presented in this document. The information presented pertains to the gender situation in the four countries and highlights the situation to as far as the proposed project site whenever access to relevant data makes it possible. Furthermore, the key problems that women have to tackle with in the four countries regarding climate change, and drought management are highlighted.

2. Overview of DRESS-EA project

The proposed "Strengthening Drought Resilience for Small Holder Farmers and Pastoralists in the IGAD Region (DRESS-EA) project" is to be implemented in four countries including Uganda, Djibouti, Sudan and Kenya. The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region. The project has been formulated for implementation by the Directorate of Rural hydraulics in Djibouti, Ministry of Environment and Forestry, Directorate of Climate change in Kenya, the Ministry of Water Resources, Irrigation and Electricity in Sudan and the Ministry of Water and Environment in Uganda, with technical assistance from Global water partnership Eastern Africa the Executing entity and OSS the implementing Entity.

4.1 2.1 Project background/context

The IGAD member states face severe water constraints and prolonged droughts. Between 60- 70 percent of the land area in the IGAD region consists of Arid and Semi-Arid Lands (ASALs) that receive less than 600 mm of rainfall annually (IGAD 2013). It is predicted that the frequency and intensity of droughts would increase because of climate change, especially in semi-arid areas. In fact, climate change has exacerbated drought occurrences due to high anomalies in precipitation. From 2015 to-date, high rainfall anomalies have been recorded. Moreover, the region faces uncontrolled activities such as deforestation and poor agricultural practices that led to reduced water retention capacities, surface runoffs, and soil cover losses. Such activities not only impact negatively on water resources, environment and other ecosystems that serve as community livelihood sources, but also increase their vulnerability to droughts. Significantly reduced precipitation levels lead to pollution, food insecurity, civil strife over water, food and pastures, the drying-up of rivers, streams and aquifers as well as loss of plant available water in the soils on which smallholder farmers and pastoralists derive their livelihoods. The natural resources of the region represent a major asset for the local populations whose livelihoods rely mainly on agriculture, livestock, fishery, forest resources, pastures, etc.

In view of all these observations and with the aim of strengthening the resilience of the region's populations and ecosystems, the Sahara and Sahel Observatory (OSS) in collaboration with the four riparian countries (Djibouti, Kenya, Sudan and Uganda) and in partnership with Global Water Partnership Eastern Africa (GWPEA) have prepared and are to submit to the Adaptation Fund (AF) a proposal for a regional project entitled "Strengthening Drought Resilience for Small Holder Farmers and Pastoralists in the IGAD Region - DRESS EA". The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region. The project targets to consolidate synergies and adapt innovative and resilient drought management actions from selected IGAD region countries including Djibouti, Kenya, Sudan and Uganda. The holistic approach of the proposed project is designed as a more integrated way to support communities in locations that are considered most vulnerable to droughts.

4.2 2.2 Project objectives

The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks, mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions. More specifically, this project is intended to, promote investments in drought early warning systems (EWS) and improve the existing ones, strengthen and improve the capacity of key stakeholders in drought risks management at regional, national and local levels, Support communities to undertake innovative adaptation actions that reinforce their resilience to drought and enhance knowledge management and information sharing on drought resilience at the considered levels. To address the drought challenges, the DRESS-EA project, has been developed by partners in the IGAD region. The project will be implemented by the Sahara and Sahel Observatory (OSS), an accredited Regional Implementing Entity for the Adaptation Fund. Project execution will be done by Regional Executing Entity, Global Water partnership Eastern Africa (GWPEA) in partnership with national executing entities in the focal countries that include Djibouti, Kenya, Sudan and Uganda.

4.3 2.3 Project Components

The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region.
The Project has four components.
Component 1: Development and enhancement of a regional Drought Early Warning System,
Component 2: Strengthening the capacity of stakeholders to manage drought risks due to Climate Change effects
Component 3: Drought and Climate Change adaptation actions and
Component 4: Knowledge management and awareness creation.

4.4 2.4 Description of the Project sites

The project will be implemented in different sites within each of four selected countries of the IGAD region. Basically, these are areas that are considered to be most vulnerable and prone to drought based on the following criteria:

- In terms of the environmental conditions, the sites experience high rainfall variability with increasing frequency and intensity of drought occurrences and high environmental degradation (focusing on vegetation and soil degradation as well as degradation and deterioration of water resources such as streams and rivers).
- Communities inhabiting such sites are also food insecure characterized by recurrent famine and a shortage of food. There is high dependence on the rain-fed agriculture especially high dependence of farmers and pastoralists on crop and livestock farming**.**
- Socially, there are many vulnerable members among the smallholder farmers and pastoralists especially women, children, youth, disabled and elderly by gender. Low-income levels of the population/high poverty levels in such sites therein are known and reported.
- Economically, smallholder farmers and pastoralists have limited options in terms of the potential alternative sources of livelihoods and /or income.

In Djibouti, the project will be implemented in three sites that are considered most vulnerable to droughts. The sites include Bieidley in Ali Sabieh region as well as, Wadi Gobaad, and Hanle sector in Dikhil region. Ali Sabieh Region is located at latitudes 11.1516° and Longitude 42.7122N and 9.6” 42° 42.44” E. It lies at in southern Djibouti with a total land area of about 2,400km^2. It borders Somalia and Ethiopia near the Dikhil region to the west. Dikhil region is the largest region in Djibouti with a total land area of approximately 7.200 km^2. In Dikhil region, the Wadi Gobaad is 120 km long and drains south of the Gobaad depression to the southwest of the Republic of Djibouti. It is the confluence of many superficial flows of the Adigala region in Ethiopia that crosses from south to north into Djibouti territory via Abbot Lake as Eyla. The Hanle sector is found 150-200m above sea level. The three project sites in Djibouti are characterized by warm and dry climate, very low precipitation and highly variable (not exceeding 200 mm annually) with scattered shrubs and grassland patches. In Kenya, the project will be implemented in Kitui and Samburu counties that lie between latitudes 0°10‟ and 3°0‟ south and longitudes 37°50‟ and 39°0‟ East and latitudes 0°30’and 2° 45’ north of the equator between longitudes 36°15’ and 38° 10’east of the Prime Meridian respectively. Kitui covers an area of 30,496.4 km^2 including 6,369 km^2 occupied by Tsavo East National park. Samburu covers an area of 21,022.27 km^2. Samburu is bordered by Turkana to the Northwest, Baringo to the Southwest, Marsabit to the Northeast, Isiolo to the East and Laikipia to the South.

In Sudan the project shall be implemented in the White Nile state. The White Nile State (WHS), as one of the Sudan's most vulnerable regions, is severely impacted by the climate change induced droughts and floods. Most notably, increasing temperatures, decreasing trends of annual rainfall as well as increasing variability, are causing gradual shift of ecological zones from north to south. This situation has adversely impacted water availability, agricultural and livestock potential, as almost, 70% of the total land area (40 km^2) earn a living based traditional rain fed agriculture and livestock (animal resources: sheep, goats and cattle - are estimated as more than 8 million head).

In Uganda, the project will be implemented in Rupa Sub County in Lokere Catchment. The catchment is located in the districts of Kaabong (5.4%), Moroto (32.0%), Kotido (3.8%), Napak (32.9%) and Nakapiripirit (2.2%) in the Karamoja Region and; Amuria (11.0%), Katakwi (9.5%) and Soroti (3.3%) in Teso Region. Lokere Catchment covers a total area of 8,156 km^2. Rupa Sub County in Moroto district borders Kotido District to the North, Katikekile Sub County to the South East, Moroto Municipality to the south and Turkana County of the Republic of Kenya. This calls for transboundary approaches and interventions in tackling the drought problem across neighboring areas in Uganda and Kenya.

3. Methodology

The gender analysis was conducted using Participatory Rural Appraisal tools and techniques in 4 community consultative meetings/PRA sessions that involved 15 males and 15 females per meeting in the proposed project sites that are highly prone to frequent and intense droughts. The main purpose of these public consultation sessions was to seek the beneficiaries' points of view and to collect information for a better design of the project with a focus on involving vulnerable groups, farmers, fishermen, women, and youth. This participatory approach aimed at ensuring effective representation of the project beneficiaries during preparation and planning stage; learning about the concerns of all stakeholders, including vulnerable groups (women, youth and men) in the design and implementation of the project as well as exchanging views on the financing and sustainability of the project. Women's presence at the consultation workshops helped to enrich the debate about challenges of women including access and income generating activity problems. Key Informant Interviews (KIIs) were also conducted with a total of 18 local leaders in the four countries in which the project will be implemented. Other key informants were engaged during and after the workshop sessions. These methods were further supported by telephone interviews where possible. Therefore, although the data collected may not be statistically representative given the fact that the participants were few, the qualitative primary and secondary data gathered presents a reliable analysis and incorporation of the emanating gender issues into the proposed regional project for the four countries.

4. Findings of the Gender Assessment

Overall, in the climate change context, the role of women and other vulnerable groups in natural resources management is still limited. This results from the socio-cultural, economic and political constraints that impede the full participation of women and vulnerable groups in adaptation and mitigation measures against climate change aggravated impacts of drought in the proposed project sites. A gender assessment was undertaken in order to understand the differences and similarities in women and men's vulnerability to climate change and drought, their adaptive capacities in the face of climate change as well as their roles and participation in climate change and drought risk management measures that could be incorporated in the DRESS-EA project. The assessment further revealed that huge inequality differences between men and women as presented in subsequent sections of this report.

4.4.1 Demographic and Socio-economic characteristics

Overall, the total population targeted by the proposed project to benefit from project interventions are approximately 96,948 people in Djibouti, 705,282 people in Kenya, 136,000 people in Sudan and 25,785 people Uganda (Table 1).

Table 1: Number of project beneficiaries targeted by the proposed project

Countries	Project sites	No. of people	Men	Women	Youth (boys and girls)
Djibouti	Dikhil	88 948	44 652	44 296	27 698
	Biedley	8 000	4 016	3 984	2 491
Kenya	Kitui	481 282	239 197	242 085	196 700
	Samburu	224 000	111 328	112 672	44 800
Sudan	Kosti/El Salam	136 000	67 986	68 014	34 000
Uganda	Rupa	25 785	12 841	12 944	8 973
Total		***964 015***	***480 020***	***483 995***	***88 948***

Djibouti

The human population of Djibouti is estimated to be 923,000 people of which 53.8% and 46.2% are males and females respectively. The population is very young with 38.5 percent estimated to be under the age of 15. It comprises two main ethnic groups; the Afars and the Issas, with a small portion of other mixed ethnical groups. Two thirds of its population lives in the urban sites mainly in the capital town of Djibouti. About 58% live in the capital city, Djibouti-Ville. According to the 2009 Census, the local population consists of 88,948 individuals, 41,552 of whom are nomads. The hinterland, an extension of the deserts of Ethiopia and Somalia, is sparsely occupied by a poor pastoral and largely nomadic population. Dikhil is one of Djibouti's main agricultural areas, with the local economy largely centered on farming. The town serves as a commercial transit point for goods between Djibouti city and Ethiopia. Ethiopian trucks and traders frequently pass through the town. The population of **Dikhil region** is estimated at about 88,948 inhabitants, or 11% of the total population of Djibouti or 26% of the total national population living outside the city of Djibouti. The new zone straddles the Obock and Tadjourah districts, but covers only about 80,000 hectares. **Ali Sabieh** is the second largest city in Djibouti. About 8,000 inhabitants are considered in this area outside Tadjourah. Therefore, the proposed project targets a total population of approximately 96,948 people including Bieidley in Ali Sabieh region, Wadi Gobaad, and Hanle sector in Dikhil region.

Kenya

The total population of Kitui is 481,282 people with 239,197 males and 242 085 females. Kitui County shares its borders with seven other counties: Machakos and Makueni counties to the west, Tana River county to the east and south-east, Taita Taveta county to the south, Embu to the north-west, and Tharaka-Nithi and Meru counties to the north, it has a diverse ethnic composition consisting of Kambas which is the main ethnic community and flanked by Somalis, Merus, Boranas, and Gares. According to the 2009 Population and Housing Census, the population of Samburu County was 224,000 comprising 111,328 males and 112,672 females.

Sudan

In Sudan, the human population of the area constitutes about 136,000 people (permanent), 120,000 (refugees in camps), 68,000 people (coming from South Sudan). Kosti is the most populated locality followed by Aldueim, Alquiteina and Rabak, but Kosti and Rabak are the most densely populated localities. The population of the area is around 136,000 in addition to huge number of refugees (120,000) and returnees (68,000). El Salam locality is maintaining long open border with South Sudan as well as historical social/blood relationships as a result of mixed-marriages particularly with Shuluk and Nuer tribes, the most dominant in Upper Nile States, these factors have motivated/driven majority of the South Sudanese flee to WNS in seek of safe refuge.

Uganda

The human population in Rupa Sub-county Karamoja region (Lokere catchment) comprises mainly the rural poor estimated at 25 785 people. The Karamoja region is home to 11 ethnic groups: the largest, “true” Karimojong—Matheniko, Pian, and Bokora; the Jie; the Dodoth; the Pokot; and a number of smaller groups that includes the Tepeth, Nyakwae, Ik or Teuso, Napore, and Ethur. Opinions vary as to their origins, but there is general agreement that by **1800** the Karimojong occupied the Magos Hills in Moroto District and that the Turkana, Jie, Dodoth, and Iteso splintered off, mostly amicably apart from the Jie, who broke away by force. Rupa Sub-county had a population of 25,785 people by 2014, of whom 13,393 were female and 12,392 were males.

4.4.2 Education

Overall, most IGAD states have attained near gender parity in primary school enrolment; the only exception is South Sudan, where there are two girls for every three boys enrolled in primary school[2].

Women are generally less educated compared to the men. Actually, most women among smallholder farmers and pastoralists are illiterate and of poorer socio-economic status. This implies that their access to basic services especially water and health-care is greatly limited thereby further rendering them more vulnerable to the vagaries of climate change including droughts. Due to limited education or literacy levels, their involvement in community leadership and governance thereby living and working under the mainly male-dominated local leadership and governance structures that are ideally meant to guide communities in managing and coping with climate risks. These findings further reveal that women’s access to information is also very limited as a result of limited literacy levels.

[2] *IGAD, 2016. Regional Strategy Implementation Plan 2016 – 2020. Inter-Governmental Authority on Development. IGAD Secretariat, Djibouti*

Djibouti

As for education, despite significant efforts made by the Government of Djibouti, the gross primary enrolment rate remained stable with 78 percent. Still, the country is moving towards gender parity in primary schools with a gender ratio (Girls/boys) at 0.87. There are several state-run owned secondary and high schools in the city. Many primary schools and nurseries are also found in the town. Although by the year 2010, the Government of Djibouti had launched the education programme to promote the education of girls in primary and middle schools, about 61% of women are still illiterate. About 57% of girls between the ages of six and sixteen, have never been to school, even though laws state that schooling is mandatory for this age group and 61% of women are illiterate.
In the **Dikhil** region, we have about 5,700 students from primary to high school, of which 40% are girls.

Kenya

Kenya is doing relatively well in terms of the level of access to basic education but there are major inequalities across regions in terms of access, educational learning attainment and literacy. Kenya's primary net enrolment rate in 2012 was 95.3 % while the primary GER was 115.8%. Kenya has a more educated youth population. In 2009, the youth literacy rate was higher compared to South Africa, Ghana, Uganda and Tanzania. Kenya, however, needs to increase the proportion of learners especially of girls and vulnerable groups and reduce the percent of learners who fail to complete primary education level and increase the number of learners who progress to post primary education levels. In 2012 for instance the primary education completion rate and primary to secondary education transition rate were 80.4% and 76.6% respectively. Also, the country needs to focus on narrowing internal regional variations in education outcomes- for instance, female literacy rates were below 10 percent in northern eastern- Mandera, Turkana and Wajir Counties but as high as 90 percent in Nairobi and Uasin Gishu Counties. According to the 2009 Census, 74 percent of the population has at least a primary education. The educational attainment in Kitui is the same as the national level.

Sudan

According to the Sudan National Household Survey 2009, approximately 2.0 million children and adults, ages 10-19, were out of school. Of those out of school, 1.2 million (17 percent of all 10-19-year old) never attended school and the remaining children either having dropped out of school or completed school at the time of the survey. Of those out of school who never attended school, the rural/urban disparities are glaring, with approximately 55 percent of children in rural areas never attending school compared to 6 percent in urban areas. Further, 61 percent of those out of school were girls with most living in rural areas thus corroborating that access to education for girls in rural areas is a major challenge in Sudan.
Aside from regional disparities in education access, children in rural areas, girls, and vulnerable groups (such as internally displaced persons, disabled and nomads) are at a disadvantage in terms of access to schooling. Urban children are 17 percentage-points more likely than rural children to access school and boys are 8 percentage-points more likely than girls to access school.
There are also compounding effects of gender and rural location in terms of access to education, for example, being a girl is more of a disadvantage in a rural than in an urban setting: girls are 4 percentage-points less likely than boys to attend school in urban areas whereas the gender gap is 11-12 percentage-points in rural areas. The poor rural girl is the most disadvantaged and is about 25 percentage points less likely to ever access basic school than the higher income urban boy. Data are missing for vulnerable groups such as internally displaced children and nomadic and disabled children, and orphans. For example, there is insufficient information to assess the school enrollment (and non-enrollment) rates of internally displaced and nomadic children.

Uganda

Education in Moroto district as a whole of which Rupa is part comprises the formal education that involves training in pre-primary, primary, secondary and tertiary levels. While informal education is non-curriculum education based on people's experiences and may take place both within and/or outside educational institutions. A total of 11,535 students were enrolled for primary school education in 2012 of which 46 % were female students and 54% were male students. By 2012, a total of 139 students with special needs were enrolled in the district in 2012 of which 64% were male students. The total secondary school enrolment in the district stood at 1,747 students in 2012 of which 26% were female students. More students were enrolled in the lowers secondary section than the upper secondary.

4.4.3 Health

Djibouti

There are marked differences in health of men and women in the proposed project sites. The HIV prevalence is estimated at 1.51 percent in 2017. As such, the number of people living with HIV is estimated at 6,900 people. The 20 to 34 age group in both urban and rural areas is the most affected and 27 percent of households affected by HIV have a low or limited food consumption score. Men aged 15 and over living with HIV are estimated at 3,400 people. Women aged 15 and over living with HIV are about 4,600 whereas the children aged 0 to 14 living with HIV are less than 1,000 individuals[3].

Kenya

In Kitui County, the HIV/AIDS prevalence stood at 4.7%[4]. This implies that out of the total population of 1,012,709 people in Kitui, 47,597 people live with HIV/AIDS with the prevalence rate standing at 6.1%, 3.4%, 2.5% and 1.5% for Adult women, adult men, young women and young men respectively[5]. In Samburu County, the HIV/AIDS prevalence rate stands at 7%. This implies that out of the total population of 223,947people, 15,676 people live with the HIV/AIDS.

Sudan

The conflict and the humanitarian crisis have a disproportionate impact on women and girls, and the particular vulnerability faced by persons displaced by conflict and drought, have further exposed women to violence.

The practice of female genital mutilation remains prevalent in the country. Statistics indicate that the national rate of female genital mutilation is approximately 65.5 per cent, with prevalence rates varying in the different regions.3 It is primarily girls under the age of 12 who undergo the procedure. Women who are not circumcised are also pressured to undergo the procedure before getting married.

Men aged 15 and over living with HIV are estimated at 29,000 people. Women aged 15 and over living with HIV are about 26,000 whereas the children aged 0 to 14 living with HIV are approximately 4,200 individuals[6].

Uganda

The 2016 Uganda Demographic and Health Survey revealed that up to 22% of women aged 15 to 49 in the country had experienced some form of sexual violence. The report also revealed that annually, 13% of women aged 15 to 49 report experiencing sexual violence. This translates to more than 1 million women exposed to sexual violence every year in Uganda.
Violence against women has recently taken new, more sophisticated forms. An increasing number of women are, for instance, reporting cyber-bullying and abuse through social media and smartphones.

The HIV/AIDS prevalence in Rupa Sub-county is reported to be 56% a reduction from 81 recorded in 2008/09.

4.4.4 Income

Nomadic or semi-nomadic pastoralism of small ruminants (primarily goats) and camels are the main sources of subsistence for men, women, youth and children. The livelihood system is highly vulnerable to the impact of recurrent drought. Economic gender inequality is high in Dikhil. Ali Sabieh and Hanle, where women's income per capita is less than half compared to men's income. The female labour force participation rate is 36%, compared to 68% for men. With the agricultural sector being predominantly controlled by men owing to the lack of access to land by women, many women are employed in vulnerable and insecure informal sector jobs. Only 19% of women are employed as compared to 81% of men, increasing the number of Djiboutian women that suffer from the effects of poverty. Although, the Government of Djibouti (GoDj) has made significant efforts to support women's economic empowerment, women's access to income-generating activities remains limited.

[3] *https://www.unaids.org/en/regionscountries/countries/djibouti*
[4] *https://journals.plos.org/plosone/article/file?type=supplementary&id=info:doi/10.1371/journal.pone.0142805.s004*
[5] *https://www.unaids.org/en/regionscountries/countries/kenya*
[6] *https://www.unaids.org/en/regionscountries/countries/sudan*

Both males and females are sharing the different livelihood activities in El Salam, Kosti (farming, animal breeding, drinking water supply, marketing … etc.). It is essential for the proposed project to open windows for youth to participate in the production process. Subsistence agriculture and livestock production are the major economic activities in Moroto district. The majority of farmers are small holders who grow sorghum, maize, beans, cow peas, sunflower, groundnuts and vegetables (local and exotic). The vegetables grown include tomatoes, cabbages, onions and eggplants.

4.4.5 Access to resources and decision making

In each of the four countries that are participating in the DRESS-EA project, it is clear that despite women's labour force in the agricultural sector, few (less than 1%) own and control land resources including trees crops and food crops. Women have very little power to access to resources and are not the main decision makers. It was evident in the proposed sites that based on limited power to access resources and make decisions renders women more highly vulnerable to poverty and other vagaries including drought and climate change impacts. These aspects impede their coping mechanisms as well as the entire community of smallholder farmers and pastoralists. Similarly, despite the numerical strength of the youth, their representation in socio-economic development processes and activities is still low. They are characterized by poor access to land and related resources and access and decision-making powers over agricultural production. They are vulnerable to limited livelihood options due to poor incomes. Yet the youth are the most energetic and more technologically savvy. These findings imply that there is limited capacity to cope due to high levels of poverty and dependency among the women and youth that render them more susceptible to the damaging effects of drought and climate change. Thus, their exclusion represents untapped potential for increasing productivity under a changing climate.

4.4.6 Roles and responsibilities

The roles and responsibilities of women are strongly attached to culture and traditions among the small-scale farming communities and pastoralists. In Djibouti and Sudan where majority of the population is predominantly Moslem, the roles and responsibilities of women are enshrined in the Muslim faith. The roles are essentially domestic and non-commercial. In Kenya and Uganda, roles and responsibilities of women are also mainly influenced by culture and traditions to the extent that very few (less than 3%) engage in high paying commercial enterprises. These are the typical situations described during consultation. Overall, women and other vulnerable individuals such as the elderly are less mobile and spend much of their time at home. Women are expected to remain at home and household keepers and engage in cultivation around homesteads. They cannot by this nature respond quickly in situations when climate risks and hazards trike. Despite the immobility of women, they are expected to perform various roles even when livelihoods have been disrupted by drought and other climate induced risks. Women are expected to take care of their children, collect fire wood, fetch water, cook food for themselves, children and their husbands and other household members as the more mobile men either seek help elsewhere or migrate to neighboring areas purportedly searching opportunities for earning more income.

4.4.7 Gender Balance

In the proposed project sites, gender balance in leadership, governance and decision-making over drought management and control of resources remains very low in the proposed project sites. They are characterized by poor access to land and related resources and access and decision-making powers over agricultural production. Therefore, gender mainstreaming is vital for successful design and implementation of the proposed project activities. It is vital that the women and youth are empowered to contribute to the design and implementation of the livelihood options especially in agriculture and natural resources management interventions.

4.4.8 Access to finance

In 2014, the Government of **Djibouti** has launched Vision 2035, a new model for economic development, with the ambition to reduce absolute poverty by a third by 2035. Access to land through succession is the main avenue though generally reserved for men hence limiting women's opportunity to accessing controlling assets and resources. However, access to land ownership is possible for both, men and women, through the acquisition expensively paid for. Access to finance is also unequal because of the stringent, discriminative eligibility criteria that require security in form of yields,

productivity, and contributions. These criteria often accompany financial requests that women can hardly meet. In general, the credits allocated to women are small amounts from informal networks and are most often invested in areas other than production. Men, on the other hand, often benefit from more substantial loans for the acquisition of production equipment and marketing. **In Kenya** only 1% of women own property and that makes it very difficult for women to provide collateral for banks. Most women who venture into businesses in the rural areas and need financing lack the needed collateral to enable them secure bank loans. Formal financial support is seen to be too expensive for many women entrepreneurs and hence they treat this as a last resort. Even when women entrepreneurs do approach banks for financing, they tend to face discrimination .Women report that bank officials tend to ignore them in meetings and prefer speaking to their husbands or male business partners. For women in the rural areas, gender stereotyped perception of self, lack of confidence and assertiveness appear to be major barriers. The fear to risk is a big hindrance. The status of women in a patriarchal social structure makes women dependent on males in their lives –husbands or fathers –and family resistance is a major disincentive to business start-up.

Women's credit access in **Sudan** is restricted by cultural practices, including the roles of men as provider and head of families and gender-biased inheritance rules favoring men. There are female-headed households; however, they tend to have lower household income than male-headed households due to the side effects of gender discrimination — one being women's low average education level.

Ugandan women own about 39 percent of businesses with registered premises, yet they receive only nine percent of commercial credit. These numbers reveal a familiar story about women's lack of access to finance. They also point to a compelling opportunity for Ugandan banks: to expand their SME lending portfolios while becoming innovative leaders in critical private sector development.

5. Conclusions

The results show that the demographic composition of most communities in the proposed project sites makes them vulnerable to the impacts of climate change aggravated droughts. The most vulnerable members of communities among the smallholder farmers and pastoralists in the proposed project areas are women, youth and People Living with HIV/AIDS (PLWHAs). The main factors that contribute to their vulnerability are; unsafe sexual practices within and outside these communities, poverty due to low incomes and limited/inadequate livelihood options and men abandoning their family responsibilities and heaping most activities to the women and youth especially in times when climate change and drought events are at the peak. In terms of populations, women and youth outnumber men. Therefore, women and youth are numerically stronger than men. However, traditional norms have hitherto disadvantaged both women and youth in most countries including the four countries where the DRESS-EA project will be implemented. Most women work in the informal sector where they provide labour for domestic and commercial activities. Women are providing the bulk of the labor force in agriculture.

This gender analysis revealed that whereas women and men face various challenges including livelihood challenges and vulnerability to droughts and climate change risks, women, children, the elderly, and youth remain the most physically, economically and socially vulnerable to climate related disasters. The vulnerabilities stem from traditional norms and beliefs, and stereotypes that have hitherto limited women's ownership and control of livelihood resources, restricted their movement, and increased their burden with many domestic gender roles. The coping strategies are also gendered, with men reportedly migrating to purportedly find opportunities to widen their income bases for their families leaving the women, children, youth and elderly behind. Women have adequate access to information on drought risk and management as well as finance. Actually, most trainings/capacity building initiatives undertaken by other stakeholders on drought and other climate change disasters management have previously targeted more men than women. Women are generally more knowledgeable than men in drought management measures due to their resilience in facing and dealing with such challenges in absence of the men. Although men, women and youth are vulnerable to drought and climate change, women are more vulnerable.

6. Recommendations

It is recommended that measures aimed at strengthening men and women's resilience to drought and other climate risks are undertaken so as to reduce their vulnerability to the damaging impacts of drought aggravated climate change. These include women empowerment schemes such as small competitive grant schemes, soft loans, restocking of households with cattle and goats, provision of drought resistant crops, high yielding, varieties, and provision of improved cooking stoves etc. that directly target and benefit women. Those measures that are aimed at enabling women and men equally access information, benefit from project interventions, empower women to take up leadership and governance roles and responsibilities should be undertaken. Such measures include Gender mainstreaming of the project interventions and supported by a Gender action plan to guide project implementation as indicated in subsequent sections of this report.

7. Gender vis-à-vis project activities

This section provides information on the relationship between Gender and Climate Change as well as the impacts that droughts have on the proposed sites of the DRESS-EA project. In addition, a description is of project-linked gender issues according to project components including drought Early Warning issues, capacity strengthening issues, issues with climate change adaptation actions and knowledge management issues.

7.1. Gender and Climate Change

Gender inequalities intersect with climate change-linked risks and vulnerabilities[7]. Gender inequalities´ historical disadvantages, added to limited rights, limited access to resources and limited participation in decision-making processes make women highly vulnerable to climate change. Climate change is likely to aggravate the existing gender disadvantage patterns. Climate change-related initiatives are being deployed today at different levels; from the international to local level settings, going across regions and nations. As indicated in the preceding sections of this document, there is an ever-increasing awareness that climate change is a multi-sectoral development-linked problem. Until recently, climate change was being primarily thought of as an environmental problem, thus the Ministries of the Environment have full responsibility to address it. Whatever the sector and the (international, national, regional, or local) scope of planning, it is imperative that strategies are designed to ensure that measures taken in relation to climate change adaptations ensure full consideration of gender relations in order to foster equity and equality in whatever adaptation actions are to be implemented.

Public policy is an opportunity to ensure that the reallocation of resources across the entire society shall equitably benefit women and men. The inclusion of gender equality criteria into the design and implementation of gender policies shall allow for an in-depth impact of these resources on redressing social inequalities that aggravate climate change impacts. The gender equality policies that are currently being implemented world over should ensure that climate change issues are integrated and strategic guidelines therein are designed and linked to respective national development policies and plans. For instance, in accordance with the IGAD Regional Strategy Implementation Plan 2016 -2020, "IGAD will advocate for a Transformative Women Empowerment through politically led gender policy and implementation mechanism including allocation of percentage in national parliaments, more allocation of national budget for gender related work, higher participation women in the political economy, cultural transformation in education"[8].

The reaction of households and the communities to recurrent droughts in the four riparian countries indicates their vulnerability, their ability to cope with recurrent droughts as well as the severity of droughts. A Vulnerability Analysis has been undertaken within the framework of the preparation of this project (Annex 7). Some of the issues are again addressed in the document to complement the gender mainstreaming approach in those cases in which data is available.

7.2. Drought Early Warning and Gender Systems

Due to their social roles and different vulnerabilities in current productive and relational settings, men and women have different capacities and vulnerabilities in information dissemination. Therefore, disasters such as droughts affect them differently. In many contexts, men are better connected to early warning mechanisms, because they move in public spaces, and have access to diverse communication channels, informal community networks, and regularly interact with government officials. Women on the other hand to a higher proportion, have limited access to disaster risk-related information and knowledge in their communities, because their activities are more confined to homes and, therefore,

[7] *Human Development Report, UNDP, 2007 in Aguilar, L., 2009*

[8] *IGAD, 2016. Regional Strategy Implementation Plan 2016 – 2020. Inter-Governmental Authority on Development. IGAD Secretariat, Djibouti.*

have less mobility in the community, while their understanding of danger is focused on their homes and family networks. Women's voices are barely heard in risk reduction and decision-making processes, often because they do not have the capacity to attend awareness and prevention meetings because of their family-related obligations. The Inter-Governmental Panel on Climate Change (IPCC) is aware that, while women and girls have strengths and potentials as agents of change in actions to deal with climate change and in management of natural resources, these strengths are little recognized by society. In this particular case of Early Warning Systems, women should be recognized as key agents for information and response management. They are usually more informed of the needs and circumstances of family members, and can be vital in communication. The EWS planning activity should undertake affirmative actions to foster women´s involvement in the design and implementation of this system.

7.3. Planning and capacity-building activities

The planning and capacity building aspects of the proposed project entail a wide range. They aim at rethinking regional, national and local strategies, fostering policy, providing capacity-building, and sensitizing, and even bringing forward specific options for retaining, retooling and general training. These activities target various types of beneficiaries. Female beneficiaries for the proposed project are women from vulnerable neighborhoods showing a high drought risk, women from neighborhoods showing medium drought risk for instance the aspect of the competitive small grants scheme for implementation the four countries of the IGAD region and targeting women individuals and groups engaged in agricultural crop and animal production to also undertake alternative innovative income generating activities. The incorporation of gender mainstreaming in this type of activities is on one hand related to the participatory processes in which women´s opinions must be collected; and, generation of information, data, databases, results, and decisions, bearing the gender approach in mind on the other hand. The Gender Action Plan provides guidelines to be ensured by all partners in participatory and capacity building activities, such as cross-cutting actions to all components; and, in the case of particularities in the Components 1, 2 3 and 4 Outputs, it provides specific guidelines to be implemented.

7.4. Climate change adaptation actions

In undertaking climate change adaptation interventions, the goals being pursued include, "*achieving gender equality and the empowerment of all women and girls in order to take full advantage of their vital contribution to sustainable development (...), ensuring the full and effective participation of women, and equal rights in all spheres and positions of leadership at all decision-making levels (...) and eliminating all forms of discrimination, violence and harassment against women and girls in public and private spaces*" was deemed as a key target. For this matter to ensure the interests of women and girls in implementation of the climate change adaptation actions there is a need to undertake gender mainstreaming in order to guarantee the women and girls perceptions over accessibility, representation and participation and decision-making powers in undertaking the interventions as proposed. These are principles that are applied throughout the entire project. The gender action plan provides guidelines for gender considerations to be ensured by four project partners to ably undertake the adaptation actions as proposed throughout the project document.

7.4.1. Perception of Security

The perception of insecurity exerts a restricting bearing on the access, use and appropriation of resources to undertake climate change adaptation actions. There is empirical evidence that women are limited in terms of decision-making power to resource access and use depending on women´s perception of insecurity. Therefore, this factor entails a constraint to women's autonomy, since they avoid participation in undertaking climate change adaptation actions. For this matter the gender action will also emphasize and incorporate gender considerations and mainstreaming actions to ensure full participation, representation and access of women to undertake climate change adaptation interventions.

7.4.2. Accessibility and representativeness

This Gender Action Plan will place special emphasis on incorporating some of these good practices

- Promoting non-discriminatory activities
- Eradicating the use of stereotyped images in any adaptation action implementation
- Disseminating gender specific information for project implementation
- Controlling advertising elements, posters, and advertisements exposed to restrict, or condition those the visual or written language of which is discriminatory.

7.5. Competitive Small Grants Scheme

This activity involves setting up a competitive small grant scheme (CSGS) for undertaking innovative climate change adaptation interventions. The CSGS funds are aimed at supporting the populations facing drought medium risk in the project areas. Therefore, this activity is not focused on those areas most vulnerable population (people living in Informal settlements), but, rather, on population in dwellings of which they are owners and for which a relocation process is not foreseen. However, gender inequality could be exacerbated if the Fund does not provide for facilities for women's access to the scheme. A series of measures should be incorporated to ensure that both, men and women, have access to this scheme, taking into account that, traditionally, women have less access to control of economic resources.

Regarding possibilities for women accessing the CSGS, their access to the scheme and generally credit facilities is constrained by the:

- High interest rates: This constraint is not present in the proposed project, since no interests are charged by the Fund.
- Credit evaluation methodology: Based mainly on guarantee requirements needed, usually shown as a gender-specific restriction. such restriction is a reflection of lack of knowledge about the activities women perform, and the conditions in which women work, because many women do not own assets
- Small amounts of the funds that respond to short-term objectives, to solve specific problems. Due to this regulation, women are unable to make long-term strategic decisions.
- Factors outside the scope of credit institutions, a fact that hinders the relationship between women and credit. This is related to the greater effort that women must make with respect to the time they need to get to, for example, a branch of the credit institution, and then comply with all the procedures required. As stated in the survey quoted, women would use more informal credit sources. Therefore, a conclusion can be reached that there is a demand for loans from women, but few access opportunities. What women need is for funding systems to be adapted to women needs.

This report points out to a double negativity in terms of women and credit: Barriers to access to it and the conditions under women are granted a credit. The variables that limit access would be multiple, but they highlight four main hindrances: Social barriers, requirements for guarantees, size of the loan, and scarcity of credit outputs aimed at women. It is evident that the proposal design involving an CSGS to invest in adaptation actions will not have all the edges that can show those cases involving access to funding, which have been looked into in related literature. However, the barriers that even at this small scale can be raised to women's access to the tool should not be underestimated. The Gender Action Plan puts forward some guidelines to abide to mitigate these risks.

7.6. Alternative Income Generating Activities (AIGAs)

From the analysis made in the preceding section, it is evident that the main constraints faced by women in undertaking alternative income generating activities are:

- Regulatory Standards: Women tend to feel less skilled to perform complicated activities.
- Women have problems accessing networks and markets for the outputs that women manufacture.
- Women are less likely to get capacity-building and business development services.
- Women seem to have a greater risk aversion, or fear of applying for a loan. Likewise, they are less familiar and comfortable with larger credit instruments.
- Women's assets are systematically of lower value and size than men´s. However, women should normally provide many more guarantees than men to access credit.
- Traditional gender roles continue to disproportionately assign family and domestic responsibilities to women.

This report raises the need for a stronger focus on fostering growth of women-headed enterprises than on establishing new businesses. Hence justifies the need for gender mainstreaming to be incorporated into project design. This document therefore, besides making a characterization of women enterprises under this outlook, brings forwards affirmative actions towards women participation in the design of AIG activities, and ensuring that women access them as beneficiaries.

8. Gender issues surveyed over stakeholder consultations

The main Gender-focused issues for project design that were considered during stakeholder consultations held at respective national and regional levels are summarized below.

Djibouti

Impacts of droughts	▪ Women are more affected by droughts because a larger number of women of childbearing age are responsible for day to day livestock herding, domestic activities including cooking. ▪ Women interact and need more water points for watering livestock and preparing meals ▪ In emergency situations, women are forced to leave their jobs (i.e., domestic chores and other informal jobs) to deal with the situation.
Support needs	▪ Capacity-building in gardening and/or use of a farm for agro-pastoral activities. ▪ Gender-focused capacity-building meetings and workshops, to empower women. ▪ Capacity-building in environmental issues ▪ Support women so that they do not have to leave their informal jobs because of care tasks that increase during the drought events.
Suggestions for project design	▪ Undertaking specific actions to support single mothers, women victims of violence and women workers, enabling day care centres for their children.

Kenya

Impacts of droughts	▪ Women are more affected by the droughts because they are in charge of their children and the elderly.
Support needs	▪ The project support tangible actions that are community oriented addressing the actual needs of the people e.g. **i.** Keeping of drought resilient animals like goats, KALRO improved chicken breeds and bees which also help in pollination processes **ii.** Intercropping of drought resistant crop species with normal species like the cow peas and chick peas which are also leguminous (nitrogen fixing) iii. Terracing of land with multipurpose trees which also host bees and reduction of surface run off from flash floods
Suggestions for project design	▪ Drought adaptation activities for Community based organization (CBOs) and women groups should be gender sensitive ▪ CBOs and women groups should be supported with inputs and financial resources to engage in activities that are income generating

Sudan

Impacts of droughts	▪ Shallow hand-dug wells provide good water quality, while the artificial ones are of low quality. ▪ Both males and females are sharing home water delivery
Support needs	▪ Capacity building programs for climate change and drought management ▪ Support technical, managerial and financial capacities for gender groups to cope with drought. ▪ Support activities that open windows for youth to participate in the production processes
Suggestions for project design	▪ Incorporate activities that consider the varying needs of the gender groups in the project sites.

Uganda

Impacts of droughts	▪ Women are more affected by the droughts because they are in charge of the homes, their children and the elderly. They suffer most of the following:

	- Water scarcity: perceived to be the biggest issue - Unfavourable rain fall patterns - Desertification characterised by a lot of heat, wind and deforestation - Hunger/famine - Reduced crop harvests - Unpredictable cropping seasons that affect the time for planting crops - Flush floods whenever it rains and extremely prolonged dry spells
Support needs	▪ Construction of water reservoirs, points and ponds ▪ Small scale irrigation schemes ▪ Restoration of degraded environment ▪ Establishing and managing apiaries for honey and income generation. ▪ Support women with farm tools to cultivate ▪ Encourage and support block or group farming
Suggestions for project design	▪ Incorporate activities that consider the varying needs of the gender groups in the project sites. ▪ Undertaking specific actions to support single mothers, women victims of violence and women workers, enabling day care centres for their children.

All assessments indicated in the tables above, have been duly addressed during the full project proposal´s design phase. Stakeholders consulted have supported the design of guidelines in the project's Gender Action Plan presented in the proceeding section of this report.

9. Gender Action Plan in compliance with the AF gender principles

Other than a gender analysis based on secondary sources, gender issues have been addressed during consultations with stakeholders during the design of the DRESS-EA full project proposal.
(Annex 3: consultative workshop reports). It was possible to confirm that all project-related actions aim at abating drought risk through enhancing social resilience. For this matter it is expected that women conditions shall improve in all cases. This report further confirms that none of the proposed project activities could be harmful to any social group on account of gender issues in a discriminatory manner that is based on legal, regulatory or customary reasons. However, the point should be stressed regarding the need to press on the incorporation of the gender approach in all activities, to ensure equal participation and equal access to the project benefits, and to take all precautions so that project does not exert any type of negative social or environmental impact based on gender issues. The actions suggested towards implementation of this project are described below. In Section 9.1, recommendations are made that apply across all components; in Section 9.2, recommendations tend to slow down in activity, as the case may be. Finally, in Section 9.3, a description is made on how the monitoring of Gender actions will be implemented.

9.1. Transversal actions throughout the Project

Those actions crossing all activities can be described under two main typologies: participation and capacity-building vis-à-vis Gender approach and representation.

9.1.1. Participation

Participatory processes and capacity-building instances should take place with an active involvement of both men and women. For this goal to be achieved, guidelines applicable to the entire Project should be ensured as follows:

- Use of an inclusive language in all instances of calls and dissemination activities, to explicitly address men and women.
- Establish meeting schedules (or any participation instance), bearing in mind possibilities for men and women participation.
- Willingness to give women a voice and ability to impact participatory processes, so women can make their needs visible. For example, splitting particular discussion groups so that women feel free and confident to express their own views.

- Setting up ad hoc care areas so that women have the time to participate in meetings and activities (considering the sexual division of labour structure).
- Always draw sex-disaggregated data and results
- Include in the participative instances women's associations, technical personnel expert in gender issues, councils, units, areas or specific equality departments.

9.1.2. Gender Approach-addressed capacity-building and provision of inputs throughout the project

In order for project-linked decision-makers, officials, and technical teams to effectively incorporate the gender approach into the former´s implementation, capacity-building instances should be incorporated that can be specific-exclusive capacity-building on the gender approach- or modules that are incorporated into some other capacity-building programmes scheduled within the framework of the project.

Gender mainstreaming should be present at all times -in any case, in a transversal manner- in all capacity-building instances, through the supervision and assistance of technical experts in the field who are attached to Executing Entities.

9.2. Gender AF GP Principle compliance by the project Activities

Component	Gender Objective	AF GP Principle	Action	Responsible parties (Who)	When (Time)
COMPONENT 1: Development and enhancement of a regional Drought Early Warning System	To tackle gender imbalances at local, national and regional levels from project design to implementation	Gender equality and Gender equity (*adherence to these two principles helps to ensure that there are no imbalances in assessing EW devices first of all between the gender groups as well as within the groups*)	Provision /supporting gender groups of farmers and pastoralists with to access EW information (e.g. devices including, brochure, SMS, Radio etc.).	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality	Involves buying EW information devices for targeted pastoralist, farmers and extension agents	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality and gender equity (*i.e. to ensure there are no gender balances between ministerial and sectoral meetings as well as within ministries and sectors*)	Holding inter-ministerial and sectoral meetings for data sharing	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality	Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality	Supporting regular stakeholder EW information feedback platforms for farmers and pastoralists	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
			Organize training sessions on the use of intervention plan for the benefit of different actors Gender equality involved at national and regional levels	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
COMPONENT 2: Strengthening capacity of stakeholders to manage	To tackle gender imbalances at local, national and regional	Gender equality	Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage

drought risks due to Climate Change effects	levels from project design to implementation To improve women empowerment to during designing and implementation of project activities at local national and regional levels To tackle gender imbalances at local, national and regional levels from project design to implementation		Supporting formulation of bye-laws and ordinances at sub-national and lower political units. The support required is facilitating the organization of a workshop for formulating as well as deliberating on the specific bye-laws	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Women empowerment	Undertaking exchange visits and learning tours for cross-learning in areas with successful drought management innovations including best water management practices	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality	Facilitating community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality and Gender equity	Supporting farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services. In this activity farmers and pastoralists will be provided with inputs	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
COMPONENT 3: Drought and Climate Change adaptation actions	To tackle gender imbalances at local, national and regional levels from project design to implementation	Gender equality	Supporting protection of water wells and springs to ensure quality, quantity and efficient water use by providing inputs, for instance, live markers around the wells.	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
		Gender equality, Gender equity and Women empowerment	Training the established water management committees to protect water wells and springs to ensure quality, quantity and efficient water use	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage

			Supporting farmers and pastoralists to prepare high-value silage and hay for livestock during dry spells.	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
			Training communities in preparing high-value silage and hay for livestock to increase production of livestock products.	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
	To improve women empowerment during designing and implementation of project activities at local national and regional levels	Women empowerment and Gender equity (*to ensure that there are no gender disparities between the women and youth groups in accessing inputs for IGAs as well as the Small Competitive Grants*)	Support women and youth groups with in puts for IGAs including (e.g. growing of sisal and *Aloe vera* to support rope production and art crafts; bee keeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
			Provide competitive small grants targeting small holder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions	OSS, GWPEA and Executing Entities and Consultants	Project design and implementation stage
COMPONENT 4: Knowledge management and awareness creation	To tackle gender imbalances at local, national and regional levels from project design to implementation	Gender equality and women empowerment	Develop gender responsive and scale-up strategies for drought, CC and early warning technologies among women, and other vulnerable groups	OSS, GWPEA and Executing Entities and Consultants	After Project implementation stage

9.3. Gender Actions Plan (by Outputs and Activities)

Output	Activity	AF Gender principle	Gender Action Plan (GAP) actions	Indicators	Baseline	Target
COMPONENT 1						
Output 1.1.1: Efficient and effective EWS in place/developed	Activity 1.1.1.1 Assess the status of EWS in the target countries and the update options of traditional EWS with modern EW technologies	Participation and Representation	▪ The project team will ensure equal representation of men and women participate in the EWS status study and capture opinions from both. ▪ Provide sex disaggregated data for the study ▪ Project team should ensure that the EWS prototype can be accessed by different gender groups ▪ Ensure at least 40% women access weather information since most affected by droughts in all the project sites as revealed by consultations ▪ The project team will ensure equal representation of men and women participate in the baseline study and capture opinions from both.	% of women attending to consultative workshops % of women accessing to weather information		50% of women attending to consultative workshops 40% of women accessing to weather information
	Activity 1.1.1.2 Develop an EWS prototype to be used at the regional and national levels	Representation				
	Activity 1.1.1.3 Equip/upgrade selected weather stations and Remote sensing derived products, time series of bioclimatic variables, etc.	Participation and representation				
	Activity 1.1.1.4 Construct/renovate and equip EW information centers including data base	Participation				
	Activity 1.1.1.5 Support/Equip project beneficiaries (pastoralist, farmers and extension agents) to access EW information (e.g. devices including, brochure, SMS, Radio etc.)	Participation				
	Activity 1.1.1.6 Conduct a baseline study	Participation and Representation				
Output 1.1.2: **Institutional linkages for EW information established**	Activity 1.1.2.1 Develop/Review EW information sharing frameworks at regional. National and sub-national levels	Participation, representation and equity and access	▪ Project team to ensure equitable participation and representation of women and men in capacity-building workshops and information sharing forums.	% of women attending to consultative workshops % of women attending to		50 % of women attending to workshops 50 % of women attending to

	Activity 1.1.2.2 Develop an implementation action plan to operationalize the frameworks	Participation and representation	▪ Ensure that timetables, places and resources take care of women interests. ▪ Ensure that timetables, places and resources take care of women interests. ▪ Sex disaggregated data will be used whenever they are available, ▪ The project team will ensure equal representation of men and women participate in the planning process and capture opinions from both	decision making workshop		decision making workshop
	Activity 1.1.2.3 Hold inter-ministerial and sectoral meetings for data sharing	Participation				
	Activity 1.1.2.4 Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)	Participation and representation				
	Activity 1.1.2.5 Support Incorporation of EW information into planning and budgeting processes of targeted countries	Participation and representation				
Output 1.1.3: Feedback mechanism for EW information developed	Activity 1.1.3.1 Support regular stakeholder EW information feedback platforms for farmers and pastoralists	Participation, representation and equity and access	▪ Project team to ensure equitable participation and representation of women and men in capacity-building workshops and information sharing forums. ▪ Ensure that timetables, places and resources take care of women interests. ▪ Project team to ensure equitable participation and representation of women and men in capacity-building workshops and information sharing forums. ▪ Ensure that timetables, places and resources take care of women interests.	% of women attending to workshops % of vulnerable groups (women, youth, elders, indigenous people, etc…) participating to KAP surveys on EW information % of user friendly tools focused on vulnerable groups (women, youth, elders, indigenous people, etc…)		50 % of women attending to workshops 60 % of vulnerable groups (women, youth, elders, indigenous people, etc…) participating to KAP surveys on EW information 60 % of user friendly tools are focused on vulnerable groups (women, youth, elders, indigenous people, etc…)
	Activity 1.1.3.2 Hold quarterly stakeholder meetings on EW information utilization for national and sub-national stakeholders	Participation, representation and equity and access				
	Activity 1.1.3.3 Conduct KAP surveys on EW information	Participation and Representation				

	Activity 1.1.3.4 Develop periodic feedback user friendly tools on accessing, utilizing and reporting EW information to mandated institutions	Participation, representation and equity and access	▪ Provide sex disaggregated data ▪ The project team will ensure equal representation of men and women participate in the KAP survey on EW information and capture opinions from both. ▪ Provide sex disaggregated data for the study			
Output 1.1.4: Emergency plan for Drought management is put in place	Activity 1.1.4.1 Develop an emergency response plan for Drought disasters at the regional and national levels.	Participation and representation	▪ The project team will ensure equal representation of men and women that participate in the planning process and capture opinions from both ▪ Project team to ensure equitable participation and representation of women and men in capacity-building workshops and information sharing forums. ▪ Ensure that timetables, places and resources take care of women interests. ▪ Provide sex disaggregated data ▪ Project team to ensure that women equipment for Drought management as they suffer drought impacts most in the four countries. ▪ Project team to ensure that women participate in blank operations as they suffer drought impacts most in the four countries. ▪ Project team to ensure that women access tools and materials to disseminate warning messages to the population as they suffer drought impacts most in the four countries.	% of women attending to decision making workshop % of women participating to blank operations % of women attending to consultative workshops		50 % of women attending to decision making workshop 40 % of women participating to blank operations 50 % of women attending to consultative workshops
	Activity 1.1.4.2 Monitoring the EWS, feedback mechanism and its contingency plan at regional level.	Participation and representation				
	Activity 1.1.4.2 Organize training session on the use of the intervention plan for the benefit of the different actors involved at national and regional level	Participation, representation, equity and access				
	Activity 1.1.4.3 Acquire equipment for Drought management (machines/pickup, bicycles, motorcycles,)	Participation and representation				
	Activity 1.1.4.4 Implement two (2) blank operations (including regional and national levels)	Participation and representation				
	Activity 1.1.4.5 Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)	Participation and representation				
COMPONENT 2						

***Output 2.1.1:* Drought management plans (DMPs) integrating CC aspects and adaptation actions developed**	Activity 2.1.1.1 Develop/update existing DMPs at national and sub-national levels integrating CC aspects and adaptation actions	Participation and representation	▪ The project team will ensure equal representation of men and women that participate in the planning process and capture opinions from both ▪ Equitable participation of men and women in capacity-building workshops and in formulation of bye-laws and ordinances will be encouraged with proper considerations for timetables, places and resources.	% of women attending to decision making workshop % of women attending to consultative workshops		50 % of women attending to decision making workshop 50 % of women attending to consultative workshops
	Activity 2.1.1.2 Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists	Participation and representation				
	Activity 2.1.1.3 Support integration of DMPs into the national and sub-national development plans	Participation and representation				
	Activity 2.1.1.4 Support formulation of bye-laws and ordinances at sub-national and lower political units	Participation and representation				
***Output 2.1.2:* Adaptive capacity of institutions, farmers and pastoralists in drought management improved**	Activity 2.1.2.1 Undertake a capacity needs assessment to identify gaps and hindrances to effective drought management	Participation and Representation	▪ The project team will ensure equal representation of men and women participate in the capacity needs assessment and capture opinions from both. ▪ Provide sex disaggregated data for the study ▪ The project team will design gender focused/inclusive training plans. ▪ The project team will ensure equal representation of men and women in organizing Undertake exchange visits and learning tours within the four countries. ▪ Proper considerations for timetables, places and resources will be done to ensure women benefit from the training. ▪ Deliberately selecting 40% women farmers and pastoralists in training	% of women attending to decision making workshop % of women attending to consultative workshops and trainings	▪	50 % of women attending to decision making workshop 50 % of women attending to consultative workshops and trainings
	Activity 2.1.2.2 Develop capacity building plans for regional, national and sub-national levels	Participation and Representation				
	Activity 2.1.2.3 Develop capacity building materials	Participation, Representation and access				
	Activity 2.1.2.4 Undertake exchange visits and learning tours for cross learning in areas with successful drought management innovations including ground water management initiatives	Participation and Representation				
	Activity 2.1.2.5 Train staff managing EW information centers	Participation and Representation				
	Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions	Participation and Representation				
	Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach	Participation, Representation and access				

	Activity 2.1.2.8 Support farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services	Participation, Representation and access				
Output 2.2.1: **New/existing regional and National arrangements /networks for drought management supported**	Activity 2.2.1.1 Support review/development of MoUs, protocols and stock route agreements for Drought Management and reducing conflict between farmers and pastoralists	Participation, Representation	▪ Supporting development and monitoring of Gender inclusive stock route agreements by the project implementation teams. ▪ The project team will ensure equal representation of men and women participate in regional and national drought management multi-sectoral/stakeholder platforms ▪ Ensure Equitable participation of men and women in resource mobilization workshops with proper considerations for timetables, places and resources	% of women attending to decision making workshop % of women attending to consultative workshops		50 % of women attending to decision making workshop 50 % of women attending to consultative workshops
	Activity 2.2.1.2 Facilitate establishment of regional and national drought management multi-sectoral/stakeholder platforms to coordinate partner efforts	Participation, representation, equity and access				
	Activity 2.2.1.3 Support regional and national partners to jointly mobilize resources for Drought Management in a changing climate context	Participation, representation, equity and access				
COMPONENT 3						
Output 3.1.1: **Innovative water and soil conservation structures constructed**	Activity 3.1.1.1 Undertake assessment on surface water utilization/potential/availability and develop water Management Plans in project sites	Participation and representation	▪ The project team will ensure equal representation of men and women participate in the ground and surface water utilization study and capture opinions from both. ▪ Provide sex disaggregated data for the study ▪ Ensure gender inclusiveness and deliberately 40% participation of women and girls as the main beneficiaries of the intervention in each country.	% of women attending to decision making workshop % of women attending to consultative workshops % of women participating to ground intervention % of vulnerable groups (women, youth, elders, indigenous		50 % of women attending to decision making workshop 50 % of women attending to consultative workshops 40 % of women participating to ground intervention 60 % of vulnerable groups (women, youth, elders, indigenous
	Activity 3.1.1.2 Construct appropriate, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, valley dams, rock water harvesting, roadside water harvesting facilities, water ponds, and locally dug underground tanks, deep and shallow wells	Participation				
	Activity 3.1.1.3 Construct mini-irrigation and water delivery systems (e.g. gravity flow scheme, micro-irrigation systems, check dams, drip irrigation borehole irrigation and solar powered irrigation systems)	Participation				

	Activity 3.1.1.4 Support protection of water wells and springs to ensure quality, quantity and efficient water use	Participation		people, etc…) benefiting from project activities Number of business enterprises promoted by women and youth groups		people, etc…) benefiting from project activities At least 5 IGAs undertaken by women groups in each country
	Activity 3.1.1.5 Promote appropriate soil and water conservation measures (e.g. terraces, contours, conservation/minimum tillage, pit gardening, Zai pits and home gardening)	Participation				
***Output 3.1.2:* Ground water sources established/ improved**	Activity 3.1.2.1 Undertake assessment on ground water utilization/potential/availability and develop groundwater Management Plans in project sites	Participation and representation				
	Activity 3.1.2.2 Review/develop regulatory framework and guidelines on ground water sources	Participation and representation				
	Activity 3.1.2.3 Restore degraded water catchments to improve recharge rates of ground water	Participation				
***Output 3.1.3:* Adaptive agricultural practices for improving crop production promoted**	Activity 3.1.3.1 Promote fast growing and drought resistant crop varieties (e.g. varieties in Graminae and Leguminacae families	Participation				
	Activity 3.1.3.2 Promote agrisilvopastoral systems (dryland agroforestry) (e.g. fast-growing multi-purpose tree species such as *Acacia mearnsii*, integrated with crops and livestock rearing)	Participation				
	Activity 3.1.3.3 Provide in puts for irrigated agriculture technologies (Drip irrigation, small irrigation etc.)	Participation				
	Activity 3.1.3.4 Promote climate smart agricultural practices	Participation				
***Output 3.1.4:* Adaptive livestock and rangeland practices enhanced**	Activity 3.1.4.1 Promote improved rangeland management practices (e.g. developing of rangeland management plans, reduction livestock stocking, integrated pest and disease management)	Participation				

	Activity 3.1.4.2 Support introduction of drought tolerant livestock breeds	Participation				
	Activity 3.1.4.3 Promote hydroponic systems for growing nutritious fast-growing cereals for livestock (animal feeds)	Participation				
	Activity 3.1.4.4 Support farmers and pastoralists to prepare high value silage and hay for livestock during dry spells	Participation				
	Activity 3.1.4.5 Support formation/facilitate existing livestock associations/groups/cooperatives at community level	Participation				
Output 3.1.5: **Enabling environment for smallholder farmers and pastoralists adaptive activities created**	Activity 3.1.5.1 Introduce and promote Index-based weather insurance in partnership with insurance companies	Participation				
	Activity 3.1.5.2 Conduct drought risk assessments on the agriculture value chain	Participation and representation				
	Activity 3.1.5.3 Facilitate farmer and pastoralists associations/cooperatives to generate, analyze and share market information.	Participation				
	Activity 3.1.5.4 Create linkages between farmer and pastoralists associations/cooperatives at regional, national and sub-national levels to enable sharing of market information	Participation				
Output 3.1.6: **Environmental friendly IGAs ([e.g., Pottery, Bee keeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted**	Activity 3.1.6.1 Support women and youth groups with in puts for IGAs including (e.g. growing of sisal and *Aloe vera* to support rope production and art crafts; bee keeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism	Participation				
	Activity 3.1.6.2 Provide competitive small grants targeting small holder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions	Participation				

	Activity 3.1.6.3 Provide inputs for value addition crop and livestock products	Participation				
▪ **COMPONENT 4**						
Output 4.1.1* Good practices and lessons on drought management, EWS and Climate Change impacts documented *and disseminated	Activity 4.1.1.1 Document lessons and best practices from project interventions	Participation, representation and access	▪ Documentation of lessons should be gender inclusive covering various groups. Focused communication campaigns and materials should be developed and disseminated ▪ Ensuring the consultation of women and vulnerable groups in assessment and protection studies of groundwater and wells, as well as the consideration of their knowledge in the development of action plans ▪ Advocating on the effective participation of women and vulnerable groups in water decision-making structures ▪ Sensitizing on bad practices from agriculture, sanitation, landfills and waste disposals that pollute the ground water and water wells ▪ Sensitizing on drinkable water quality requirements and training on water purification ▪ Informing water users and especially women on the necessity of separate water use for human and animals ▪ Raising awareness on manifold value of groundwater, using customized approaches and tools (social media, serious gaming, etc.) for women and vulnerable groups	Number of knowledge products e.g. documents on lessons and best practices from project interventions Number of case studies and lessons learned documented and shared projects % of women attending to consultative workshops Number of sensitization sessions Number of women and vulnerable groups equipped		2 brochures, 2 publications (documents) on lessons and best practices from project interventions per country At least 4 case studies /lessons learn documented, packaged and shared with key stakeholders for upscaling and informing project interventions 50 % of women attending to consultative workshops 3000 women and vulnerable groups equipped
	Activity 4.1.1.2 Generate and package information dissemination materials on EW, CC and drought adaptation actions in forms for easy uptake (e.g. policy briefs, brochures) adapted to the various stakeholders	Participation, representation and access				
	Activity 4.1.1.3 Disseminate/share knowledge and information through use of existing and popular platforms e.g. electronic and print media, telecom that are easily accessible by the stakeholders.	Participation, representation and access				
***Output 4.1.2* Drought information management strengthened**	Activity 4.1.2.1 Support existing channels/networks for information generation and dissemination at regional level (e.g. GHACOF for EW and IDDRISI for drought management platform and national platforms)	Participation, representation and access				
	Activity 4.1.2.2 Engage policy makers in dissemination of drought management information and best practices	Participation, representation and access				
	Activity 4.1.2.3 Support drought management working groups to share and disseminate the information	Participation, representation and access				
	Activity 4.1.2.4 Facilitate empowerment of women and other vulnerable groups on water management in a context of drought	Participation, representation and access				

10. Gender consideration management

Gender considerations will be made at every stage and intervention of the proposed project gender will be a major consideration in for instance capacity building meetings or workshops, management committees such as the water management committees, drought management information sharing platforms, developing and formulating by-laws and ordinances for groundwater sources management in communities within the four selected countries, women should constitute at least 40% of each target group. Also, at every stage of providing inputs such as for early warning devices, soil and water conservation, climate-smart agricultural practices, range, and livestock management at least 40% of the women will be the sole beneficiaries. A gender analysis for project interventions is presented in the following.

Table 18: Gender consideration management during project implementation

Component	Activity	Gender aspect	Benefits	Risks	Strategies for mitigation
COMPONENT 1: Development and enhancement of a regional Drought Early Warning System	Provision /supporting gender groups of farmers and pastoralists with to access EW information (e.g. devices including, brochure, SMS, Radio etc.)	Representation of various gender groups in accessing EW information	The aspect leads to stronger/strengthened gender groups (women, men, and youth) of farmers and pastoralist that have climate information earlier. This aids planning crop and livestock based activities.	The tendency to selectively provide early warning information to men only yet women are the main planners of climate influenced household activities including cropping and livestock grazing.	Provide fair guidelines for supporting gender groups. The guidelines should acknowledge the importance of women by about 40%. The guidelines should be approved by project parties.
	Involves buying EW information devices for targeted pastoralist, farmers and extension agents	Representation of various gender groups in accessing EW information devices	The benefit is timely reception of EW information leading to timely planning and implementation of agro-pastoral activities.	The tendency to provide EW devices without gender consideration, yet the roles the devices serve requires a gender perspective. Most often devices are provided to only the men	Deliberately buying EW information devices that are gender sensitive.
	Holding inter-ministerial and sectoral meetings for data sharing	Representation of various gender groups at ministerial and sectoral meetings	This provides an opportunity for gender groups to share EW information and data at a high influential and policy level	The tendency for EW information and data not to remain un utilized at higher levels to the detriment of the end users (farmers and pastoralists) at the local levels.	Ensure the participants at these ministerial and sectoral meetings are gender segregated to at least 40% women representation compared to other gender groups.

	Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)	Representation of various gender groups in EW information and data sharing forums	This aspect is beneficial in strengthening forums and associations sharing EW information.	Forums and Associations for farmers and pastoralists are not gender balanced, hence lack equity in effective representation of the gender groups.	Deliberately ensure that 40% of the women participate and are supported in such Forums as well as executive committees on Pastoralists' and crop farmers' associations.
	Supporting regular stakeholder EW information feedback platforms for farmers and pastoralists	Representation of various gender groups on EW information feedback platforms	This aspect is beneficial in strengthening platforms for EW information feedback.	Platforms for EW information feedback are not engendered. Feedback provision is quite often lead by men.	Deliberately ensure that 40% of the women participate and are supported on such feedback platforms for Pastoralists' and crop farmers'.
	Organize training sessions on the use of intervention plan for the benefit of different actors involved at national and regional levels	Proportional representation of various gender groups on training	This is beneficial in building the capacity of various actors to plan and prepare for emergency responses to droughts. Different actors acquire knowledge and skills to plan and manage emergencies.	Trainings being dominated by men	Proper guidelines to determine the proportion of gender groups in such trainings should be developed and implemented.
COMPONENT 2: Strengthening capacity of stakeholders to manage drought risks due to Climate Change effects	Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists	Representation of various gender groups in workshops organized for popularization and dissemination of reviewed DMPs.	Strengthens the planning and management of drought by farmers and pastoralists.	More men selected to attend workshops yet women and youth more vulnerable to the impacts of drought.	Deliberately ensure 40% women representation in workshops
	Supporting formulation of bye-laws and ordinances at sub-national and lower political units. The support required is facilitating the	Representation of various gender groups in workshops organized for formulation of bye-laws and ordinances at sub-national and lower political units.	Encourages women to take the lead in formulation and	Marginalization women, youth and other vulnerable groups	Proper guidelines to determine the proportion of gender groups in such workshops for formulation of bye-laws and ordinances

	organization of a workshop for formulating as well as deliberating on the specific bye-laws		implementation of laws and ordinances		
	Undertaking exchange visits and learning tours for cross-learning in areas with successful drought management innovations including best water management practices	Selection of at least 40% women for participation in exchange visits for cross learning in such initiatives	Encourages women to take the lead in implementing successful interventions to the success of the projects	Selecting only then men, yet youth and women often lead implementation of project interventions.	Develop guidelines for selecting participation in exchange visits.
	Facilitating community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach	Proportional representation of various gender groups on training	Strengthens the capacity of various actors in drought management	Trainings being dominated by men	Proper guidelines to determine the proportion of gender groups in such trainings should be developed and implemented.
	Supporting farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services. In this activity farmers and pastoralists will be provided with inputs	Proportional representation of various gender groups on training Representation in accessing farm inputs.	Strengthens the capacity of various actors to undertake innovative climate smart agriculture through skills and knowledge acquisition as well as accessing farm inputs	Trainings being dominated by men	Proper guidelines to determine the proportion of gender groups in such trainings should be developed and implemented.
COMPONENT 3: Drought and Climate Change adaptation actions	Supporting protection of water wells and springs to ensure quality, quantity and efficient water use by providing inputs, for instance, live markers around the wells.	Representation of various gender groups in accessing inputs for protection of water wells and springs	Promotes sustainability of interventions for water wells and springs	The tendency to provide inputs without gender consideration, yet the women and youth and children interact more with water resources later on are more vulnerable to	Deliberately buying EW information devices that are gender sensitive.

				water scarcity, quality and quantity related challenges.	
	Training the established water management committees to protect water wells and springs to ensure quality, quantity and efficient water use	Proportional representation of various gender groups on training Representation in accessing farm inputs.	Strengthens the capacity of various actors to undertake innovative climate smart agriculture through skills and knowledge acquisition as well as accessing farm inputs	Trainings being dominated by men	Proper guidelines to determine the proportion of gender groups in such trainings should be developed and implemented.
	Supporting farmers and pastoralists to prepare high-value silage and hay for livestock during dry spells.	Representation in accessing inputs for preparing high value silage and hay for livestock	Strengthens the capacity of farmers and pastoralists in silage and hay preparation; It also beneficial in the sustainability of interventions on resilient drought and livestock management	Marginalization women, youth and vulnerable groups	Gender groups especially women need to be supported and empowered to participate in livestock management activities
	Training communities in preparing high-value silage and hay for livestock to increase production of livestock products.	Proportional representation of various gender groups on training Representation in accessing farm inputs.	Strengthens the capacity of various actors preparing high-value silage and hay for livestock	Trainings being dominated by men	Proper guidelines to determine the proportion of gender groups in such trainings should be developed and implemented.
	Support women and youth groups within puts for IGAs including (e.g. growing of sisal and *Aloe vera* to support rope	Proportion of women accessing support/ inputs for alternative IGAs	People acquire additional knowledge and skills about the various alternative IGAs	Marginalization women, youth and vulnerable groups	Supporting various groups especially women and the other vulnerable groups to access the inputs IGAs through skills development and trainings etc.

	production and art crafts; bee keeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism		People have improved incomes		• Develop clear guidelines on management of the fund to cater for all groups • Ensure that all gender groups are equally represented fund management committees • Proper and inclusive criteria for selection of beneficiaries
	Provide competitive small grants targeting small holder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions	Proportion of women accessing Small grants engaging in innovative alternative IGAs or value addition.	People acquire additional knowledge and skills about the various alternative IGAs People have improved incomes	Marginalization women, youth and vulnerable groups	• Supporting various groups especially women and the other vulnerable groups to access the inputs IGAs through skills development and trainings etc. • Develop clear guidelines on management of the fund to cater for all groups • Ensure that all gender groups are equally represented fund management committees • Proper and inclusive criteria for selection of beneficiaries
COMPONENT 4: Knowledge management and awareness creation	Develop gender responsive and scale-up strategies for drought, CC and early warning technologies among women, and other vulnerable groups	Non-Gender responsive strategies for up scaling project interventions Representation of various gender groups in workshops and meetings for inputs	Women and other gender groups embrace project interventions and contribute to their sustainability	Marginalization of women, youth and other vulnerable groups	Proper guidelines to determine the proportion of gender groups in such workshops

11. Monitoring and evaluation

As described in Part III in the full project Proposal "Implementation arrangements", a Project Monitoring Officer shall be attached to the project to monitor safeguards, complaints, and claims. The officer will have proven work experience with international funding agencies safeguard, including a gender approach. The Officer will be hired by the Regional Executing Entity and will be in charge of overseeing the implementation of the project´s Environmental and Social Management Plan, and the Gender Action Plan. This Technician will be responsible for conveying semi-annual reports to the National and Regional Executing Entities. In addition, during quarterly meetings held to monitor project progress, this Officer will report any possible environmental and social and gender risks that may have originated and that have not been previously identified. The Officer will also be responsible for updating the Environmental and Social Management Plan and the Gender Action Plan whenever unforeseen impacts and risks are identified. The Implementing Entity on the other hand will appoint a qualified and responsible officer to oversee compliance with the Gender Action Plan. This officer shall work together other staffs for instance the counterpart staffs at the Executing Entity teams to ensure compliance with all conditions.

Annex 4: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA), AND ENVIRONMENT AND SOCIAL RISK MANAGEMENT PLAN (ESRMP)

for DRESS-EA Project (Djibouti, Kenya, Sudan and Uganda)

Table of contents

List of Figures

List of Tables

1. Introduction

As a requirement for the approval of the DRESS-EA project, The Adaptation Fund needs an Environmental and Social Impact Assessment (ESIA) and an Environmental and Social Risk Management Plan (ESRMP). The ESIA and ESMP are required in order to guarantee that the DRESS-EA project will promote positive social and environmental benefits as well as avoid the associated risks and adverse social and environmental impacts. Consequently, both ESIA and ESRMP were undertaken for the proposed project with inputs from the National Environment Authorities and the respective Executing Entities in the four participating countries, Global water partnership Eastern Africa the main Executing entity hand in hand with the Sahara and Sahel Observatory as the project's Implementing Entity.

The screening and preliminary analysis found that, although the project brings significant benefits to communities and ecosystems, certain project activities could generate some limited adverse social and environmental impacts. The screening resulted in an overall social and environmental risk categorization of “Type B”. The ESMP is designed to avoid, and where avoidance is not possible, mitigate and manage these limited potential impacts. The document is composed of the following sections:

1. Overview of the project including the project activities
2. Risk identification and categorization
3. ESMP

2. Project description

2.1 Project background

The IGAD member states face severe water constraints and prolonged droughts. Between 60- 70 percent of the land area in the IGAD region consists of Arid and Semi-Arid Lands (ASALs) that receive less than 600 mm of rainfall annually (IGAD 2013). It is predicted that the frequency and intensity of droughts would increase because of climate change, especially in semi-arid areas. In fact, climate change has exacerbated drought occurrences due to high anomalies in precipitation. From 2015 to-date, high rainfall anomalies have been recorded. Moreover, the region faces uncontrolled activities such as deforestation and poor agricultural practices that led to reduced water retention capacities, surface runoffs, and soil cover losses. Such activities not only impact negatively on water resources, environment and other ecosystems that serve as community livelihood sources, but also increase their vulnerability to droughts. Significantly reduced precipitation levels lead to pollution, food insecurity, civil strife over water, food and pastures, the drying-up of rivers, streams and aquifers as well as loss of plant available water in the soils on which smallholder farmers and pastoralists derive their livelihoods. The natural resources of the region represent a major asset for the local populations whose livelihoods rely mainly on agriculture, livestock, fishery, forest resources, pastures, etc.

In view of all these observations and with the aim of strengthening the resilience of the region’s populations and ecosystems, the Sahara and Sahel Observatory (OSS) in collaboration with the four riparian countries (Djibouti, Kenya, Sudan and Uganda) and in partnership with Global Water Partnership Eastern Africa (GWPEA) have prepared and are to submit to the Adaptation Fund (AF) a proposal for a regional project entitled “Strengthening Drought Resilience for Small Holder Farmers and Pastoralists in the IGAD Region - DRESS EA”. The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region. The project targets to consolidate synergies and adapt innovative and resilient drought management actions from selected IGAD region countries including Djibouti, Kenya, Sudan and Uganda. The holistic approach of the proposed project is designed as a more integrated way to support communities in locations that are considered most vulnerable to droughts.

2.2 Project objective

The proposed “Strengthening Drought Resilience for Small Holder Farmers and Pastoralists in the IGAD Region (DRESS-EA) project” is to be implemented in four countries including Uganda, Djibouti, Sudan and Kenya. The overall objective of the project is to increase the resilience of smallholder farmers and pastoralists to climate change risks mainly those related to drought, through the establishment of appropriate early warning systems and implementation of drought adaptation actions in the IGAD region. The project has been formulated for implementation by the Directorate of Rural hydraulics in Djibouti, Ministry of Environment and Forestry, Directorate of Climate change in Kenya, the Ministry of Water Resources, Irrigation

and Electricity in Sudan and the Ministry of Water and Environment in Uganda, with technical assistance from Global water partnership Eastern Africa the Executing entity and OSS the implementing Entity.

2.3 Project Components and financing

Component 1: Development and enhancement of a regional Drought Early Warning System

Component one will focus on upgrading, as well as reinforcing, the climate change early warning process since smallholder farmers and pastoralists are facing challenges of accessing timely and accurate climate information for planning and responding to drought risks. Current EWS are inadequate and unsustainable causing crop failures, pasture losses, the death of livestock, soil degradation, conflicts, migration, and food insecurity. The purpose of this component is to conduct baseline studies and assessments as a first step to understand the current status of the existing EWS for different types of hazards in the four selected countries. By understanding the challenges associated with the existing EWS, the project will consequently undertake interventions aimed at promoting adaptation actions to address drought risks and improving the situation for the benefit of smallholder farmers and pastoralists, including women. In achieving these goals, the project proposes to improve and develop effective and efficient innovative EWS by equipping and upgrading weather stations including observation and monitoring infrastructure to ably collect weather related information that could aid smallholders, farmers, and pastoralists to plan appropriate drought adaptation measures. It is also understood that good risk management decisions rely on accurate information, which, in turn, requires reliable and timely data which is by far the most useful assets farmers and pastoralists can access to help them adopt drought resilient actions. In fact, farmers and pastoralists are constrained in accessing EW information and later alone respond or deal with emergencies, for these reasons, the project proposes to construct and/or renovate EW information centers where all the necessary data for drought adaptation planning could be availed to the farmers and pastoralists and support emergency planning.

Institutional linkages for sharing early warning information will also be supported and the targeted beneficiaries' capacities reinforced to access EW information for instance through, developing social media tools and other response and feedback mechanisms for EWS. Quite often even with efficient and effective high quality EWS, there are always possibilities of shortfalls in supplies or interventions to respond to drought. The project will endeavor to provide support to plan for such shortfalls that were not envisaged by developing drought emergency plans. In this case, the project will further support regional and national stakeholders in securing appropriate equipment and plank operations for populations and monitor feedback mechanisms regarding the preparation and implementation of contingency plans.

These specific aspects will be achieved through outcome 1.1, outputs 1.1.1, 1.1.2, 1.1.3 and 1.1.4 presented below. The proposed activities in relation to the corresponding outcomes and outputs are also presented.

Component 2: Strengthening the capacity of stakeholders to manage drought risks due to Climate Change effects

The current capacity to integrate drought risk management interventions into development plans is insufficient to ably implement drought adaptation actions and support responses at the community level. These coupled with a limited budget allocation for drought risk management at the national level aggravates drought management among the vulnerable communities in the four riparian countries. Therefore, communities' drought coping mechanism is weak.

Component two aims at strengthening and improving the adaptive capacity of various stakeholders including women and youth that are affected by climate change induced drought and contribute to drought adaptation and resilience in various ways. Such stakeholders include extension agents, artisans, local government or sub-national and national as well as regional leaders including technical and non-technical plus the smallholder farmers and pastoralists in the four selected countries/areas. This project seeks to, first of all, understand the stakeholders' needs in drought adaptation and contribute to developing their capacity to plan and manage droughts if their resilience is to be enhanced. Based on such needs, capacity building plans including developing the appropriate tools and materials will be supported. The proposed activities are indicated under outcomes 2.1 and 2.2 in outputs 2.1.1, 2.1.2 and 2.2.1.

The project has proposed several drought management innovations. In fact, for cross-learning purposes (Activity 2.1.2.4), focus will be on easily adoptable and fast replicable innovations by communities. Innovations with such high multiplier effect include locally made water harvesting and storage structures e.g. simplified water jars. Others include rock water harvesting, sunken sand dams and water ponds etc. also, ground water management initiatives are critical because it poses a huge potential and yet an immediate solution for water security amongst the communities.

Component 3: Drought and Climate Change adaptation actions

Component three aims at increasing resilience of smallholder farmers and pastoralists by supporting them to undertake concrete innovative and appropriate sustainable land, water, crops and livestock management measures or technologies. It is understood that currently, smallholder farmers and pastoralists have limited drought adaptation technologies that have consequently caused the extremely low productivity characterized by low crop and livestock food production levels, food insecurity and low incomes. The proposed project seeks to understand the current status of water security by focusing on surface and groundwater resources, soil and water conservation, crop and livestock production and sources of incomes. Some of the specific climate change and drought adaptation interventions include: developing soil and water conservation, water harvesting and storage structures e.g. simplified water jars, rock water harvesting, construction of sunken sand dams and water ponds. Mini-irrigation systems to support crops during water stress will be constructed. Underground water sources e.g. construction of boreholes and water wells will be constructed. Drought resistant pastures and crops will be promoted to enhance the resilience of pastoralists and farmers. The project further aims to establish an innovative competitive grant scheme targeting household value addition to food crops as well as food crop and livestock products. The competitive small grants scheme will focus on encouraging and rewarding the efforts of the most vulnerable among smallholder farmers and pastoralists such as the women, youth and elderly. Such efforts sought for evaluation will be on drought adaptation actions or IGAs. For instance, the innovativeness of the competitive grant scheme will include interventions on alternatives energy sources (solar, improved energy stoves, etc.), energy saving innovations, interlocking blocks and charcoal briquettes manufactured from household waste such as briquettes from crop residues will be promoted. Pasture management techniques- including growing fast-growing pasture varieties and storage as silage or hay for longer term use by domestic animals, improved livestock breeds of animals (cattle and goats), drought-resistant crops will be tackled. These are some of the probable innovative drought adaptation actions that could be rewarded under the competitive small grants scheme of the proposed project. These aspects are covered under outcome 3.1 and outputs 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5 and 3.1.6.

Component 4: Knowledge management and awareness creation

There is a limited awareness on drought risks and adaptation actions amongst stakeholders leading to poor planning and responses to drought risks and disasters with low crop and livestock yields hence food insecurity and low incomes. This component seeks to support knowledge generation, packaging, and dissemination between and across stakeholders in various institutions. The activities facilitate institutions to generate knowledge on drought risk management, undertaking study tours and exchange visits, documenting lessons learned or best practices, facilitating knowledge exchange. The information, lessons learned, best practices and innovative technologies will be documented and shared for the use by various stakeholders. The specific activities of this component are highlighted under outcomes 4.1 and 4.2 and outputs 4.1.1 and 4.2.1.

Table 1: Project components and Budget summary

Project/Programme Components	Expected Outcomes	Expected Outputs	Countries	Amount (US$)
1. Development and enhancement of a regional Drought Early Warning System	1.1: Increased use of effective Early Warning Systems by stakeholders	1.1.1: Efficient and effective EWS in place/developed	Djibouti, Kenya, Sudan &Uganda	763,000
		1.1.2: Institutional linkages for EW information established	Djibouti, Kenya, Sudan &Uganda	401,000
		1.1.3: Feedback mechanism for EW information developed	Djibouti, Kenya, Sudan &Uganda	316,000
		1.1.4 Emergency plan for drought management is put in place	Djibouti, Kenya, Sudan &Uganda	907,100
2. Strengthening the capacity of stakeholders to manage drought risks due to Climate Change effects	2.1: Drought resilience of key stakeholders at regional, national and local levels strengthened	2.1.1: Drought management plans (DMPs) integrating CC aspects and adaptation actions are developed	Djibouti, Kenya, Sudan &Uganda	360,000
		2.1.2: Adaptive capacity of institutions, farmers, and pastoralists in drought management is improved	Djibouti, Kenya, Sudan &Uganda	950,000

	2.2: Partnerships for drought management at regional, national and local levels strengthened	2.2.1: New/existing regional and National arrangements /networks for drought management supported	Djibouti, Kenya, Sudan &Uganda	440,000
3. Supporting innovative drought and Climate change adaptation actions	3.1: Increased uptake and usage of concrete and innovative drought adaptation actions	3.1.1: Innovative water and soil conservation structures constructed	Djibouti, Kenya, Sudan &Uganda	1,550,000
		3.1.2: Groundwater sources established/ improved	Djibouti, Kenya, Sudan &Uganda	460,000
		3.1.3: Adaptive agricultural practices for improving crop production promoted	Djibouti, Kenya, Sudan &Uganda	1,140,000
		3.1.4 Adaptive livestock and rangeland practices enhanced	Djibouti, Kenya, Sudan &Uganda	1,044,040
		3.1.5: Enabling environment for smallholder farmers' and pastoralists' adaptive activities created	Djibouti, Kenya, Sudan &Uganda	625,600
		3.1.6: Environmentally friendly IGAs ([e.g., Pottery, Beekeeping, Energy saving stoves, Briquettes making, and interlocking bricks) promoted	Djibouti, Kenya, Sudan &Uganda	1,460,280
4. Enhancing knowledge Management, awareness creation and information sharing	4.1: Knowledge and awareness on drought risks management is increased	4.1.1 Good practices and lessons on drought management documented and disseminated	Djibouti, Kenya, Sudan &Uganda	304,000
		4.1.2 Drought information management strengthened	Djibouti, Kenya, Sudan &Uganda	288,000
6. Project/Programme Execution cost				1,045,860
7. Total Project/Programme Cost				11,009,020
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				1,024,660
Amount of Financing Requested				**13,079,540**

2.4 Projected calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	June 2020
Mid-term Review (if planned)	June 2022
Project/Programme Closing	June 2024
Terminal Evaluation	December 2024

3. Description of the project sites

The project will be implemented in different sites within each of four selected countries of the IGAD region. Basically, these are areas that are considered to be most vulnerable and prone to drought based on the following criteria:

- In terms of the environmental conditions, the sites experience high rainfall variability with increasing frequency and intensity of drought occurrences and high environmental degradation (focusing on vegetation and soil degradation as well as degradation and deterioration of water resources such as streams and rivers).
- Communities inhabiting such sites are also food insecure characterized by recurrent famine and a shortage of food. There is high dependence on the rain-fed agriculture especially high dependence of farmers and pastoralists on crop and livestock farming.

- Socially, there are many vulnerable members among the smallholder farmers and pastoralists especially women, children, youth, disabled and elderly by gender. Low-income levels of the population/high poverty levels in such sites therein are known and reported.
- Economically, smallholder farmers and pastoralists have limited options in terms of the potential alternative sources of livelihoods and /or income.

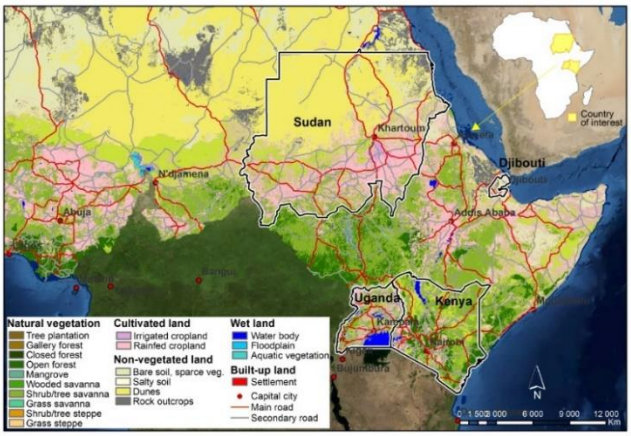


Figure 1: Landcover map in countries of interest (Sudan, Uganda, Kenya and Djibouti)

- ***In Djibouti*:** The project will be implemented in three sites that are considered most vulnerable to droughts. The sites include Bieidley in Ali Sabieh region as well as, Wadi Gobaad, and Hanle sector in Dikhil region. Ali Sabieh Region is located at latitudes 11.1516° and Longitude 42.7122N and 9.6" 42° 42.44" E. It lies at in southern Djibouti with a total land area of about 2,400km^2. It borders Somalia and Ethiopia near the Dikhil region to the west. Dikhil region is the largest region in Djibouti with a total land area of approximately 7.200 km^2. In Dikhil region, the Wadi Gobaad is 120 km long and drains south of the Gobaad depression to the southwest of the Republic of Djibouti. It is the confluence of many superficial flows of the Adigala region in Ethiopia that crosses from south to north into Djibouti territory via Abbot Lake as Eyla. The Hanle sector is found 150-200m above sea level. The three project sites in Djibouti are characterized by warm and dry climate, very low precipitation and highly variable (not exceeding 200 mm annually) with scattered shrubs and grassland patches.

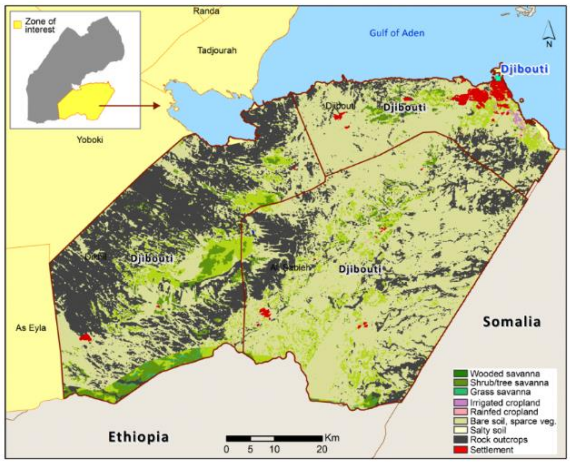


Figure 2: Location of project sites (Ali Sabieh/Bieidley, Wadi Gobaad and Hanle sector) in Djibouti

- ***In Kenya:*** The project will be implemented in Kitui and Samburu counties that lie between latitudes 0°10‟ and 3°0‟ south and longitudes 37°50‟ and 39°0‟ East and latitudes 0°30'and 2° 45' north of the equator between longitudes 36°15' and 38° 10'east of the Prime Meridian respectively. Kitui covers an area of 30,496.4 km^2 including 6,369 km^2 occupied by Tsavo East National park. Samburu covers an area of 21,022.27 km^2. Samburu is bordered by Turkana to the Northwest, Baringo to the Southwest, Marsabit to the Northeast, Isiolo to the East and Laikipia to the South.

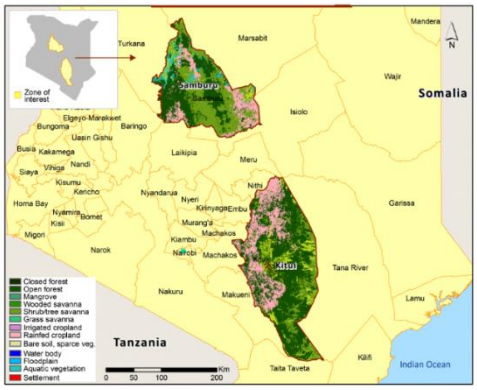


Figure 3: Location of project sites (Kitui and Samburu counties) in Kenya

- ***In Sudan:*** The project shall be implemented in the White Nile state. The White Nile State (WHS), as one of the Sudan's most vulnerable regions, is severely impacted by the climate change induced droughts and floods. Most notably, increasing temperatures, decreasing trends of annual rainfall as well as increasing variability, are causing gradual shift of ecological zones from north to south. This situation has adversely impacted water availability, agricultural and livestock potential, as almost, 70% of the total land area (40 km^2) earn a living based traditional rain fed agriculture and livestock (animal resources: sheep, goats and cattle - are estimated as more than 8 million head).

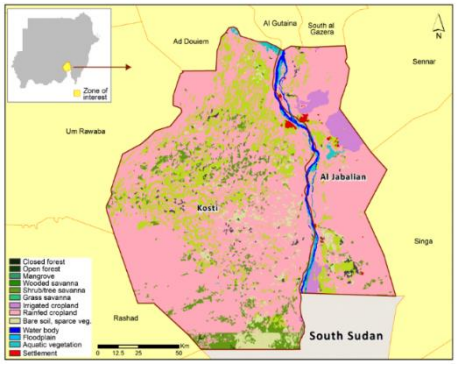


Figure 4: The location and landcover of El Salam in Sudan

- ***In Uganda:*** The project will be implemented in Rupa Sub County in Lokere Catchment. The catchment is located in the districts of Kaabong (5.4%), Moroto (32.0%), Kotido (3.8%), Napak (32.9%) and Nakapiripirit (2.2%) in the Karamoja Region and; Amuria (11.0%), Katakwi (9.5%) and Soroti (3.3%) in Teso Region. Lokere Catchment covers a total area of 8,156 km^2. Rupa Sub County in Moroto district borders Kotido District to the North, Katikekile Sub County to the South East, Moroto Municipality to the south and Turkana County of the Republic of Kenya. This calls for transboundary approaches and interventions in tackling the drought problem across neighboring areas in Uganda and Kenya.

Figure 5: Districts and Sub-Counties in Lokere Catchment in Uganda

4. E&S Risks identification and description

4.1 Methodology

This chapter aims to identify and analyze the environmental and socio-economic impacts of the project on the various ecosystems involved. To do this, the sources of impact inherent in the project are identified as well as the different environmental components of potential economic and ecosystem interests of the study area. Then, based on the impact assessment methodology, evaluate the potential negative impacts that have a direct or indirect effect on the environmental components present in the project area framing.

The general approach proposed to identify and analyze the significance of the impacts on the natural and social environment is based on a detailed description of the project and the environment. The description of the project makes it possible to identify the sources of impacts based on the technical characteristics of the infrastructures, equipment, activities as well as the methods and techniques used and the work program. The general description of the environment, in turn, makes it possible to understand the ecological, socio-economic and cultural context in which the project is located, to discriminate the environmental components that are the most sensitive to the project and to identify, as a preliminary, certain environmental issues related to the project.

For each targeted environmental component, the evaluation process includes the following steps:

- Description of the initial state of the environment: it is a summary reminder of the environmental characteristics as they present themselves before the project is carried out;
- Description of the impact on ecosystems and populations, that is to say the description of anticipated changes according to the sources of impact of the project on ecosystems.

The method of environmental analysis will be conducted following the E & S principles of the 15 FA. Indeed, as presented above, the DRESS-EA project is submitted to a request for funding from the Adaptation Fund (FA). Among the requirements, it is important to emphasize respect and compliance with its E & S policy. The 15 principles of the FA's E & S policy, which cover aspects related to natural resources, physical environment, cultural environment, and social are presented as follows.

- Principle 1: Compliance with the law
- Principle 2: Access and equity
- Principle 3: Marginalized and vulnerable groups
- Principle 4: Human rights
- Principle 5: Gender equality and women's empowerment
- Principle 6: Fundamental rights of women work
- Principle 7: Indigenous Peoples
- Principle 8: Involuntary resettlement
- Principle 9: Protection of natural habitats
- Principle 10: Biodiversity conservation
- Principle 11: Climate change
- Principle 12: Pollution prevention and resource efficiency
- Principle 13: Public Health
- Principle 14: Physical and Cultural Heritage
- Principle 15: Conservation of Land and Soil

4.2 Overview of the environmental and social impacts and risks identified as being relevant to the project

Like any project that involves activities with strong interactions with ecosystems and the population, DRESS EA project could have environmental and social impacts. This project was developed in compliance with 15 principles of the Adaptation Fund Environmental and Social Policies. It is important to identify at this stage, the possible negative impacts in order to foresee the necessary mitigating measures. The table below sums up the impacts/risks evaluation against the AF Environmental and social principles.

Table 2: Adaptation Fund E&S checklist

Checklist of environmental and social principles	No additional assessment is required for conformity	Potential impacts and risks - additional assessment and management required for the conformity
Compliance with the law		X (*compliance with the national laws is supported by the delivery of conformity certificates by the four national authorities in charge of environmental and social issues*)
Access and Equity	X	
Marginalized and vulnerable groups		X
Human rights	X	
Gender Equality and Women's empowerment	X *(Gender Analysis study has been conducted during the preparation of the Full Proposal)*	
Core Labour Rights	*X*	
Indigenous People		X (Consent letters signed by the representatives of the indigenous people has been delivered and further detailed analysis will be conducted)
Involuntary Resettlement	*X*	
Protection of natural habitats	X	
Biodiversity conservation	*X*	
Climate change	X *(Climate Change vulnerability study has been conducted during the preparation of the Full Proposal)*	
Pollution prevention and resource efficiency	*X*	
Public health	*X*	
Physical and Cultural Heritage	*X*	
Soil and land conservation	X	

P1- Conformity with the law

The project proposal has been developed in alignment with a number of national and regional priorities, policies, plans, and national technical standards for sustainable development and adaptation to climate change. It will also take into account the international and national standards related to biodiversity, land conservation, water resources, ecosystem management and poverty alleviation.

With regards to the Environmental and Social Assessment, and following discussions conducted during the several consultations workshops, the national executing entities have submitted the ESIA to their national authorities for review and approval. This process is underway and the delivery of conformity certificates by the four national authorities in charge of environmental and social issues is ongoing.

At this stage of full proposal development, some activities/ sub-projects are still unidentified and so are their impacts such as the component 3 Income-Generating Activities (IGAs), therefore they may require EIA depending on the size and the location of their implementation.

The risk screening procedure that will be applied should take into account the conformity of these activities with the national laws and technical standards. In fact, these unidentified activities / sub-projects will need to be subject to a review of impacts and risks, a public consultation process, and development of safeguarding measures in order to obtain certificates of conformity.

P2- Access and Equity

In general, the project will provide fair and equitable access to benefits for all beneficiaries including the most marginalized and vulnerable groups through the provision of water, sustainable livelihoods, solar energy, updated and accurate alert messages and effective knowledge.

Under Component 3 and during the implementation of socioeconomic activities to enhance communities' livelihoods, local authorities at each of the project sites and in the beneficiary, communes will ensure that sub-project activities will be

equitable. Knowing that project beneficiaries will be in general rural people (pastoralists and smallholder farmers), they have difficulties to access to the decision-making process. According to the gender assessment, and particularly for women and youth, it was evident in the proposed sites that despite the important role of women's labor force in the agricultural sector, few (less than 1%) own and control land resources including food crops. Women have very little power to access to resources and are not the main decision makers. Similarly, despite the numerical strength of the youth, their representation in socio-economic development processes and activities is still low. They are characterized by poor access to land and related resources and access and decision-making powers over agricultural production.

These findings imply that there is limited capacity to cope due to high levels of poverty and dependency among the women and youth that render them more susceptible to the damaging effects of drought and climate change and may limit their opportunities to benefit from projects outcomes.

Consequently, consultation workshops will be held to enhance the participatory decision making as well as ensure a close monitoring targeting all the project beneficiaries to enhance equal access of men; women, youth and the most vulnerable.

In addition, OSS, as a regional implementing entity and in accordance with its practices, makes available to all direct and indirect beneficiaries of the project a grievance mechanism that will inform about conflict situations and will ensure access and equity.

P3- Marginalized and vulnerable groups

The project will provide opportunities for strengthening the resilience of the local population. A gender study has been established as well for a better understanding of the social construction.

Besides, according to the project components, marginalized and vulnerable groups will be encouraged to participate in the decision-making processes at the local and communal level. In fact, during the several consultation workshops, representatives from the several target groups were invited to take part in some activities design. Additionally, as detailed in the component 3, they will be supported to improve their livelihoods by supporting them to undertake concrete innovative and appropriate sustainable land, water, crops and livestock management measures or technologies. Some of the specific climate change and drought adaptation interventions include developing soil and water conservation, water harvesting and storage structures, mini-irrigation systems to support crops, underground water sources, drought resistant pastures and crops promotion and IGAs enhancement among other things. So impacts on these groups will be positive particularly women and youth.

During the first steps of project implementation, additional assessment (e.g land right) will be carried out, to avoid exclusion of marginalized groups and to minimize potential impacts related to the project activities.

In fact, some risks can be identified related to the insufficient knowledge and access/use of technological devices such as mobile phones or lack of good cellular connectivity specially required in component 1 on Early Warning System design and implementation. In order to avoid the exclusion of these communities and to broadcast the warning messages, local radio stations and traditional practices such as criers, maps and sirens will be put in place to reach them.

In addition, the component 3 will focus on improving livelihoods for farmers and pastoralists contributing to improve their resilience by constructing, among other things, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams) and mini-irrigation and water delivery systems. But, there is a risk of reducing or prohibiting, the temporary access during construction activities of certain populations, especially women, to the resources on which they depend (pastures, water, fruit trees, crops, fishing grounds, forest, public services).

Thus, it is planned to organize consultation meetings with local administrative and customary authorities and steering committees representing communities and indicate that any activity limiting access to resources or sources of income or excluding vulnerable groups such as women will not be analyzed and lead to an agreed community plan for work/construction implementation. All activities implementation must be decided in common with consultation of all concerned communities.

In addition, the activity 3 involves setting up a competitive small grant scheme (CSGS) for undertaking innovative climate change adaptation interventions. The CSGS funds are aimed at supporting the populations facing drought medium risk in the project areas. Given the funds available dedicated to the small grants it is hard to cover all the beneficiaries. That's why funds distribution will be based on a set of agreed community selection criteria to avoid exclusion and inequity.

OSS, as a regional implementing entity and in accordance with its practices, makes available to all direct and indirect beneficiaries of the project a grievance mechanism that will inform about conflict situations if any.

P4- Human rights

No further assessment is required. No activities are identified whose execution does not respect international human rights. The project objectives aim at promoting fundamental human rights for equitable access to services, water for irrigated agriculture, capacity building, and information.

The project will respect the human rights of all actors and local population in accordance with its objectives and scope.

Moreover, and particularly for this project, the regional approach will provide an adequate framework to ensure respect for human rights at the level of each country. The proposed project will promote the basic human rights of access to food, water, and information.

P5- Gender Equality and Women's empowerment

During project design, a gender assessment study has been conducted as a preparatory step to elaborate the project proposal. In fact, gender mainstreaming in project activities aims at analyzing gender and youth relationships as well as advocating the full development of all women and men. Therefore, gender equality is a prerequisite in the implementation of concrete adaptation actions and is the baseline for communication, training, and awareness raising activities to be undertaken within the framework of the project.

Indeed, component 2 aims at strengthening and improving the adaptive capacity of various stakeholders including women and youth that are affected and contribute to drought adaptation and resilience in various ways. Besides, project activities under the component 3 aim at establishing an innovative competitive grant scheme targeting household value in addition to food crops and food crop and livestock products among other things. The competitive small grants scheme will focus on encouraging and rewarding the efforts of the most vulnerable among smallholder farmers and pastoralists such as the women, youth and elderly.

So, women will be involved in the design and the decision making processes. In addition, they will be considered in the livelihood improvement activities (e.g. IGAs) as well as the capacity building and information just like men. Thus, women will ensure their income, living conditions and the sustainability of the promoted activities.

In the proposed project sites, gender balance in leadership, governance and decision-making over drought management and control of resources remains very low in the proposed project sites. They are characterized by poor access to land and related resources and access and decision-making powers over agricultural production.

There is therefore a risk that women may not benefit equitably from proposed adaptation measures, capacity building interventions and gender equality in employment due to male domination. So, gender mainstreaming is vital for successful design and implementation of the proposed project activities including in the consultation process, IGAs and small grants (among other).

Furthermore, according to the gender assessment there is a difficult and unequal access to finance between men and women related to local discriminative eligibility criteria that require security in form of yields, productivity, and contributions in the four countries. Under component 3, it is intended to provide competitive small grants targeting small holder farmers and pastoralist associations including women to improve their livelihoods. However, gender inequality could be exacerbated if the Fund does not provide facilities for women's access to the scheme due to social norms and pressures linked to men leaderships. A series of measures (e.g. involvement in consultation process, selection criteria) should be incorporated to ensure that both, men and women, have access to this scheme, taking into account that, traditionally, women have less access to control of economic resources.

Additionally, although the project proposal development provides an overview of the expected impacts of the project on the gender aspect basing on the conducted study findings. It is also planned (i) to carry out Communication and sensitization of populations on the gender issue to ensure gender equality in income-generating activities, (ii) to strengthen the

representation of women and youths in the various consultation workshops, and (iii) make available a grievance mechanism that can be used by women and youth to complaint about being affected by certain project activities.

P6- Core Labor Rights

As a global framework related to the fundamental rights of work, the four project's beneficiary countries have ratified the eight ILO Conventions. Additionally, during the project design stage were national and regional stakeholders have been involved, the core labor rights have been highlighted. So, the project will be implemented and managed in compliance with the international and the countries designated labor laws. As a result, compliance with fundamental labor rights will be ensured in all the proposed project activities and especially the community-based ones. In fact, the component 3 that encompasses the adaptation actions implementation where communities will provide the local labor force, core labor rights compliance will be mandatory.

Concretely, it is intended to establish contacts with representatives of the local communities responsible for carrying out some activities, where their mandate and their rights will be clearly explained. Besides, during activities execution, the national executing agencies will be in charge of the follow-up and monitoring of the worksites including activities progress and the respect of the labor and safety rights of workers. With regards to the potential risks, it is likely that accidents or occupational hazards during the project preparation or implementation could occur.

In addition, there is a risk of late or unpaid salaries or remuneration non- compliant with the countries labor legislations and laws. Finally, children's labor will be forbidden as well as remuneration inequity between men and women.

Consequently, it is planned to (i) provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable, (ii) Sensitize workers and populations to the risks related to the undertaken activities, and (iii) design and implement safety measures and emergency plans to contain accidents risks and ensure the application of safety standards by companies (equipment, signs, training, etc.).

Finally, there will be a close follow-up and monitoring of the worksites by the national executing entities including schedules, activities progress, respect of the labor and safety rights of workers and conformity with national labor codes.

P7- Indigenous People

As part of the elaboration of the project's contextual framework and the environmental and social assessment of the project's intervention areas, the composition of local populations and communities was defined. Indeed, the 4 beneficiary countries of the project are concerned by the presence of indigenous peoples in the selected project sites, as presented in Part I Title 1.2.5. It is important to notice that the project beneficiary countries are members of the ILO Convention (Djibouti Member since 03.04.1978, Kenya Member since 13.01.1964, Sudan Member since 12.06.1956 and Uganda Member since 25.03.1963). Based on this finding, it is important to point out that the involvement of representatives of the local communities and especially the indigenous peoples during the preparatory phase of the project has been at the center of the concerns of the executing and implementing entities. Indeed, based on the principle of Free, Prior and Informed Consent (FPIC), since the first preparatory activities of the project (workshop, meetings, field visits, etc) the active participation of the representatives of the indigenous peoples has been assured. They have been informed of the project details, the potential impacts, the mitigation measures and the grievance mechanism. They also expressed their needs and expectations (cf. consultative process). Moreover, as proof of their involvement and approval of the project, letters of consent has been signed by their representatives and delivered.

As regards the project impacts on indigenous people, they will be the same as on all the other communities. There will be no major risk on their assets, resources, culture, land and rights. The project intervention will not affect indigenous groups or territories since construction works will be executed outside indigenous territories.

The main risks that could raise are related to the ways they use water resource, transhumance routes, livestock management, agricultural practice etc. Therefore, a detailed analysis will be carried out by local and national agencies to understand the traditional use of natural resources especially regarding to water and land use. This will be the major project challenge and to cope with this the participatory approach will be applied. They will be involved at all stages of the project implementation to allow a better ownership of the project outcomes by these populations. The traditional knowledge of indigenous people

on drought will be useful when preparing the drought Management Plans and the early warnings and information dissemination.

P8- Involuntary resettlement

Basically, the project activities will not lead to removing local populations or even losing their land use rights and will not include community resettlement activities.

However, the construction of appropriate and innovative water harvesting and storage infrastructure as well as mini-irrigation and water delivery systems will occupy spaces and may affect private lands or related activities.

The choice of these areas will include strict criteria that stipulate no population resettlement through giving priority to state-owned lands. In the case that there is no choice but to opt for private lands, compensation measures will be arranged.

P9- Protection of natural habitats

Given the project activities nature and the intervention sites characteristics, only indirect risks related to the protection of ecosystems and to the natural habitats may occur. These are related to the implementation of solar-pumped boreholes, water harvesting and storage infrastructure (e.g simplified water tanks, water jars, sunken dams, micro-dams, sand dams, and water pans) as well as micro-irrigation systems can result in the vegetation and wildlife habitats destabilization in the implantation site. Also, the presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have an impact on the fauna and flora of certain intervention sites.
So, to face up these risks, a close follow-up of the project activities implementation must be arranged including (i) follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats, (ii) establishment of E&S Impact Assessment Studies as applicable according to the size of the construction to be undertaken, (iii) policies and laws to protect natural habitats will be screened with the stakeholders to ensure that the critical habitats are legally protected, and (iv) sensitization sessions to local populations on good environmental practices and the protection of natural habitats.

P10- Biodiversity conservation

The protection of ecosystems and their biological diversity is an essential objective of components 1, 2, 3 and 4 of the project. They will provide opportunities to promote planning for biodiversity conservation activities, such as reforestation and capacity building to strengthen the efficient management of natural resources.

As part of the implementation of some activity, vegetation clearance for water harvesting and storage sites construction may represent a form of disturbance for bird habitat and wildlife.

Consequently, to mitigate these risks, it is intended to (i) follow-up and monitor the implementation of all activities related to the protection and management of ecosystems, (ii) minimize vegetation clearance as Low as Reasonably Practical (ALARP), (iii) pre-survey the proposed construction site areas to avoid sensitive habitats that have high diversity of indigenous plants, and (iv) promote awareness sessions, capacity building and peer learning to strengthen the efficient management of natural resources, including aquatic species, animals and forests.
With regard to tree removal, it will be recommended to avoid cutting large trees with a diameter >20cm and compensatory reforestation will be executed where needed.

P11- Climate change

The project will increase the resilience of the ecosystems and the adaptation capacity of the local population.
Climate change vulnerability study has been conducted during the preparation of the Full Proposal. According to this study, the adverse effects of climate change are being felt moderately both on the natural ecosystems and on the livelihoods of communities.

The proposed project activities are mainly on adaptation. Indeed, the component 1 is dedicated to establish the early warning system to prevent natural disasters risks and impacts whereas through its component 3, the project aims at increasing the adaptive capacity of the local population and the resilience of ecosystems to climate change adverse effects. Finally, the component 4 is devoted to information and stakeholder's capacity building on climate change.

A potential change of the land use due to the field clearing to construct innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, etc.) under component 3 may generate sequestration decrease. So, it is intended to promote reforestation to offset these lands.

P12- Pollution prevention and resource efficiency

The project will contribute to the energy efficiency through the interventions on alternatives energy sources such as solar and the introduction of the improved economic stoves. Additionally, it will enhance the efficient use of water through the small irrigation techniques and the water storage constructions establishment. Moreover, projects activities advocates the prevention of air, water, and soil pollution by controlling bushfires through the EWS technology and monitoring the water harvesting through the component 3 that undertakes these activities more in detail. Finally, the project will create awareness, strengthen technical capacities and provide support on water management for users at different levels (component 4).

Although the importance of its interventions, the project proposal has not been identified as huge energy demanding or big consumers of natural resources and therefore would require measures for their efficient use.

Minor risks related to potential water contamination of water reservoir through introduction of impurities, wastewater and solid waste is possible. That's why, it will be important to conduct regular water quality monitoring and maintenance of the water supply system as well as ensure the monitoring of water quality by chemical analysis, improve the awareness on water resource management and conservation through consultation workshops, and finally separate the infrastructures for human and animal use and provide a specific installation for the watering of livestock near the tanks.

Besides, increase in dust levels and air pollution by gas emissions from machinery during field work or consultants and various stakeholders' vehicles during workshops and field visits could occur. Thus, it is intended to limit levels of dust through good practice such as watering of access routes, construction sites, and other disturbed sites and cover lorries transporting construction materials, (ii) reduce gaseous emissions by selection of appropriate machinery and regular servicing of vehicles and (iii) Incite to use a good quality fuel meeting the standards.
With regards to the micro-irrigation systems establishment, vandalism of water pipelines infrastructure, wastage of water and leakages at consumer points as well as over abstraction of water can be risks. So, creation of awareness on water resource management and conservation through consultation workshops, creation and implementation of a Social Engagement Plan – SEP, monitoring of the irrigation system installed as well as the irrigation schedule should be undertaken.
Finally, the execution of the project different activities may generate waste related to the presence of the workers, construction engines, and equipment, etc. It will be recommended to proceed to waste management plans in the construction sites, think to waste recycling / composting in the USPs.

P13- Public health

The project will contribute to improving the sanitary conditions of communities by monitoring ecosystems, water, and soil quality, to prevent the population from natural disasters through the EWS and to improve their incomes for easier access to health facilities.
Water storage constructions may lead to water-related diseases (such as Malaria) increase, so, it is mandatory to raise awareness and support mechanisms to implement disease awareness and management programme for Malaria and Bilharzia. Additionally, results related to the demographic composition in the proposed project sites show that most vulnerable members of communities among the smallholder farmers and pastoralists in the proposed project areas are women, youth and People Living with HIV/AIDS (PLWHAs). Then, it is important to prevent and control spread of HIV/AIDS among the program workers and local communities by organizing sensitization sessions and distributing prevention kits.
Additionally, construction activities may lead to noise and odor nuisance as well as increase the dust levels. To face this risk, it is intended to (i) select appropriate machinery and regular servicing of machinery and vehicles, (ii) use and ensure the application of security measures by companies such as ear plugs and ear muffs among workers when noise levels exceed 80 dBA for 8 hours and limit the hours of exposure of workers, (iii) apply a noise mitigation policy for all operations in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution) and iv) workers will be provided with appropriate dust protective gear including masks and overalls.

With regards to the persons safety in maintaining the tanks or dams (in particular risk of fall of man or cattle), security will be ensured at the reservoirs especially at the dams' area by providing adequate protective equipment (e.g protective mesh).

Finally, health problems due to tank water low quality or the proliferation of insects near the water points could occur. Thus, it will be recommended to (i) not collect the first runoff that is often heavily loaded or provide a decanter for tanks to improve the water quality, (ii) train communities that tank water is not consumed by the population without adequate treatment (after boiling or treatment), and (iii) Provide family sanitary kits (filters and disinfectants).

P14- Physical and Cultural Heritage

The project will enhance and promote the protection of physical and cultural heritage. In fact participatory workshops to identify areas of physical and cultural will be organized and traditional and ancestral knowledge will be preserved.

P15 -Soil and land conservation

The project will promote the conservation of soil and land resources as detailed in the component 3, especially through the improvement of agricultural good practices such as reforestation, restoration and rehabilitation of degraded lands. Besides, component 4 undertakes activities that aims at building farmers and technicians' capacities in order to enhance environmental awareness and soil and land better management solutions.

Furthermore, livelihood diversification through the promotion of several IGA will help reduce farmers' pressure on forest soils. However, there is a potential risk of soil erosion. So, where applicable, it will be recommended to install specific measures to combat erosion (dry rock, gabions, stone bunds) and plant sediment binding grasses, shrubs and trees on the exposed slopes and other surfaces as found appropriate. Soil compaction by the machinery during construction or maintenance may occur.

Thus, to face up to these risks, sustainable techniques to refresh the affected lands will be boosted. It is also intended to promote awareness sessions with the workers and the local population to strengthen the effective management of soil and land.

4.3 Unidentified Sub-Projects: Methodology of Impact Assessment and Risk Management

275. The ESIA of the project activities has been established to ensure that the potential impacts are identified, their significance is assessed, and appropriate mitigation measures are proposed to minimize or eliminate such impacts during a fair and visible time frame with the consideration of the investment which has to be taken. Nevertheless, the project includes a number of activities that have not yet been identified to the stage where effective ESP risks identification is possible (so called unidentified sub-projects USPs). These USP are related mainly to the IGA including agricultural or related field activities such as agroforestry, livestock farming that will not generate major negative impacts.

276. Given this, additional environmental and social impact assessment for each sub-project will be required and ensured by the REE. The screening system will ensure that each sub-project adheres to the environmental and social principles of the AF and of the OSS E&S Policies as well as national policies and procedures.

277. In fact, during project implementation and when the USPs will be clearly identified once the E&S and Gender screening will be conducted, a focus on the relevant national technical standard will be made. It is however important to note that the USPs will be only activities related to similar ones that are already known at this stage of project development. Most of the expected project' USPs will be dealing with agriculture activities such as breeding small ruminants, Medicinal and aromatic plants distillation, etc. Given this, the technical standards presented above and which are relevant with the project activities will be applied for the USPs if relevant and additional Standards could be identified and referred to if required according to the USP's specificities.

278. Furthermore, assessed sub-projects that may present significant environmental and social risks will not be implemented unless a comprehensive risk management plan is developed and where the impacts and risks are important, no sub-project or activity will be carried out without the approval of the relevant national authorities.

279. For each sub-project, ESIA will be carried out to predict and assess the potential environmental and social impacts and design appropriate mitigation, management and monitoring measures. The process will be in compliance with national standards, AF and OSS Policies and will include the following steps:

- **Screening**: It is a tool for predicting, understanding and assessing potential sub-project/activity impacts. In other words, it aims to determine if a sub-project/ activity is likely to have significant environmental and social effects. Basing on the 15 principles of the AF, the purpose of Screening is to determine whether or not an EIA is required;
- **Scoping**: If a full ESIA is required, scoping establishes the studies that will be required as part of the ESIA process including the identification of data availability and gaps. It determines the appropriate spatial and temporal scopes for the assessment and suggests suitable survey and research methodologies;
- **Impact Prediction and Evaluation**: is the heart of the ESIA and involves analyzing the impacts identified in the scoping to determine their nature, temporal and spatial scale, extent and effect. Impact analysis requires input from relevant experts, including ecologists, biologists, sociologists and economists. Once the potential impacts are fully understood, it is necessary to judge the significance of each impact, to determine whether it is acceptable, requires mitigation or is unacceptable. Consultations with local stakeholders is vital at this stage, and particular attention should be given to vulnerable and disadvantaged communities and risks arising from involuntary resettlement. Successfully identifying and addressing significant impacts at this stage can be key to obtaining both a formal and informal license to operate;
- **Mitigation**: aims to eliminate or reduce negative sub-project/activity impacts through suggesting appropriate measures;
- **Social and Environmental Management Plan (SEMP) and monitoring**: Also called an Environmental Action Plan (EAP), it defines resources, roles and responsibilities required to manage sub-project/activity impacts and implement mitigation measures. The SEMP forms a link between the ESIA and the Social and Environmental Management System/entity. The central elements of a SEMP should include a detailed description of the activities planned to mitigate impacts, a time line and identification of resources to ensure the SEMP can be delivered, and a communication plan that indicates how progress in the implementation of the SEMP will be disclosed. The SEMP should also define monitoring requirements or indicators to determine whether mitigation is successful;
- **Evaluation**: Also called The Environmental Impact Statement (EIS), is the physical report on the ESIA process and findings. The EIS should provide a clear review of potential impacts and how they have been or will be mitigated. The report often forms the basis of public consultation activities and is the document that is presented to regulatory authorities as the basis for decision making.

However, as part of AF quality assurance role, AF requires adherence to the ESP for Project activities implemented using funds channeled through AF accounts. So, all proposed Projects are required to be screened according to the 15 principles as given in the table below.

Table 3: Checklist for preliminary risk screening and project categorization according to the AF principles

Checklist of environmental and social principles	No additional assessment is required for conformity	Potential impacts and risks - additional assessment and management required for the conformity
Compliance with the law		
Access and Equity		
Marginalized and vulnerable groups		
Human rights		
Gender Equality and Women's empowerment		
Core Labour Rights		
Indigenous People		
Involuntary Resettlement		
Protection of natural habitats		
Biodiversity conservation		
Climate change		

Pollution prevention and resource efficiency		
Public health		
Physical and Cultural Heritage		
Soil and land conservation		

Besides, OSS, as the project implementation entity, is also provided of its specific E&S policies describing principles and procedures for the environmental, social and gender impacts screening/assessment during the preparation and implementation of projects. In addition, the USPs environmental screening and potential ESIA should be in line with national laws and regulations as the activities will be executed at national level. If some of the USPs require detailed assessments the involvement of National authorities in charge of environment will be necessary.

OSS Environmental and Social Safeguard

Environmental and Social Safeguard of DRESS-EA project is ensured through OSS policies and procedures which are based on the International Finance Corporation (IFC) Environmental and Social sustainability Framework. This ensures that potential risks and impacts are iteratively identified, mitigated and monitored throughout the life-cycle of the Project. The Environment and Social risk management is completed through two main stages: 1- Preliminary Risk Screening with respect to the ten Performance Standards (PS) prescribed in OSS E&S policy that all projects should comply with. This phase is implemented during project preparation and leads to a categorization of the project according to its risk level.

In compliance with OSS Environmental and Social policy, a preliminary risk screening was conducted from the earliest stages of DRESS-EA project preparation. Pre-screening of the concept note and early drafts of the project document using OSS' procedure for risk and project categorization helped to ensure that social and environmental sustainability issues are considered and integrated into the project' design. 2- On-going Risk Screening of the project interventions during the implementation phase. Activity-wise risk management is governed by OSS' risk management procedure which is in line with the internationally recognized standards, and more specifically the ISO 31000:2009, Risk management — Principles and guidelines. In addition to the preliminary and overall risk screening conducted at the preparation phase, operational procedures will be implemented to ensure a continuous screening of all project activities and interventions for the identification of arising risks and impacts. If these impacts or risks are determined significant, activity-wise environmental and social assessment will be conducted which, in turn, will lead to the identification of activity' specific environmental and social management measures that need to be incorporated into the project. Identification, treatment and monitoring of identified risk and mitigation measures for DRESS-EA project will be managed using a Risk Register. The process will be governed by the Risk Management Procedure of the AF and OSS.

Moreover, in monitoring of the mitigation measures, corrective actions identified to manage activities with significant Environmental and social impact will be monitored using operational rules set out in the monitoring and review procedure of OSS. In this respect, OSS will monitor and review the implementation of corrective action plans, which range from simple mitigation measures to detailed management plans with actions that can be measured quantitatively or qualitatively. Then, once the ESIA is conducted, a detailed ESMP will be developed in each sub-project site and will include a mitigation and monitoring plans, institutional arrangements, with capacity building and associated costs. It will specify how, at what stage and by whom during project implementation for each sub-project risks of negative environmental and social impacts will be identified according to the 15 principles of the AF' ESP.

5. Environmental and social risk management measures in line with the Environmental and Social Policy of the Adaptation Fund

During the development of the Project full proposal a first and global environmental and social impacts and risks assessment has been developed according to the national standards (the three beneficiary countries).

The DRESS-EA project environmental and social risks analysis indicate limited significant environmental or social impacts as per the Environmental and Social Policy of the Adaptation Fund. The impacts levels are evaluated to be low or medium risks, thus the project is classified under Category B of risk. This means that the project activities have small-scale impacts, limited to the project area and easily mitigated through good environmental and social management practices.

Besides, the project will undertake environmental and social impact assessment reviews as applicable (depending on the scale of the project activities to be undertaken).

The table below describes potential impacts and risks related to the proposed project in accordance with the Environmental and Social Principles of the AF.

Table 4: E&S risks mitigation measures

Checklist of environmental and social principles	Risk identification per E & S Principles	Mitigation measures per E & S Principles
Conformity with the law	The fully identified project activities will not generate risks. Only unidentified activities or sub-projects particularly Income Generating Activities (IGAs) undertaken in the component 3 may require a specific EIA depending on the size and the location of the implementation to comply with national standards and laws.	The fully identified project activities do not generate risks related to conformity with the law so there are no mitigation measures to plan.
Access and Equity	Knowing that the project beneficiaries will be generally rural people (pastoralists and smallholder farmers) who have difficulties to access decision-making process; There is a risk that this may limit their opportunities to benefit from projects outcomes.	- Consultation workshops will be held at implementation stage to kick start the project; - Close monitoring and reporting of the project beneficiaries to ensure equal access of men; women, youth and the most vulnerable; - Grievance mechanism.
	Women and youth are characterized by poor access to land and related resources over agricultural production. These findings imply that there is limited capacity to cope due to high levels of poverty and dependency among the women and youth and may limit their opportunities to benefit from projects outcomes.	
Marginalized and vulnerable groups	Insufficient knowledge and access/use of technological devices such as mobile phones or lack of good cellular connectivity specially required in component 2 on Early Warning System design and implementation.	To avoid the exclusion of marginalized and vulnerable communities in order to disseminate and broadcast the warning messages in case of natural disaster, local radio channels and traditional practices such as speakers, maps and sirens will be implemented to reach them. Grievance mechanism

	During construction activities, risk of reducing or prohibiting the temporary access of certain populations, especially women, to the resources on which they depend (pastures, water, fruit trees, crops, fishing grounds, forest, public services)	- Organize consultation meetings with local administrative and customary authorities and steering committees representing communities and indicate that any activity limiting access to resources or sources of income will be analyzed and lead to an agreed community plan for work/construction implementation. All activities implementation must be decided in common with consultation of all concerned communities; - Grievance mechanism
	Component 3 involves setting up a competitive small grant scheme (CSGS) for undertaking innovative climate change adaptation interventions. Given the funds available dedicated to the small grants, it is hard to cover all the beneficiaries.	Funds distribution will be based on a set of agreed community selection criteria to avoid exclusion and inequity Grievance mechanism
Human rights	The project activities do not generate risks related to human rights.	The project activities do not generate risks related to human rights so there are no mitigation measures to plan.
Gender Equality and Women's empowerment	The cultural and social norms of the project region lead to a greater role for women to question male dominance and claim their role in decision-making. So, there is a risk that women will not benefit equitably from the proposed adaptation measures and the capacity building interventions due to men leadership.	- Ensure the presence of women and young people in workshops and trainings; -Communication and sensitization of the population on the gender issue to ensure gender parity in income-generating activities - Grievance mechanism.
	Under component 3, it is intended to provide competitive small grants targeting small holder farmers and pastoralist associations including women to improve their livelihoods. There is a risk of gender inequality if the Fund does not provide facilities for women's access to the scheme due to social norms and pressures linked to men leaderships.	A series of measures (e.g. involvement in consultation process, selection criteria) will be incorporated to ensure that both, men and women, have access to this scheme, taking into account that, traditionally, women have less access to control of economic resources. Grievance mechanism
Core Labor Rights	Risk of accidents and occupational hazards during the project preparation and implementation.	- Sensitize workers and populations to the risks related to the undertaken activities; - Design and implement safety measures and emergency plans to contain accidents risks and ensure the application of safety standards by companies (equipment, signs, training, etc.) - Provide workers with protective clothing (nose and mouth masks, ear muffs,

		overalls, industrial boots and gloves) and helmets as applicable
	Risk of late or unpaid salaries or remuneration non-compliant with the countries labor legislations and laws. Risk of Children's labor. Risk of Remuneration inequity between men and women.	- Salaries in line with regional practices and defined with national entities - Close follow-up and monitoring of the worksites by the national executing entities including schedules, activities progress, respect of the labor and safety rights of workers and conformity with national labor codes.
Indigenous People	The project activities will generate the same risks on Indigenous people as the risks on all project communities. There will be no major risk on their assets, resources, culture, land and rights. The main risks that could raise are related to the ways they use water resource, transhumance routes, livestock management, agricultural practice etc.	-Involvement of indigenous people representatives at all project stages (development, implementation, monitoring and decision-making process) -Detailed analysis will be carried out by local and national agencies to understand the traditional use of natural resources especially regarding to water and land use.
Involuntary Resettlement	The construction of appropriate and innovative water harvesting and storage infrastructure as well as mini-irrigation and water delivery systems will occupy spaces and may affect private lands or related activities.	The review process for these activities will include criteria that stipulate no resettlements. The project will opt for state-owned lands and if needs be, compensation measures will be arranged for used private lands owners.
Protection of natural habitats	The presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have an impact on the fauna and flora of certain intervention sites. The implementation of solar-pumped boreholes, water harvesting and storage infrastructure (e.g simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, etc) can result in the vegetation and wildlife habitats destabilization in the implantation site.	- Follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats - Establishment of E&S Impact Assessment Studies - Policies and laws to protect natural habitats will be screened with the stakeholders to ensure that the critical habitats are legally protected - Sensitization sessions to local populations on good environmental practices and the protection of natural habitats.

Biodiversity conservation	Vegetation clearance for water harvesting and storage sites construction may represent a form of disturbance for bird habitat and wildlife	- Follow-up and monitor the implementation of all activities related to the protection and management of ecosystems; - Minimize vegetation clearance as Low as Reasonably Practical (ALARP) - Avoid cutting large trees with a diameter >20cm - Pre-survey the proposed construction site areas to avoid sensitive habitats that have high diversity of indigenous plants - Promote planning for activities of biodiversity conservation such as Compensatory reforestation - Promote awareness sessions, capacity building and peer learning to strengthen the efficient management of natural resources, including aquatic species, animals and forests.
Climate change	A potential change of the land use due to the field clearing to construct innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, etc) the may generate the sequestration decrease.	Promote reforestation to offset these used lands
Pollution prevention and resource efficiency	Potential contamination of water reservoir through introduction of impurities, wastewater and solid waste.	- Conduct regular water quality monitoring and maintenance of the water supply system as well as ensure the monitoring of water quality by chemical analysis; - Awareness improvement on water Resource management and conservation through cconsultation workshops; - Separate the infrastructures for human and animal use and provide a specific installation for the watering of livestock near the tanks.
	Increase in dust levels	- Limit levels of dust through good practice such as watering of access routes, construction sites, and other disturbed sites - Cover lorries transporting construction materials

	Vandalism of water pipelines infrastructure, Wastage of water and leakages at consumer points	- Creation of awareness on water Resource management and conservation through Consultation workshops; - Creation and Implementation of a Social Engagement Plan – SEP;
	Over abstraction of water	- Irrigation system installed and fully monitored - Irrigation schedule controlled
	Air pollution by gas emissions from machinery during field work or consultants and various stakeholders' vehicles during workshops and field visits.	- Reduce gaseous emissions by selection of appropriate machinery and regular servicing of vehicles - Incite to use a good quality fuel meeting the standards.
	Generation of waste related to the presence of the workers, construction engines, and equipment, etc. during the execution of the project different activities.	- Recycling wastes/ recycling and composting could be an USP - Waste management plans for construction sites.
Public Health	Water storage constructions may lead to water-related diseases (such as Malaria) increase	- Raise awareness and support mechanisms to prevent and control spread of water related diseases such as Malaria and Bilharzia among the program workers and local communities - Implement disease awareness and management programme for Malaria and Bilharzia
	The presence of workers at construction sites near the project beneficiary villages could increase the risk of spread of sexually transmitted diseases (STD) especially that most vulnerable members of communities among the smallholder farmers and pastoralists in the proposed project areas are women, youth and People Living with HIV/AIDS (PLWHAs).	- Prevent and control spread of HIV/AIDS among the program workers and local communities, by organizing sensitization sessions and distributing prevention kits.
	Noise and odor nuisance	- Selection of appropriate machinery and regular servicing of machinery and vehicles. - Use and ensure the application of security measures by companies such as ear plugs and ear muffs among workers when noise levels exceed 80 dBA for 8 hours and limit the hours of exposure of workers - Apply a noise mitigation policy for all operations in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution)

	Increase in dust levels	Provide workers with appropriate dust protective gear including masks and overalls.
	Risk of persons safety in maintaining the tanks or dams (in particular risk of fall of man or cattle)	- Ensure security at the reservoirs especially at the dams' area by providing adequate protective equipment (e.g protective mesh).
	Risks of health problems due to tank water low quality or the proliferation of insects near the water points	- Do not collect the first runoff that is often heavily loaded or provide a decanter for tanks to improve the water quality; - Train communities that tank water is not consumed by the population without adequate treatment (after boiling or treatment); - Provide family sanitary kits (filters and disinfectants)
Physical and Cultural Heritage	The project activities do not generate risks related to physical and cultural heritage	The project activities do not generate risks related to physical and cultural heritage so there are no mitigation measures to plan.
Soil and land conservation	Risk of soil erosion	- Where applicable install specific measures to combat erosion (dry rock, gabions, stone bunds) - Plant sediment binding grasses, shrubs and trees on the exposed slopes and other surfaces as found appropriate.
	There is a minimal risk of soil compaction by the machinery during construction or maintenance.	- Refresh the deteriorate lands - Raise the local population awareness to strengthen the effective management of soil and land; - A close follow-up and monitoring of the implementation of all activities related to the soil and land conservation.

6. **Environmental and Social Management Plan (ESMP)**

In accordance with the Environmental and Social Policy being enforced by the Adaptation Fund, and once all projects have been reviewed pursuant to the fifteen principles, and risks and impacts have been identified for each activity, the mitigation measures should be brought forward, together with the names of persons responsible for their implementation in the Environmental and Social Management Plan (ESMP). This Plan has been jointly prepared by the implementing entity team (OSS), Regional executing entity (GWPEA) and the national executing entities, of the respective countries (Djibouti, Kenya, Sudan and Uganda).

This document highlights the following sections:

- Environmental and social management plan

- Environmental Monitoring Program
- Capacity building program

The Environmental and Social Management Plan that has been drafted up for the project incorporates specific measures to prevent and mitigate adverse environmental and social risks and impacts that have been identified in all the project activities. Mitigation measures envisaged according to the relevant risks identified are indicated. Information is included herein pertaining organizations responsible for implementing these mitigation measures and ensuring they have indeed been applied. As a part to the Environmental and Social Management Plan, and prior to their implementation, all activities should go through an environmental and social risks´ screening process (table below) and, depending upon related findings, mitigation measures should be defined that are properly discussed and disseminated with local authorities and other relevant stakeholders.

Table 5: Project activities screening in accordance with AF E&S

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
COMPONENT 1															
Activity 1.1.1.1 Assess the status of EWS in the target countries and the update options of traditional EWS with modern EW technologies	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 1.1.1.2 Develop an EWS prototype to be used at the regional and national levels		x			x		x								
Activity 1.1.1.3 Equip/upgrade selected weather stations and Remote sensing derived products, time series of bioclimatic variables, etc.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 1.1.1.4 Construct/renovate and equip EW information centers including data base		x			x	x	x		x	x		x	x		x
Activity 1.1.1.5 Support/Equip project beneficiaries (pastoralist, farmers and extension agents) to access EW information (e.g. devices including, brochure, SMS, Radio etc.)		x			x		x								
Activity 1.1.1.6 Conduct a baseline study		x			x		x								
Activity 1.1.2.1 Develop/Review EW information sharing frameworks at regional. National and sub-national levels		x			x		x								

[9] ***P1*** *Conformity with the law* ***P2*** *Access and Equity* ***P3*** *Marginalized and vulnerable groups* ***P4*** *Human rights* ***P5*** *Gender Equality and Women's empowerment* ***P6*** *Core Labor Rights* ***P7*** *Indigenous People* ***P8*** *Involuntary Resettlement* ***P9*** *Protection of natural habitats* ***P10*** *Biodiversity conservation* ***P11*** *Climate change P****12*** *Pollution prevention and resource efficiency* ***P13*** *Public Health* ***P14*** *Physical and Cultural Heritage* ***P15*** *Soil and land conservation*

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Activity 1.1.2.2 Develop an implementation action plan to operationalize the frameworks		X			X		X								
Activity 1.1.2.3 Hold inter-ministerial and sectoral meetings for data sharing					X										
Activity 1.1.2.4 Support national, regional and local EW information sharing Forums (including farmers and pastoralist associations)		X			X		X								
Activity 1.1.2.5 Support Incorporation of EW information into planning and budgeting processes of targeted countries		X			X		X								
Activity 1.1.3.1 Support regular stakeholder EW information feedback platforms for farmers and pastoralists		X			X		X								
Activity 1.1.3.2 Hold quarterly stakeholder meetings on EW information utilization for national and sub-national stakeholders		X			X		X								
Activity 1.1.3.3 Conduct KAP surveys on EW information		X			X		X								
Activity 1.1.3.4 Develop periodic feedback user friendly tools on accessing, utilizing and reporting EW information to mandated institutions		X			X		X								
Activity 1.1.4.1 Develop an emergency response plan for Drought disasters at the regional and national levels.		X			X		X								
Activity 1.1.4.2 Monitoring the EWS, feedback mechanism and its contingency plan at regional level.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 1.1.4.2 Organize training session on the use of the intervention plan for the benefit of the different actors involved at national and regional level		X			X		X								
Activity 1.1.4.3 Acquire equipment for Drought management (machines/pickup, bicycles, motorcycles,)		X			X		X								

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Activity 1.1.4.4 Implement two (2) blank operations (including regional and national levels)		x			x		x								
Activity 1.1.4.5 Acquire tools and materials to disseminate warning messages to the population (beacons, flags, sirens, signaling, speakers, telephone, local radio ...)		x			x		x								
COMPONENT 2															
Activity 2.1.1.1 Develop/update existing DMPs at national and sub-national levels integrating CC aspects and adaptation actions		x			x		x								
Activity 2.1.1.2 Popularization and Dissemination of the reviewed DMPs for use by the farmers and pastoralists		x			x		x								
Activity 2.1.1.3 Support integration of DMPs into the national and sub-national development plans		x			x		x								
Activity 2.1.1.4 Support formulation of bye-laws and ordinances at sub-national and lower political units	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 2.1.2.1 Undertake a capacity needs assessment to identify gaps and hindrances to effective drought management		x			x		x								
Activity 2.1.2.2 Develop capacity building plans for regional, national and sub-national levels	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 2.1.2.3 Develop capacity building materials	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 2.1.2.4 Undertake exchange visits and learning tours for cross learning in areas with successful drought management innovations including ground water management initiatives		x			x		x								
Activity 2.1.2.5 Train staff managing EW information centers		x			x										
Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions		x			x		x								

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach		X			X		X								
Activity 2.1.2.8 Support farmers and pastoral groups to establish learning centers for innovative Climate Smart agricultural extension services.		X			X		X								
Activity 2.2.1.1 Support review/development of MoUs, protocols and stock route agreements for Drought Management and reducing conflict between farmers and pastoralists		X			X		X								
Activity 2.2.1.2 Facilitate establishment of regional and national drought management multi-sectoral/stakeholder platforms to coordinate partner efforts	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 2.2.1.3 Support regional and national partners to jointly mobilize resources for Drought Management in a changing climate context	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COMPONENT 3															
Activity 3.1.1.1 Undertake assessment on surface water utilization/potential/availability and develop water Management Plans in project sites		X			X		X								
Activity 3.1.1.2 Construct appropriate, innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, valley dams, rock water harvesting, roadside water harvesting facilities, water ponds, and locally dug underground tanks, deep and shallow wells		X			X	X	X	X	X	X	X	X	X		X
Activity 3.1.1.3 Construct mini-irrigation and water delivery systems (e.g. gravity flow scheme, micro-irrigation systems, check dams, drip irrigation borehole irrigation and solar powered irrigation systems)		X			X	X	X	X	X	X	X	X	X		X
Activity 3.1.1.4 Support protection of water wells and springs to ensure quality, quantity and efficient water use		X			X	X									

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Activity 3.1.1.5 Promote appropriate soil and water conservation measures (e.g. terraces, contours, conservation/minimum tillage, pit gardening, Zai pits and home gardening)		X			X	X	X	X	X	X	X	X	X		X
Activity 3.1.2.1 Undertake assessment on ground water utilization/potential/availability and develop groundwater Management Plans in project sites		X			X		X								
Activity 3.1.2.2 Review/develop regulatory framework and guidelines on ground water sources		X			X		X								
Activity 3.1.2.3 Restore degraded water catchments to improve recharge rates of ground water					X	X	X					X	X		X
Activity 3.1.3.1 Promote fast growing and drought resistant crop varieties (e.g. varieties in Graminae and Leguminocae families									X						
Activity 3.1.3.2 Promote agrisilvopastoral systems (dryland agroforestry) (e.g. fast growing multi-purpose tree species such as Acacia mearnsii, integrated with crops and livestock rearing)									X						
Activity 3.1.3.3 Provide in puts for irrigated agriculture technologies (Drip irrigation, small irrigation etc.)		X			X		X								
Activity 3.1.3.4 Promote climate smart agricultural practices		X			X		X			X					X
Activity 3.1.4.1 Promote improved rangeland management practices (e.g. developing of rangeland management plans, reduction livestock stocking, integrated pest and disease management)		X			X		X			X					X
Activity 3.1.4.2 Support introduction of drought tolerant livestock breeds		X			X		X			X					
Activity 3.1.4.3 Promote hydroponic systems for growing nutritious fast growing cereals for livestock (animal feeds)		X			X		X								
Activity 3.1.4.4 Support farmers and pastoralists to prepare high value silage and hay for livestock during dry spells		X			X		X								
Activity 3.1.4.5 Support formation/facilitate existing livestock		X			X		X								

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
associations/groups/cooperatives at community level															
Activity 3.1.5.1 Introduce and promote Index-based weather insurance in partnership with insurance companies															
Activity 3.1.5.2 Conduct drought risk assessments on the agriculture value chain		x			x		x								
Activity 3.1.5.3 Facilitate farmer and pastoralists associations/cooperatives to generate, analyze and share market information.		x			x		x								
Activity 3.1.5.4 Create linkages between farmer and pastoralists associations/cooperatives at regional, national and sub-national levels to enable sharing of market information		x			x		x								
Activity 3.1.6.1 Support women and youth groups with in puts for IGAs including (e.g. growing of sisal and Aloe vera to support rope production and art crafts; bee keeping; briquette making; keeping of local poultry (e.g. Kroilers) and community tourism															
Activity 3.1.6.2 Provide competitive small grants targeting small holder farmers and pastoralist associations to undertake innovative IGAs or drought adaptation actions															
Activity 3.1.6.3 Provide inputs for value addition crop and livestock products		x			x		x								
COMPONENT 4															
Activity 4.1.1.1 Document lessons and best practices from project interventions	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Activity 4.1.1.2 Generate and package information dissemination materials on EW, CC and drought adaptation actions in forms for easy uptake(e.g. policy briefs, brochures) adapted to the various stakeholders		x			x		x								

Component/Activity	P1[9]	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Activity 4.1.1.3 Disseminate/share knowledge and information through use of existing and popular platforms e.g. electronic and print media, telecom that are easily accessible by the stakeholders.		x			x		x								
Activity 4.1.2.1 Support existing channels/networks for information generation and dissemination at regional level (e.g. GHACOF for EW and IDDRISI for drought management platform and national platforms)		x			x		x								
Activity 4.1.2.2 Engage policy makers in dissemination of drought management information and best practices					x		x								
Activity 4.1.2.3 Support drought management working groups to share and disseminate the information		x			x		x								
Activity 4.1.2.4 Develop gender responsive and scale-up strategies for drought, CC and early warning technologies among women, and other vulnerable groups		x			x		x								

Legend

	Unidentified risk for USPs
NA	Not applicable - No generated risk
X	Risks identified according to the corresponding AF ES Principle

6.1 E&S management plan

Based on the precautions and effective measures to be put in place to ensure good management of the environmental, social and safety impacts and the sustainability of the project, this plan gives the guidelines for an efficient consideration of environmental and social concerns. This Environmental Management Plan includes activities that are nothing more than the remedial measures proposed for the successful completion of the project in environmental and social terms. It has been presented here in tabular form with activities, impact indicators, types and mechanisms of monitoring as well as those responsible for monitoring and surveillance. The various measures presented here are to be added to the specifications of the proponent who will be prepared for the implementation of the project of integration of the measures of adaptation to climate change in the targeted countries, because, an integral part of the project. The implementation of this plan is coordinated by the OSS, the Regional and national Executing Entities in collaboration with the technical structures in charge of the evaluation and rescue of the environment (respective NEMA institutions within the four countries).

Table 6: E&S management Plan

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
1- Conformity with the law	The fully identified project activities will not generate risks. Only unidentified activities or sub-projects particularly Income Generating Activities (IGAs) undertaken in the component 3 may require a specific EIA depending on the size and the location of the implementation to comply with national standards and laws.	The fully identified project activities do not generate risks related to conformity with the law so there are no mitigation measures to plan.			
2- Access and Equity	Project beneficiaries will be in general rural people (pastoralists and smallholder farmers) who have difficulties to access to the decision-making process, this may limit their opportunities to benefit from projects outcomes. Women and youth are characterized by poor access to land and related resources over agricultural production. These findings imply that there is limited capacity to cope due to high levels of poverty and dependency among the women and youth and may limit their opportunities to benefit from projects outcomes.	- Consultation workshops; - Close monitoring of the project beneficiaries to assure equal access of men; women, youth and the most vulnerable; - Grievance mechanism.	- Nb of workshops -Nb of participants to these workshops and gender distribution - Nb of complaints	OSS GWP NEE	It is incorporated in the investment cost of the project
3- Marginalized and vulnerable groups	Insufficient knowledge and access/use of technological devices such as mobile phones or lack of good cellular connectivity specially required in component 2 on Early Warning System design and implementation.	To avoid the exclusion of marginalized and vulnerable communities in order to disseminate and broadcast the warning messages in case of natural disaster, local radio channels and traditional practices such as speakers, maps and sirens will be implemented to reach them.	-Nb/ Frequency of radio awareness campaigns per day (in local language) - Nb of indication panels put in place	OSS GWP NEE	It is incorporated in the investment cost of the project
	During construction activities, risk of reducing or prohibiting the temporary access of certain populations, especially women, to the resources on which they depend (pastures, water, fruit trees, crops, fishing grounds, forest, public services)	- Organize consultation meetings with local administrative and customary authorities and steering committees representing communities and indicate that any activity limiting access to resources or sources of income will be	- Nb of workshops - Nb of participants in these workshops and gender distribution	OSS GWP NEE	

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
		analyzed and lead to an agreed community plan for work/construction implementation. All activities implementation must be decided in common with consultation of all concerned communities; - Grievance mechanism	-Validation of the process for selecting the intervention area - Nb of complaints		
	Component 3 involves setting up a competitive small grant scheme (CSGS) for undertaking innovative climate change adaptation interventions. Given the funds available dedicated to the small grants, it is hard to cover all the beneficiaries.	Funds distribution will be based on a set of agreed community selection criteria to avoid exclusion and inequity Grievance mechanism	- Nbr of people belonging to the marginalized groups benefiting from grants - Nb of complaints	OSS GWP NEE	It is incorporated in the investment cost of the project
4- Human rights	The project activities do not generate risks related to human rights.	The project activities do not generate risks related to human rights so there are no mitigation measures to plan.			
5- Gender Equality and Women's empowerment	The cultural and social norms of the project region lead to a greater role for women to question male dominance and claim their role in decision-making. So, there is a risk that women will not benefit equitably from the proposed adaptation measures and the capacity building interventions due to men leadership.	- Ensure the presence of women and young people in workshops and trainings; -Communication and sensitization of the population on the gender issue to ensure gender parity in income-generating activities; - Grievance mechanism.	-% of women and youth participating in workshops and trainings -% of women beneficiaries of IGAs - Nb of complaints	OSS GWP NEE	It is incorporated in the investment cost of the project
	Under component 3, it is intended to provide competitive small grants targeting small holder farmers and pastoralist associations including women to improve their livelihoods. There is a risk of gender inequality if the Fund does not provide facilities for women's access to the scheme due to social norms and pressures linked to men leaderships.	A series of measures (e.g. involvement in consultation process, selection criteria) will be incorporated to ensure that both, men and women, have access to this scheme, taking into account that, traditionally, women have less access to control of economic resources. Grievance mechanism	- Nbr of women and youth benefiting from grants - Nb of complaints	OSS GWP NEE	It is incorporated in the investment cost of the project

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
6- Core Labor Rights	Risk of accidents and occupational hazards during the project preparation and implementation.	- Sensitize workers and populations to the risks related to the undertaken activities; - Design and implement safety measures and emergency plans to contain accidents risks and ensure the application of safety standards by companies (equipment, signs, training, etc.); - Provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable	- Nb of training sessions on the risks related to construction sites -Nb of participants to these sessions and gender distribution -% of companies that comply with safety standards - % workers equipped with protective clothing	OSS GWP NEE	It is incorporated in the investment cost of the project
	Risk of late or unpaid salaries or remuneration non- compliant with the countries labor legislations and laws. Risk of Children's labor. Risk of Remuneration inequity between men and women.	- Salaries in line with regional practices and defined with national entities; - Close follow-up and monitoring of the worksites by the national executing entities including schedules, activities progress, respect of the labor and safety rights of workers and conformity with national labor codes.	-Signature of people involved in works ; - % of spot checks validated		
7- Indigenous People	The project activities will generate the same risks on Indigenous people as the risks on all project communities. There will be no major risk on their assets, resources, culture, land and rights. The main risks that could raise are related to the ways they use water resource, transhumance routes, livestock management, agricultural practice etc.	- Involvement of indigenous people representatives at all project stages (development, implementation, monitoring and decision-making process) - Detailed analysis will be carried out by local and national agencies to understand the traditional use of natural resources especially regarding to water and land use.	-% indigenous people involved -Nb of studies/ analysis carried out	OSS GWP NEE	It is incorporated in the investment cost of the project
8- Involuntary Resettlement	The construction of appropriate and innovative water harvesting and storage infrastructure as well as mini-irrigation and water delivery systems will occupy spaces and may affect private lands or related activities.	The review process for these activities will include criteria that stipulate no resettlements. The project will opt for state-owned lands and if needs be, compensation measures will be arranged for used private lands owners.	- Nb of beneficiaries affected by the project activities ; -% of beneficiaries affected and offset through IGAs	OSS GWP NEE	It is incorporated in the investment cost of the project

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
9- Protection of natural habitats	The presence of labor and construction equipment, if this is necessary for carrying out the works or activities planned by the project, could have an impact on the fauna and flora of certain intervention sites. The implementation of solar-pumped boreholes, water harvesting and storage infrastructure (e.g simplified water tanks, water jars, sunken dams, micro-dams, sand dams, water pans, etc) can result in the vegetation and wildlife habitats destabilization in the implantation site.	- Follow-up of the implementation of all activities related to the protection and management of ecosystems and natural habitats; - Establishment of E&S Impact Assessment Studies; - Policies and laws to protect natural habitats will be screened with the stakeholders to ensure that the critical habitats are legally protected; - Sensitization sessions to local populations on good environmental practices and the protection of natural habitats.	-Nb of monitoring reports including specific section on activities related to the protection and management of ecosystems - Nb of E&S impacts assessments -Nb of stakeholders meetings around the implementation of policies and laws on the protection of natural habitats -Nb of awareness sessions on the protection of the ecosystems -Nb of participants to these sessions and gender distribution	OSS GWP NEE	It is incorporated in the investment cost of the project
10- Biodiversity conservation	Vegetation clearance for water harvesting and storage sites construction may represent a form of disturbance for bird habitat and wildlife	- Follow-up and monitor the implementation of all activities related to the protection and management of ecosystems; - Minimize vegetation clearance as Low as Reasonably Practical (ALARP); - Avoid cutting large trees with a diameter >20cm; - Promote planning for activities of biodiversity conservation such as Compensatory reforestation; - Pre-survey the proposed construction site areas to avoid sensitive habitats that have high diversity of indigenous	-Nb of monitoring reports including specific section on activities related to the protection and management of ecosystems -% reforested land in relation to deforested land -Nb surveys established - % of surveys indicating that the area has high diversity of indigenous plants	OSS GWP NEE	It is incorporated in the investment cost of the project

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
		plants; - Promote awareness sessions, capacity building and peer learning to strengthen the efficient management of natural resources, including aquatic species, animals and forests.	-Nb of awareness sessions on the protection of the ecosystems -Nb of participants in these sessions and gender distribution		
11- Climate change	A potential change of the land use due to the field clearing to construct innovative water harvesting and storage infrastructure (e.g. simplified water tanks, water jars, sunken dams, micro-dams, etc) the may generate the sequestration decrease.	Promote reforestation to offset these used lands	% reforested land in relation to deforested land	OSS GWP NEE	It is incorporated in the investment cost of the project
12- Pollution prevention and resource efficiency	Potential contamination of water reservoir through introduction of impurities, wastewater and solid waste.	- Conduct regular water quality monitoring and maintenance of the water supply system as well as ensure the monitoring of water quality by chemical analysis; - Awareness improvement on water Resource management and conservation through cconsultation workshops; - Separate the infrastructures for human and animal use and provide a specific facilities for the watering of livestock near the tanks.	-Nbr of conformity certificates issued ; -Nb of awareness sessions on water Resource management and conservation -Nb of participants in these sessions and gender distribution - Nb of facilities set up near each tank for the watering of livestock	OSS GWP NEE	It is incorporated in the investment cost of the project
	Increase in dust levels	- Limit levels of dust through good practice such as watering of access routes, construction sites, and other disturbed sites; - Cover lorries transporting construction materials	% companies applying measures to limit the dust level increase		
	Vandalism of water pipelines infrastructure, Wastage of water and leakages at consumer points	- Creation of awareness on water Resource management and	-Nb of awareness sessions on water Resource management and conservation		

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
		conservation through Consultation workshops; - Creation and Implementation of a Social Engagement Plan – SEP	-Nb of participants in these sessions and gender distribution -Nb of frauds related to vandalism		
	Over abstraction of water	- Irrigation system installed and fully monitored - Irrigation schedule controlled	Nb of frauds and irregularities		
	Air pollution by gas emissions from machinery during field work or consultants and various stakeholders' vehicles during workshops and field visits. Generation of waste related to the presence of the workers, construction engines, and equipment, etc. during the execution of the project different activities.	- Reduce gaseous emissions by selection of appropriate machinery and regular servicing of vehicles; - Incite to use a good quality fuel meeting the standards. - Recycling wastes/ recycling and composting could be an USP; - Waste management plans for construction sites.	-Nb of waste management plans -Quantities/volumes of recycled wastes – Quantities/volumes of compost produced		
13- Public Health	Water storage constructions may lead to water-related diseases (such as Malaria) increase	- Raise awareness and support mechanisms to prevent and control spread of water related diseases such as Malaria and Bilharzia among the program workers and local communities - Implement disease awareness and management programme for Malaria and Bilharzia	- Nb of awareness sessions on diseases -Nb of participants in these sessions and gender distribution - Nb of programmes translated in local language and distributed	OSS GWP NEE	It is incorporated in the investment cost of the project

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
	The presence of workers at construction sites near the project beneficiary villages could increase the risk of spread of sexually transmitted diseases (STD) especially that most vulnerable members of communities among the smallholder farmers and pastoralists in the proposed project areas are women, youth and People Living with HIV/AIDS (PLWHAs).	Prevent and control spread of HIV/AIDS among the program workers and local communities, by organizing sensitization sessions and distributing prevention kits.	- Nb of awareness sessions on diseases -Nb of participants in these sessions and gender distribution -Nb of workers provided by prevention kits		
	Noise and odor nuisance	- Selection of appropriate machinery and regular servicing of machinery and vehicles. - Use and ensure the application of security measures by companies such as ear plugs and ear muffs among workers when noise levels exceed 80 dBA for 8 hours and limit the hours of exposure of workers - Apply a noise mitigation policy for all operations in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution)	-% companies complying with labor safety - Nb of working hours per day (Conformity)		
	Increase in dust levels	Provide workers with appropriate dust protective gear including masks and overalls.	-% of workers provided with the appropriate tools		
	Risk of persons safety in maintaining the tanks or dams (in particular risk of fall of man or cattle)	Ensure security at the reservoirs especially at the dams' area by providing adequate protective equipment (e.g protective mesh).	-% reservoirs equipped with security measures -Nb of security measures set up at each reservoir		
	Risks of health problems due to tank water low quality or the proliferation of insects near the water points	- Do not collect the first runoff that is often heavily loaded or provide a decanter for tanks to improve the water quality; - Train communities that tank water is not consumed by the population without	-Nb of trainings on the risks of low water quality -Nb of participants and gender distribution		

E&S principles Checklist	Potential impacts	Mitigation Measures	Indicators	Responsible	Cost (USD)
		adequate treatment (after boiling or treatment); - Provide family sanitary kits (filters and disinfectants)	- Nb of families provided with sanitary kits for water purification		
14- Physical and Cultural Heritage	The project activities do not generate risks related to physical and cultural heritage	The project activities do not generate risks related to physical and cultural heritage so there are no mitigation measures to plan.			
15- Soil and land conservation	Risk of increased soil erosion	- Where applicable install specific measures to combat erosion (dry rock, gabions, stone bunds) - Plant sediment binding grasses, shrubs and trees on the exposed slopes and other surfaces as found appropriate.	- Nb of soil and water conservation measures	OSS GWP NEE	It is incorporated in the investment cost of the project
	There is a minimal risk of soil compaction by the machinery during construction or maintenance.	- Refreshment of the deteriorate land - Raise the local population awareness to strengthen the effective management of soil and land; - A close follow-up and monitoring of the implementation of all activities related to the soil and land conservation.	-% refreshed land in relation to compacted land -Nb of awareness sessions on the effective management of soil and land -Nb of participants in these sessions and gender distribution		

6.2 Environmental Monitoring program

Environmental and social monitoring will be mainstreamed in the overall Monitoring and Evaluation (M&E) system of the DRESS-EA Project. Environmental monitoring of sub-projects will be undertaken at different levels. EA In-house Environmental/Social Experts will be responsible for day-day supervision and monitoring of implementation of environmental and social safeguards and preparing routine Reports. Also trained persons at lower local government levels will, depending on the scale or scope of the projects, undertake the monitoring exercises in sequences and frequencies stipulated in the Project Implementation Schedule including where appropriate a Maintenance Schedule. The regulatory Agencies in each country will mainly carry out "spot checks" to ensure that implementation of mitigation measures is done satisfactorily.

Supervision arrangements for the ESMP shall summarize key areas on which supervision will focus—critical risks to implementation of the ESMP, how such risks will be monitored during implementation and agreements reached with the key stakeholders including contractors. Supervision of the ESMP, along with other aspects of the project, covers monitoring, evaluative review and reporting and is designed to:

- Activity 1: to ensure the application of mitigation and maximization measures in this ESMP
- Activity 2: to carry out regular inspections on the work site and report any non-conformities to the site manager
- Activity 3: identify, in collaboration with the site manager, the alternative measures to be put in place in order to solve any unforeseen problems that may arise during the works
- Activity 4: to ensure that the works are carried out in accordance with the environmental requirements of the beneficiary States and the FA

It is vital that an appropriate environmental supervision plan is developed with clear objectives to ensure the successful implementation of this ESMP.

Implementing Entity

The E&S committee of the OSS, the Implementing Entity, will be responsible for ensuring the implementation of the ESMP and the application of the methodology described here above. Besides, for the USPs, this committee will be in charge of deciding whether ESIA studies are necessary or not when risks happen and this according to its Environmental and Social principles as well as those of the AF. Additionally, National Environmental Authorities may be involved to deliver conformity certificates (if applicable) and/or just for seeking opinion and comments. Finally, OSS will ensure the effective implementation of the mitigation measures identified in the ESMP during its supervision missions. Nevertheless, it could organize specific assignments to assess the complaints submitted by local communities.

Regional Executing Entity (REE)

The regional monitoring of the project activities will be carried out by the GWP-EA. This REE will be responsible for the supervision of the National Executing Entities activities related to monitoring the ESMP at local level. On a quarterly basis, the REE will gather the reports from the National Executing Entities, who will rely on a bottom up feedback system based also on community inputs. In order to ensure a relevant monitoring regular field visits to inspect and verify on the one hand the efficiency of the mitigation measures and on the other hand to check the extent of the foreseen impacts. A yearly monitoring report will be developed and submitted to OSS as a RIE. Given that the project is regional, the impacts may also be regional and the limited competencies of the national entities could make the monitoring of these impacts inadequately implemented. The GWP-EA as REE will be responsible of taking this dimension into account in order to identify these impacts and ensure that each country makes the necessary follow-up. Also, the REE will take the measures to ensure that the regional dimension is taken into account in the assessment of the USPs if required. The implementation of these transboundary measures will be reviewed during the analyses of the quarterly reports sent by the national entities. If the monitoring is not adequately ensured, the GWP-EA will inform the national entities and the RIE to take the necessary measures in a concerted manner. In addition, the REE and the RIE will carry out regular field missions for close monitoring of risks, impacts and mitigation measures, especially those with a regional connotation. In this context, the involvement of all implementing and executing entities is necessary to ensure adequate monitoring of mitigation measures at the local, national and regional levels. Their involvement mainly necessary for monitoring the cross-border impacts that are the most difficult to follow. A half-yearly monitoring report will be developed by the REE and submitted to OSS as a RIE.

National Executing Entities (NEE)

The NEE will be responsible for coordinating and monitoring environmental and social indicators. The NEE will be also in charge of analyzing data, managing local information systems and supervising the baseline establishment at project starting phase. As regards to the unidentified sub-projects the NEE will be responsible for conducting the ESIA according to the national standards and laws and will then work closely with local authorities to develop the relevant ESMPs for each intervention sites. Finally, the NEE will prepare quarterly based reports and submit them to the REE.

Local Communities

The ESIA monitoring will also include a community-based component. In fact, the project plans to carry out training and capacity building sessions for the benefit of local agents and communities, in data collection and monitoring. During all the consultative workshops and meetings related to activities execution, capacity building and training the representatives of ethnic groups and indigenous people will be

involved in an active way. They will be informed about the activity risks and will be involved in the implementation and monitoring of mitigation measures.

Actor Involved	Responsibility/Role
Implementing Entity (OSS)	OSS will be committed to adherence to AF standards and ESP principles and will implement mitigation measures as part of the ESMP.
Regional Executing Entity (GWP-EA)	Monitor and disseminate the ESIA / ESMP, in particular its grievance mechanism, among relevant stakeholders and beneficiaries. Ensure that the implementation of the project complies with applicable national and standard regulatory frameworks. And monitor the implementation of ESMP activities and evaluate the effectiveness of the mitigation measures put in place.
National Executing Entities (Ministries)	The project coordinator at the national level will direct the day-to-day implementation of the project and ensure regular monitoring, identifying any new potential risks for society and / or the environment during the project implementation, so that measures of support and appropriate attenuation can be implemented to be adopted on time.
Local Communities/ Project Partners	Provide information on potential new social / environmental risks that may arise during the implementation of the project. Assist in the implementation and monitoring of mitigation measures based on their expertise.

As part of the monitoring of the implementation of the DRESS EA ESMP, it is important to carry out an annual monitoring and evaluation mission of the application of the environmental measures foreseen in the ESMP in order to detect any unforeseen impacts. The reports produced by the national technical structures should be transmitted to the structures involved in the implementation of the ESMP as well as to the FA.

The costing of the measures took into account the most important elements of the environmental management plan. The gender and gender issues will be respected in carrying out the different project activities in accordance with the E&S policy of the FA and the OSS. Moreover, in the case of a problem related to Environmental and Social Management, the population has at its disposal a grievance mechanism relating to the project through which it can express its claims. Given this, the total cost of implementing the Environmental and Social Management Plan for interventions in the framework of the implementation of the DRESS EA project activities amounts to three hundred thousand (US $ 300,000).

6.3 Capacity building program

The preparation, implementation and monitoring and evaluation envisaged in this project are based on a system of organization that involves the contribution of several categories of interventions, particularly the structures mentioned above. This will create the right conditions for better results. The table below shows the cost of the capacity building program for these actors.

Table 7: Stakeholders capacity building program

Topic	Target entities	Implementing entities	Indicators	Timing	Cost (USD)
Training on environmental monitoring	GWP 4 NEE	OSS	Nb of training sessions Nb of trained persons	Project start	20 000

Annex 5 : Training and capacity building of the project

Table 1: Trainings planned by the DRESS-EA Project

Component	Specific Training Theme/Activity	Stakeholders	Training Methods	Responsible Persons	Timelines (Years)			
					1	2	3	4
Component 1: Development and enhancement of a regional Drought Early Warning System	Activity 1.1.4.2 Organize training sessions on the use of the intervention plan for the benefit of the different actors involved at national and regional level	• Pastoralists and crop farmers in the project sites • Focal Executing Country entities, • ICPAC • Staff from Departments of Meteorology	• Training workshops • Presentations and discussions	• GWPEA, • Focal Executing Country entities				
Component 2: Strengthening capacity of stakeholders to manage drought risks due to climate Change	Activity 2.1.2.4 Undertake exchange visits and learning tours for cross learning in areas with successful drought management innovations including ground water management initiatives	• Pastoralists and crop farmers in the project sites • Focal Executing Country entities	• Field excursion • Practical demonstrations • Case studies	• GWPEA, • Focal Executing Country entities				
	Activity 2.1.2.5 Train staff managing EW information centers	• ICPAC, • Executing Country entities, • Staff from Departments of Meteorology	• Training workshops • Presentations and discussions • Practical demonstrations	• GWPEA, • Focal Executing Country entities				
	Activity 2.1.2.6 Train extension staff and artisans in drought adaptation interventions	• District/County/ • Sub national level government Extensionists • Focal Executing Country entities	• Field excursion • Practical demonstrations • Training workshops • Presentations and discussions	• GWPEA, • Focal Executing Country entities				
	Activity 2.1.2.7 Facilitate community training workshops for farmers and pastoralists in drought risk management and adaptation measures utilizing the farmer field school approach	• Different actors per country • Pastoralists and Farmers in the project sites	• Training workshops • Practical demonstrations	• GWPEA, • Focal Executing Country entities				
Component 3: Drought and Climate Change adaptation actions	Activity 3.1.4.4 Support farmers and pastoralists to prepare high value silage and hay for livestock during dry spells	• Farmers and Pastoralists • District/County/ • Sub national level government • Extensionists • Focal Executing Country entities	• Training workshops • Practical demonstrations	• GWPEA, • Focal Executing Country entities				

Table 2: Topics for the training

Objective of the training	Topics of the ToT and Module	Number of Trainings	Persons to be trained to become a trainer	Persons to be trained by ToTs
To impart knowledge and skills to stakeholders on EWS operation and management including real time, data collection, processing and communication of the results and actual "warning"	1. Early Warning Systems (EWS) • Weather and Climate • Multihazard early Warning Systems • Types/forms of data • Data collection analysis and • Communication	• 8 initial Training sessions at national level • 8 follow up training sessions	Different actors involved in Multi-hazard Early Warning including those that focus on drought e.g. Staff from the Department of Meteorology, Ministries, Decentralized governments e.g. Environment and natural resources Officers.	Local communities (men, women and youth), both crop farmers and pastoralists in project sites
To impart knowledge and skills to stakeholders in resilient catchment management techniques so as reduce the vulnerability to climate change aggravated drought.	2. Water catchment restoration and water resources management • Water harvesting and storage technologies • Water source protection and management • Irrigation and water balance • Water and soil conservation measures • Water catchment restoration techniques	• 3-year annual training sessions	Ministries and Extension staff at local government, Artisans, Community Development Officers, Local leaders and Catchment Management Committee members	Local communities (men, women and youth), both crop farmers and pastoralists in project sites Local communities (men, women and youth), both crop farmers and pastoralists in project sites
To impart knowledge and skills to stakeholders in resilient crop, and livestock management technologies.	3. Resilient Cropping and livestock systems in drought prone areas (Crop varieties, • Agrisilvopastoral systems • Rangeland management • Hydroponic systems and hay production	• 3-year annual training sessions	Ministries and Extension staff at local government, Artisans, Community Development Officers, Local leaders and Catchment Management Committee members	Local communities (men, women and youth), both crop farmers and pastoralists in project sites
To impart knowledge and skills to stakeholders in drought risk management through engaging in resilient alternative IGAs, insurance, value addition and marketing.	4. Drought risk management • Index-based weather insurance • Income Generating Activities (e.g. Apiculture and Briquettes making) • Value addition and marketing	• 3-year annual training sessions per country	Ministries and Extension staff at local government, Artisans, Community Development Officers, Local leaders and Catchment Management Committee members	Local communities (men, women and youth), both crop farmers and pastoralists in project sites

Annex 6: NATIONAL TECHNICAL STANDARDS OF PROJECT BENEFICIARIES' COUNTRIES

Djibouti

Legal framework		
Policy	**Purpose of the Policy**	**Relevance to the Project**
Law No. 51 / AN / 09 / 6th L Bearing Code of the Environment	This environmental code aims at establishing terms and guidelines for sustainable management and development that respect the environment and ensure the equilibrium of ecosystems, the sustainability of natural resources and a life of good quality.	Although the project is low risk to the environment, environmental and social safeguards are planned. These measures will be aligned with the provisions of this law. Component 3 (drought adaptation actions and climate change) aims at increasing resilience of smallholder farmers and pastoralists by supporting them to undertake concrete innovative and appropriate sustainable land, water, crops and livestock management measures or technologies
Decree No. 2001-0011 / PR / MHUEAT defining the procedure of environmental impact study	In application of the law No. 106 / AN / 00 / 4th L on the framework law on the environment, this decree aims to establish the national procedure in the matter of environmental impact assessment. Any activities likely to induce negative impacts on the environment must be the subject of a preliminary impact study.	The impact studies/notices will be taken into account during the execution of the project to comply with the directives and procedures established by this Decree.
Law No. 93 / AN / 95 / 3rd L Bearing Code of Water	The purpose of this code is the protection of the aquatic environment, the preservation of the common water resource (surface water and groundwater) and the conciliation in the interest of all of the different uses. It aims to allow balanced management of the water resource, its reasonable and equitable use and the harmonization of the rules governing its use by the public or private persons.	The development of surface water and groundwater management plans at the project sites, covered by **activities 3.1.1.1** of output 3.1.1 (innovative water and soil conservation structures) and **3.1.2.1** of output 3.1.2 (groundwater sources), passes by the guarantee of the preservation of the waters as well as the conservation and the free flow of the waters; protection against any pollution of water quality, especially underground; meeting the demands of agriculture and the pastor, the fight against waste and over-exploitation and the prevention of the harmful effects of water.
Decree No. 2013-110 / PR / DFAIT establishing the National Early Warning and Reaction Mechanism for Pastoral and Urban Conflicts	This decree establishes a National early warning and response mechanism for pastoral and urban conflicts (CEWERU) at the Ministry of foreign affairs and international cooperation.	In the project implementation areas, migration and food insecurity, pasture losses and the risk of conflicts between pastoralists and farmers are high because for many reasons, including drought. To mitigate this risk of conflict, the project aims to put in place an early warning mechanism enabling the community to take appropriate measures regarding the adverse

		effects of drought, as recommended in **activity 1.1.1.1** of output 1.1.1 (efficient and effective DEWS). Also, the **activities 3.1.4.1** of output 3.1.4 (adaptive livestock and rangeland practices enhanced) and **3.1.1.5** of output 3.1.1 (innovative water and soil conservation structures) tend to promote better pasture management practices through the development of pasture management plans, reduction of livestock seeding and disease management.
Decree No. 2006-0192 / PR / MID setting up an institutional framework for risk and disaster management	This is the decree of application of the law No 140 / AN / 06 / 5th L on the national policy of risk and disaster management. Risk and disaster management is part of the overall framework of protection and security activities. It is based on integrated and comprehensive procedures that include prevention, warning, preparedness, management, relief, recovery and development measures. The risk and disaster management plans include the general risk and disaster management plan; the support plans for specific risks; the emergency organization plans; the emergency plans. They define the priorities and priorities for risk and disaster management in the short, medium or long term.	This project innovatively harnesses, develops and enhances the communication channels and linkages, develops new and upgrades existing tools and technologies for various stakeholders including smallholder farmers and pastoralists in the focal countries. The **activity 1.1.4.1** of output 1.1.4 (emergency plan for drought management) provides for the development of a regional and national drought contingency plan at the regional and national levels and the **activity 2.1.1.1** of output 2.1.1 (drought management plans (DMPs) integrating climate change aspects and adaptation actions) to develop/update existing drought management plans (DPMs) at national and sub-national levels by integrating climate change aspects and adaptation actions.
Technical standards		
Decree No. 2000-0032 / PR / MAEM made under Law No. 93 / AN / 95 / 3rd L of April 4, 1996 concerning the Water Code, relating to the procedures of declarations, authorizations and concessions	The abstraction and use of water (underground or superficial) from the public hydraulic domain for non-domestic purposes by means of any installation or work must be declared to the administration in charge of the hydraulic if the sampling capacity is greater than 1m3/h whether it is groundwater or whether it is surface water. No work may be done on or over the bed or over a watercourse, whether or not it alters its regime, no diversion or withdrawal of public water with a flow rate greater than 10 m3/h, in particular for groundwater, in any manner whatsoever and for any purpose whatsoever, by removing them momentarily or permanently from their course or from their deposit or deposit, cannot be made without authorization granted by decision of the Commissioner of the Republic taken after investigation and after opinion of the technical services, following a request.	Regulations on the use of watercourses and on groundwater and surface water withdrawals for agricultural purposes are useful for **activities 3.1.1.1** and **3.1.1.3** and **3.1.1.5** of output 3.1.1 (innovative water and soil conservation structures) of the project.

Decree No. 2000-0031 / PR / MAEM taken in application of the law No 93 / AN / 95 / 3rd L bearing the Code of the water, relating to the fight against the water pollution	This decree describes the standards of discharges, discharges, jets, direct or indirect deposits of water or negligible substances of harmfulness and, more generally, any fact likely to alter the quality of the superficial or underground water. It announces the conditions to which releases are subordinated. It gives the thresholds and conditions of the vulnerability of the environment or the resource.	Through the thresholds and the conditions of vulnerability of the environment that it recommends, this decree provides a more specific view of the standards and the way of protection of wells and springs, expected in **activity 3.1.1.4** of output 3.1.1 (innovative water and soil conservation structures), in order to guarantee a rational use of quality water, in quantity and efficiency.
Order No. 74-2012 / SG / CD making decision No. 74 / 8 L concerning the protection of groundwater and surface water, enforceable	This decree launches resolution No. 74 / 8 L on the protection of groundwater and surface water. Sampling works and those likely to deflect and slow the free flow of natural surface water are subject to prior authorization. Provision is also made for periodic inspection of these works.	The development of surface water and groundwater management plans at the project sites, as indicated by **activity 3.1.1.1** of output 3.1.1 (innovative water and soil conservation structures constructed) and **activities 3.1.2.1** and **3.1.2.3** of output 3.1.2 (groundwater sources), may be conditioned by the application of this decree. In fact, it protects surface water and groundwater by controlling and restoring watersheds in order to improve their indicated recharge and operating rates.

Kenya

Legal framework		
Policy	**Purpose of the Policy**	**Relevance to the Project**
Environmental (Impact Assessment and Audit) Regulations, 2003 (Cap. 387)	These regulations, made under section 147 of the Environmental Management and Co-ordination Act, contain rules relative to content and procedures of an environmental impact assessment in the sense of section 58 of the Act, contain rules relative to environmental impact audit and monitoring and strategic environmental assessment and regulate some other matters such as appeal and registration of information regarding environmental impact assessment.	The project will comply with these regulations during the assessment of USPs and their mitigation measures.
Environmental Management and Coordination (Public Complaints Committee) Regulations, 2012 (L.N. No. 112 of 2012)	These regulations concern lodging of complaints relating to any matter set out under section 32 of the Act with the Public Complaints Committee established under section 31 of the act and the handling of such compliant by the Committee. These Regulations shall apply, as far as practicable to allegations investigated by the Committee on its own initiative.	In accordance with this procedure, the project grievance mechanism provides affected persons by adverse environmental, social and gender impacts and harms resulting from its activities, with an accessible, transparent, fair and effective process for the submission and processing of their complaints. The project grievance was designed in line with the provision of this Law.
Water Act, 2016 (No. 43 of 2016)	This act provides for the regulation, management and development of water resources and water and sewerage services in line with the constitution.	Among the specific interventions for climate change and adaptation to drought, the project foresees in output 3.1.1 (innovative water and soil conservation structures) the development of water and soil conservation structures **(activity 3.1.1.5),** the recovery of water and storage structures, for example jars of simplified water, recovery of rock water, construction of sand dikes and ponds **(activity 3.1.1.2)** And support the protection of wells and water sources to ensure the quality, quantity and efficient use of water by providing inputs, such as live markers around wells **(activity 3.1.1.4).** These activities will be conducted according to the provision of this Act.
Crop Production and Livestock (Livestock and Controlled Areas) Rules	These rules, which shall apply to specific areas, regulate the inspection, branding and keeping cattle and camels, sheep, goats, horses, mules, donkeys and swine, and the weaned young thereof.	These are plant and animal production rules, applicable in several areas, including the Kitui area, which is the subject of this project. Regulation of livestock ownership is essential for the smooth running of the **activity 3.1.4.1** of output 3.1.4 (adaptive livestock and rangeland practices).
Fertilizers and Animal Foodstuffs (Approved	These rules give an insight into Kenyan government-approved animal feeds.	As the project seeks, through its **activity 3.1.4.3** of output 3.1.4 (adaptive livestock and rangeland practices enhanced), to

Animal Foodstuffs) Rules (Cap. 345)		recognize foods that can provide healthy nutrition to livestock, these rules list the approved food varieties suitable for animal consumption by presenting their specified characteristics.
Animal Diseases Act (Cap. 364)	This act introduces measures that may or shall be taken by public bodies and holders of animals for the control of diseases affecting all animal declared by the Minister.	For the project, specified by **activity 3.1.4.1** of output 3.1.4 (adaptive livestock and rangeland practices), livestock disease management is an important step to be demanding.
Agriculture Act (Cap. 318)	This act provides rules relative to good agricultural practice and in particular rules for the use of agricultural land and aiming at its development and preservation. Furthermore, the Act provides for administrative instruments to ensure sound agricultural development and the marketing of agricultural products.	Water and soil conservation can only be promoted through appropriate measures of good agricultural practice. **Activity 3.1.1.5** of output 3.1.1 (innovative water and soil conservation structures) of this project aims to make water and soil conservation one of these key priorities. The rules (basic land usage) introduce various prohibitions regarding use of sloping land and introduce other measures regarding the prevention of soil erosion on such land. The agriculture (basic land usage) rules (L.N.26/1965), for purposes of preventing erosion of the soil, place restrictions on the cultivation of land, the cutting of vegetation and the grazing of livestock on slopes exceeding a specified degree and near to watercourses. Exemptions may be granted by the Director of Agriculture, a provincial agricultural officer, a district agricultural committee or any authorized officer.
Technical standards		
Code of Practice for Borehole Construction	This code of Practice provides a technical basis for and a description of the minimum requirements for constructing boreholes in Kenya. It complements the Drilling Contractor Registration and Water Permit Application processes.	The drilling technical standards provide the technical basis and for the construction useful for the good progress of the **activity 3.1.1.4** of output 3.1.1 (innovative water and soil conservation structures).
KS 2770-1:2018 Admixtures for concrete, mortar and grout-Part 1: Common requirements	Specifies the common requirements for all admixtures	These standards will be take into consideration during the construction of small hydraulic structures under **activity 3.1.1.2** of the product 3.1.1 (innovative structures for the conservation of water and soils).
National Water harvesting and Storage Regulations, 2019	The stated objectives of the proposed National Water Harvesting and Storage Regulations 2019 are among other : (a) to specify the procedure for the operation of dams and storage facilities; (b) to detail the manner in which maintenance and management of water works is to be undertake (c) specify public and private works for water harvesting and storage; reservoirs for impounding surface run-off and for regulating stream flows to synchronize them with	National regulations on water storage will be used for the smooth running of **activity 3.1.1.2** output 3.1.1 (innovative water and soil conservation structures).

	water demand patterns; and structures and devices for flood control and management.	
KS EAS 230:2001 Maize bran as livestock feed — Specification	Prescribes the requirements for maize bran as a livestock feed	The specification of cereals, including maize bran, for livestock feed are being to be follow under **activity 3.1.4.3** of output 3.1.4 (adaptive livestock and rangeland practices), that intend to promote hydroponic systems for fast-growing cereal crop.
KS ISO 9635-1 to 6: 2006 Agricultural irrigation equipment	Specifies construction and performance requirements for operation in irrigation.	This standard specifies the data to be provided by the manufacturer to enable proper information, installation and operation of the field irrigation equipment, which may guide the project in its construction of mini irrigation systems for the **activity. 3.1.1.3** of output 3.1.1 (innovative water and soil conservation structures).

Sudan

Legal framework		
Policy	Purpose of the Policy	Relevance to the Project
Environmental Health Act 2009	This act aims to preserve environmental health including provision and preparation of public drainage and drain rainwater and sewage water.	The project has a low negative impact on the environment. However, the USPs with a potential impact will be subject to environmental impact assessments and mitigation measures will then be undertaken.
Environment and Natural Resources Protection Act 2017	It is a law relating to the protection of the environment and also of natural resources in general. It governs the exploitation of resources in the soil, water, vegetation, fauna, flora, deforestation, etc.	This law will allow the framing, monitoring and recovery of **all project activities** to respect the environment and implement management approaches that ensure the sustainability of natural resources.
Water Resources Act of 1995	This act aims at reforming the organization of the Nile and Non-Nilotic surface waters as well as the groundwater, hence superseding the Law of 1939 that was limited to the Nile waters only. The Law establishes the National Council for Water Resources (NCWR) with design and rationalize the management and use of water resources to mitigate the effects of natural disasters.	This applies to several activities of component 3 (drought and climate change adaptation actions) of the project, including **activities 3.1.1.1** and **3.1.2.1** of output 3.1.1 (innovative water and soil conservation structures).
Rangelands and Feed Resources Development Act of 2015	This law aims at promoting the pasture land being a public natural resource; addressing the ravages that have a negative impact on its quality and quantity (such as fires, deforestation, overgrazing and expansion of unplanned agriculture); reducing the lack of adequate coordination between the bodies concerned with natural resources and the absence of an integrated plan to exploitation.	In order to promote better management and exploitation of rangelands, as well as better grazing practices, this law, like **activity 3.1.4.1** of output 3.1.4 (adaptive livestock and rangeland practices) aims at the good development of rangelands and the fight against diseases and ravages that may cause harm to the pastures. Balance of pastures. In addition, strengthening coordination between the agencies involved and the development of an integrated farm plan can strengthen the farmer groups as required by **activity 3.1.4.5** of output 3.1.4 (adaptive livestock and rangeland practices).
Law of 2004 for the National Fund to ward off the effects of agricultural risk and support agricultural insurance	This law aims at establishing a National Fund with the purpose of controlling agricultural risk including drought, desert encroachment, floods, conflicts and fires; encouraging interest in agriculture and agricultural production; stabilizing and developing agricultural areas and communities; supporting and encouraging the insurance companies to work in the agricultural field; achieving stability in the sector through funding and compensations.	**Activity 3.1.5.1** of output 3.1.5 (enabling environment for smallholder farmers and pastoralists adaptive activities) provides for the establishment and promotion of climate insurance based on indices in partnership with insurance companies. Target communities face the challenge of reducing the risk of climate change. Focal countries must be supported to improve emergency measures and risk mitigation strategies. Likewise, the project will mobilize partners to help target countries strengthen their knowledge and capabilities in innovative risk insurance.

Forests and Renewable Natural Resources Act for the year 2002 (Act No.11 of 2002)	This law stipulates that the society will be the main force of the country to carry out the afforestation, the improvement of silvo-pastoralism, the development of the forest production, the facilitation of the pasture, etc.	For a better valorization and agropastoral zones, recommended by the **activity 3.1.3.2** of output 3.1.3 (adaptive agricultural practices for improved crop production) of the project, this law is of a great help as for the identification of the authority responsible for and its functions, manifested by the protection of forests and agrosilvopastoral routes.
Irrigation and Drainage Act of 1990	This act establishes that any work related to irrigation or drainage provided needs with a permit from the Ministry of Irrigation and Water Resources.	The Ministry of irrigation and water resources (will or have), approval of proposed water projects, water licensing, implementation of water harvesting activities, design and organizing capacity building programs recommended in **activity 3.1.1.3** and **activity 3.1.1.5** of output 3.1.1 (innovative water and soil conservation structures).
Technical standards		
Drinking Water Standards	This document specifies requirements and method of sampling and test for packaged drinking water for direct consumption.	The quality of the drinking water is governed by standards specifying the requirements **(activity 3.1.1.4)** of the product 3.1.1 (innovative structures for the conservation of water and soils).
Technical Guidelines for the Construction and Management of Improved Hafirs	This document aims at providing the basis for the construction and management of rural water supply and sanitation facilities. An 'improved hafir' is one with a water treatment system that can provide drinking water primarily for human consumption.	The project innovative water harvesting and storage infrastructure **(activity 3.1.1.2)** of the product 3.1.1 (innovative structures for the conservation of water and soils) will be constructed in accordance with the requirements of this standards.
SDS 0186: 2009 Animal feed ingredients (energy sources) grains	This document prescribes the requirements for livestock feed.	The specification of cereals, including maize bran, for livestock feed will be followed under the **activity 3.1.4.3** of output 3.1.4 (adaptive livestock and rangeland practices), that will promote hydroponic systems for fast-growing cereal crop.

Uganda

Legal framework		
Policy	**Purpose of the Policy**	**Relevance to the Project**
The National Environment Act, Cap 153	It is a law regulates all the regulatory aspects (impact study, environmental standards…) and the environmental aspects of the institutional environment in Uganda.	Section 20 of this act obliges every developer to undertake an environmental assessment for projects listed in the 3rd schedule of the act. The assessment of the USPs will comply with the provision of this act.
Water Act 1995 (Cap 152)	The text of this act consists the water resources, the water supply and sewerage, and the general miscellaneous. It includes rights in water and water administration, water resources planning, hydraulic works and uses of water, revision, variation and cancellation of water permits, etc.	This water act facilitates the elaboration of a vast majority of the activities of output 3.1.1 (innovative water and soil conservation structures) because it evokes the general rights in the administration **(activity 3.1.1.1),** the management and the use of the water **(activity 3.1.1.3),** but also the limitation of its use and the ban on polluting. The regulations (S.I. 152-2), made under section 107 of this act, make provision with respect to public supply of water and related waterworks. They also concern the protection of water supply resources. The Regulations set out rules for the connection by landowners to the public water system and the metering of supplied water **(activity 3.1.1.2).** The water resources regulations (S.I. No. 33 of 1998) provide for various aspects of this act. The text consists of 29 regulations which are divided into 5 Parts: preliminary; water permits; water policy committee; drilling and construction permits; miscellaneous **(activity 3.1.1.4).**
Framework for Water Source Protection (Volume 1 of Framework and Guidelines for Water Source Protection)	These guidelines contain general principles of and rules for water source protection (e.g. protecting the water sources from threats, such as pollution, siltation and low water flows). They provide guidance for different stakeholders ranging from regulators, water users, to project managers for the implementation of water source protection, further give specific guidance for the types of water.	These general principles and rules for the protection of water sources will support source protection to ensure efficient, effective and efficient water use as advocated in **activity 3.1.1.4** output 3.1.1 (innovative water and soil conservation structures).
Animal Breeding Act, 2001	This act provides a regulatory framework for animal breeding activities, defines the functions of the Director of Animal Resources, the Commissioner, Animal Production and Marketing, the Commissioner, Livestock, Health and Entomology and the Commissioner, Fisheries Resources in the Ministry responsible for agriculture, animal industry and fisheries, provides rules for trade-in, handling and use of animal reproduction materials.	This Act will drive the implementation of the project pasture management activity **(activity 3.1.4.1)** of output 3.1.4 (adaptive livestock and rangeland practices). The project aims may be framed by this law which provides a regulatory framework for livestock activities.
Animal Diseases Act (Cap. 38)	This act specified the diseases and it makes provision with respect to measures to control diseases affecting animals (example, camels and other ruminating animals, etc.).	For the project, specified by **activity 3.1.4.1** of output 3.1.4 (adaptive livestock and rangeland practices), livestock disease management is an important step to be demanding. Identifying but also preventing these diseases becomes very relevant.

Soil Conservation Measures and Guidelines	These guidelines combinate several measures and recommendations for soil conservation.	For **activity 3.1.1.5** of output 3.1.1 (innovative water and soil conservation structures), soil conservation measures are prescribed and recommendations are given by these guidelines for the conservation of lowlands and flat areas and slopes of various degrees, pastures and mudflats. Measures are needed for the environmentally sound production of food and other products, based on the sustainable use of land, species and ecosystems.
Technical standards		
US 1681:2017, Chemical admixtures for concrete — Specification	This Uganda Standard specifies materials for use as chemical admixtures to be added to hydraulic-cement concrete mixtures in the field.	These standards will be take into consideration during the construction of small hydraulic structures under **activity 3.1.1.2** of the product 3.1.1 (innovative structures for the conservation of water and soils).
US EAS 153:2014, Packaged drinking water — Specification	This Uganda Standard specifies requirements and method of sampling and test for packaged drinking water for direct consumption.	Food security for farmers and pastoralists will be verified through the verification of drinking water quality in the region, which requires the application of a standard specifying the requirements as well as the method of sampling and testing. Intended for direct consumption **(activity 3.1.1.4)** of output 3.1.1 (innovative water and soil conservation structures).
Design Guidelines for Water Supply Infrastructure in Uganda	The intention of the Guidelines is to provide practical guidance to planners and design engineers of water supply infrastructure in Uganda, in order to promote standardization, quality assurance and adherence to national standards and international good practices. Instead, these Guidelines will focus on rules, criteria, standard methods, procedures and best practices to be followed when designing water supply infrastructure in Uganda.	Water supply, goal of **activity 3.1.1.2** of output 3.1.1 (innovative water and soil conservation structures), is very important for the development of project implementation area.
US EAS 230:2001, Maize bran as livestock feed — Specification	This Uganda Standard prescribes the requirements for maize bran as a livestock feed.	The specification of cereals, including maize bran, for livestock feed, is very important for this project which foresees, in **activity 3.1.4.3** of output 3.1.4 (adaptive livestock and rangeland practices), to promote hydroponic systems for fast-growing cereal crop.
US ISO 9261:2004, Agricultural irrigation equipment — Emitters and emitting pipe — Specification and test methods	This Uganda Standard gives mechanical and functional requirements for agricultural irrigation emitters and emitting pipes, and, where applicable, their fittings, and provides methods for testing conformity with such requirements.	This standard specifies the data to be provided by the manufacturer to enable proper information, installation and operation of the field irrigation equipment, which may guide the project in its construction of mini irrigation systems for the **activity. 3.1.1.3** of output 3.1.1 (innovative water and soil conservation structures).
US IEC 61702: 1995, Rating of direct coupled photovoltaic (PV) pumping systems	This Uganda Standard defines predicted short-term characteristics (instantaneous and for a typical daily period) of direct coupled photovoltaic (PV) water pumping systems. It also defines minimum actual performance values to be obtained on-site. It does not address PV pumping systems with batteries.	To ensure the continuity of water availability, the wells of rural project implementation areas will be equipped with photovoltaic pumping systems. This mechanism will be described by **activity 3.1.1.4** of output 3.1.1 (innovative water and soil conservation structures).

Annex 7: BIBLIOGRAHY AND LIST OF REFERENCES

1 Thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

2 Babikir, O., Muchina, S., Sebsibe, A., Bika, A., Kwai, A., Agosa, C., &Wakhusama, S. (2015).Agricultural Systems in IGAD Region – A Socio-Economic Review.

3 IGAD Climate Prediction & Application Centre (ICPAC) / World Food Programme (WFP) Regional Bureau for East and Central Africa Greater Horn of Africa Climate Risk And Food Security Atlas- Technical Summary. , Nairobi , 2017

4 IGAD, 2013. IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI) Strategy.

5 T. Zhao et al. (2015) 'The Magnitude and Causes of Global Drought Changes in the Twenty-First Century under a Low–Moderate Emissions Scenario'. Journal of Climate, 28.

6 The World Bank Group, 2011. Vulnerability, risk reduction, and adaptation to climate change. Climate risk and adaptation country profile. Djibouti.

7 Anonymous, 2017. https://www.un.int/djibouti/djibouti/country-facts. Country Facts. 26.03.2018

8 Anyadike, O. 2017. Drought in Africa 2017. Farmers, traders and consumers across East and Southern Africa are feeling the impact of consecutive seasons of drought that have scorched harvests and ruined livelihoods. https://www.irinnews.org/feature/2017/03/17/drought-africa-2017.

9 Djibouti National Adaptation Programme if Action, 2006. Ministry of Habitats, Urban areas and Environment. Republic of Djibouti.

10 Anonymous, 2017b. http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb_gfdrr_climate_change_country_profile_for_DJI.pdf Vulnerability, Risk Reduction, and Adaptation to Climate Change. Climate Risk and Adaptation Country Profile. 30.03.2018

11 Ministry of Environment and Natural Resources, 2010. National Climate Change response strategy. Executive brief. Kenya.

12 Ahmed Eltohami, A. B. E. 2016. Anthropogenic and Climatic factors: as causes of drought disaster in Sudan. World Irrigation. Forum (WIF2), 6-8 November, Chiang Mai, Thailand. http://www.droughtmanagement.info/literature/UNWDPC_NDMP_Country_Report_Sudan_2014.pdf.

13 Sudan National Adaptation Programme of Action (NAPA), 2007. Ministry of Environment and Physical Development, Higher Council for Environment and Natural Resources, Sudan.

14 Ericksen, P., de Leeuw, J., Thornton, P., Said, M., Herrero, M. And Notenbaert., A. 2013. Climate change in Sub-Saharan Africa: What consequences for pastoralism? In Catley, A., Lind, J. and Scoones I. (Eds.), Pastoralism and development in Africa: Dynamic change at the margins (pp 71 – 81). Routledge.

15 Ministry of Water and Environment (MWE), 2015. Uganda National Climate Change Policy. Transformation through Climate Change Mitigation and Adaptation. Kampala, Uganda.

16 Stark, Jeffrey. 2011. Climate Change and Conflict in Uganda: The Cattle Corridor and Karamoja. Foundation for Environmental Security and Sustainability.

17 Fitzgibbon, C. and Crosskey, A. 2013. Disaster risk reduction management in the drylands in the Horn of Africa. Brief prepared by a Technical Consortium hosted by CGIAR in partnership with the FAO Investment Centre. Technical Consortium Brief 4. Nairobi: International Livestock Research Institute.

18 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.

19 Take urgent action to combat climate change and its impacts. This is taken in combination with target 1.5 of goal 1 (to build the resilience of the poor and those who are in vulnerable situations and reduce their vulnerability to climate related extreme events and other economic social and environmental disasters

20 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation"

21 "By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies".

22 "Support and strengthen the participation of local communities in improving water and sanitation management"

23 End poverty in all its forms everywhere

24 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

25 Achieve gender equality and empower all women and girls

26 Sougal A. A., Pon B., Bates M., and Petersons A. 2009. Irrigated Agriculture in Djibouti: An Economic and Physical Analysis of Irrigation Systems.

27 Sudan National Adaptation Plan, 2016. Ministry of Environment, Natural Resources& Physical Development. Higher Council for Environment and Natural Resources. Sudan.

28 Uganda Bureau of Statistics (UBOS), 2012. The Agricultural Sector. Gender Statistics Profile. Kampala, Uganda.

29 Cullis, A. 2018. Agricultural Development in Karamoja, Uganda: Recent Trends in Livestock and Crop Systems, and Resilience Impacts. Karamoja Resilience Support Unit, USAID/Uganda, UK aid, and Irish Aid, Kampala.

30 WFP and UNICEF, Food Security and Nutrition Assessment, Karamoja Region Uganda, July – August 2015, cited by Lysette Boucher, 2016.

31 Climate risk screening –SNAPSHOT- Uganda- Karamoja, USAID (2016)

32 Uganda National Housing and Population Census 2014

33 Bintoora A. 2015. Assessment of the threats to conservation of Mt. Moroto Central Forest Reserve and their effects on livelihoods of Tepeth People in Moroto District, Uganda. International Journal of Current Research. Vol. 7, Issue 04, pp 14734-14740, 2015.

34 FAO, 2010. Food Security in the White Nile State of Sudan. Analysis of 2010 State level Baseline household survey. http://www.org.fao.org/fileadmin/user

35 Nanyunja, R. K. 2003. Indigenous knowledge of the abundance of medicinal and food plants in Mount Moroto Forest Reserve. World Forestry congress, Quebec City, Canada

36 Nature Uganda 2010. Important bird areas in Uganda: Status and trends. Kampala, Uganda.

37 IGAD Climate Prediction & Application Centre (ICPAC) / World Food Programme (WFP) Regional Bureau for East and Central Africa, 2017. Greater Horn of Africa Climate Risk and Food Security Atlas Technical Summary, Nairobi, Kenya. https://reliefweb.int/sites/reliefweb.int/files/resources/WFP-0000098939.pdf

38 Arid and Semi-Arid Lands

39 Country water Partnerships are neutral multi-stakeholder platforms for dialogue and facilitating change in water and climate processes.

40 The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply