ADAPTATION FUND

REGIONAL PROJECT/PROGRAMME PROPOSAL

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Agricultural Climate Resilience Enhancement Initiative (ACREI)
Countries:	Ethiopia, Kenya, Uganda
Thematic Focal Area[1]:	Food security
Type of Implementing Entity:	UN agency
Implementing Entity:	World Meteorological Organization
Executing Entities:	Food and Agricultural Organization (FAO) and the Inter-Governmental Authority on Development (IGAD)
Amount of Financing Requested:	USD 6.8 Million

Project / Programme Background and Context:

The Greater Horn of Africa is extremely vulnerable to climate variability. Extreme precipitation changes over Eastern Africa such as droughts and heavy rainfall events have been experienced more frequently during the last 30-60 years (IPCC, 2013). The risk of loss of rural livelihoods and income due to climatic hazards is particularly real in arid and semi-arid regions, largely inhabited by communities engaged in pastoral and agro-pastoral livelihood systems. These communities have limited access to information and technical support and financing for adaptation options hence responding to local climate variability and predictions is very limited. Therefore, enhancing the capacity of communities to cope and adapt to climate variability will build the resilience of communities and livelihoods dependent on climate-sensitive resources. The intervention will 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 Agro-pastoralist Field School (APFS) approach, an adaptation of the well proven Farmer Field School approach will form a key delivery mechanism in this project building strongly on previous experiences. Climate sensitive APFS interventions engaging communities in participatory group learning and experimentation will be coupled with Village Community Banking approach (VICOBA) to support community uptake of strategies and practices for resilient local food and income systems. Impact data from the region indicate substantial impact of Field Schools on productivity and poverty, especially among women[2] and the successful combination of technical, social and financial support though APFS/VICOBA[3]. The informal nature of the approach provides an entry point to also address social issues

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

[2] *Davis, K., Nkonya, E., Kato, E., Mekonnen, D.A., Odendo, M., Miiro, R. & Nkuba, J. (2011). Impact of Farmer Field Schools on Agricultural Productivity and Poverty in East Africa. World Development, 40: 402-413.*

[3] Hoeggel and Mbeyale, 2014. Impact Assessment of Pastoralist Field Schools in Ethiopia, Kenya and Uganda. FAO, SDC and University of Bern.

including HIV, gender, resource use conflicts, population growth as well as health and nutrition issues thus ensuring a holistic approach to adaptation. The initiative will build on Climate Smart Agriculture (CSA) principles and field practices to incorporate more accurate and relevant localized climate services into extension and advisory services for agro-pastoralists. The content of technical and financial support to communities will include good agricultural practices, conservation agriculture, soil and water management, water harvesting and small-scale irrigation, improved rangeland and livestock management, farm and income diversification and improved storage, nutrition and marketing of produce. The project is focusing on three countries; Ethiopia, Kenya and Uganda selected based on the presence of agro-pastoral population highly affected by climate variability, availability of good quality climate data and climate products, existence of national policies and strategies for advisory services, experience and presence of Field School interventions and based on complementarity with ongoing FAO support for institutionalization of the Field School approach. In the future it is expected that with increased complementary funding the initiative may be scaled up to other countries in the Horn of Africa

Data Processing and Forecasting Systems (DPFS), appropriate information packaging, dissemination channels and policy gaps are the major limitations to provision of effective climate services to farming communities by the NMHSs in the region. The infrastructure and facilities for data processing and forecasting systems have continued to deteriorate leading to great difficulties in providing weather and climate services in the region to meet national and regional needs. The human resource capacities in the National Meteorological and Hydrological Services (NMHSs) in the region are also insufficient to meet the evolving challenges. These shortcomings have continued to negatively impacted on the availability, timeliness, efficiency, accuracy and quality of actionable climate service delivery.

ICPAC activities focus mainly on climate information, prediction and early warning applications in support of environmental management, disaster risk reduction for sustainable development in the IGAD region as well as in Burundi, Rwanda and Tanzania. ICPAC climate information products are derived from statistical models run at the centre and dynamical model outputs from advanced centres on a dekadal, monthly and seasonal time scales. The prediction products are provided through outlooks for a dekad (10-day), month and season in form of bulletins and provide summaries of rainfall, drought severity and temperature anomalies. Consensus pre-season climate outlook fora are also organized in conjunction with the major climate centres world-wide in order to derive a single consensus forecast for the region. The Centre has recently stepped up its capacity to produce improve climate prediction products and services.

Users of climate services and products in the region indicated that the most useful information about climate variability and change is that which takes into consideration contextual knowledge and non-climate conditions, including socio-economic elements, and is co-developed by scientists and other (non-climate) experts and decision makers through an iterative process of co-development. Such a process should focus on the joint identification of specific sectoral challenges that can be better managed through the use of climate information, and the co-generation of solutions in the

form of decision support tools and strategies. The users further expressed a desire for information not only about current or pending climatic conditions, but also an understanding of how that might affect, for example, agriculture, social well-being of vulnerable populations, and migration patterns in a particular region. While most users already use rainfall and temperature information, major gaps on information related to, for example, socio-economic conditions and shift in seasons that may result from the forecasted climate status were cited.

Geographic Context: Drylands in Horn of Africa and the Target Countries

Horn of Africa Context

Drylands are arid and semiarid lands (ASALs) in which annual evapotranspiration exceeds rainfall and in which agricultural productivity is limited by poor availability of moisture thus affecting the food and nutrition security of populations. These drylands occur throughout the world and occupy significant areas in the Horn of Africa. It is estimated that 75% of Kenya, 50% of Ethiopia and 30% of Uganda are classed as either arid or semi arid lands and the total dryland area in the Horn of Africa covers over 5 million km^2.

According to IGAD, prolonged and widespread drought is a recurrent feature of the ASALs that is exacerbated by climate change phenomena, advancing desertification and ecological degradation. In fact, climate variability and climate change has been identified as one of the main natural factors that have contributed to the enhanced desertification in the Horn of Africa's dry-lands. The harsh ecological circumstances of the ASALs contribute to severe hardships amongst the affected communities, including poverty, hunger, malnutrition, dislocation and conflicts over natural resources both within and across boundaries in the region. The Horn of Africa region is observed to be the most food and nutrition-insecure region of the world as well as being one of the most impacted by and vulnerable to weather variability and climate change. The project countries are still struggling in meeting the MDG as shown in Table I.

Table I: Prevalence of undernourishment and progress towards the World Food Summit (WFS) and the Millennium Development Goals (MDG) in selected Horn of Africa countries[4]

	Number of undernourished in millions (2014/16)	**% change since 1990/92**	**Progress towards WFS target**	**Proportion of undernourished as % of total population (2014/16)**	**% change since 1990/92**	**Progress towards MDG target**
Ethiopia	31.6	-15.1	slow progress	32	-57.2	Achieved
Kenya	9.9	26	-ve progress	21.2	-34.5	+ve progress
Uganda	10.3	143.2	-ve progress	25.5	10.1	-ve progress

The predominant livelihood in the horn of Africa's arid and semi arid lands is pastoralism and agro-pastoralism with seasonal movement of livestock and their herders in search of fresh water and pasture. According to IGAD (IDDRSI, 2013), droughts in the Horn of Africa displace a large number of communities that lose their traditional means of livelihood

[4] FAO, 2015. The State of Food Insecurity in The World: Africa regional Overview

(pastoralism, farming or fishing) and creates “climate refugees”, often resulting in conflicts between communities, within and across borders. Therefore drought and other climate related hazards are a major problem in the Horn of Africa’s arid and semi arid lands.

In addition to drought and climate related hazards, the ASALs of the horn of Africa, face a number of other challenges which include population growth, resources scarcity, land degradation, low productivity (both livestock and crops), overgrazing, deforestation, invasive species and market fluctuations among others all of which affect the ability of the inhabitants to successfully adapt and be resilient to weather variability and climate change. Overall, the drylands of the Horn of Africa are fragile ecosystems that are highly vulnerable to climate change, and thus the livelihood strategies undertaken by dryland communities are equally fragile and vulnerable in these regards. The task of building resilience to climate change and supporting community adaptation to climate change is thus linked closely to the sustainable management of the natural resources.

Other challenges commonly cited in the ASALs that compound the impacts of and vulnerability to climate change include:

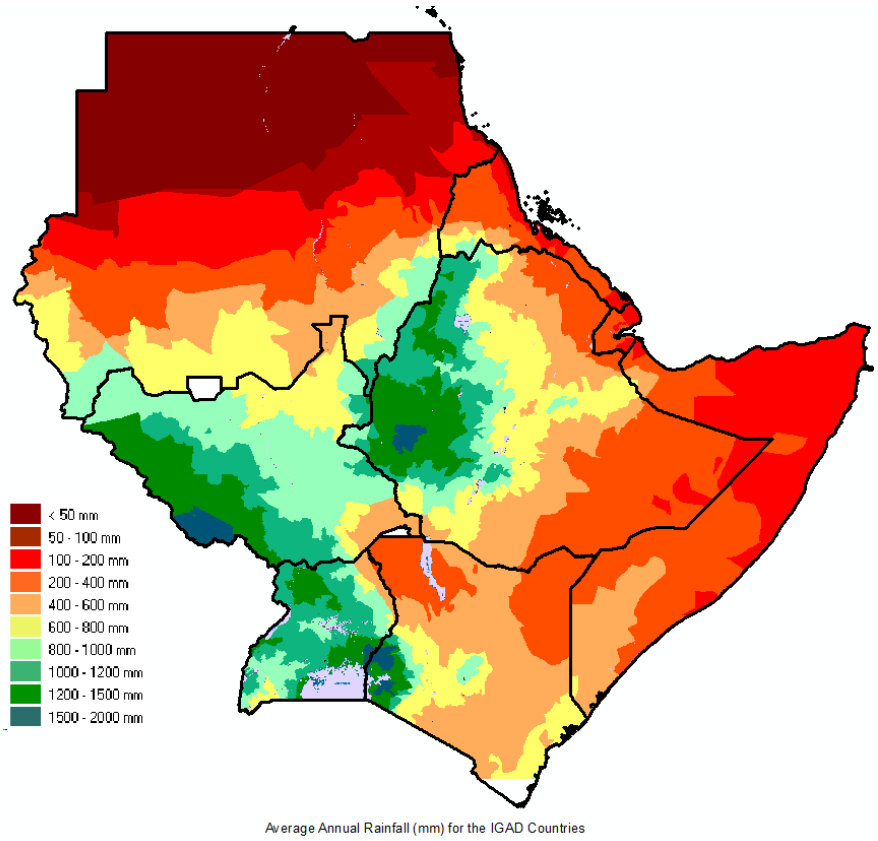
- Limited employment (especially for youth);
- Limited investment by all actors (possibly due to the ASALs perceived as being “wastelands”);
- Lack of alternative livelihood options;
- Lack of value addition in agriculture;
- Presence of transboundary crop and animal pests and diseases;
- Poor infrastructure facilities especially those related to livestock and marketing of agricultural produce; and
- Inadequate early warning systems especially for climate related hazards.
- Occupation of the livestock grazing areas by plant invasive species (Prosopis) affecting pasture and water availability.
- Increase of settlements in the livestock grazing and migration corridors affecting feed and water resources for livestock.
- Upstream river activities such as irrigation that effect water volumes at the lowstream thus affecting water availability for humans and livestock in the agro and pastoral areas.
- Destruction of the water towers through deforestation and agricultural activities affecting watervolumes that passes in the agro and pastoral areas.
- Unwarranted destruction of shrubs and trees for charcoal burning leading to severe land degradation.

Unplanned distribution of watering points thus leading to severe land degradation within the water point areas.

The IDDRSI strategy thus states that due to this interplay of factors, “efforts to increase the capacity of communities and households in the ASALs to cope with and adapt to greater prevalence of drought events requires a holistic approach that addresses the need for information (including climate information and information on climate resilient practices), access to appropriate technology, capacity building, new livelihood opportunities and a supportive policy regime”.

The ASALs can also be said to be sparsely populated, as only 30% of the Horn of Africa's population lives in ASALs that occupy between 60-70% of the region's land. The livestock population (which comprises cattle, goats, sheep and camels) is however high and plays an important role not just for the livelihoods of the inhabitants but also for the economies of the countries and it is stated that the contribution of the livestock and livestock products to agricultural and national GDP in the target countries is frequently underestimated.

For example, highly economically valued products such as gum Arabica, are largely found in the drylands of the Horn of Africa. According to UNDP the development of countries like Uganda and Ethiopia, that have a high percentage of drylands, are highly dependent on the development, efficient and effective use (and also resilience) of these parts of the countries. Therefore, the drylands in the Horn of Africa can be said to be socially, economically and ecologically important areas where building of climate resilience can effectively contribute to poverty alleviation and economic growth of the resident populations and their countries as a whole.



Map of Rainfall in Arid and Semi-Arid Lands in the Horn of Africa (Source IDDRSI[5])

The vulnerability of the Horn of Africa's Arid and Semi Arid Lands has been evidenced over the last decades by the occurrence of drought induced famine in many parts of the region, notably in the early 1980s and most recently in 2011, when millions of people were affected by drought causing untold suffering and death of both livestock and human populations. The World Bank has in the past estimated that livestock mortality as a result of the 2011 drought was about 10-15 percent above normal in the affected areas. Between 2008- 2011

[5] The country borders shown on the map are only indicative and do not represent the position of WMO, FAO or IGAD.

droughts cost US $12.1 billion[6]. More recently, the Horn of Africa has since late 2015 been experiencing one of the strongest El Niño events on record. In some parts of the region's ASALs this has resulted in El Niño induced drought said to be among the worst in over 50 years and estimated to leave up to more than 10 million people needing urgent food support.

Ethiopia

The farming systems in Ethiopia can be classified into five major categories – the highland mixed farming system, the lowland mixed agriculture, the pastoral system, shifting cultivation and commercial agriculture. Over 95 percent of the annual gross total agricultural output of the country is said to be generated from smallholder farmers with an average farm size ranging from 0.5 to 2 hectares.

Ethiopia depends greatly on the agriculture sector, which contributes approximately 42 percent of national GDP, while 80 percent of the country's population depends on the sector for their livelihoods. Chronic food and nutrition insecurity affects 10 percent of the population and even in average rainfall years these households cannot meet their food needs and must rely partly on food assistance. Malnutrition affects a large number of children as well as pregnant and lactating women in Ethiopia, with May-June 2016 figures indicating around 458,000 expected admissions for severe acute malnutrition[7]. Overall, the agriculture sector is highly vulnerable to the impacts of climate change. Ethiopia has the largest livestock population in Africa and the tenth largest in the world. Livestock is an integral part of the farming systems in the country. It is the source of many social and economic values such as food, draught power, fuel, cash income, security and investment in the highland, lowland and pastoral farming areas. As in the case of crops, the sector makes a significant contribution to GDP and is also a major source of foreign currency.

Droughts periodically reverse agricultural sector performance gains, with devastating effects on household food security and poverty levels. Vulnerability to droughts is greatest in the pastoral areas of the lowlands and the densely populated, food-insecure districts of the highlands. Drought-induced famines are further exacerbated by limited coping mechanisms and inadequate contingency planning for drought mitigation and the threat of climate change.

Other causes of the vulnerability of Ethiopia (and in particular the drylands) to climate variability and change include under-development of water resources, low health service coverage, high population growth rate, low economic development level, low adaptive capacity, inadequate road infrastructure in drought prone areas, weak institutions, lack of awareness, poor information and early warning systems among others.

Ethiopia's Drylands

Ethiopia's drylands cover approximately 63% of the country's land area and are found mainly in the north, east and central areas of the rift valley, also south and southeastern parts of the country and include a very wide and diversified range of agricultural environments. These regions have an estimated human population of between 12–15

[6] Kenya Post Disaster Needs Assessment, 2012

[7] Regional Food Security and Nutrition working group – June 2016

million people. Ethiopia's drylands provide important forage for livestock and constitute a main source of food and livelihoods for a large proportion of Ethiopia's population. Crops grown in the drylands include sorghum, finger millet, field peas, chickpea, cowpea, cotton, safflower, castor bean, sesame and other crops. However, livestock production is the predominant dryland farming system and is practiced either as pastoralism or agro-pastoralism. Livestock in the drylands serve as insurance against crop failure and as a source of food, usually for dairy rather than meat production. In all, pastoral lands in the country cover an area of over 625,000 km^2.

Ethiopia's dryland household livelihoods are considered to be highly vulnerable to climate variability and change largely due to widespread poverty, low adaptive capacity and high levels of dependence on natural resources. The major challenges threatening the dryland communities of Ethiopia relate to the degradation of the natural resource base, which is leading to soil erosion and vegetation loss, soil fertility decline, flooding, water stress, drying of water resources such lakes and rivers. This degradation is being exacerbated by increasing climate variability and change, with profound impacts on the livelihoods of the communities.

Kenya

According to the Ministry of Agriculture, Livestock and Fisheries (MALF), agriculture is the main economic sector, accounting for over 25 percent of the gross domestic product (GDP), over 65 percent of Kenya's total exports and providing more than 18 percent of formal employment. Production is carried out on farms averaging 0.2–3 hectares, mostly on a commercial basis. This small-scale production accounts for over 75 percent of the total agricultural output and over 70 percent of marketed agricultural produce. Growth of the national economy is therefore highly correlated to growth and development in agriculture. However, Kenya's agriculture is 98 percent rain-fed and predominantly small-scale, especially in the medium to high-potential areas, covering about 15 percent of the country. Therefore, productivity in the sector is directly influenced by climatic conditions. The livestock subsector employs 50 percent of the agricultural labour force and is the mainstay for over 10million Kenyans (34% of the country's population) living in the Arid and Semi-Arid Lands (ASALs). According to the 2009 livestock census, the country had a livestock population of 17.5 million cattle; 27.7 million goats; 17 million sheep; and 31.8 million domestic birds, among other livestock kept in the country. Kenya's national forest cover is approximately 6.9 percent, much lower than the internationally suggested minimum of 10 percent. The fisheries and aquaculture subsector also plays an important role in food and nutrition security and is composed of both freshwater and marine fisheries, which contribute about 0.5 percent of the country's national GDP.

Overall, dependence on rain-fed agriculture and declining soil health have increased the vulnerability of farming systems and exposed rural households to food insecurity and poverty. Kenya is now increasingly seeing changes in the onset, duration and intensity of rainfall across the country, while the frequency and intensity of the extreme weather events such as drought and floods are on the rise, with devastating impacts on the national economy and the livelihoods of the people. Drastic and innovative measures are needed to help farmers adjust to these changes in current and projected weather patterns.

Kenya ASALs

The ASALs of Kenya cover 84% of the country's total land area, account for 34% of Kenya's human population (approximately 10 million people of whom 4 million are pastoralists) and an estimated 46% of the country's livestock population. Livestock raised by pastoralists in Kenya drylands is estimated to be worth up to US$800 million annually (AU-IBAR in IIED and SOS Sahel, 2010).

However, pastoralist areas have the highest incidences of poverty, food and nutrition insecurity and the least access to basic services in the country particularly in the northern districts of the country. According to the Kenya Demographic and Health Survey (KDHS 2014), about 26% of Kenyan children under 5 years are stunted, with some counties in ASALs bearing the largest burden. 4% of Kenyan children are wasted, with wasting concentrated in the north (ASAL counties) having over 11% of their children wasted. ASALs in Kenya contain 18 of the 20 poorest constituencies in Kenya. In some parts of the vast northern districts of Turkana, Marsabit, Wajir and Mandera between 74% - 97% of people live below the absolute poverty line. Droughts are common in the ASALs, and it has been suggested that they have increased in frequency over recent decades thus placing further stress on the livelihoods of those who live in these areas.

Uganda

Uganda has a total land area of 241 551 km^2 of which about 30 percent is highly degraded. The country has 14 agro-ecological zones (AEZs) with different farming systems determined by soil types, climate, landforms as well as socio-economic and cultural factors. Farming systems cover a wide range of activities, including the production of traditional cash crops (coffee, sugarcane, cotton and tea) and food crops (banana, cassava, maize, sorghum, finger-millet, rice, potatoes and beans) and keeping livestock (cattle, goats, pigs and poultry). Agriculture supports the livelihoods of 73 percent of households in the country and contributes 20.9 percent of the national GDP and 80 percent of foreign currency earnings, yet approximately 95 percent of the farmers are smallholders with landholdings averaging two hectares. Inland fisheries also play a major role in the food system and economy of the country.

Over the years poor agricultural land management and increased occurrence of extreme weather events have escalated land degradation. Consequently, the agricultural sector in the country is characterized by low agricultural productivity, limited use of external inputs (such as improved seeds, agro-chemicals and fertilizer), poor land management practices using rudimentary production tools which contribute to low agricultural productivity and land degradation, and high post-harvest losses currently estimated at 30 percent. This also affects fodder and pasture availability thus livestock production in general.

Uganda's population growth rates have been said to be among the highest in the world at 3.2 percent per annum, which accelerates land fragmentation, soil nutrient depletion and unsustainable production practices. Large human populations tend to degrade highland ecosystems, while high animal populations degrade marginal lands such as the cattle corridors semi-arid ecosystem, which stretches from Rakai in southern Uganda to Karamoja in the northeast of the country, largely caused by overgrazing.

Land degradation is very evident in the drylands of the cattle corridor of Uganda, where land management is threatened by overgrazing by local and mobile pastoralist herds, deforestation for fuel wood resources and poor and inappropriate agricultural practices on marginal land.

In terms of climate change, Uganda has been described as one of the most vulnerable countries. Unreliable rainfall, frequent drought, precarious water supply, seasonal fires and endemic poverty are all major climate-related issues affecting the country. Already it has been observed that during the period 1900 to 2000, the frequency of years with significantly below normal rainfall increased from once every 20 years to as often as once every five years, with severe impacts on agricultural production. In addition to changes in rainfall patterns, consistent warming trends have been observed across the country and climate projections indicate that this trend is likely to continue.

Uganda's Drylands

Uganda's drylands cover over 84,000km^2 of land (43% of the country's land area) and stretch from the northeast to the southwestern borders of the country, an area commonly known as the "Cattle Corridor". The Cattle Corridor, covers over 40 districts, is dominated by livestock production (90% of the countries cattle population) with scarce water and pasture, and is one of the most climate change affected regions in the country. Land degradation is also most widespread and pronounced in the cattle corridor. Thinning of bushlands for pasture, deforestation for wood products, and encroachment onto marginal lands all occur in the drylands of the country. Currently, rainfall in Uganda's arid lands is irregular and the region experiences periodic droughts and at times flash floods.

There are indications that the carrying capacity of rangelands in the cattle corridor is under critical stress, with increasing levels of overgrazing and water scarcity, especially at the end of the two dry seasons (December to February, June to August) even though there are some lakes and water bodies present. Climate variability is expected to increase with more extreme and frequent periods of intense rainfall, as well as more frequent episodes of drought. These changes are likely to have significant implications for the cattle corridors water resources, agriculture, food security, soil and water resources, among others. The poor and vulnerable people of the drylands will feel these impacts the hardest. In terms of poverty within the cattle corridor, poverty rates are highest in eastern and northeastern Uganda, with up to 80 percent of the population living below the poverty line in some parts of these areas.

Problem to be addressed by the project

The Greater Horn of Africa (GHA) region is highly vulnerable and regularly gets exposed to natural disasters, notably drought. Due to climate change, the frequency and severity of these natural disasters are expected to increase[8]. These natural disasters severely impact on food production given that most of the agricultural production in the region is rain-fed. Persistent and deteriorating food and nutrition insecurity remain a major concern particularly in arid and semiarid lands which are hotspots for the highest crisis and emergence food insecurity levels. Apart from conflicts and insecurity, prolonged dry spells and droughts have been the main drivers of food insecurity in these areas. With the ever rising population growth in GHA region, concerted efforts are needed to stabilise and more importantly increase food production.

According to the FSNWG, due to the El Nino driven drought of 2015/2016 the number of people needing immediate food assistance in Ethiopia alone evolved from 2.9 million in January 2015 to 4.5 million in August 2015, to 8.25 million by mid-October 2015, and to 10.2 million as of early December 2015[9].

In Kenya, the 2008-2011 drought disaster caused a loss of approximately Ksh 968.6 billion (USD 12.1 billion); livestock sector registered the largest loss of close to Ksh 700 billion, followed by Agriculture with Ksh 121 billion[10].

In Uganda, over thirty percent (30%) of the total population face some level of chronic food insecurity. Households that are severely chronically food insecure (level 4), notably those in the drought-prone regions of Karamoja, Teso and Acholi face seasonal deficits in quantity and quality of food for at least 4 months of each year (lean season April to July) and are not resilient to climatic shocks[11].

Overcoming the problems of low productivity and food insecurity requires an integrated approach combining changes in multiple components of the production, livelihood and input-output market systems. This necessitates adoption of new technologies that increase productivity - such as more drought tolerant and productive crop varieties and more sustainable production practices. The incorporation of indigenous livestock species due to their tolerance to harsh weather and some diseases will be explored.
These need to be matched with: (a). reliable climate information that inform appropriate decision making, and, (b). improved market opportunities that ensure improved food availability and access, increased incomes and greater system sustainability.

[8] **IPCC, 2013:** Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

[9] Ethiopia Humanitarian Requirements Document, 2016: A joint Government and Humanitarian partners' document.

[10] Kenya Post-Disaster Needs Assessment (PDNA) 2008-2011 Drought, 2012

[11] Uganda Chronic Food Insecurity Overview, February 2015 (http://www.ipcinfo.org/ipcinfo-detail-forms/ipcinfo-map-detail/en/c/295195/)

Effective Climate Smart Agriculture practices can undoubtedly increase food production and ensure food security through diversification of farming systems and resilience building within target farming communities. This project is centred in improving farm household food security through identification and promotion of appropriate adaptation options and improved farm planning, livestock production and decision making for increased food production in both good and bad seasons, improved storage of surplus food, and better trade and distribution options thereby increasing food availability in both good and bad years.

Appropriate climate information flows, and climate information based decision making, will contribute to better targeting of farming interventions aiming at improving food security and effective safety nets against climatic shocks as well as the identification of climate change adaptation domains for adoption in other CSA systems.

Target Locations

Description of target project sites (livelihood systems, biophysical and social-economic situation, etc):

Kenya Target Site: Taita Taveta County

Taita Taveta County is located in the Coastal region of Kenya and borders Kajiado County to the North West, Makueni County, Kitui County and Tana River County to the North, Kilifi County and Kwale County to the East and the United Republic of Tanzania to the South and South-west. It covers an area of 17,084.1Km2 with 62% or 11,100Km2being within Tsavo East and Tsavo West National Parks. Taita Taveta County is one of Kenya's ASAL regions with 89% of the County area characterized by semi-arid and arid conditions. Only 2.5% of the County (located in the highlands) is classified as high potential area. 62 % of the County area is covered by Tsavo National Park (Tsavo East and Tsavo West National Parks). This coupled with high human population pressure in the lowlands has resulted in human-wildlife conflict. The County population was 329,383 in 2015 and is projected to rise to 345,800 in 2017 (KNBS, 2009). An estimated 57.2% of the population is absolute poor, meaning that they live on less than Kshs 1,562 per month.

The crop and livestock sub-sector are the largest employers and contributors to household incomes in the County. The average farm holding in the areas that have agricultural potential ranges between 0.5 ha to 30ha, while that of rain fed ranges between 2ha - 20ha. The average farm size for small scale farmers is about 0.4 Ha in the highlands, 1.3 Ha in the midlands, and 4.8 Ha in the lowlands.

The County has a bimodal rainfall pattern with two rainy seasons. The long rains occur between March and May with a maximum in April. The short rains take place between October and December. Rainfall distribution is uneven, with the highlands receiving higher rainfall than the lowland areas. During long rains, on average the highlands record 265 mm while the lowlands record 157 mm whereas during short rains, annual rainfall is 1,200 mm and 341 mm for highlands and lowlands respectively. The annual mean rainfall is 440 mm. The average temperature in the County is 23 degrees Celsius, with temperatures getting as low as 18.2 degrees Celsius in the hilly areas, while on lower zones, temperatures rise to

about 25 degrees Celsius.

Main crops grown include maize, beans and pigeon pea; and ranked similarly in order of profitability. The County is a major livestock rearing zone with the main types of livestock being beef cattle, dairy cows, sheep, goats, camels, pigs and poultry. Chicken is the main poultry reared, although guinea fowl rearing is emerging in some parts of the County. Bee keeping is also a livestock enterprise that is undertaken in the County.

Climate change and variability remains a threat to sustainable development in the County. Although climate data from the Kenya Meteorological Department for the County is scanty, there is evidence of a changing climate characterized by increased frequency and severity of extreme events such as drought and floods.

There are observed changes in the seasons whereby the rainy seasons have reduced and the onset of the rains delayed. These changes present additional challenges to the socio-economic development of the County in a number of ways. Within the agriculture sector, which is the most vulnerable, farmers have experienced reduced yields and substantive postharvest losses leading to food insecurity in the County. Rising temperatures are associated with high prevalence of pests and diseases which affect productivity both in crops and livestock. Extreme cold is responsible for frost experienced in some parts of the County. Moreover, shifting seasons means changes in planting period which in turn affects crop performance, while drought results in reduced pasture.

Uganda Target Sites: Sembabule and Isingiro Districts

The two project sites (Isingiro and Sembabule Dsistricts) are located in the cattle corridor of Uganda, which is the most vulnerable to climate change in Uganda. The two areas are dominated with agro-pastoral production systems and provide opportunities to access climate change effects in both crop and livestock production systems. Major vulnerabilities are in terms of changing climatic patterns (shortened rain seasons, increased frequency of long droughts, increased temperatures) which lead to crop failures, and livestock deaths due to water and pasture scarcity

There are climate change activities that have been implemented in these areas. In Sembabule District, FAO has been implementing the Global Climate Change Alliance Project and Farmer Field Schools (FFS) methods used with success. There are also areas where investments in water resources were done and there is need to mobilize communities around these resources using the FFS approach and mainstream climate change into the FFS to foster adaptation.

There is good local extension in the two districts that has been active in implementation of past projects in climate change. FAO has District Climate Change Focal persons and a climate change committee. The District focal point person is either the district agriculture or environmental officer while the climate change committee is chaired by the district Chief Administrative Office.

The two areas have passable road networks as well as communication that cover all parts of the districts and are void of communal fighting and raiding

Ethiopia Target Sites: Boreda and Meso in Eastern and Western Harage zones

East and West Hararghe Zones Ethiopia

East and West Haraghe Zones are situated in the eastern part of Ethiopia, bordering Somali Region as well as the urban administrative regions of Dire Dawa and Harari. Both Zones can be classed into lowlands (30-40%), midlands (35-45%) and highlands (15-20%) areas. The two zones have two rainy seasons; belg (March to May) and meher (June to September). Belg rains are mainly used for land preparation and planting of long cycle crops such as maize and sorghum and seed bed preparation for meher crops. The meher rains are used for planting of cereal crops like barley, teff, wheat and vegetable crops like onion, shallot and potatoes in the mid- and highlands and peanut in the lowlands. Despite the agricultural system in the two zones being strongly subsistence based, East and West Hararghe also have some cash crop production, which includes coffee, Irish potatoes, onions and chat which are produced in the highland areas and to some extent groundnuts grown in the southern lowlands of East Hararghe Zone.

Recurring droughts have depleted the resilience of these zones with particular effect on the food security of agropastoralists in the lowland areas of these zones. The severity of food insecurity is more critical in the lowlands than in the mid- and highlands, mainly due to moisture stress hampering agricultural production. The two zones also suffer from problems of population pressure, land shortage, soil erosion, droughts and chronic food and nutrition security particularly in the lowland areas where moisture stress hampers agricultural production. Crop pests, mainly Quelea birds, bollworm, stalk borer and armyworm outbreaks are additional production constraints, while weeds such as striga, a parasitic weed mainly attacking maize and sorghum, are resulting in yield declines of staple crops.

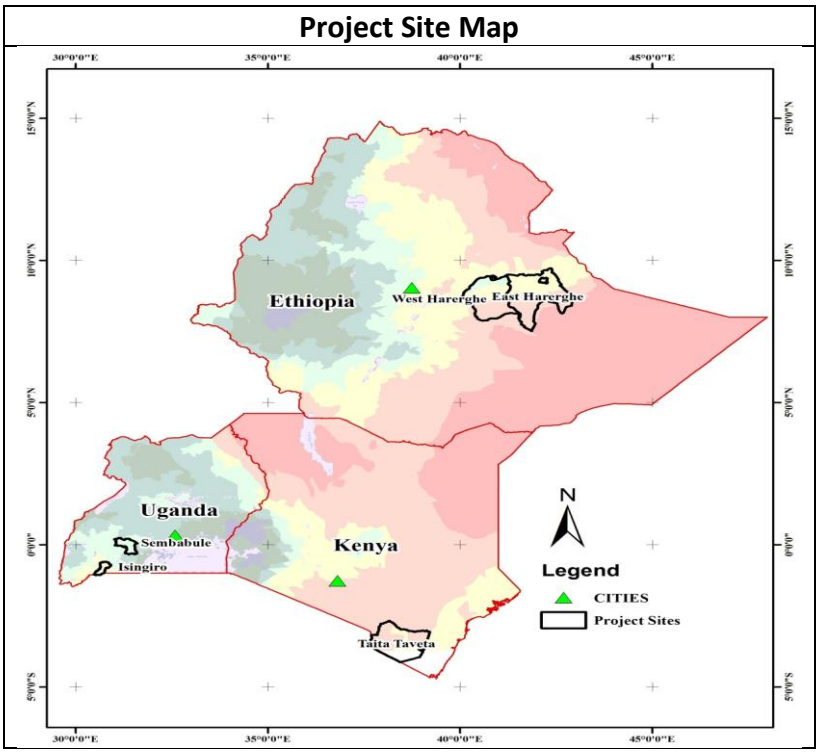
East Hararge is bordered on the southwest by the Shebelle River which separates it from Bale, on the west by West Hararghe, on the north by Dire Dawa and on the north-east by the Somali Region. East Hararghe Zone is one of the drought and conflict prone areas of Ethiopia where malnutrition prevalence has been high for a long period. According to the Central Statistical Agency (2011), the zone has a total population of 3,244,379 inhabitants spread among 648,876 households. The Central Statistics Agency (2011, went on to indicate that of the zones population, 8.27% are urban inhabitants, 1.11% is pastoralist, 17% agro-pastoralists, and the rest are agriculturalists (74%).

Livestock production is major or the sole livelihood of pastoral and agro-pastoral communities and it plays a significant role in diversifying the income of farminign communities in both zones. Among the livestock types, cattle and goats which are the major marketable livestock commodities are the most dominant in the farming system followed by camel population which is the highest particularly in Mieso woreda in West Hararge zone.. Crop residue, natural pasture and weed are the major feed resource for cattle. However, the productivity of livestock has been decreasing substantially due to continuous drought, population pressure and shortage of grazing conversion of grazing land into crop production. Shortage of feed is one of the limiting factors in livestock production. During

drought periods, migrating with livestock to other areas is very common. Livestock disease such as anthrax, blackleg, internal and external parasites is another major problem constraining livestock production and this aggravated during aftermath of drought due to poor body condition of livestock that contributes to the lack of resistance to many of the diseases. This resulted in very low productive performance (pregnancy and birth) due to weak livestock physical body condition. Consequently, livestock product especially milk is very low and livestock herd size is reduced in most of the lowland areas of the two zones.

In past droughts Eastern and Western Hararghe have been among the most highly affected parts of Ethiopia. Whereas in some of the highland areas of these two zones, pockets of high vulnerability exist due to structural development problems, people living in mid- and lowland areas of these zones, especially those making a living from agro-pastoralism, are the most vulnerable to food insecurity.

The current El Niño-induced drought in Ethiopia, one of the strongest on record, has particularly affected adversely smallholder farmers in the north-eastern and eastern parts of Amhara and Oromia Regions, including East Hararghe. The failed rains also affected long-cycle crops typically harvested in the *belq* season (e.g. maize and sorghum), resulting in reduced crop yields, as much as 50 to 90 percent crop losses were experienced. The erratic and delayed *kiremt* rains further hindered the planting and establishment of crops, resulting in/no reduced harvests. Two consecutive seasons below normal rains in both zones severely affected regeneration of pasture and browse and replenishment of water points for livestock consumption. Moreover, crop residues which mostly used as animal feed in most crop dependent areas in the affected zones were scarce due to crop failure. As a result, availability of pasture and browse was much below normal with the shortage being is more severe in the lowland agro-pastoral areas where the project sites are located.



Project / Programme Objectives:

The goal of the initiative is to **"Develop and implement adaptation strategies and measures that will strengthen the resilience of vulnerable smallholder farmers, agro-pastoralists and pastoralists in the Horn of Africa to climate variability and change"** in line with the IGAD Drought Disaster and Sustainability Initiative (IDDRSI) programme, the National Adaptation Plans of Action (NAPAs) and Development Strategies/Visions of participating countries. The overall objective is **"Improved adaptive capacity and resilience to current climate variability and change among targeted farmers, agro-pastoralists and pastoralist communities".**

Project / Programme Objectives:

Project/ Programme Components	Expected Outcomes	Expected Outputs	Countries	Amount (US$)
1.Community Adaptation practice	1. Sustainably enhanced productivity, production, livelihood diversification and income levels among targeted communities	1.1 Participatory adaptation action plans produced in communities in line with the NAP framework. 1.2 Functional climate sensitive FS groups involved in season long participatory learning and experimentation 1.3 Viable community adaptation investment proposals are funded and implementation started. 1.4 Communities are engaged in a peer learning and knowledge sharing processes.	Ethiopia, Kenya, Uganda,	3,270,881.6
2. Climate proofing of extension system	2. Enhanced technical capacity of development and extension actors (national, sub-national, private sector, NGOs, CBOs) to support community level climate adaptation strategies.	2.1 Sub national extension actors' technical capacity on climate proof extension system analysed and capacity needs prioritized 2.2 National, sub-national, private sector, NGOs, CBOs extension and Field School actors' capacity on climate sensitive extension methodologies enhanced 2.3 Knowledge, information and communication systems strengthened for community adaptation to climate change 2.4 Climate information services mainstreamed into Farmer Field Schools/ Agro-pastoral Field schools field practice.	Ethiopia, Kenya, Uganda,	1,195,494.4

3. Climate informed decision making	3. Improved climate informed decision making in regional, national and sub-national institutions	3.1 Downscaled, location-specific seasonal climate forecasts and future projections regularly generated by ICPAC and participating NMHSs 3.2 An efficient agro-climatic advisory and feedback mechanism strengthened 3.3 Agro-climatic advisories appropriately packaged and timely disseminated 3.4 Evidence based climate information feeds into policy dialogues in the region	Ethiopia, Kenya, Uganda,	1,109,624
4. Project/Programme Execution cost				646,000
5. Total Project/Programme Cost				5,657,600
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				578,000
Amount of Financing Requested				6,800,000

Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	01.01.2017
Mid-term Review (if planned)	30.06.2018
Project/Programme Closing	31.12.2019
Terminal Evaluation	30.03.2020

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities, how these activities would contribute to climate resilience, and how they would build added value through the regional approach, compared to implementing similar activities in each country individually. For the case of a programme, show how the combination of individual projects would contribute to the overall increase in resilience.

The project scope provides a highly innovative effort to link upstream and downstream climate information and services to ensure a more farmer, agro-pastoralist and pastoralist friendly approach to climate resilience in agriculture that blends scientific and traditional knowledge systems.

Component 1: Supporting Community Adaptation Practice

Outcome 1: Sustainably enhanced productivity, production, livelihood diversification and income levels among targeted communities

Many of the strategies and policies related to climate change adaptation, resilience and disaster risk reduction in Eastern Africa and the target countries call for community based and bottom up adaptation actions that are locally appropriate in terms of the social, economic and environmental context. The intervention will thus use a community based adaptation planning approach that builds on the field based farmer to farmer learning strategy of the Field Schools approach. This component, led by FAO in close collaboration with relevant regional institutions and country ministries of agriculture, livestock and environment will support capacity building linked to financial support for implementation of locally adapted adaptation practices that enhance food, nutrition and income security. In depth consultation with communities will assist in linking traditional mechanisms for assessing and predicting climate variation with the packaging and dissemination of localized down-scaled climate services (climate forecasts, analyzed historical climate information, assessment of local risks and vulnerabilities). Communities will be supported to apply climate informed farming practices through participatory training and experimentation on appropriate technology and adaptation options through the Agro-pastoral Field School approach (APFS).

Output 1.1 Participatory adaptation action plans produced in communities in line with the NAP framework.

The output will build on the premise that enhanced knowledge of past, present and future climate as well as availability, communication and use of both local and scientific climate and weather information is an integral component of community adaptation planning and enhancement of resilience of communities to weather variability and climate change. NAPs at national level, will be aligned to community planning processes to endure harmony across national, sub-national and community efforts towards adaptation practice, The Output will also ensure the involvement of multiple stakeholders in climate change adaptation and resilience, providing a platform for identification of joint and coordinated responses and actions that build on the different strengths and knowledge of various organizations within and outside of the community and ensures ownership of the process by the climate affected people involving farmers, meteorologists, extension staff, community members, community based organizations, NGOs, local government and other local level support structures. The process will also ensure involvement of both men and women as well as the young and elderly who all have different levels of knowledge relating to weather and climate. The discussion on use and application of both local level and scientific weather information particularly seasonal forecasts and longer term climate projections will aim to identify local level seasonal and longer term climate scenarios and the possible impacts and opportunities in terms of agro-pastoral livelihoods.

Adaptation planning will be conducted on two time scales, the first being on a seasonal timescale to inform short term adaptation strategies (e.g. crop planting date and variety

selection) based on the seasonal weather forecast, the second being on a longer term basis of 5-10 years informed by longer term climate projections. In each of the 3 countries, 10 community adaptation action plans will be developed (i.e. one plan per target community) building on the three APFS groups in each target community. A total of 30 community adaptation plans will thus be produced benefitting up to 40,000 households.

Indicative activities to be implemented under output 1.1 are:

1.1.1 Training of extension/sub-national met staff in target sites in community mobilization and participatory planning processes through a one week training event. The methodology forming the basis of the community based adaptation planning process will build on locally proven and relevant climate change planning tools such as Participatory Scenario Planning (PSP), Participatory Capacity and Vulnerability Analysis (PCVA) and Community Managed Disaster Risk Reduction (CMDDR). Experience is also drawn from climate field school interventions in Western Africa and South Asia that have successfully integrated climate change adaptation planning into the Field School approach.

1.1.2 Initial community sensitization, mobilization and launching of the community adaptation planning processes, linking to NAPs

1.1.3 Context analysis and stocktaking (identifying available information on climate change impacts –including on food and nutrition security, vulnerability and identifying gaps and needs for the adaptation planning process) including community participatory dialogues in 10 target communities per country.

1.1.4 Seasonal short term adaptation planning will take place on a seasonal basis over a period of 1-2 days in each target community and result in locally relevant and agreed upon seasonal advisories in crops, livestock and natural resources management that will be communicated through the FFS, agricultural extension staff, community leaders, schools, community radio stations and other means. The seasonal adaptation planning will also review and update existing community adaptation plans as needed. The community adaptation plans will also include components of preservation of food and feed in a safe manner that can be consumed during the dry seasons. This will enhance the nutrition security of the target groups as well as livestock.

1.1.5 The longer term adaptation planning will take place once within the project lifespan over a period of seven to ten days in each community and will result in the development of longer term adaptation plans that will ultimately inform the funding of technically sound and climate informed adaptation investments for each community.

1.1.6 Compilation and communication of community adaptation plans and support mainstreaming into sub-national development planning and budgeting processes.

Output 1.2 Functional climate sensitive FS groups involved in season long participatory learning and experimentation

In close connection and synergy with ongoing extension interventions and systems in the target sites the Field School approach will be utilized to build climate resilience support self-reliance among community members. The APFS approach allows for the introduction of new adaptation techniques and practices while at the same time building on indigenous knowledge and local innovation systems, with community and gender empowerment as a proven result. The process include mechanism for joint action learning and experience sharing on weather, climate change, local hazards, risks, vulnerabilities, uncertainties and opportunities in terms of agro-pastoral livelihoods, food & nutrition security and production systems and how to utilize and integrate this information into climate informed community adaptation practice. Linking the community risk analysis and planning of outcome 1.1 with a practical hands on learning process through APFS will ultimately support implementation of technically sound, locally appropriate, well informed climate change adaptation strategies.

The project aims to achieve 60 (20 per country) APFS groups reaching 9,000 direct beneficiaries over the project period, at least half of whom will be women with over additional 9000 indirect beneficiaries benefitting through member to neighbor knowledge transmission.

APFS groups set up comparative field studies, running over two rainy seasons, on a group farm or site to undertake regular data collection and monitoring on climatic information, disease surveillance, livestock and vegetation condition, availability & accessibility to diversified foods, soil quality and moisture conditions, crop and pasture production that guide decision making for selection of suitable adaptation practices to adopt at household or community level.

Indicative activities to be implemented under output 1.2 are:

1.2.1 Baseline data will be collected from target groups and members with a focus on community level adaptation practice as to enable monitoring and evaluation of intervention impact.

- Comprehensive 4-week training of facilitators (ToFs) will be undertaken to build capacity of local extension staff or community trainers (depending on country situation) in the APFS approach, on climate change adaptation and ecosystem resilience strategies and on interpretation and dissemination of climate information.

1.2.2 Community Ground working will be undertaken in each target community including sensitization of the community members and leaders, context analysis, group formation and establishment.

1.2.3 Facilitation of participatory learning in APFS group entails APFS groups meeting on weekly basis managing the set up and running of comparative field studies running over minimum two rainy seasons on a group farm or site with the groups involved in regular data collection and monitoring on climatic information, disease surveillance,

livestock and vegetation condition, availability & accessibility to diversified foods, soil quality and moisture conditions, crop and pasture production that guide decision making for selection of suitable adaptation practices to adopt at household or community level.

1.2.4 Provision of learning materials package/grants to APFS groups will enable an effective learning process both in terms of stationary for learning s well as farm inputs and supplies to set up quality experimentation and demonstration of adaptation practices.

Output 1.3 Viable community adaptation investment proposals are funded and implementation started.

The target communities (10 villages per country) will be facilitated and supported to develop collective adaptation investment plans, informed by the APFS group study, that will (following review and approval) be funded by the program. Community investment financing will aim to support inputs, equipment, field supplies and technical support for communities to address priority issue related the sustainable and climate smart use of land, soil, water, forestry, animals and rangeland resources as well as aim to diversify income, food sources through community savings and credit mechanisms and improved storage, utilization and marketing of produce.

Indicative activities to be implemented under output 1.3 are:

1.3.1 Training of communities in village savings systems (VSLA/Vicoba) and financial management and support for establishment of community savings and banking schemes.

1.3.2 Support to development of community adaptation investment proposal in target communities.

1.3.3 Technical review and screening of proposals through multi-sectoral proposal review group and disbursement of financing for approved proposals.

1.3.4 Technical backstopping and monitoring of beneficiary community investment project implementation.

Output 1.4 Communities are engaged in peer learning and knowledge sharing processes.

The peer to peer learning and sharing on experiences and successes in the planning and implementation of climate informed adaptation practice is an important element of the project to ensure larger scale outreach of good practices generated from the intervention.

Indicative activities to be implemented under output 1.2 are:

1.4.1 Within country community exchange visits will be undertaken for communities to share and learn from each other's as well as to visit key adaptation practice demonstration or learning sites in the country through minimum one visit per group.

1.4.2 International Participation in project review processes will be ensured to support the joint learning between communities, project staff and the broader stakeholder group related to the intervention.

1.4.3 Participation in field days and agriculture shows/fairs but target communities and local support actors will be sponsored by the intervention to trigger dissemination of successes and facilitate scale-up of proven practices.

1.4.4 Build leadership and knowledge exchange coalitions for climate change adaptation led by youth and media.

Component 2: Climate proofing of extension system

Outcome 2: Enhanced technical capacity of development and extension actors (national, sub-national, private sector, NGOs, CBOs) to support community level climate adaptation strategies.

This component led by FAO and supported by IGAD and national governments, will support climate proofing of existing agricultural advisory services in the target countries and ensure a minimum level of climate awareness among development actors and advisory support service actors. Working with national agricultural extension service to enable extension staff to better understand the impacts of climate change on local agriculture, food and nutrition security will in turn enable them to provide better advice to farmers and agro-pastoralists. Selected project and government technical staff from the participating target location as well as representatives from national level will be trained on appropriate climate data collection/analysis tools and adaptation strategies. It is estimated that approximately 100 technical staff will be trained per country through short trainings serving over 30,000 beneficiaries over the project period and 24 Master trainers will be comprehensively trained in the region leading the activities of component 1. Through dissemination of timely information on climate-impact and weather forecasts in an understandable format through media an additional 40,000 community members will benefit from some form of climate adaptation advice. The institutionalization process and integration of participatory extension and Field Schools in government mainstream programs and funding streams started in the region will be enhanced, building on member countries and IGADs ongoing efforts.

Output 2.1: Sub national extension actors' technical capacity on climate proof extension system analyzed and capacity needs prioritized

As a pre-requisite for targeted capacity building and information efforts related to skills improvement among extension actors and subject matter specialists in promoting climate change adaptation strategies in agriculture a capacity development plan will be developed. To support enhanced climate sensitivity in extension practice knowledge products on how

to include and mainstream climate sensitivity in farmer and agro-pastoral advisory services will be developed.

Indicative activities to be implemented under output 2.1 are:

2.1.1 Carry out assessment with focus on;

- Stakeholder mapping of actors
- Assessment of the coordination between different actors involved in climate change adaptation planning and extension service provision;
-
- Identification and analyze the barriers and bottlenecks to climate proofing the extension system (technical, institutional and operational).
- Review of existing district level extension system including district development plans, ordinances, planned budgets and bye-laws

2.1.2 Conduct capacity needs assessment for actors and Development of a capacity development plan

2.2.1 Develop training manuals/FS curricula on climate change adaptation best practices, based on review existing training materials on climate change and extension applied both in the sub-region and elsewhere.

2.2.2 Undertake a workshop to validate the climate training curriculum and modules among key stakeholders followed by printing and dissemination of the curriculum

Output 2.2 National, sub-national, private sector, NGOs, CBOs extension and Field School actors' capacity on climate sensitive extension methodologies enhanced

Key public and private actors and subject matter specialist of extension departments will be identified and trained on how to enhance climate sensitivity in mainstream extension practice.

Indicative activities to be implemented under output 2.3 are:

2.3.1 Stocktaking and identification of actors

2.3.2 National and sub-national training of extension actors on climate sensitive extension services.

Output 2.3 Knowledge, information and communication systems strengthened for community adaptation to climate change

Indicative activities to be implemented under output 2.4 are:

2.4.1 Establishment of a knowledge and experience sharing platform following review of existing information systems for dissemination of climate adaptation strategies and pathways

2.4.2 Dissemination of timely information on climate impacts and weather forecasts through selected community radio, social media and print channels.

2.4.3 Formation of dialogue groups for information exchange on climate adaptation.

Output 2.5 Climate information services mainstreamed into Farmer Field Schools/ Agro-pastoral Field schools field practice.

In line with the current significant efforts at country level, especially in Kenya and Ethiopia to institutionalize the FS approach within the public extension system[12] the intervention will support mainstreaming of climate considerations and adaptation practice in mainstream FS practice.

Indicative activities to be implemented under output 2.5 are:

2.5.1 Awareness creation workshops will be held among FS support actors for enhancement of climate considerations in ongoing FS practice.

2.5.2 Development of a generic climate module for FS practice on climate change adaptation and ecosystem resilience strategies.

2.5.3 Refresher training of practicing Field School Master trainers in the region on the climate module and adaptation strategies will be undertaken to supper the mainstreaming of climate sensitive APFS practice.

2.5.4 Lobbying and advocacy for Inclusion climate sensitive FS as mandatory key issue and pre-condition for district budgeting.

Expected Outcome 3. Improved climate informed decision making in regional, national and sub-national institutions

Farmers all over the world face weather-related challenges and hazards which arise from extreme events such as excessive or insufficient rainfall and extreme temperature. These challenges severely impact on quantity and quality of food; and pose harsh negative impacts on livelihoods of farmers & their dependants. In the GHA region, such disasters continuously bring about food shortages which lead to chronic Food and nutrition Insecurity, Famine, Hunger and Starvation, extreme Poverty and at times conflict and forced migration as a result of competition of scarce resources. According to IPCC (2013), these extreme weather and climatic conditions are likely to worsen in the future due to Climate Change. Within the GHA region, the immediate response for such climate-induced disasters has always been mainly through humanitarian assistance; yet this is not sustainable. Climate-related

[12] The project Institutionalization of Field Schools in Eastern Africa (GCP/SFE/002/SWI) is a two year Swiss (SDC) funded initiative started in 2016 supporting networking and coordination among FS actors in the eastern Africa region as well as supporting the institutionalization of FS in public extension services in Kenya and Ethiopia as well as in extension learning institutions regionally.

disasters have already caused significant economic losses in the region; for example, the 2008-2011 drought in Kenya caused a loss of approximately Ksh 968.6 billion (USD 12.1 billion) in which livestock sector alone suffered close to Ksh 700 billion[13].

One of the strategies that has been identified to promote climate change adaptation within vulnerable communities is the appropriate use of accurate climate early warning information to guide production activities. However, in most vulnerable farming communities, such as those in the arid and semi-arid lands, there has not been any deliberate weather and climate information services to inform agricultural planning, decision making and progressive management. Most communities rely on their own (traditional) methods of weather prediction and view conventional forecasts with suspicion, yet due to climate change, the seasons are no longer predictable and so is crop production, pastures and water availability, food security and communities' livelihoods.

Climate variability affects Agricultural production in many ways, notably:

- Inconsistent inter- and intra-seasonal rainfall variability (in intensities and distribution) that lead to moisture stress which results into loss of yield, crop failures, insufficient pastures and water, etc; thus food and nutrition insecurity.
- Increased frequency and magnitude of weather extremes e.g. flooding, prolonged dry spells, droughts, hail storms and associated impacts which lead to outbreaks of pests and diseases, destruction of crops, livestock, household property, lives and livelihoods, infrastructure, etc; thus food and nutrition insecurity.

Without deliberate efforts to support climate change adaptation and resilience building at community level, vulnerable farmers will continue to face these challenges and will remain vulnerable to the associated negative impacts of climate change and variability. A strategy is therefore needed to immediately transform traditional agriculture practices to climate smart agriculture by employing community-based climate services which involves timely provision of quality down-scaled, well interpreted, location-specific climate forecasts and related information and its proper dissemination and use by the respective farmers to enable them make informed decisions about when, what, where and how to plant and manage land, crops, pastures, water, preserve food and feed for later use etc as the season progresses. This component will be led by IGAD and supported by member state NMHSs to facilitate the provision of improved climate informed decision making in regional, national and sub-national institutions.

Output 3.1 **Downscaled, location-specific seasonal climate forecasts and future projections generated regularly by ICPAC and participating NMHSs**

Key activities:

a. Regularly generate improved tailored seasonal climate forecasts and climate change projections for the near future;
b. Conduct training and capacity building in downscaling techniques;
c. Perform high resolution seasonal forecast downscaling;

[13] Kenya Post-Disaster Needs Assessment (PDNA) 2008-2011 Drought, 2012

d. Establish historical climate baseline statistics and trends, including mapping out historical and future areas of concern (hot spots) for selected agricultural communities;

Activity 3.1.1. Improved tailored seasonal climate forecasts and climate change projections

Climate information at various time scales (seasonal, monthly, decadal), including projections of future climates at regional, national and local scales, is required for adaptation. Processing climate data into actionable information and its effective use plays a crucial role in national development planning, for management of development opportunities and risks and most importantly for climate change adaptation and mitigation.

ICPAC currently has an expert team working on Climate Diagnostics, Prediction and Early Warning which produces both long term climate scenarios and medium to long term climate forecasts and climate change projections. ICPAC in collaboration with NMHSs will therefore generate high resolution (at least 1km) seasonal, monthly and decadal forecasts, with a good lead time (at least 1 month) for the 3 participating member states. In addition, ICPAC will provide climate change projections for 1, 2, 3, 5 and 10 year periods downscaled at national level.

It is important that the climate forecasting and climate change modeling teams from ICPAC and member state NMHSs fully participate in pre-COF and GHACOF forums so as to contribute in generating the required climate forecasts at various scales, and to refine seasonal outlooks and climate change projections for initial downscaling to national and sub-national levels. This activity will lead to improved ICPAC's seasonal climate outlooks and projections for the near future which ultimately will lead to improved downscaled climate forecasts and projections by member state NMHSs.

Activity 3.1.2. Training and capacity building in downscaling techniques and communication of uncertainties

There have been pilot efforts to downscale seasonal forecasts in all of the three project countries with reasonable success, but what is still needed is the development of standard procedures for the downscaling, communication of downscaled forecasts to users, and training of staff within the NMHSs on how to do this. The project will use existing competencies at ICPAC and in some NMHSs for human capacity development. In Ethiopian, the National Meteorological Agency (NMA) has developed competency in data management while Kenya Meteorological Department (KMD) is competent in the new WMO Table Driven Code Forms (TDCF) data exchange format. The main areas of capacity building will be on data processing and management, techniques for downscaling the seasonal forecast (e.g. blending of dynamical and statistical techniques), and communication methods. Capacity building workshops will rotate between member countries and the regional centre. The countries will be supported to develop manuals for the downscaling process. Communication and outreach staff from ICPAC and NMHSs will receive training on how to communicate uncertainty, and to develop a standard format for the main climate products, i.e. the downscaled seasonal forecast and the monthly and ten day agrometeorological bulletins.

In addition, NMHS Agrometeorologists to improve on methods of Agrometeorology product development, including use of new tools and procedures (including Instat), tailoring of products to the needs of farmers across the region and season, and use of efficient communication methods including online tutorials, community-based climate field school (face-to-face trainings) as well as use of mobile technology will be strengthened. Capacity building will involve exchange training visits by scientists from ICPAC to NMHSs as well as between NMHSs and vice versa. Three regional and three in-country training workshops will be conducted per year in line with the GHACOF calendar.

The project will leverage any ongoing capacity building efforts at ICPAC or within participating member states to ensure that enough capacity is built so as to sustain continuous development of climate forecast products, interpretation and packaging, and communication of effective climate information products to farmers for increased food production and improved food and nutrition security.

Activity 3.1.3. High resolution forecast downscaling to farming community level

Across the GHA region, there has been growing need for high resolution climate forecasts for target users in agriculture, hydrology, disaster management and health among others at sufficient lead times. To generate high resolution local climate anomalies, downscaling techniques, which can either be statistical or dynamical are applied. Both techniques are currently running at ICPAC.

For sustainability, capacity for both statistical and dynamical downscaling of seasonal forecasts will further be strengthend at NMHSs. Dynamical and statiscal downscaling tools will then be routinely applied for skillful downscaling of weather and climate forecasts across participating countries to generate more reliable and actionable forecast products applicable for agricultural, household food & nutrition security planning and decision making. Seasonal, monthly and dekadal forecasts will be downscaled to 1Km resolution. Attempts will also be made to downscale the seasonal forecasts into monthly and dekadal forecasts at the begining of every season. Downscaled products will act as basis for generation of agro-advisories upon which strategic and tactical decision making by farmers will be based.

Activity 3.1.4. Establishment of historical climate baseline statistics, trends and historical and future climate change hotspots (areas of concern) for selected agricultural communities

Downscaled climate forecast products and relevant historical baseline and trend derivatives create awareness and significantly contributes to climate risk management and climate change adaptation. Appropriate tools and procedures will be applied to analyze historical data and generate useful climatological baseline products such as rain-fed cropping start, progression and end of season, number of rain days, seasonal rainfall distribution in space and time, probability of damaging dry spells and or storms occurring – when, where and for how long, SPI and percentile of precipitation, WRSI and related seasonal water balance variables, seasonal peak, etc. Useful location-specific climatological trends and climate change projections will also be generated. Historical and future climate change hotspots (areas of concern) will be mapped. These baseline products will be made available to each project location during inception.

Output 3.2 An efficient agro-climatic advisory and feedback mechanism strengthened.

Key activities:

a. Establish a database for intermediaries and farmer users
b. Review of existing feedback mechanisms
c. Design, test and validate a cost effective communication and feedback channel

Activity 3.2.1. Database for intermediaries and famer users established

Baseline surveys will be conducted in all project sites in order to establish benchmark demographic and socio-economic status in the communities using appropriate methodology. Baseline year for the baseline data will be set to 2016. A database for all stakeholder categories, their needs and priorities, roles and perceptions will be generated. Of particular interest will be a database for extension service providers, other intermediary information disseminators and targeted user farmers. These baselines will constitute basis for measuring and quantification of the impact of project interventions within the participating communities. Baseline surveys will also identify climate information needs which will be basis for the project to prepare and design products and support climate information generation, use and management capacity.

Activity 3.2.2. Existing feedback mechanisms reviewed

The NMHSs of the target countries currently receive little feedback in a systematic manner from climate information users, which means that there is no efficient process in place for continuous improvement of the services provided. This programme will therefore support the three countries to undertake an assessment of the existing feedback mechanisms, rank them and come up with key recommendations on how to improve on feedback delivery. Comparisons will be made with similar past and ongoing work within the region.

Activity 3.2.3. A cost effective communication and feedback channel designed, tested and validated

In order to obtain verifiable and actionable feedback from climate information disseminators and users, a framework for developing a cost-effective communication and feedback mechanism will be developed, jointly tested and validated. An integrated tool that allows use of available ICT technology including use of internet, mobile phones etc will be evaluated for efficacy in transmitting credible feedback from stakeholders. Lessons will be drawn from past and ongoing similar projects from the region.

Output 3.3 Agro-climatic advisories appropriately packaged and timely disseminated.

Key activities:

a. Regular production of seasonal agriculture planners through national participatory planning workshops
b. Continuous monitoring and evaluation
c. Identification and training of intermediaries
d. Capacity building for agro-met divisions at ICPAC and NMHS

Activity 3.3.1. Seasonal agriculture planners regularly produced through national participatory planning workshops

Building on experiences from previous projects in Kenya and Ethiopia, including the Adaptation Learning Programme Consortium led by CARE[14], ICPAC's community-based climate services pilot project in Kenya[15] and a WMO led Climate Services Programme in Ethiopia, the programme will support multi stakeholder dialogues at national and district levels to co-produce a comprehensive Seasonal Agricultural Planner (SAP) at least twice a year after release of every downscaled seasonal forecast. The seasonal planners will regularly be updated through Dekadal and monthly Agrometeorology bulletins throughout the season. The SAP will guide strategic seasonal planning while monthly and Dekadal bulletins will guide tactical decision making. The needs of all farmer categories, i.e. crop farmers, pastoralists and agro-pastoralists will be considered during (agro-meteorological) product development and customization.

Based on the seasonal agricultural planners, agricultural advisories in form of seasonal agricultural planning calendars will be produced at the start of every season; as well as advice on food and feed preservation for use in unexpected climatic changes. These dialogues will bring together representatives from the extension service, the local government, farmer groups, forecasters, agro-input dealers, agricultural researchers, and other relevant stakeholders. The main product from these stakeholder dialogues will be a tailored seasonal agriculture calendar specifying what, when, where and how to plant, and how to manage the crop as the season progresses for the case of crop farmers; how to preserve the food and feed for later use and how to effectively manage pastures, water and livestock for the pastoral and agro pastoralists.

The most useful agro-meteorological products needed for both strategic (or seasonal) planning and tactical decision making by farmers such as seasonal onset, progression and cessation dates, seasonal peaks, number of wet/rainy days, seasonal rainfall distribution in space and time, likelihood of occurrence of damaging extreme events (such as dry spells and storms), drought risk analyses, WRSI and other modeled products, will be developed, tailored to the needs of different farmer categories and appropriately communicated to participating farmers every season.

Activity 3.3.2. Continuous monitoring and evaluation

Feedback, verification of information and other products and cost-benefit analysis will be done regularly during continuous monitoring as well as during mid-term and final project evaluations. Mid- and end-of-season continuous monitoring and evaluation will assess the level of farmers' compliance to the agreed-upon seasonal work plans and activities – based on advisories disseminated through the seasonal planner, performance of the seasonal forecast (in terms of accuracy of onsets, cessations, amounts, distribution, etc), and the outcomes (crop/livestock performance as compared to baselines). Mid-season continuous monitoring and evaluation will be done in the middle of the season; this will be led by the local extension officers who will write and submit reports to the project team on regular basis.

[14] http://careclimatechange.org/our-work/alp/

[15] http://rcc.icpac.net/wp-content/uploads/Climate_Information_Package_ICPAC_Case_Study.pdf

In addition, the project will get feedback on what challenges or risks farmers faced during the season, and how they managed those risks. Mid-term and final project evaluations will be conducted by external M&E experts. The experts will critically assess the impacts (level of adaptation achieved), sustainability and efficiency in building resilience of the target communities against climate-related hazards and any improvement in economic, social and environmental benefits in the target communities.

Activity 3.3.3. Identified intermediaries trained in PICSA and PSP approaches

The intermediaries identified in Activity 3.2.1 will be trained in climate information interpretation and dissemination so as to enable them organize and guide farmers appropriately. Initially, training needs assessment will be done followed by prioritization of training opportunities. Intermediaries will be trained in PICSA and PSP approaches of community-based climate services – developed by CCAFS/University of Reading and CARE respectively, and customized to suit local contexts.

Activity 3.3.4. Capacity for agro-met divisions at ICPAC and NMHS built

Reliable and timely crop and pasture yield forecasting is critical for informed planning and decision making on food production, marketing, export/import, food distribution and the overall food security in every country. An integrated approach combining Ground Observation (Met), Earth Observation (Remotely Sensed) and Agro-met data, appropriate models and statistical tools need to be developed and operationalized both at regional and national levels so as to provide more reliable, timely and accurate early warning information to decision makers including farmers.

This project will support capacity building in terms of skill development, acquisition of new tools and software, equipment, data, and training to enable efficient modeling and production of reliable crop and pasture model outputs by Agrometeorology divisions at NMHSs.

Output 3.4 = Evidence based climate information feeds into policy dialogues in the region

Key activities:

a. Documentation and dissemination of good practices and lessons learned on the use of climate information in agricultural decision making.
b. Conducting regional and national learning forums
c. Improved regional food and nutrition security assessment coordination including capacity building on linking food insecurity to various climate related hazards.
d. Publication of key findings in peer-reviewed journals

Activity 3.4.1. Documentation and dissemination of good practices and lessons learned on the use of climate information in agricultural decision making.

New and other key information generated from baseline surveys, continuous monitoring, mid-term and final project evaluations, including cost-benefit analysis will be analyzed and well documented. Lessons including verifiable opportunities, challenges and recommendations, and good practices in agriculture, food security & nutrition arising from this project will also be documented.

Project findings will be presented at expert consultation and validation workshops both at national and regional levels. Approximately 30 (for national) and 35 (regional) participants consisting of core expert climate researchers, policymakers and project partners will gather to discuss the results of the project. These workshops will set the tone for broader national and regional stakeholder adaptation dialogues.

Outcomes of these dialogue meetings will be shared as widely as possible including through online means, print and live presentations.

Activity 3.4.2. Conducting regional and national learning forums

ICPAC and NMHSs will host annual regional and national farmers and pastoralist adaptation forums respectively. Planners and policy makers and other key stakeholders will be invited to participate. Forum participants will share experiences and discuss plans for adaptation to climate change in the medium to long term. It is essential that such discussions are based on the best available climate information, and therefore ICPAC and NMHSs will produce relevant climate information to inform the discussions including downscaled ten year climate scenarios and take part in these policy dialogues to explain these scenarios to the planners and policymakers.

National level consultations aimed at strengthening capacity in access, utilization, and evaluation of climate information in community development in each of the selected countries will be organized. The consultations will also support identification of modalities through which public sector and non-government stakeholder groups can benefit from and contribute to climate adaptation and resilient development in communities. Taking account of a need for synergies with the ongoing development and implementation of National Adaptation Plans of Action (NAPA), Nationally Appropriate Mitigation Actions (NAMA) and other national development plans by selected countries and of the need to add value and maximize resources, the project will seek to collaborate on these activities with the implementing agencies whenever possible.

These forums are expected to contribute to the mainstreaming of climate change issues in national and regional policy through dialogue and stakeholder consultations aimed at raising awareness on climate change issues to strengthen understanding, use and mastery of climate information in agricultural development including adaptation.

Activity 3.4.3. Improved regional food and nutrition security assessment coordination including capacity building on attribution of food insecurity to various climate related hazards.

In addition to improving the availability of effective climate services at community level, there is a need for the policy dialogue on food and nutrition security at regional level to be better informed about the outcomes of community-based adaptation and resilience-building efforts in terms of prevailing levels of food and nutrition security, hotspots and priority areas of concern as well as trends, and attribution of food & nutrition insecurity levels to climatic drivers.

The Agriculture and Food Security unit of ICPAC works closely with the regional Food Security and Nutrition Working Group (FSNWG), a regional platform for sharing

information on Food and Nutrition Security, building consensual situation analysis and bringing together a broad number of stakeholders for advocacy and response. The group which meets every month is jointly co-chaired by IGAD and FAO and comprises of over 80 member organisations including relevant government bodies, international, regional and national donor and humanitarian community and non-governmental agencies at all levels. The regional food security and nutrition assessment currently covers the 1 3 countries in eastern and central Africa, including the 3 project countries. ICPAC leads the Climate sub-working group but also contributes to the Agriculture sub group since climate is a known main driver of Food Security/Insecurity. ICPALD co-chairs the livestock sub-working group together with FAO which is in line with ICPALD's mandate.

Through ICPAC, the FSNWG will provide regular (monthly) updates on food and nutrition security including key drivers, hotspots and areas of concern and attribution of food & nutrition security outcomes to various climate related hazards. These updates will act as monitoring tools for the project through comparison with baseline situations and trends.

On the other hand, ICPAC will use this channel to communicate the good lessons and practices derived from the ACREI project to FSNWG stakeholders with a view of soliciting support for upscaling these practices to other countries as well as influence member governments' policy reforms. These will also be shared in other regional forums including the bi-annual IDDRSI steering committee meetings, GHACOFs, etc. The agriculture/livestock and food security and nutrition expert focal points for the FSNWG's member states coordination units will to participate in the agricultural scenario setting during GHACOFs. The project will forge synergies with the existing East African Climate Smart Agriculture platform supported by FAO and host government counterparts. The platform aims at developing solutions on issues around the adoption and sustained practice of climate-smart agriculture including monitoring and evaluation of climate-smart agriculture, value chain development for climate-smart agriculture, access to equipment for climate-smart agriculture, mainstreaming CSA into national agriculture investment plans and the gender dimensions in promotion of CSA practices among others.

Finally, given the fact that food and nutrition insecurity is driven by a multitude of factors such as conflicts and insecurity, compounding socio-economic status e.g. poverty, environmental/land degradation, climatic factors, etc, capacity of regional and national food security and nutrition assessment teams will be built effective food and nutrition security assessment and attribution of outcomes to the various drivers.

Activity 3.4.4. Publication of key findings in peer-reviewed journals

Peer-reviewed journal articles, working papers, etc on accuracy of downscaled forecasts and benefits from appropriate use of climate information in decision making for improved agricultural production and productivity; and any other relevant project outputs will be regularly produced and published.

B. Describe how the project /programme would promote new and innovative solutions to climate change adaptation, such as new approaches, technologies and mechanisms.

According to the Climate-Smart Agriculture Source Book (FAO, 2013), agriculture is inherently risky, and may be even more so in the future with more extreme climate events. For poor farmers, adopting new technologies and production strategies may be beyond their tolerance for risk, given that failure may be catastrophic. It also often requires a certain investment, which – even if minimal – may be beyond their capacity. However at the same time, some scholars[16] have argued that there is a strong negative relationship between household food security and innovation meaning that there is a correlation between innovation in agricultural practices and household food security. In addition the learning of individuals and organizations is important to keep up with and trigger innovations needed to improve resilience and support adaptation to climate change. The ACREI project will thus aim to identify, facilitate and foster innovation at regional, national and community levels so as to enhance the resilience and adaptive capacity of the target communities. The ACREI project will recognize innovation not just as use of a particular technology but as a process of community engagement, learning, testing and adoption of viable adaptation practices that ultimately ensure sustainability of results.

The use of a participatory method of seasonal and longer term adaptation planning based on actual downscaled weather forecasts and climate projections is an innovative aspect of the project that will support the conducting of adaptation practices on two time scales, the first being on a seasonal timescale to inform short term adaptation strategies (e.g. crop planting date and variety selection) based on the seasonal weather forecast, the second being on a longer term basis of 5-10 years informed by longer term climate projections.

While community adaptation planning has been undertaken in some parts of the target countries, the ACREI project will ensure that adaptation planning is fully participatory, takes account of actual weather information (historical trends and forecasts) and climate forecasts (including down scaled high resolution climate change projections), and is aligned with the national adaptation plans/ national adaptation programmes of action of the target countries. Project activities will thus contribute towards and be in line with the broader climate change adaptation plans of the participating countries.

The participatory approach to the project within the framework of farmer field schools will build on farmers' knowledge and their own innovations so as to develop capacity of communities to manage their own environment in a manner that builds resilience and further catalyzes innovation in the long run. The approach will build on practical farming skills, observation, personal experience, knowledge sharing and developing local capacity for adapting complex agro-ecosystems to changes in weather and climate. The approach will also foster the combining of local farmer expertise with scientific knowledge and technological innovations.

[16] Kristjanson, P. Neufeldt, H., Gassner, A., Mango, K. Kyazze, F.B., Desta, S., Sayula, G., Thiede, B., Forch, W., Thornton, P.K., & Coe, R. 2012. Are food insecure smallholder households making changes in their farming practices? Evidence from East Africa, Food Security, 4(3): 381–397.

In addition, the project not only supports adaptation planning aspects but goes further to fund viable, locally appropriate community adaptation investment proposals identified directly through the community adaptation planning process. In most cases in the target countries adaptation investments are often top down with little involvement of the communities in their identification and implementation or in other cases community based adaptation planning has been supported but funds for implementation of the identified actions has not been available. The ACREI project ensures that there is both a bottom up planning approach as well as that the planning efforts do not go to waste and are implemented with participation of the communities.

Using a climate-smart agriculture approach to adaptation planning will enhance adaptation and resilience in the target communities and will importantly contribute to food security as well as identifying opportunities for greenhouse gas mitigation thus also contributing to national greenhouse gas mitigation targets set under countries INDCs that were recently submitted to the UNFCCC. Such initiatives are highly valued by the target countries as well as the global community and hence the use of this innovative approach ensures that the ACREI project will provide both adaptation and mitigation benefits. The climate smart approach will also identify practical innovations that harness synergies between crop, livestock and agro-forestry production to improve the resilience of the target communities as well as the economic and ecological sustainability of the agro-ecosystems in which they live. The climate-smart agriculture approach may include some of the following innovations:

- Identifying and prioritizing locally viable practices that build resilience to climate change;
- Use of climate-smart crop and livestock varieties including drought resistant varieties;
- Changes in timing of farming activities;
- Mitigating while adapting;
- Changing crop, livestock, soil and rangeland management approaches; and
- Promoting more efficient use of land, water, energy and other inputs;

While in many cases policy makers, development practitioners and other national level actors have been supported to conduct cross country learning and experience sharing visits, the ACREI project will also look at cross community level exchange and learning to ensure that communities within the country also learn from each other. This will foster innovation by seeing how other communities have approached climate change adaptation and resilience building and hence enhance scaling up of good practices from one community to another.

The ACREI project also looks at a broader definition of “extension actors” that encompasses not only government agricultural extension agents but also private sector, NGOs, CBOs and other community level support, recognizing that all have a crucial role to play in the resilience and adaptive capacity building within the framework of Component 2 of the ACREI project, ensuring that all actors are able to provide climate informed agricultural advice that promotes the long term adaptive capacity and resilience of the target communities. The ACREI project will link up with the national AU-NEPAD-iNGO CSA alliance chapters. It should be noted that the host government’s Ministry of Agriculture have endorsed this

chapter thus actively engaging with the NGOs members. This also fosters the building of innovation systems outside of those directly supported by the project.

The quality and specificity of Agrometeorological bulletins produced by NMHSs will be improved and will be used to develop Seasonal Agricultural Planners (SAPs) for use in the target communities even beyond the project lifecycle. Through the agricultural bulletins and SAPs, the project will introduce improved, tailored climate information into farmer field schools an aspect that has often been lacking in the past. While farmer field schools have in some cases looked at issues of weather and climate, the ACREI project will aim to ensure that climate and weather aspects are a key component of farmer to farmer experiential learning in areas vulnerable to weather variability and climate change.

In addition, locally appropriate means of communicating climate and weather information through media such as community radio will be explored, including broadcasting of poetry and short drama programmes to create awareness on seasonal weather variability and climate change. The use of ICT for sharing weather and climate information will also be investigated as part of the ACREI project including use of mobile phone based technology that will be linked to a stakeholder feedback mechanism to ensure that all information and advisories generated through the project are relevant to those who receive them.

The partnership between the World Meteorological Organization, The Food and Agriculture Organization and the Inter-Governmental Authority for Development as well as the relevant government ministries/departments for agriculture and meteorological and hydrological services in the target countries is an innovative one in itself. This partnership is expected to be a lesson on the importance of collaboration and coordination of climate change adaptation activities in the region and beyond. The channeling of weather and climate information from regional to national to local level, for tailored location specific agrometeorological advisories feeding into community adaptation planning at seasonal and longer timescales through this partnership will be a model to be scaled up to all countries in Eastern Africa and even beyond.

Lastly, gender considerations and social dynamics will be taken into account in all aspects of the ACREI project so as to ensure that men and women as well as all social groups in the target communities benefit from the innovations supported by the project ensuring gender responsive and socio-culturally appropriate information, technologies and approaches for climate change adaptation and enhanced resilience.

C. Describe how the project / programme would provide economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme would avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

In order to be consistent with the Environmental and Social Policy of the Adaptation Fund the ACREI Project will ensure that all project activities:

- are aligned with local, national and regional policies and programmes
- comply with national laws and global instruments related to environment and natural resources management, plant and animal genetic resources
- are in line with standards, policies and laws for the responsible governance of land including the Voluntary Guidelines for the Responsible Governance of Tenure for Land, Fisheries and Forests in the Context of National Food Security and The African Union Framework and Guidelines on Land Policy in Africa.
- Ensure participation of all relevant stakeholders in project activities without discrimination and with aim to ensure fair and equitable access to project benefits including for both women and men as well as marginalized groups.
- Aim to ensure that project activities in fact target and support the most vulnerable to become more resilient to climate change including women, women headed households, children and the youth.
- Aim for 50% participation of women in project activities and 50% of project direct beneficiaries to be women, while also targeting specific project activities at women or women groups (for example the integrated savings and lending).
- Ensure that all crop and livestock varieties supported as part of the project are locally appropriate non-invasive species and are nutrition dense and culturally acceptable.
- Use a climate-smart agriculture approach to maximize on and take advantage of opportunities within identified adaptation and resilience building options that reduce greenhouse gas emissions and improve the efficiency with which natural resources are utilized in agro pastoral communities.
-

The ACREI project does not involve conversion of natural habitats to other uses and will in fact through some activities such as agroforestry, improve and restore degraded lands, improve soil fertility, reduce erosion and soil nutrient depletion and enhance below and above ground carbon storage.

Through the climate-smart agriculture approach the project will in fact improve biodiversity in crop and livestock production as a means of improving agro-ecosystem resilience to climate change and weather variability.

In addition both WMO and FAO incorporate social and environmental risk screening into the identification phase of all projects, conduct social and environmental impact assessments for all medium or high risk projects, ensures disclosure of project activities and their potential risks with affected communities, engages in a process of free, prior and informed consent (FPIC) with relevant stakeholders and target communities and ensures consultation with communities at all phases in the project cycle to minimise environmental and social risks. The ACREI project has been classified as having Low environmental and social risks by FAO.

Overall, the ACREI programme has been preliminary screened for environmental and social risks and is found to be a Category C project (of the Adaptation Fund social and environmental risk categories), meaning there are not significant environmental or social risks foreseen.

Economic benefits

The ACREI project will directly improve the economic, social and physical resilience of approximately 40,000 people in the 30 target communities in 3 countries in Eastern Africa.

The project will also directly train and engage with 90 agro pastoral field school groups composed of approximately 30 farmers each (totaling 2700 farming households or 13500 individuals based on average household size of 5 people) on experimental field based learning to support sustainable crop and livestock intensification, testing of improved crop and livestock varieties for resilience to weather variability and climate change, physical and biological soil and water conservation measures that also contribute to resilience to climate change and weather variability., physical and biological

The project will directly finance community identified adaptation initiatives in 30 communities that will be based on a climate smart agriculture approach so that all identified adaptation options also yield benefits in terms of food security and maximize on opportunities for contributing to climate change mitigation.

The identified adaptation options will be screened using FAOs climate-smart agriculture investment framework which identifies benefits, trade-offs and opportunities of agricultural activities in terms of climate change adaptation (physical, economic and social), mitigation (carbon sequestration, emissions reductions and improved efficiency of production) and resilience to extreme events such as droughts and floods as per the table II below.

Table II: Measures by which social and economic benefits of adaptation options for the ACREI project will be screened against

Screening measures		Example of CSA responsive actions
Slow on-set	Physical resilience	e.g., development and promotion of drought and/or heat tolerant crop varieties/animal breeds; enhanced water control and storage capacity
	Economic resilience	e.g., increased economic welfare and individual savings; crop insurance schemes; village warehouse receipts facilities, etc. Diversification of production system, improved storage, off-farm earnings, diversity of employment opportunities, health and social services, markets
	Human-social resilience	e.g., increased individual knowledge of climate change impacts; strengthened local resource management capacities; etc. Extension and access to technical know-how, farmer organizations, networks, education and training, information management
Extreme Events		e.g., flood early warning systems; national disaster response preparedness; crop gene bank and robust seed system, etc.
Mitigation	Carbon sequestration	Increased above and below-ground woody biomass; increased soil organic matter content. Forestry, agroforestry
	GHG emission reduction	Reduction in point-source emissions, e.g., use of renewable fuels, re-use/recycling of materials, reductions in wildfires/crop residue burning, etc. Biogas, improved stoves
	GHG emission efficiency	Increased crop/animal productivity per unit of emission output through improved timing of input usage, more complete animal nutrition, etc.

The project will benefit farmers through the following: An average yield increment of 3 times or more for most of the food security crops like sorghum, maize, millet, beans, sweet potatoes and cassava; a multiplier effect of at least 1:100 due to improved planning and decision making and management of agricultural practices by farmers; improved food and nutrition security through crop diversification, food & nutrition education creation of awareness on climate smart practices and precision farming to enable more farmers be able to plan and make the right decisions based on the anticipated weather/climate; farmers will be able to produce more diversified food to ensure that enough food is available within farming households till the next harvest; capacity to safely and hygienically store surplus food will be enhanced, farmers will be able to generate more income from the sale of surplus produce and from the income generated, farmers will be able to purchase other nutritious foods that they are not currently producing..

The CSA approach is responsive to knowledge on local environmental and climate conditions (including agroecology and location specific weather and climate information generated through the ACREI project), and utilizes an integrated landscape approach to climate change adaptation building on the involvement of multiple stakeholders (as will be done in the community adaptation planning process) and aiming at capitalizing on potential synergies, reducing trade-offs between economic gains and effects on the environment and optimizing the use of natural resources and ecosystem services. The ACREI project will thus utilize a CSA approach to maximize adaptation benefits (economic, physical and social) while preserving (and in many cases improving) the ecological integrity of the entire food system in each target community.

The use a location specific weather information and development of community adaptation plans that incorporate a climate-smart agriculture approach will also reduce the chances of costly mal-adaptation by ensuring that adaptation options identified for financing are all locally appropriate as well as scientifically sound based on knowledge of actual weather and climate and the possible climate change scenarios.

Evidence from FAO projects on climate-smart agriculture, to which this project is closely related have identified multiple benefits from certain community based practices that aim to promote climate resilience of smallholder farmers and agro-pastoralists.

The use of the field schools approach will also facilitate the ability of rural farmers to leverage appropriate financial services, markets and market information, as well as engage in diversification with a strong bearing on production, productivity and incomes. Through the field schools collective action is expected to be enhanced, negotiation skills will improve, information sharing will increase. A recent rigorous and quantitative International Fund for Agricultural Development (IFAD) study[17] of one of the first larger FFS projects in East Africa (Kenya, the United Republic of Tanzania and Uganda) showed significant differences in outcomes among participants with respect to value of crops produced, livestock value gain, and agricultural household income as compared to the control group especially among

[17] Davis, K., Nkonya, E., Kato, E., Mekonnen, D.A., Odendo, M., Miiro, R. and Nkuba, J. (2011). Impact of Farmer Field Schools on Agricultural Productivity and Poverty in East Africa. World Development, 40: 402-413.

female-headed and low educated households. Further, a regional level Impact Assessment[18] of Pastoralist Field Schools across Ethiopia, Kenya and Uganda undertaken in 2013 by Bern University showed a strong shift of mindsets among PFS participants from focus on subsistence or survival to a more business-oriented attitude following enhanced production as well as income generating capacity with, especially among women.

Social benefits

Participating farmers will realize numerous of social benefits, in addition to the economic benefits identified above. These include reduced food and nutrition insecurity related house-hold conflicts due to availability and accessibility of safe, diverse and adequate food in the homes. Participating farmers will also generate additional income from sale of surplus food to enable them maintain their children in schools; as well as purchase other variety of foods that they do not produce, so as to enhance their nutrition security. They will also be able to maintain their other social obligations such as religious (e.g. payment of tithe), cultural (e.g. marriage), etc. This will create stable families and enhance their livelihoods.

The use of the field school approach will play a much broader role in society than simply as vehicle for agricultural development, by providing a platform for broader adult education thus filling critical gaps in rural societies commonly characterized by low education. The field school approach equips and empowers farmers with broader ability, to initiate or strengthen a self-perpetuating social system that promotes innovation and sharing of experiences to allow a community to adapt to a hanging environment and thus be more resilient to changes in the long term.

Field schools promote social cohesion within a community and enhance collective action that is both a key component on adaptive capacity and resilience building. With improved social cohesion, mutual trust and collective action the field school members, their families and the community at large gradually becomes more and more resilient to climate shocks, crises and other changes to their agroecosystems.

The field school approach acknowledges farmers as a key source of information and knowledge, thus promoting bottom up planning for improved and more sustainable actions to build resilience of the community as a whole to weather variability and climate change.

Importantly, field schools will incorporate both men and women farmers and will support gender equity, recognition of women's knowledge in agricultural production and climate change adaptation and ultimately encourage the examining of gender norms in the community with a view of empowering women socially and economically within the community. Both individual and collective empowerment, a pre-requisite for collective action and market integration as well as change in gender dynamics have been demonstrated among participants[19].

[18] Hoeggel and Mbeyale, 2014. Impact Assessment of Pastoralist Field Schools in Ethiopia, Kenya and Uganda. FAO, SDC and University of Bern.

[19] [19] Friis-Hansen, E. and Duveskog, D. (2012) The empowerment route to well-being: an analysis of Farmer Field Schools in East Africa. World Development 40(2): 414-427.

The ACREI project will enhance and prioritize the strengthening of livelihoods, of agro pastoralists, by improving access to services, knowledge, resources (including genetic resources), financial products and markets all in a climate-smart agriculture approach.

Environmental benefits

The climate smart agricultural practices such as improved soil and water conservation practices (like minimum or zero tillage, contour ridging, increased use of organic manure), water harvesting and irrigation, bush fallowing, agro-forestry, diversified agriculture including apiculture and plantation agriculture; and rotational grazing, programmed reseeding of degraded rangelands among pastoral and agro-pastoral communities, etc will be encouraged and promoted by the project. This will ensure a lot of environmental benefits.

A number of environmental benefits will be realized from the ACREI project which aims to ensure that adaptation options utilized are also climate smart and maximize their potential to contribute to climate change mitigation. As part of Component 1 of this project a climate-smart agriculture approach will be used to ensure that apart from promoting resilience and supporting community based adaptation, agricultural and natural resources such as soil, water, land and seeds are used more efficiently and sustainably so as to reduce impact on the physical environment. FAO has a Mitigation of Climate change in Agriculture20 (MICCA) programme that contributes to global efforts to address climate change. It builds on the long-standing work carried out by FAO's technical departments and collaborates with international and national organizations. MICCA's work in developing capacities at local and national level, carrying out pilot projects and generating technical knowledge supports climate change actions at the national level as well as climate change negotiation processes undertaken through the UN Framework Convention on Climate Change (UNFCCC).

Community adaptation plans to be financed under the project may also include aspects of rangeland management and agroforestry both of which have benefits in terms of supporting adaptation to climate change as well as supporting soil conservation, reversing land degradation and desertification and

Livelihood diversification activities under this project will also promote biodiversity improvement.

Component	Economic benefits	Social Benefits	Environmental Benefits
1.Community Adaptation practice	• Diversified livelihoods resulting in increased incomes even in times of climate shocks • Community savings and credit mechanisms will be developed as part of community adaptation	• Diversified crops and livestock breeds coupled with increased incomes and nutrition education will result in diversification of foods consumed at	• Adaptation plans to incorporate rangeland management and agroforestry • Improved biodiversity due to diversification of crops and livestock breeds and

[20] More information on the MICCA Programme here http://www.fao.org/in-action/micca/

	investments • Climate informed agricultural practices will result in improved yields	household level, thus improving household food and nutrition security. • Increased gender equality through involvement of women in community planning and tailoring of some activities directly for women (e.g. savings and lending) • Improved social networks through community based planning processes	introduction of improved agroforestry species. • Use of a CSA approach to adaptation planning will ensure maximising of potential for climate change mitigation
2. Climate proofing of extension system	• Improved weather information resulting in more efficient use of inputs •	• Improved community support systems on climate change adaptation • Improved social networks related to sharing of climate information	•
3. Climate informed decision making	• Awareness on the benefits of climate smart agricultural practices created; • Improved farm planning, decision making and risk reduction due to increased access to location-specific climate information leading to improved food production and productivity; • Improved (climate-proof) and safe food storage practices that	• Reduced food and nutrition insecurity related house-hold conflicts due to availability of adequate and diversified food in the homes; • Increased income generation from sale of high grade surplus food will enable farming households maintain their children in schools access health care	• The project will encourage and promote climate smart agricultural practices such as improved soil and water conservation practices (like minimum or zero tillage, contour ridging, increased use of organic manure), water harvesting and irrigation, bush fallowing, agro-forestry, diversified agriculture including

	ensure reduced post-harvest losses through increased access and application of climate information; Increased income generation by farming households owing to improved storage practices and sale of well stored (high grade) surplus food;	services; • Farming households will also be able to maintain their other social obligations such as religious (e.g. payment of tithe), cultural (e.g. marriage), etc; • Increased family stability and resilience to climatic shock thus enhanced livelihoods; food and nutrition security.	apiculture and plantation agriculture; and rotational grazing, programmed reseeding of degraded rangelands among pastoral and agro-pastoral communities, etc. These will lead to a lot of environmental benefits. The beneficiaries will be alerted to implement flood protection measures at farm levels.

D. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme and explain how the regional approach would support cost-effectiveness.

A regional approach for the ACREI implementation of three components is critical for a number of reasons. Firstly, the three project countries have similar challenges that will be addressed during this project and the main factor is small-scale agricultural production which is weather is a product of the seasonal forecast, a process that is lead by the regional climate centre and developed through the Greater Horn of Africa climate outlook forum. This process brings together users and producers of the forecasts three times a year to come up with a consensus forecast and discuss how they will make use of the consensus forecast. The project country, Ethiopia, Kenya and Uganda are involved in this process and hence brings about cost effectiveness. Improvements and adjustments to the forecast to more accurately meet community needs are later undertaken by the individual countries with the inclusion of the regional climate centre as a central implementation actor.

Secondly the adaptation measures being applied in this project in the three project countries will generate lessons learned, and validation of best practices to be documented and replicated in other areas and countries. WMO, FAO and IGAD have sufficient experience and systems in place for knowledge management, documentation and dissemination. FAO has both national and field level offices and technical teams in place in all project countries that will provide a critical role in capturing and sharing experiences, especially in regards to outputs under component 1 and 2. FAO has conducted Farmer Field Schools in the project countries and will scale-up the experiences to other locations covered by this project. IGAD will utilize existing linkages with relevant national level sectors and other regional forums to share lessons learned, good practices and policy recommendations. A designated space for sharing of program experiences and lessons will be opened on the regional resilience partner sharing web platform www.disasterriskreduction.net , financed by complementary funding. Face-to-face interactions through regional meetings and cross country exchange

visits will also be facilitated, across target communities (component 1), among service actors (component 2) across policy and decision makers (component 3). This will assist in streamlining currently scattered and sometimes duplicated efforts of integrating climate considerations in extension and Field School work.

Thirdly the regional approach will enhance cost effectiveness of capacity development as well as ensuring a certain level of generic scope of tools and processes developed for future application beyond the target sites and countries. Centralizing the capacity building of the Meteorological Agencies with the regional body, ICPAC, will enhance cost effectiveness. By using existing structures and staffing in the field already familiar or skilled in the farmer field school approach, start-up will be quick and cost effective. Lastly, a regional approach will ensure close complementarities with the SDC financed Field School Institutionalization project started in 2016 that will support the ongoing uptake of APFS at extension policy level in the target countries.

E. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist. If applicable, please refer to relevant regional plans and strategies where they exist.

The project interventions are in line with the respective government and regional priorities as relates to the significant additional adaptation efforts needed to address the critical interface between climate, agriculture, disaster risk management and livelihoods at the community level. The project directly supports the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI) as well as the Global Framework for Climate services (GFCS) implementation strategy, specifically components 1 and 3 (Developing the User Interface platform and strengthening climate services information systems). GFCS has identified five pillars for building the user interface for agriculture, and this project is implementing three of those, namely: monitoring, data, tools and methods, managing risks of climate variability and change and contributing to food security information and emergency response. The project is designed within the framework of IGADs regional strategy for mainstreaming climate information into key socio-economic sectors for disaster risk reduction and sustainable development. Existing gender policy frameworks will guide project implementation, for example targeting women to access weather services is an IGAD policy imperative. Analysis of existing similar initiatives has taken place to avoid duplication. Close synergies are envisaged with the similar community grant mechanism developed under the IGAD-FAO Partnership Programme in cross-border areas, commencing in 2016. Further, in Kenya close collaboration is envisaged with the National Implementing Entity (NIE) National Environment management Authority-Kenya (NEMA) within the Food security and Knowledge Management components of the Kenya Climate Change Adaptation (KCCAP) program. All elements related to data and information on climate variability will be clearly linked with the relevant national authorities in the countries such as Ministries of Agriculture, Environments and Meteorological departments.

The table below further elaborates alignment with national, regional and global policies and strategies related to agricultural climate resilience.

National	
National Adaptation Plans (NAPs)/ National Adaptation Programmes of Action (NAPAs)	
Ethiopia	NAPA (2007): The NAPA identifies 37 urgent adaptation needs and 11 priority areas including Priority Project 30 on Capacity building for climate change adaptation in Ethiopia at all levels mainly federal as well as regional levels. This project is aligned with this Priority adaptation project as it supports community level adaptation as well as national and regional level capacity on monitoring and interpreting climate information. The ACREI project is also aligned with the NAPA priorities on climate change resilience, climate information and awareness creation on climate change as well as on strengthening or enhancing drought and flood early warning systems in Ethiopia. The Ethiopian Programme of Adaptation to Climate Change (EPACC, 2011) followed the NAPA in 2011 and takes a more programmatic approach to adaptation planning. The EPACC aims to build a climate-resilient economy through adaptation initiatives implemented at sectoral, regional and local community levels. The EPACC identified 20 major problems that Ethiopia is facing as a result of climate change and singled out 7 broad responses to address the problems. The ACREI project is aligned with at least 3 of these 7 broad actions including the following: • Strengthening information generation and dissemination (All ACREI Components particularly Component 3); • Strengthening disaster early warning (Components 1 and 3 of the ACREI project which aim to provide appropriate and timely climate information for local level agricultural planning, improved resilience and disaster risk reduction). • Incorporate adaptation to climate change into educational curricula (Component 2 of the ACREI Project which aims to incorporate climate change considerations into agricultural extension systems). The EPACC has been divided into sectoral climate change adaptation strategies including the Agriculture Sector Programme on Adaptation to Climate Change (APACC) which has as one of it's objectives to mainstream and incorporate climate change adaptation into the social system and existing development efforts from bottom to top levels, making use of the mobilization and coordination of the people.
Kenya	The NAP (2015- 2030) is Kenya's first plan on adaptation and was developed within the framework of sub-component 3 of the National Climate Change Response Strategy (NCCRS) and aims to operationalize

	the National Climate Change Action Plan (NCCAP, 2013-2017) from which it is also greatly aligned. The ACREI Project is thus aligned with Kenya's NAPA through its primary alignment with the NCCRS and NCCAP as elaborated in sections below on national climate change policies.
Uganda	NAPA (2007) Uganda's NAPA of 2007 identifies a number of priority adaptation areas including Strengthening Meteorological Services; Drought Adaptation Projects; Use of Indigenous Knowledge (IK) and Natural Resources Management; and Climate Change and Development Planning. Components 1 and 2 of this project are aligned with Priority Areas 6 on Drought Adaptation Projects; 8 on Indigenous Knowledge (IK) and Natural Resources Management; and 9 on Climate Change and Development Planning. Component 3 of this project is aligned with Priority Area 3 on Strengthening Meteorological Services.
National Development Goals	
Ethiopia	**Climate Resilient Green Economy Strategy (2012)** This has the goal of enabling Ethiopia to reach middle-income status before 2025 by building a green economy. The sectoral CRGE strategy for Agriculture and Forestry identified 41 option to address the problems arising due to climate change and build resilience in the sectors. Among these included information and awareness as key to supporting Ethiopia's transition to a climate resilient economy including ensuring the collection and communication of meteorological data to farmers and communities, and enhancing the ability of the agricultural extension system to disseminate agrometeorological information that enhances climate resilience at the local level. The strategy also identifies capacity building on climate information and research on current and future climate as key to supporting of adaptation in agriculture and forestry in the country. Component 3 of this project directly supports the aspect of capacity building on climate information while Component 2 addresses the issue of enhancing agricultural extensions capacity to convey locally relevant climate information. Other options identified such as crop switching and new varieties, climate-smart irrigation, soil and water conservation, soil management, biodiversity promotion in agriculture and agroforestry among others may in one way or another depending on the local context form part of the community adaptation investments to be developed and supported as part of the ACREI Project.
Kenya	**Kenya Vision 2030 (2007)**

	Represents the country's development blueprint for 2008-2030, identifying agriculture as a key sector to boost economic growth. It aims to transform smallholder agriculture from low-productivity subsistence activities to an innovative, competitive agricultural sector. The strategy places the insulating of development gains from natural hazards as a priority. Operationalized in a series of five-year Medium-Term Plans (MTP), the current MTP (2013 to 2017) places emphasis on devolution, socio-economic development, equity and national unity. Vison 2030 has a pillar on infrastructure with a component on Meteorological systems modernization that aims to improve Kenya's disaster preparedness and mitigation and promote public education and awareness among vulnerable communities and decision makers including introduction of dynamic modelling capabilities for prediction of weather and climate. This is specifically addressed in component 3 of this proposal. The strategy also highlights climate change and desertification as key national challenges as well as indicating the fact that events like the El Niño phenomena can erode the gains made on the economy. The strategy calls for establishment of national trends and impacts of climate change on sensitive sectors (such as agriculture); bridging of the gap between science of climate change and policy making; and pilot adaptation programmes on climate change and desertification. Component 3 of this proposal specifically addresses climate informed decision making, while component 1 and 2 address the development and implementation of climate change adaptation initiatives and the sectoral integration of climate change into agricultural extension. The strategy also links the need for water security in the face of weather variability and a changing climate a component which may become apparent under output 1.2, 1.3 and 1.4 of this proposal.
Uganda	**Uganda Vision 2040 (2007)** The Vision has an overall objective to Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years. The Vison highlights weak management of environment and climate change as key problems affecting the country and states that over the Vision 2040 period, Government will develop appropriate adaptation and mitigation strategies on climate change to ensure that Uganda is sufficiently cushioned from any adverse impact brought by climate change. The Vision goes on to indicate that knowledge and information sharing with the relevant stakeholders on climate change and variability will be the starting point in this endeavor. Component 3 of this proposal specifically addresses climate informed decision making.

	Uganda's 2nd National development Plan (NDP II) whose goal is to facilitate achievement of Vision 2040, has objectives and interventions targeted at increasing the functionality and usage of meteorological information systems and the need to increase the country's resilience to the impacts of climate change both of which are supported by this proposal. Specifically NDP II inherently seeks to take urgent action to combat climate change and its impacts and aims at: • Integrating climate change measures into national policies, strategies, and planning (Target 13.2) - ACREI Component 2 is aligned with this. • Improving education, awareness and human and institutional capacity on climate change adaptation, impact reduction, and early warning (Target 13.3) – ACREI Component 3 is aligned with this. Agriculture is a priority Development Area in the NDP II with priority enterprises selected for improvement including ASAL products such as milk, beef, maize, rice, cassava and beans. NDPII seeks to increase production and productivity of priority agricultural enterprises through increased technology adaptation, irrigation technology, enhancing extension services and promotion of sustainable land use and soil management practices all of which are addressed by the ACREI Project Components 1 and 2.
Poverty Reduction Strategies	
Ethiopia	**Poverty Reduction Strategy Paper (2011)** This paper builds on Ethiopia's Growth and Transformation Plan, and highlights adaptation to climate change and natural resources management as key focus areas as well as highlighting the linkages with the CRGE Strategy. The GTP (currently in it's second phase known as GTP II) identifies climate change adaptation and mitigation as priority areas to ensure the realization of the vision of attaining middle income status by 2025 and highlights among others: ▪ Increase crop and livestock productivities to ensure food security (will be a major focus of the ACREI Project); ▪ Reduce Degradation of natural resources and improve its productivities (will be incorporated in the ACREI Project as part of the benefits of good adaptation planning using a climate-smart agriculture approach); ▪ Promote women and youth empowerment ,effective participation in the development (ACREI Project will facilitate participation of all stakeholder groups particularly the most vulnerable in the adaptation planning process to ensure support to those who need it most).
Kenya	**Poverty reduction Strategy Paper (2012**) Under this strategy, economic growth and job creation were prioritized

	as a means of reducing poverty. The strategy focuses on several thematic areas including economic, social and political. Several means of achieving the goals of the Poverty Reduction Strategy have been proposed, including: i) fight poverty and income inequality; ii) set goals of structural transformation of Kenya's economy towards higher productivity; and iii) improve public infrastructure, in particular the transport network and electricity supply. In particular, through Components 1, 2 and 3, the project is aligned with the Poverty Reduction Strategy.
National Climate-Smart Agriculture Programmes	
Ethiopia	N/A – CSA is elaborated in the CRGE Strategy and INDC
Kenya	**Kenya Climate Smart Agriculture Framework Programme (2015-2030)** The programme is jointly coordinated by the Ministry of Agriculture, Livestock and Fisheries and the Ministry of Environment and Natural Resources and is based on the need to simultaneously enhance gains in agricultural productivity, build resilience to climatic and weather shocks as well as reduce emissions intensity from agriculture and food systems where possible. The Vision for the CSA Program is a "Climate resilient and low carbon growth sustainable agriculture that ensures food security and contributes to national development goals in line with Kenya Vision 2030." Among other aspects of resilience in agriculture the Programme specifically calls for "Agro-advisory services that include climate applications for agriculture" to help farmers to make informed decisions in the face of risks and uncertainties. These applications include seasonal weather forecasts, monitoring and early warning products for drought and floods to help "increase the preparedness of the farmers, well in advance, to cope with risks and uncertainties". This is an underlying principle of the ACREI project and is hence well aligned with this Programme. **Forest and Farm Facility Programme** The Forest and Farm Facility funds partnership agreements and small grants with smallholder, women, community and Indigenous Peoples' producer organizations and Governments at local, national, regional and international levels through the following pillars: •Strengthen smallholder, women, community and Indigenous Peoples' producer organizations for business/livelihoods and policy engagement. •Catalyze multi-sectoral stakeholder policy platforms with governments at local and national levels. •Link local voices and learning to global arena through genuine participatory processes/communication and information sharing. The FFF programme in Kenya works in two counties (Nakuru and Laikipia) and the main goal is to build the resilience capacity of producer organisations.

	GEF Project: Restoration of arid and semi-arid lands (ASAL) of Kenya through bio-enterprise development and other incentives under the Restoration Initiative (TRI): Fostering innovation and integration in support of the Bonn Challenge. The Restoration Initiative (TRI) Program has been developed to make a significant global contribution to restoring ecosystem functioning and improving livelihoods through the restoration of priority degraded and deforested landscapes, in support of the Bonn Challenge, and in response to the expressed needs of countries. Through the GEF programmatic approach, the TRI will create synergies, provide a wider array of tools and resources to national projects, and leverage key partnerships to yield cost savings and realize greater impact than possible under a fragmented, project-by-project approach. The goal of the project is to alleviate poverty and build the resilience of dry land communities against impacts of climate change through sustainable management of NWFPs and services.
Uganda	**The Uganda Climate Smart Agriculture Programme (2015 – 2025)** This programme is jointly implemented by the Ministry of Agriculture, Animal Industry and Fisheries and Ministry of Water and Environment. The Vision of the CSA Program is a "Climate resilient and low carbon agricultural and food systems contributing to increased food security, wealth creation and sustainable economic growth in line with the National Vision 2040." As with the Kenya CSA Programme, Uganda's also highlights resilience in agriculture the Programme specifically calls for "Agro-advisory services that include climate applications for agriculture" to help farmers to make informed decisions in the face of risks and uncertainties. These applications include seasonal weather forecasts, monitoring and early warning products for drought and floods to help "increase the preparedness of the farmers, well in advance, to cope with risks and uncertainties". This is an underlying principle of the ACREI project and is hence well aligned with this Programme.
Agricultural Sector Development Plans	
Ethiopia	**Ethiopia's Agriculture Sector Policy and Investment Framework (2010–2020)** The PIF does highlight climate change as a key cross cutting issue and indicates improved short and long term weather forecasting, and risk management measures to cope with increasing climatic variability as areas of focus to support climate resilience and adaptation to climate change. This project is thus aligned with these aspects of the PIF.

	In addition, according to the external mid-term review of the PIF, "The PIF final document covers issues of climate change and where the focus should be; and that the first annual PIF review paid much attention to CRGE issues in agriculture, given the high level of dependence on rain fed agriculture."
Kenya	**Medium-Term Investment Plan for the Agriculture sector** This plan indicates that arid and semi-arid parts of the country are prone to more frequent and more severe droughts and associated food insecurity due, and hence highlights climate change as a main cross cutting issue in agricultural development and investment. The plan highlights enhanced access to extension services for underserved areas and populations, especially those in chronically food-insecure areas and states that Kenya's agricultural investments should integrate climate information for effective planning and forecasting; infrastructure and management practices for climate proofing and resilience (e.g., such as flood defense and drainage systems; reservoirs, wells and irrigation channels, and soil restoration and conservation); resilience-enhancing measures for vulnerable groups; and institutions for disaster risk management, including early warning and response systems. Component 3 of this project responds to the need for enhanced climate information, while components 1 and 2 respond to the need to enhance resilience and climate proof the country especially with regards vulnerable agro pastoralists Pillar 3 on Sustainable Land Management and Natural Resources Management also states that Knowledge about the impacts of climate change will be enhanced, leading to development and dissemination of context-specific options for climate change adaptation especially in arid and semi-arid lands where there is need for Increasing awareness of climate change impacts and promoting viable climate change adaptation strategies. This is clearly supported in Components 1-3 of this project.
Uganda	**Agriculture Sector Development Strategy and Investment Plan (DSIP, 2010)** The DSIP currently considers climate change and its impacts on agriculture among other sectors as a major cross cutting issue. In addition, the DSIP includes a sub-component on developing capacity for climate change adaptation planning and also includes aspects of training on climate advisory for farmers, climate monitoring, capacity for weather forecasting and climate information among the activities all of which this project proposal is aligned with and will contribute to. The DSIP will be replaced by the Agriculture Sector Strategic Plan (ASSP)

	in 2016 which will be aligned with Uganda's Vision 2040 and the second National Development Plan. The prospects that the new ASSP will incorporate significant cross-cutting climate change considerations are high as FAO has supported an exercise on capacity building of key Ministry of Agriculture technical staff on mainstreaming climate-smart agriculture into national agricultural investment plans.
National Climate Change Policies	
Ethiopia	Climate Resilient Green Economy Strategy – see national development Plans above.
Kenya	National Climate Change Response Strategy (2011) & National Climate Change Action Plan (2012) The vision of the NCCRS is for a prosperous and climate change resilient Kenya and it's strategic objective focus among others on enhancing understanding of climate change and its impacts nationally and in local regions (including through analysis of local/national meteorological data); Develop comprehensive national education and awareness-creation Programmes (including simplifying climate impacts and weather information into a more understandable form particularly for vulnerable rural communities); and recommending robust adaptation and mitigation measures needed to minimize risks associated with climate change (focusing on immediate action to reduce climate impacts and improve resilience of the most vulnerable). Component 1 of this proposal focuses on recommendation and implementation of robust locally appropriate adaptation measures; Component 2 focuses on ensuring climate information is integrated into the agricultural extension system and is simplified for use in agricultural advisory, while Component 3 of this project aims to improve understanding, knowledge and forecasting of climate including through science and collection, analysis and improved dissemination of climate information. The strategy also calls for capacity building and strengthening of institutions with regards to climate change and disaster risk reduction which also forms a key part of this project as there will be capacity building from regional to local level on climate science, climate information and community led adaptation planning. The NCCRS calls for development partners to provide support to the KMD's Early Warning System to facilitate the timely dissemination of projected and downscaled weather information to farmers; enhancing agricultural extension services to train farmers on how to better cope with climate variability and change which forms a key part of the ACREI proposal. The National Climate Change Action Plan provides a means for implementation of the NCCRS and highlights a number of agricultural adaptation priorities which include: Coordination and mainstreaming of climate change into agricultural extension; strengthening capacity on climate change data and information; climate proofing the ASALs;

	supporting sustainable livelihoods in ASALs; and establishment and maintenance of climate change related information for agriculture; Up-scaling specific adaptation actions (such as promotion and bulking of drought tolerant traditional high value crops, greater harvesting for crop production; Index-based weather insurance; Conservation agriculture; Agro-forestry; and Integrated soil fertility management). Both the NCCRS and the NCCAP are closely aligned with Kenya's Vision 2030 and help fill any gaps on integrating climate change and climate proofing of Kenya's development efforts based on Vision 2030.
Uganda	**National Climate Change Policy (2013)** The *Uganda National Climate Change Policy* is based on the following priority concerns: adaptation, mitigation, and research and observation and emphasizes climate change adaptation in agriculture and livestock production to enhance resilience and sustainability of these production systems. The goal of the policy is to ensure "a harmonized and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda" and has an overall objective of ensuring that all stakeholders "all stakeholders address climate change impacts and their causes through appropriate measures, while promoting sustainable development and green growth". The NCCP considers adaptation the top priority for Uganda, "while mitigation efforts are embraced by the policy as secondary and this is aligned with the ACREI Project which prioritizes adaptation but will also integrate mitigation opportunities where possible through a climate-smart agriculture approach. The ACREI proposal supports harmonized and coordinated action on climate change from regional to local level as well as between different sectors of meteorology, agriculture (including extension) and environment. The objectives focus on promoting adaptation and also enhancing integration of climate change into decision making in all sectors. Of importance the Policy puts emphasis on community based and bottom up adaptation planning through extension services and improved systems for conveying timely climate information to rural populations to enhance the resilience of agricultural systems to the impacts of climate change, which is a key aspect of the ACREI proposal. In brief: • Component 1 of the ACREI Project is aligned to objective 2- identify and promote adaptation to climate change. • Component 2 of the ACREI Project is aligned to objective 5 – support integration of climate change issues into planning and decision making. • Component 3 of the ACREI Project is aligned to objective 4 – identify and promote monitoring, detection, attribution and

	prediction.
National DRR Plans and Strategies	
Ethiopia	**National Policy and Strategy on Disaster Risk Management (2013):** The policy has an overall goal "To see capacity for withstanding the impact of hazards and related disasters is built at national, local, community, household and individual levels; and damages caused by disasters are significantly reduced by 2023". Specifically it aims to reduce an prevent disaster risk and vulnerability by integrating DRR into development planning and includes strategies and activities on early warning and information exchange as well as capacity building of actors on DRR at all levels. The ACREI project will facilitate adaptation planning to reduce disaster risk, information sharing on climate change and climate related hazards, as well as capacity building of extension actors to improve the resilience of communities to climate related threats and crises such as droughts and floods.
Kenya	**The National Disaster and Management Policy (2012)** This policy institutionalizes disaster management and mainstreams disaster risk reduction in the country's development initiatives. The policy aims to increase and sustain resilience of vulnerable communities to hazards. The ACREI project aims to do exactly this and targets the most vulnerable and climate change affected communities in the arid and semi-arid lands of the country.
Uganda	**The Uganda National Policy for Disaster Preparedness and Management.** This has among its objectives the need for early warning information generation and dissemination and includes community participation, early warning and focus on climate related hazards among its guiding principles, all of which are enshrined in the ACREI Project.
Intended Nationally Determined Contributions (INDCs)	
Ethiopia	Ethiopia's INDC while focusing on contribution to global climate change mitigation efforts highlights a number of short and medium term adaptation goals to which this proposal are aligned and include: (i) increasing resilience and reducing vulnerability of livelihoods and landscapes to droughts and floods and gradual climate change and (ii) ensure that climate change is mainstreamed into development activities (including agricultural development).
Kenya	Kenya's INDC while focusing on contribution to global climate change mitigation efforts highlights a number of priority adaptation areas to which this proposal are aligned and include (i) Enhance climate information services; (ii) Enhance the resilience of ecosystems to climate variability and change; (iii) Enhance the resilience of the agriculture, livestock and fisheries value chains by promoting climate smart agriculture and livestock development.

Uganda	Uganda's INDC has a component on climate change adaptation to which this project is aligned and whose long term objective is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures, while promoting sustainable development and green growth. The priority adaptation activities identified include expanding climate information and early warning systems; mainstreaming climate resilience in all sectors; and developing vulnerability risk mapping based on better data on climate change impacts at sectoral and regional level. The INDC also mentions Climate-Smart Agriculture (CSA), diversification of crops and livestock, rangeland management, small scale water infrastructure, research on climate resilient crops and animal breeds all of which may form parts of the community adaptation investments.
Other Policies and Programmes	
Kenya	**The Climate Change Bill** recently enacted by Parliament and ascended into Law by the President and aims to promote integration of climate change adaptation and mitigation concerns into national policies and processes in line with Vision 2030. **The Constitution of Kenya** devolves key agriculture subsectors (including crop and animal husbandry, plant and animal disease control and fisheries) to sub-national (local) levels. This is in line with the ACREI proposal which will support county and community level capacity building and adaptation planning including supporting delivery of enhanced, timely and locally appropriate climate information to farmers through agricultural extension service providers. **The Arid and Semi-Arid Lands (ASALs) Policy** aims to revitalize ASALs by harnessing livelihood opportunities in these areas. The ACREI project will focus on such areas to build the resilience of agro pastoralists in the ASALs to climate change thus being in line with this policy which also calls for the provision of basic services and decentralizing the planning of livelihood diversification, community participation and early warning systems, which constitute important development priorities for the ASALs in the context of a changing climate. **The Farm Forestry Rules** requires farmers to establish and maintain farm forestry (e.g., woodlots or trees on farms) on at least 10% of their agricultural land and the ACREI project through the climate-smart agriculture approach to be utilized in the community based adaptation planning will incorporate where possible and locally appropriate the use of agroforestry. National Food and Nutrition security policy, 2011 (FSNP). Stipulates that all Kenyans throughout their life-cycle enjoy at all times safe food in sufficient quantity and quality to satisfy their nutritional needs for optimal health. The FNSP addresses associated issues of chronic,

	poverty-based food insecurity and malnutrition, as well as the perpetuity of acute food insecurity and malnutrition associated with frequent and recurring emergencies, and the critical linkages thereof. The ACREI project is in line with this policy, to improve the resilience, food and nutrition security of target populations through climate smart agriculture, climate information for agricultural production, safe preservation and utilization of food in all seasons.
Uganda	**The Constitution of Uganda p**rovides an overall regulatory framework for the implementation of climate change policies. It states that "every Ugandan has a right to a clean and healthy environment" and advocates for the management of the environment for sustainable development. ACREI Component 1 addresses sustainable food production and improved income through climate change adaptation and particularly the use of climate-smart agriculture approaches.

Regional	
IGAD Drought Disaster Resilience and Sustainability Initiative	The IDDRSI is aimed at addressing the effects of drought and related shocks in the IGAD region in a sustainable and holistic manner. The Strategy has 7 priority Intervention Areas (PIAs) of which PIA 4 calls for Disaster risk management, preparedness and effective response through among others, climate monitoring and addressing of climate change. This project directly responds to PIA 7 of the IDDRSI strategy. This project will also support PIA 1 on natural resources management through promotion of adaptation and climate resilience strategies that are based on sustainable natural resources management; PIA 3 on livelihoods support through Component 1 of this project that will support communities in improving their livelihoods in the context of a changing climate; PIA 5 on research, knowledge management and technology transfer through Component 3 that focuses on climate information and also includes components on knowledge sharing; and PIA 7 on coordination, institutional strengthening and partnership through promotion of inter-sectoral and regional to local level collaboration to support climate change adaptation.
4th East African Community Development Strategy (Kenya and Uganda)	The 4th East African Community Development Strategy (EACDS) outlines broad strategic goals of the EAC and highlights that Agriculture and food security will receive more serious attention by the EAC in the next and this will be achieved through implementation of the EAC Agriculture and Food Security Action Plan so as to ensure structural change as well as technological upgrading of agriculture, especially in the face of adverse climate change. The Strategy also states that "Delivery of meteorological services including application of weather and climate products remains national though harmonization of policies is better handled regionally. The application of weather, climate and hydrological information and related services helps improve the safety and well-being of people and reduce damage to property, reduce poverty, improves safety of the transport sector and helps in monitoring and protecting the environment for future generations. Studies have shown that up to 60 percent of all economic activities are weather sensitive. Further, studies have also shown that over 90 per cent of all natural disasters are weather and climate related. Meteorological services therefore play a leading role in disaster risk reduction. Component 3 of this project proposal thus addresses Priority Area 5.5 of the Strategy which calls for Improvement of meteorological services in the region including building the capacity in climate analysis, short, medium and long range forecasting and meteorological observations as well as building capacity in climate analysis, seasonal/forecasting and meteorological observations.

	All components of the project are also aligned with Priority Area 6.4 on Sustainable natural resource management, environmental conservation, and mitigation of effects of climate change across the East African region.
East African Community Climate Change Policy (Kenya and Uganda)	The overall aim of the Policy is to contribute to sustainable development in the EAC region through harmonized and coordinated regional strategies, programmes and actions to respond to climate change. This includes specific objectives related to: • Promote climate change research and observations through monitoring, detection, attribution and model prediction to enhance climate change preparedness. Component 3 of this project responds to this objective. • Identify priority adaptation and mitigation action areas and roles of Partner States and other stakeholders to address climate change in the region. This project directly responds to this joint call for action by bringing together multiple stakeholders from regional to local level to enhance climate resilience in the target countries. • Promote capacity building efforts through, inter alia, education, training, research, technology development and transfer, information and knowledge management. Components 1 and 2 of this project specifically address capacity building on climate change adaptation and improved use of weather and climate information for farmers and agro pastoralists as well as agricultural extension agents.
Sustainable Development Goals (SDGs)	This project is primarily aligned to Goal 2 and Goal 13 of the SDGs which requires countries to Take urgent action to combat climate change and its impacts. Specifically the project is aligned with the following SDG 13 targets and indicators: 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries - is a key part of the project and is evident in all 3 Components of the project. 13.2: Integrate climate change measures into national policies, strategies and planning – Component 3 will facilitate improved knowledge and understanding of weather and climate change while Component 2 will specifically aim to integrate climate considerations into agricultural extension strategies and implementation. 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning – Will be facilitated through Components. 13.b: Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries

	and small island developing States, including focusing on women, youth and local and marginalized communities – This project will be directly aimed at promoting mechanisms that raise the capacity of smallholder farmers and agro pastoralists in developing countries to be resilient to climate change. In addition the project will contribute to the following SDGs in one way or another: Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture. This is a major issue to be addressed through all components of the project since the primary community level beneficiaries are smallholder farmers and agro pastoralists whose food and nutrition security is impacted directly by climate change due to their climate dependent livelihoods. 2.1- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round, 2.3- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment; 2.4- By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality SDG 5: Achieve gender equality and empower all women and girls. This will be done through involvement and consultation of both women and men to ensure project activities reap appropriate benefits for both men and women and not increase the burden on women. Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss. Component 1 of this project will support targeted communities, smallholder farmers and agro pastoralists to develop adaptation strategies that take into account their local contexts, combat land degradation and promote sustainable natural resources management for resilience to weather variability and climate change.

	Goal 17: Revitalize the global partnership for sustainable development. The project will contribute to SDG 17 by enhancing cooperation between institutions to tackle a major issue of common concern. The project also supports improvement and capacity building on meteorological data monitoring for improved adaptation planning from sub-regional level (IGAD) down to local level.
Paris Agreement	At Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal on mitigation, adaptation, Loss and damage etc. On adaptation, Parties agreed to strengthen ability of societies to deal with the impacts of climate change, and ongoing supports from the international community for adaptation in developing countries. This project will contribute to the outcome of the Paris Agreement, especially building community adaptation practices through participatory community adaptation planning, training and experimentation on appropriate technologies and adaptation options on the ground. By doing so, the project aims to improve the adaptive capacity and resilience of vulnerable smallholder farmers, agro-pastoralists and pastoralists in the Horn of Africa. With continued and enhanced international supports for adaptation to developing countries through the Adaptation Fund, this project helps to build capacity by linking to financial supports for the implementation activities, such as technologically sound and economically viable community adaptation investment proposals. The project also aims to provide training to national, sub-national, private sector, NGOs, CBOs on adaptation options responding to local climate variability, and improve climate informed decision making in regional, national and sub-national institutions.
The Sendai Framework for Disaster Risk Reduction	The Sendai Framework for Disaster Risk Reduction aims at substantial reduction of disaster risk and losses of lives and livelihoods of communities. It comes with the seven global targets in the four priorities for action. This project intervention will be screened against extreme events in the project areas in the countries against physical, economic and human-social resilience by addressing critical interface between climate, agriculture, disaster risk management and livelihood at the community level. The project supports the IGAD Drought Disaster Resilience and Sustainability Initiative to understanding disaster risk of vulnerability communities. The project is designed and implemented within the framework of IGADs regional strategy for mainstreaming climate information into key socio-economic sectors for disaster risk reduction and sustainable development, including early warning and response service.

	There are also aims to contribute to the Sendai Framework for capacity building and strengthening of institutions with regards to climate change and disaster risk reduction which also forms a key part of this project. The IDDRSI is aimed at addressing the effects of drought and related shocks in the IGAD region in a sustainable and holistic manner. The Strategy has 7 Priority Intervention Areas (PIAs) of which PIA 4 calls for Disaster risk management, preparedness and effective response through among others. This project directly responds to PIA 7 of the IDDRSI strategy.
Global Framework for Climate services (GFCS)	Following the decision of the World Climate Conference-3 (WCC-3) to establish the GFCS, a taskforce of high-level independent advisors (HLT) prepare a report recommending for it and the next steps for its implementation. The report of the HLT was endorsed by the Sixteenth Session of the World Meteorological Congress, which entrusted the WMO with the responsibility of moving ahead. GFCS provides a worldwide mechanism for coordinated actions to enhance the quality, quantity and application of climate services for better management of the risk of climate variability and change and adaptation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale. WMO will lead in the management of the climate services. In the project countries useful climate data and information are initial constrain. In addition, technical, financial and policy gaps are major limitations to provision of effective climate services. The project will intervene by conducting in depth consultation with communities to link traditional mechanisms for assessing and predicting climate variation with the scientific tools to down-scaled climate services (climate forecasts, analyzed historical climate information, assessment of local risks and vulnerabilities). Under the leadership of WMO, and ICPAC, the Regional Climate Centre the capacity of the NMHSs in the target countries to produce the required climate services will be built through training, infrastructure development and other resource investment. Building on experiences from WMO ongoing projects in African to provide climate services in the African countries, a WMO led Climate Services Programme in Ethiopia, the programme will support multi stakeholder dialogues at the district level to co-produce agricultural advisories for the Seasonal Forecast at the start of every season.
Comprehensive Africa Agriculture Development Programme	The overall goal of CAADP is to Help African countries reach a higher path of economic growth through agriculture-led development, which eliminates hunger, reduces poverty and food insecurity, and enables expansion of exports. CAADP includes aspects of sustainable intensification and resilience of production systems for which the ACREI

(CADDP)	Project directly supports.
African Union Priorities	The Malabo Declaration (2014): Enhancing Resilience of Livelihoods and Production Systems to Climate Variability and other related risks (Malabo) Agenda 2063: Climate resilient low carbon production systems in place and significantly minimizing vulnerability and natural disasters NEPAD has a priority programme to scale up climate-smart agriculture practices to 25 million farming households in Africa and the ACREI project will contribute to this.

F. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

The programme has been preliminary screened by both FAO and WMO for environmental and social risks and is found to be a Category C project, meaning there are not significant foreseen environmental or social risks. The preliminary screening has involved checking for the following factors among others:

- That the project will not have a negative effect on water availability and quality in the target areas;
- That the project will not result in the displacement of any people in the project target areas;
- That the project will not negatively affect the tenure rights of individuals, communities or others;
- That the project will not have any negative impact on the biodiversity and genetic resources of the target communities;
- That the project will not encroach into or affect protected areas and critical habitats;
- That the project will foster gender equality and promote equitable access to resources and services;
- That the project will be sensitive to the culture of the people in the target areas.

The ACREI project has been found to meet all of these requirements all of which will be continually monitored throughout project implementation to ensure that no negative social or environmental affects emerge as a result of the project.

In addition, along with being aligned with the sub-national, national and regional plans, policies and strategies of the target countries as described in Section 2E, as well as being in compliance with the Environmental and Social Policy of the Adaptation Fund as elaborated in Section 2C and above, the project implementation team will also ensure that all relevant national technical standards, laws and byelaws for construction and infrastructure are adhered to where such developments are required as part of the project. To support this, all project activities will be implemented in close collaboration with the National Meteorological and Hydrological Services (NMHS's) and the relevant Ministries of Agriculture, Livestock and Environment so as to ensure compliance with the relevant standards and technical guidelines in each of the target countries. Overall, the project has been designed to comply with all relevant national and international laws, regulations and technical standards related to resilience building in the project target areas. Labour laws will also be adhered to in line with international standards. The national and international standards related to weather and climate information as prescribed by the WMO and the National Meteorological and Hydrological Services in the target countries will be adhered to so as to ensure quality outputs in this regard.

A project grievance mechanism will be introduced in all target communities, so as to ensure that there is a mechanism for stakeholders to communicate and get feedback on any problems regarding project implementation including problems related to environmental and social standards.

G. Describe if there is duplication of project / programme with other funding sources, if any.

The ACREI project is designed to complement and synergise with similar ongoing projects and programmes, most notably the DFID funded Weather Information and Services (WISER) for East Africa project; the Adaptation Consortium Programme in Kenya; the USAID funded PREPARED project; expert placement by NORCAP; the CCAFS project on effective climate services for agriculture and food security; the ASARECA's Network of Climate Smart Landscapes in Kenya, Uganda and Ethiopia and the FAO/UNDP Integrating Agriculture in National Adaptation Plans programme being conducted in Kenya and Uganda.

One of the activities under WISER is to improve the seasonal forecasting process for the Greater Horn of Africa. The ACREI project will build on this initiative and utilize the improved seasonal forecasting process to allow for further refinement and downscaling of the forecast to community level in the target countries.

The support from USAID through the PREPARED project aims at developing capacity for climatological baseline and trend analysis (in form of tools and skills development), software development e.g. the GeoCLIM tool, data rescue and gridding, climate hotspots and vulnerability mapping, and downscaling of global climate change scenarios to regional and national projections – e.g. Climate Change Scenario for Eastern Africa for 2030. The ACREI project will build on this project to ensure the capacity is built in the three target countries so as to also build national capacity and not only capacity of ICPAC.

In addition, ICPAC has benefited from expert placement by NORCAP in collaboration with WMO. These programs are aimed at equipping ICPAC and scientists with appropriate tools and skills to not only run the dynamical models but also be able to conduct verification of dynamical model outputs as well as downscale global climate forecasts and climate change projections to regional and national scales. The ACREI project will build on the knowledge and skills of those who have participated in the expert placement programme and who can train others on what they have learned.

CCAFS, through funding from USAID is supporting ICPAC to strengthen her capacity and that of member countries to develop effective climate services for agriculture and food security; in a manner that benefits smallholder farmers. This project will support development of an online regional map-room that provide Agriculture and food security users with access to an expanded set of location-specific and high resolution historical and forecast climate information products and these will be hosted at www.icpac.net. The ACREI project will benefit from and build on the capacity at ICPAC and NMHSs built from these ongoing programs and projects.

The Adaptation Consortium programme led by CARE has been working with the Kenya Meteorological Department to downscale the seasonal forecast and co-produce agricultural advisories through a process called Participatory Scenario Planning (PSP). The PSP process has been scaled up and operationalized to cover the whole of Kenya. The ACREI project will build on this and other locally proven and relevant climate change planning tools being used in the target communities focusing on institutionalizing the nationwide downscaling and co-

production of the seasonal forecast, and building on the recent decentralization of KMD which has put Meteorological Officers in every county in Kenya. In addition CARE has been conducting work in Ethiopia related to climate information services and PSP since 2014. CARE has been working on Participatory Scenario Planning in 32 Woredas in 5 regions of Ethiopia and the ACREI project will aim to scale up and institutionalize this initiative with focus on pastoral and agro pastoral communities. In Ethiopia, the ACREI project will further build on and engage with the work of stakeholders and structures involved in sharing of climate and weather information such as the community integrated rangeland management committees; traditional weather forecasters; zonal and district level Disaster Preparedness and Prevention Office (DPPO); Pastoralist Development Office(PDO); Water Management and Environment (WM&E) offices; Education, Women and Children Affairs offices; Kebele Early Warning Committees; and National Meteorology Agency (NMA) representatives at the sub-national level. It is important to note that, while partners such as CARE have been supporting the planning and information generation process related to climate and weather information, the ACREI project will take a step further to directly support implementation of community adaptation investments so as not to add to the myriad of plans and planning process available in the communities without support tangible on the ground adaptation efforts. In Uganda, the ACREI project will either build on locally proven existing or introduce new climate change planning tools to inform community seasonal and long term adaptation planning.

The Integrating Agriculture in National Adaptation Plans programme is a global programme jointly implemented by FAO and UNDP. The programme aims to support vulnerable countries through coordinated technical assistance to integrate the climate change adaptation concerns of their agriculture sectors into National Adaptation Plans (NAPs). The Programme targets eight countries of which two are part of the ACREI project, these being Kenya and Uganda. The programme has four outcomes namely: (a) technical capacities and institutions on the National Adaptation Plan (NAP) strengthened (b) Integrated roadmaps for the National Adaptation Plan developed (c) Evidence-based results for National Adaptation plan improved and (d) Advocacy and knowledge-sharing on NAP promoted. The ACREI project will link with this project so as to connect national level activities to the community level as well as translate community level agricultural adaptation priorities and concerns to the national level. The two projects will thus complement one another and have compounded benefits.

The ACREI Project will focus on utilizing a climate-smart agriculture (CSA) approach to adaptation planning so as to ensure that the community adaptation investments bring food security benefits, adaptation benefits and where possible maximize on mitigation potential. In Ethiopia, this is in line with the ongoing climate-smart agriculture work in Ethiopia that is being implemented within the framework of the World Bank and GiZ supported Sustainable Land Management Programme. The SLM Programme covers six regions, 135 woredas and has a large sub-component on climate-smart agriculture, which is integrated within the component on watershed management, specifically subcomponent 1.1 that focuses on natural resource management and climate-smart agriculture. Within this subcomponent, CSA systems/practices will be introduced at homestead level based on the needs of local farmers and the suitability of local conditions. Climate-smart agriculture in SLM refers to proven practical techniques – such as mulching, intercropping, conservation agriculture, no-

till, crop rotation, cover cropping, integrated crop-livestock management, agroforestry, improved grazing and improved water management – and innovative practices such as the use of drought-resistant food crops. FAO, with Norwegian Government funding, is also supporting three climate-smart agriculture related studies in Ethiopia namely:

- Analysis of integration of CSA in tertiary education;
- CSA Cost Benefit Analysis; and
- Private Sector Engagement in CSA.

These studies will inform the prioritization and practicality of adaptation practices to be utilized as part of the community adaptation investments of the ACREI project.

In Uganda, climate-smart agriculture is supported by a number of partners including FAO, UNDP and the Norwegian Development Agency (NORAD). FAO is also implementing the Agricultural Adaptation to Climate Change in the Central Cattle Corridor Project which has two main funding partners – the European Union and the Government of Belgium. This project is implemented within the framework of the Global Climate Change Alliance (GCCA) and aims to strengthen the resilience of the rural population and the agricultural production systems in the central part of the cattle corridor, and to build the capacities of communities, commercial farmers and the Government of Uganda to cope with climate change. To enhance Uganda's climate change knowledge and capacities, the project is increasing climate change awareness and knowledge in selected departments and districts, and ensuring that good adaptation practices are integrated into policies and plans. The ACREI project will be closely aligned and build on the work being done within this project.

In Kenya, FAO under the Climate-Smart Natural Resources Management Project, with funding from the United States Department for Agriculture (USDA) and in partnership with the Ministry of Agriculture, Livestock and Fisheries has recently completed the development and publication of a Climate-smart Agriculture manual for the country. The ACREI project will utilize the climate-smart agriculture practices identified in the manual to support community adaptation investments that contribute to food security as well as to greenhouse gas mitigation where possible. FAO has also been implementing a pilot project on Mitigation of Climate Change in Agriculture (MICCA) in partnership with the East Africa Dairy development Project. It was found that adaptation practices such as adopting better feeding and breeding practices, developing agroforestry and improving the quality of pasturelands within the project area could lead to the storage of 663 689 MT CO2e in a period of 20 years. The ACREI project will adopt similar approach to adaptation that builds on a climate-smart approach to the utilization of natural resources in the arid and semi-arid lands of Kenya and indeed all three target countries for the project.

Other projects and programmes ongoing in the target countries that the ACREI project will align with and build on include the USAID-Funded Low Emissions Climate Resilient Development Project in Kenya whose goal is to support Kenya's efforts to pursue long-term, transformative development and accelerate sustainable climate resilient economic growth, while slowing the growth of greenhouse gas emissions. Specifically the ACREI project will synergize with the project components on building national and county institutions' capacity to better coordinate climate change activities and climate finances; promote climate smart technologies; and enhance decision making for increased resilience to climate change

impacts. The ACREI project will however focus on extension service providers and NMHSs as well as focusing on climate-smart technologies in the agriculture sector.

Another project is the project on Integrated Management of ASAL Water Towers in Northern Kenya: Building Incentives to Secure Ecosystem Services. This project has a budget of US$10 million and seeks to identify practical entry points for managing, conserving and making productive use of the water towers in the arid and semi-arid lands of Kenya, focusing on Marsabit and Samburu and Taita-Taveta Counties. It also explores options for the restoration and if possible, enhancement of the ecosystem services of these ASAL water towers. The ACREI project will target communities rather than broader watersheds.

The project on "Support to Low Carbon Climate Resilient Development for Poverty Reduction in Kenya" aims to build on the comparative strengths of 5 UN agencies (UNDP, UNEP, UN-HABITAT, UN-ILO, UNIDO and UNESCO) and has outputs related to 1) Pro-poor climate change adaptation and mitigation mainstreamed in national and sub-national planning and budgeting processes (UNDP Kenya /UNEP); and 2) Renewables and sustainable biomass production promoted in Arid and Semiarid Lands (UNDP Kenya/KEREA). The ACREI project team will ensure that any opportunities for alignment and synergies with this project will be pursued to ensure there is no duplication of activities and opportunities for synergies are taken advantage of.

H. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The adaptation measures being applied in this project will generate lessons learned, and validation of best practices to be documented and replicated in other areas and countries. WMO, FAO and IGAD have significant experience and systems in place for knowledge management, documentation and dissemination.
The knowledge management component will be aligned to the IGAD - IDDRSI strategy for a unified knowledge management system. The strategy which was developed in Addis Ababa, Ethiopia in March 2015 aims to establish a regional KMS that integrates knowledge and information to support the implementation of the IGAD drought resilience initiative. The KM component will facilitate connection among experts from different disciplines to generate responsive and sustainable climate solutions coupled with capacity building of extension workers. Agro-pastoral communities will be tailored on the use incentives such as the climate fund proposal and development of climate resilience champions and villages. Over time, exemplary communities applying climate information to their production will be supported to become centers of excellence for community climate resilience practice.

IGAD will utilize existing linkages with relevant national level sectors and other regional forums to share lessons and policy recommendations. In this context the IDDRSI knowledge flows will be adapted in terms of conducting a knowledge audit on climate resilience agriculture. This will help identify gaps, needs as well as opportunities that will help develop a climate resilience specific knowledge pathways and information flows. This KMS will assist the decision makers and experts to enhance their understanding of climate resilience agriculture in order to build up systemic sustainable solutions for production. Under component 3 of this proposal, the unified IDDRSI strategy on KMS will inform on the use of

technologies. A new paradigm shift from the conventional M and E frameworks to incorporate the use of cellar phones, radio programs and social media for both baseline survey data gathering and for impact monitoring. The use of geo-spatial mapping together weather data will be used to justify the project impacts.
FAO have both national and field level offices and technical teams in place that will provide a critical role in mentoring and sustaining communities of practice, s, especially in regards to outputs under component 1 and 2.

A designated space for sharing of program experiences, documents, case studies and lessons will be opened on the regional resilience partner sharing web platform www.disasterriskreduction.net financed by complementary funding. This information could also be linked to the www.fao.org/ffs/en and the IGAD -IIDRSI website. From a regional level, knowledge developed and field practices will be shared with pastoral, agro pastoral and farming communities. This project will facilitate both inter-community and cross-country visits for peer reviewing and bench marking. Face-to-face interactions through regional meetings and cross country exchange visits will also be facilitated, across target communities (component 1), among service actors (component 2) across policy and decision makers (component 3). This will assist in streamlining currently scattered and sometimes duplicated efforts of integrating climate considerations in extension and Field School work. Lessons learning and sharing from the field school work of the intervention will also feature strongly both in the global FFS website platform (http://www.fao.org/farmer-field-schools/en/) as well as the Eastern Africa FFS social networking platform under development.. The Eastern Africa FFS social networking platform will endeavor to incorporate the services of the meteorological experts and agro-climatologists, who in the past may have been very distant to farmer field school advisory and other climate smart agriculture initiatives.

I. Describe the consultative process, including the list of stakeholders consulted, undertaken during project / programme preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

Both the implementing entity (WMO) and the executing entities (FAO and IGAD) have regional responsibilities with direct connections with the project countries. These responsibilities will make it easier for the implementation of the project. These institutions are well-positions to collaborate with national institutions in the implementation process. Initial consultations on the project scope involved discussions with the Directors of the National Meteorological institutions in the 3 project countries in June, 2015. This was followed by further consultations with executing entities, the Food and Agriculture Organization (FAO) and the Intergovernmental Authority on Development (IGAD). Subsequent consultations at the regional level with the executing entities and national partners to determine the scope and focus of the project, including target districts within the countries were undertaken. Based on initial results based framework, outcomes were defined including a screening of potential environmental and social impacts and risks. A workshop was held in Nairobi in 6-7th June 2016, to fine tune the details of the project including modalities of operations. The workshop was attended by three institutions from the participating countries with a total of 20 stakeholders. The participants were from the

Ministries of Agriculture, Environment as well as staff from the national meteorological institutions in the three project countries. Comprehensive community level consultations in the target districts, including with vulnerable groups such as female headed households and key informants such as traditional forecast providers will be undertaken during the implementation. The consultation will include application of participatory tools for gender sensitive community consultation and the FAO Self-evaluation and Holistic Assessment to Climate Resilience of Farmers and pastoralists (SHARP).

Finally, following programme inception consultations will be held in each of the target countries to obtain stakeholder support for the project and validate the final project design. Further consultations will be done at community level during baseline studies, needs assessment and priority setting activities of the project inception phase

J. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Component 1: Community Adaptation Practice

Baseline scenario (without AF funds):
While numerous initiatives have supported adaptation or DRR planning in one way or another, these initiatives have had one big challenge which has been related to the lack of investment funds to implement the plans thus leaving communities with a myriad of plans but limited resources to implement. As a result, without Adaptation Fund funds, the communities in the target areas will continue to use short term coping strategies that do not build long term resilience to climate change. The vulnerability of the target communities will remain high and their livelihoods will continue to be highly susceptible to the vagaries of unpredictable variable weather, erratic rainfall and the occurrence of extreme weather events particularly droughts and floods. The communities will continue to utilise their natural resource base in an unsustainable manner that results in increased land degradation and desertification and only increases their vulnerability to climate related hazards. Soils, forests and rangelands will continue to be depleted thus placing the communities in a downward spiral of natural resources degradation, poverty and increasing vulnerability to climate change and weather variability. Poverty and malnutrition in the target communities will continue to be high with women and children bearing the brunt of these conditions. The target communities will continue to be on the short end of development initiatives due to continued limited investment in the arid and semi-arid lands of the Horn of Africa. Development initiatives that used to be top down could not fully take into account the community adaptation planning processes or the actual climate changes being experienced in the communities. Unless this approach is reversed to take care of community-based initiatives, the target communities will continue to have higher levels of stunting, underweight and wasting among children under 5 years of age compared to other parts of the countries.

Governments and other development partners will continue to spend large amounts of money in supporting the short-term and immediate emergency needs of the target communities when climate threats do occur and in the long-run, these costs will far exceed the costs of undertaking concrete adaptation and resilience programming in these target

communities. Furthermore livestock deaths in times of drought will continue to be high due to the lack of availability of concrete adaptation measures to support the target pastoral and agro pastoral communities in improving livestock feed and other services. This is especially so since IFPRI estimates that 70% of the poorest people in the Horn of Africa own livestock as one of the main household livelihoods and food and nutrition sources.

Additionality (with AF funds):
With adaptation funds the target communities are expected to have improved capacity to implement technically sound adaptation practices that improve their resilience to climate change and weather variability. The communities will have improved understanding of climate change and weather variability including how to link indigenous knowledge on climate and weather to modern information sources which when combined can improve the resilience of the target communities.

The adaptation practices implemented are expected to diversify their production and income sources as well as increase their productivity, food security, nutrition and incomes. The adaptation actions implemented will be informed by actual analysis of weather and climate data as well as being based on the perspectives, needs and constraints of the people in the communities themselves thus resulting in more technically sound, locally relevant and socially acceptable adaptation investments that are sustainable in the long-run. The target communities will be more knowledgeable in use of climate change adaptation options.

The adaptation options proposed through the project, because of the use of a climate-smart approach, will result in multiple benefits which include improved food security and nutrition, improved resilience to climate change and weather variability and improved environmental integrity with increased efficiency of production and reduced negative impact on the environment. Rangeland quality and soil fertility are expected to improve while deforestation, soil erosion and land degradation are expected to be reduced due to the use of a climate-smart approach to adaptation in the ACREI project. The adaptation options proposed will also maximize on opportunities for reducing greenhouse gas emissions.

The use of agro-pastoral field schools and peer exchange and learning in the ACREI project will also improve the level of information sharing among the farmers and improve social cohesion thus improving resilience as the availability of information and social cohesion have been said to be key components of resilience to climate change. Through the training of facilitators, the knowledge and capacity of the communities will be improved thus reducing their reliance on external support during climate change shocks.. The use of field days and agriculture shows will help share information and knowledge of what adaptation practices are working and thus enable scaling up of proven practices to other communities. Gender equality and youth involvement in adaptation will also improve due to the participatory nature of the adaptation planning process.

Most importantly, due to the ACREI project component on funding of community adaptation investments, a significant investment will be made in each of the target communities to support concrete initiatives that build resilience to climate change contrary to the limited investment in development initiatives often experienced in these areas.

Community investment financing will aim to support inputs, equipment, field supplies and technical support for communities to address priority issues related the sustainable and climate smart utilization of land, soil, water, forestry, animals and rangeland resources as well as aim to diversify income and food sources, initiate community savings and credit mechanisms, and improve storage, utilization and marketing of produce.

Component 2: Climate proofing of extension system

Baseline scenario (without AF funds):
While there are a number of ongoing initiatives focused on provision of weather information to inform small holder farming activities in parts of the Horn of Africa, there are still large gaps in the collection, analysis and dissemination of climate and weather information especially in remote pastoral and agro-pastoral communities where this information is needed most. These gaps include short-term seasonal information to inform seasonal agricultural and livelihood activities as well as longer term climate scenarios to inform long term adaptation planning. Weather information, especially seasonal, often arrives too late in the communities to inform planning or is not adequately disseminated to the majority of farmers.

Furthermore, there are gaps in the knowledge and capacity of agricultural extension and advisory services (including government, private and civil society actors) on weather and climate change. Many extension actors do not adequately understand weather variability and climate change and in fact have low awareness of the causes and impacts of climate change. Where actors have been trained on climate change and the integration of climate information in their work, this has not been institutionalized into the mainstream government programmes and processes and thus poses a serious threat to the long-term sustainability of such initiatives.

Additionality (with AF funds):
Through the ACREI project the capacity of extension actors related to climate change adaptation will be identified and a plan for capacity development will be developed with focus on coordination of the different actors, addressing their needs and filling the capacity gaps. The existing training materials will be reviewed and modules on climate change developed to complement them. Training will be conducted to raise the level of understanding and knowledge of extension actors on climate change in the target communities.

Through the seasonal planning process supported by the ACREI project, weather information will arrive in the communities on time to inform seasonal planning and will be widely disseminated to community members through the short-term adaptation planning process conducted seasonally in each target community. There will be greater awareness of extension and field school actors on climate change and weather variability through the awareness raising workshops.

All culminate in a better informed and capacitated extension service to provide locally relevant, climate informed advisory services to pastoralists and agro-pastoralists in the target communities on a regular basis. The institutionalization process and integration of

climate informed extension methodologies will be enhanced thus supporting long-term capacity to adapt and be more resilient to climate change and weather variability. This will have a great impact on broader adaptation initiatives which will have a solid base of extension actors to rely on to support climate informed adaptation initiatives outside of the target communities for the ACREI project.

Component 3: Climate informed decision making

Baseline scenario (without AF funds):
IGAD has a regional centre devoted to climate predictions and applications (ICPAC) including a team working on Climate Diagnostics, Prediction and Early Warning which produces both long term climate scenarios and medium to long-term climate forecasts and climate change projections. However, institutional decision making at regional, national and sub-national level has not adequately taken consideration of climate change and weather variability in the Horn of Africa. While countries do conduct national and regional climate-outlook forums the extent to which this information is used in institutional decision making is limited while the limited availability of high resolution down-scaled climate scenarios as well as lack of understanding by decision makers of their use in planning also poses a challenge. The weather and climate information generated and disseminated is often generalized climate information that is not tailored to any specifics of the weather and climate in their area of work. In addition, climate information users and decision makers are often part of a one way information flow from the meteorological and hydrological services agencies, and thus in many cases the information received is not relevant to the user and there is no means of channeling feedback on the needs of the user or the relevance and impact of the information received. The NMHSs of the target countries currently receive little feedback in a systematic manner from climate information users, which means that there is no efficient process in place for continuous improvement of the services provided.

Additionality (with AF funds):
The ACREI project will directly support IGAD (ICPAC) to improve capacity to generate regular tailored seasonal forecasts and longer-term climate scenarios; downscale high resolution climate scenarios to specific locations in the target countries; map climate change "hotspots"; and establish climate baselines and trends. The ACREI project will support generation of high resolution seasonal, monthly and decadal forecasts with an advance period of at least 1 month for all three target countries. The ACREI project will also support development of climate change projections for 1, 2, 3, 5 and 10 year periods downscaled at national level. The project will also facilitate capacity building of both ICPAC and the National Meteorological and Hydrological Services of the target countries in data management and data exchange; communicating uncertainty; and a standard procedure and format for downscaling and communication of the results to decision makers and stakeholders will be put in place in the three target countries. All seasonal, monthly and decadal forecasts and products will be further downscaled to the target communities of the project at 1km resolution with a focus on farmers, agro-pastoralists and pastoralists thus informing the implementation of Components 1 and 2 of the ACREI project. Future climate scenarios and short term forecasts will be complemented by analysis of past trends thus giving a wholesome picture of the changes in climate in the target communities. The ACREI project will put in place a systematic feedback mechanism on the relevance, timeliness and

effectiveness of the weather information received and what can be done to improve it. This will facilitate a process of continuous improvement of weather and climate information products to aid climate informed decision making and improved resilience to climate change in the target countries. The ACREI project will also work with agro-meteorologists at both ICPAC and NMHSs to build their capacity and promote the tailoring of climate information for agricultural advisory rather than having broad climate advisories that are not tailored to any specific sector.

As IGAD/ICPAC is a regional organization that covers the entire Horn of Africa, this project Component will also have wider benefits outside of the 3 target countries and thus promote cost-effectiveness of the ACREI project.

K. Describe how the sustainability of the project / programme outcomes has been taken into account when designing the project / programme.

The sustainability of a project or programme outcomes has always been assured when interventions are built within existing institutions and systems. The ACREI project has taken that into account by involving national institutions to undertake the implementation of the activities. The two instructions that will be involved are: (i) Ministries of Agriculture and (ii) Ministries of Environment. The two ministries have the responsibilities of the relevant departments that deal climate change adaptation, provision of climate services and the sustainability and agricultural production and building of resilience building in agricultural systems. The improved climate and weather services to be provided by this project will become part of the routine services provided by the NMHSs in the target countries thus ensuring continuity post intervention. The NMHSs have been part of the project development process including consultations right of the conception of the project and they full understand the responsibilities and this project will be built within the normal processes that they undertake on a daily basis.

In terms of agricultural activities, the long terms sustainability is further ensured by focusing on existing extension staff, field workers and community focal points and building their capacity in climate change adaptation. This is enhanced by making of use of institutions that are already in that field of specialization so that when the project comes to an end, activities continue. By taking advantage of FAOs global modalities for knowledge dissemination in agriculture, food and nutritional security the reach and spread of program outcomes will be enhanced. Building on local culture and traditional practices is central to this initiative. At farm level, low cost adaptation technologies and practices will be prioritized to enhance the potential for sustaining the promoted technologies/practices post intervention. The proven ability of farmer field schools coupled with community financing mechanism to link technical advancement with enhanced social and financial capital will create a holistic foundation for enhanced and resilient rural livelihoods. Since activities at local level are defined and led by the community, the risks of culturally inappropriate practices are minimal. Tools for community based analysis of new technologies/practices in an agro-ecological perspective will be applied thus minimal negative environmental impact is expected.

L. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

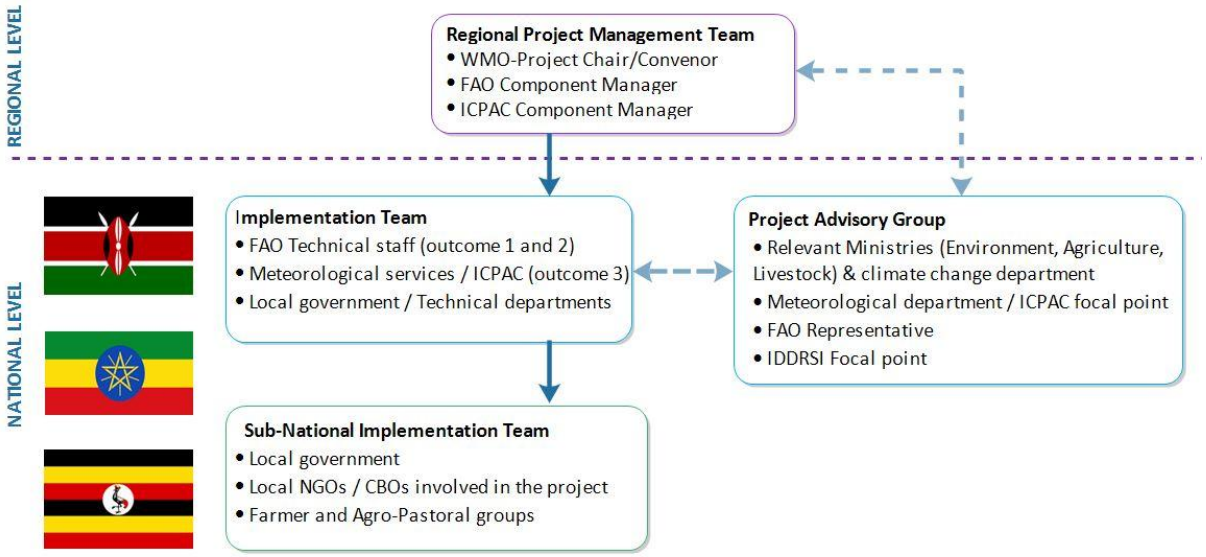
Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	x	Risk: Low Potential Impact: Low The final project design will be compliant with all relevant regional and national laws following extensive consultation with national and regional stakeholders.
Access and Equity	x	Risk: Low Potential Impact: Low The activities will be designed in such a way as to ensure that there is equitable access to the services at project sites from accessing basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions and land rights.
Marginalized and Vulnerable Groups	x	Risk: Low Potential Impact: Low The main beneficiaries of the proposed intervention will be the marginalized groups that are living in the dryland areas.
Human Rights	x	Risk: Low Potential Impact: Low The programme is building on FAOs experience in using the field schools approach to enhance awareness of civil rights, including the right to demand for basic services from local and central government.
Gender Equity and Women's Empowerment	x	Risk: Low Potential Impact: Moderate Participation of women will be encouraged in the field schools, and the programme will draw on FAOs experience of promoting the role of women and gender equality within the field school setting.
Core Labour Rights	x	Risk: Low Potential Impact: Low The programme will not undertake any significant works that would utilize manual labour.
Indigenous Peoples	x	Risk: Low Potential Impact: Moderate
Involuntary Resettlement	x	Risk: Low Potential Impact: Low The programme will work with communities in their locations,

		and will not in any way promote resettlement of communities to new locations or sedentarization of pastoralists
Protection of Natural Habitats	x	Risk: Low Potential Impact: Low
Conservation of Biological Diversity	x	Risk: Low Potential Impact: Low The conservation agricultural practises promoted by the programme will bring about additional benefits related to the conservation of biological diversity.
Climate Change	x	Risk: Low Potential Impact: Low By providing accurate and relevant climate and weather information to the targeted communities the programme will improve adaptive capacity to climate change in the targeted areas, and at the national level through the development of climate products t0 inform planning processes at the national and regional level.
Pollution Prevention and Resource Efficiency	x	Risk: Low Potential Impact: Low Through the field schools practises for improved water management and conservation agricultural techniques, reducing the application of fertilizer with related runoff and pollution issues will be promoted.
Public Health	x	Risk: Low Potential Impact: Low The programme aims to have indirect public health benefits by improving the food security situation of the beneficiaries.
Physical and Cultural Heritage	x	Risk: Low Potential Impact: Low
Lands and Soil Conservation	x	Risk: Low Potential Impact: Low The agricultural management practises promoted in the field schools will include management techniques to improve soil conservation and prevent land degradation.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme management at the regional and national level, including coordination arrangements within countries and among them. Describe how the potential to partner with national institutions, and when possible, national implementing entities (NIEs), has been considered, and included in the management arrangements.

The project will be implemented by WMO and executed by FAO and IGAD (ICPAC and ICPALD), and relevant government ministries in the target countries. WMO will lead in the management of the climate services while FAO will lead the agronomic, food security and natural resource aspects. IGAD (ICPAC and ICPALD) will coordinate the promotion of utilization of climate information in decision making (crop and livestock investment). These three Executing Entities shall have contractual engagements with the Implementing Entity and will report directly to the Implementing Entity. In each of these three Executing Agencies a Team Leader will be appointed by the executing Entities to oversee coordination, management, implementation, monitoring and reporting of programme activities. The Lead Institutions in the three project countries shall be the National Meteorological Institutions. It is envisaged that the WMO will establish a Project Management Unit (PMU), which will be responsible for implementing the project components and activities. The PMU will also be responsible for the day-to-day coordination of the project and for promoting and facilitating stakeholder engagement. A programme steering committee comprising membership from the three Executing Entities, beneficiaries and the Implementing Entity shall be established. The Steering Committee will oversee the project implementation through existing structures to monitor performance, provide technical oversight, advice on strategic challenges, and ensure systems exist to mitigate risks and disseminate best practice. This committee shall also undertake Monitoring and Evaluation of programme activities. It will as ensure there is prudent expenditure of financial resources. National Project Leading Group (NPLG) will be set up at country level including representatives from NMHS, Ministry of Agriculture, regional/local authorities and civil society leaders. The Regional Project Management Team will be responsible for reviewing the investment proposals for community investment grants as well ensuring integrity and transparency in the proposal funding.



B. Describe the measures for financial and project / programme risk management.

WMO will act as a fund manager for this project, with Letters of Agreement to be signed with each of the executing agencies and implementing partners. The LoAs will follow the standard WMO format for such agreements, and include provisions on financial management, procurement, minimizing risk of corruption and reporting deadlines and templates. Executing agents and implementing partners will submit reports to WMO biannually, including certified financial statements on programme expenditure.

Issues that emerge from the reporting as potential risks will be raised by WMO with the PSC at the regional level for action. The WMO Project Management Board, consisting of the Directors of the main Departments within WMO, which meets quarterly will also provide oversight of the project and advice on any management measures needed to address emerging risks.

The programme shall be subject exclusively to the internal and external auditing procedures laid down in the Financial Regulations, Rules and directives of WMO. The internal audit regime in WMO operates as an integral part of the Organization's system of internal controls, following best practices, and under policies established by senior management. The internal audit strategy of WMO is comprehensive embodying financial, compliance, performance and value for money features and provides assurance that operations in the field and at headquarters are managed in an economical, efficient and effective manner.

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

The project has been screened for environmental and social risks as per the Environmental and Social Policy of the Adaptation Fund and was found to be a category C project with no adverse environmental or social impacts found.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

Monitoring and evaluation of the project will be integrated within the existing M&E systems of FAO and ICPAC. The Programme Steering Committee will provide oversight to the detailed M&E framework developed jointly by FAO, WMO and IGAD (ICPAC). The M&E framework will describe objectives, performance indicators and the methodologies for data collection. During the inception phase, relevant stakeholders shall be engaged to review and validate the M&E framework. The main monitoring and evaluation processes will include:

i) Work Planning: project work plans will guide implementation throughout the project cycle. Work plans shall be reviewed annually in order to redefine activity implementation and targets based on performance.

ii) Harmonized baseline surveys: to be conducted at the inception phase in order to establish the baseline values of indicators upon which the project performance will be measured. The surveys will also gather information that will guide implementation of the three project components.

iii) Monitoring and technical backstopping: to be carried out by project technical teams throughout the project cycle to track progress of activities and delivery of outputs. Joint monitoring missions will be carried out by project coordination committees at regional, national and sub-national levels. The mission teams will comprise of representatives from Adaptation Fund, implementing partners, host governments and communities.

iv) Monitoring short-term outcome results: to be conducted mid and end-of-season to assess the extent to which farmers utilize climate information and comply to agreed-upon seasonal work plans and activities. In particular, this monitoring activity will focus on rainfall dependent enterprises such as; staple crops and fodder. Participatory experiments through FS will determine the immediate outcome results. Monitoring will be undertaken by local extension and meteorological officers.

v) Mid-term review and final project evaluations; to be conducted to critically assess effectiveness, relevance, efficiency, sustainability and/or impacts. Findings and recommendations of the mid-term review shall inform the remaining period of project implementation.

Reporting schedule

The project aims to produce the following reports:

Inception phase report: detailing what has been put in place (in terms of institutional arrangements, staff recruitment, assignment/deployment and other arrangements); overall direction of the programme, annual work plans, problems/constraints encountered and adjustments needed in specific cases, etc.

Periodical Progress Reports: The progress report for on the project implementation shall be submitted to the donor either on bi-annual or annual bases, as shall be agreed upon. All reports will be prepared based on the reporting formats which will be developed during the inception phase. In general it is expected that the bi-annual report shall include the

following a) planned vs. achieved in terms of implementing planned activities; b) main constraints encountered, solutions sought and recommendations for the next mid-term activities. C) Reference should be made against achieving the expected outputs in each of the bi-annual reports. d) Fundamental changes which may affect project performance should be detailed.

Special Technical Reports: WMO will ensure that special reports such as technical reports, publications, press releases and updates, policy briefs, relevant to the project are communicated to the donor and the Steering Committee, and the NPLG as and when they are issued.

Project Completion Report: towards the end of the programme duration, a final report will be prepared and submitted to the Donor government. Main contents of programme completion report shall include:

- A full description of programme components activities actually carried out with an explanation for the variances with the original plans, and a description of accomplishments and failures;
- Description of the process of implementation modalities and the degree to which actual implementation met the original plans in the programme document;
- Programme performance detailing the degree to which planned activities actually led to the accomplishments of expected outputs and the project outcome. In the case of variations, a full account of the circumstances which prevented progress or delivery of services and the measures taken by stakeholders to address the bottlenecks should be reported;
- The extent to which proposed mitigation measures have been effective in managing risks;
- A statement of final programme costs by budget lines, compared to the original financial plans;
- The most significant positive and negative lessons learned from the success or failure of the programme;
- Maintenance and sustainability plan put in place.

E. Include a results framework for the project / programme proposal, including milestones, targets and indicators.

Objective component outcomes and outputs	indicators	Baseline	Milestones	End of project target	Means of Verification	Responsible parties	Risks and assumptions
Component 1.Community Adaptation practice							
Outcome 1: Sustainably enhanced productivity, production, livelihood diversification and income levels among targeted communities	Percentage change in crop/livestock yields among targeted households	TBD	10% increase by end of year 2.	30% increase in crop/ livestock yields	Household Surveys. FS assessment data.	National focal points. M and E focal points	Risks: • The 3 countries may not implement the project at the same pace. • The sub-national government /institutions may prioritize alternative implementation frameworks. • Political uncertainties in the region especially election related. Assumption: • Climate variability will be within the normal dekad trend. • There will be stable market linkages to sustain the production.
	Percentage change in quantity of crop and livestock produce among targeted communities.	TBD	20% increase in produce by end of year 2.	At least 50% increase	Household Surveys. FS assessment data.	National focal points. M and E focal points	
	Percentage of households adopting new or scaling up existing[21] climate adaptation practices (including indigenous knowledge)	TBD	15% by end of YR 2	At least 30% adoption.	Household surveys. Project reports.	National focal points. M and E focal points	
	Percentage change in household incomes		20% increase by end of year 2.	At least by 50%	Household surveys.	M and E focal points.	

[21] Existing practices evaluated on a criteria set i.e. 30 % increase in land under cultivation, 30% yield increase etc.

Output 1.1: Participatory adaptation action plans reviewed and adopted by communities in line with the NAP framework	Number of sub-national action plans reviewed and aligned to community priorities	0	At least 30 draft adaptation plans by end of Year 2.	30 Community Adaptation Plans.	Project reports Adaptation Plan Documents	Regional Project Management team. National focal points	Risk: • The development of adaptation plans may cause inter-communal differences. Assumption: • Communities are fairly literate to develop viable adaptation plans within the given time-line.
	Number of FS that have integrated climate adaptation action plans in their activities	0	30 FS by end of year 2	60 FS	Project report Climate adaption proposals	National Focal points. FS Master Trainers/Subject Matter Specialists	
Output 1.2: Functional climate sensitive FS groups involved in season long participatory learning and experimentation	Number of participatory technology developments (trials) linked to climate change adaptation	0	At least 60 PTDs by year 2	At least 90 PTDs documented.	Project reports Documented PTDs.	National focal points. FS Master trainers	Risk: • Climate related PTDs take a longer time to yield results thus communities may abandon the trials along the way. • There could be bias in awarding adaptation proposals. **Assumption:** Factors of production will be available for the project e.g. land, labour etc.
	Number of field days conducted by FS on climate change adaptation	0	At least One Field day per FS by end of year 2.	At least 90 Field days	Field day report Project report	National focal points. FS Master trainers	
Output 1.3: Viable community adaptation investment proposals are funded and implementation started	Number of FS trained in climate change adaptation proposal development	0	60 FS trained by end of Year 2	60 FS trained.	Training reports Project reports	National Focal points	
	Percentage of FS trained that developed	0	At least 30%	80%	Community Climate Adaptation proposals.	National focal points	

	climate adaptation proposals				Multi-sectoral proposal review group report.	Multi-sectoral proposal review group.	
	Percentage of approved, climate adaptation proposals, funded and implemented	0	50%	100%	Field Monitoring reports Fund disbursement report	National focal points Regional Project Management team.	
Output 1.4: Communities are engaged in peer learning and knowledge sharing processes	Number of intra-country FS visits conducted	0	At least 1 per field school.	60 Visits	Project report	National focal points	
	Number of inter-country FS visits conducted	0	1 visit per country	3 Visits	Project report	Regional Project Management team.	
	Number of regional agricultural climate resilience sharing and learning events held	0	A knowledge management platform established and functional by year end of two.	At least 3 physical learning events	Project report Knowledge Management platform	Regional Project Management team.	
Component 2: Climate proofing of extension system							
Outcome 2: Enhanced technical capacity of development and extension actors (national, sub-national, private sector, NGOs, CBOs) to support community level climate adaptation strategies	Percentage of actors with knowledge and skills on climate change adaptation in target areas	TBD	At least 40% by end of year 2.	80%	Capacity assessment report	National focal points	Risks: The high transition of trained project staff to other sectors/outside the project area.
	Percentage of extension workers who are integrating adaptation strategies in their	TBD	30 % by end of year 2.	80%	Project report	FS master trainers.	

	work at the community level						Assumption: Households will be willing to adopt the climate informed extension approaches.
	Percentage of households adopting new technologies/ improved farming practices to cope with climate variability and extremes	0	30 % by end of year 2.	70%	Household surveys	National focal points.	
Output 2.1: Sub national extension actors' technical capacity on climate proof extension system analysed and capacity needs prioritized	A capacity development plan in place	0	1	1	Capacity assessment report	Regional Project Management team.	
	A training curriculum for climate proof extension system targeting various groups developed	0	1	1	Project report Training curriculum	Regional Project Management team.	
Output 2.2: National, sub-national, private sector, NGOs, CBOs extension and Field School actors' capacity on climate sensitive extension methodologies enhanced	Number of training manuals on climate adaptation strategies developed and disseminated	0	At least one per country by end of year 2	3	Project report Training manual	National focal point	**Risks** The media may not be factual when covering climate change adaptation information as compared to sensational reporting **Assumption** Good physical and digital infrastructure exists in the project areas. Adequate awareness among actors and decision
	Number of extensions actors (% female) who demonstrate an increase in knowledge and skills on climate-sensitive extension methodologies	0	At least 60 extension actors.	90 extension actors.	Project report Training reports	National focal point.	
Output 2.3: Knowledge, information and communication	A knowledge and experience sharing platform for extension actors on climate	0	Knowledge and information	ACREI Knowledge platform	Project report Media-based reports	Regional Knowledge Management	

systems strengthened for community adaptation to climate change	proofing methodologies established		on climate change adaptation disseminated using existing platforms	linked to existing platforms[22]		Officer.	makers in national climate sensitive sectors is needed. Governments will prioritize climate change adaptation among national priorities.
	Number of community outreach forums on adaptation to climate change held and linked to the FS.	TBD	At least one forum per community per country by end of Year 2.	60 Community outreach forums	Project report Media-based programmes	National Focal points	Extreme Climate events (droughts, floods, etc.) continue affecting national priority development sectors
	Number of media-based partnerships developed for disseminating climate change adaptation information	TBD	At least two per country (national level and sub-national level)	At least 6 media partnerships	Project report Media-based programmes	National focal points.	
Output 2.4 : Climate information services mainstreamed into Farmer Field Schools/ Agro-pastoral Field schools field practice	Proportion of identified FS service providers integrating climate related information in FS implementation	0	30% of identified FS service providers integrating climate information by end of Year 2	At least 80%	Project report	National focal points	

[22] ACREI knowledge platform will be linked to the existing platforms; FS knowledge Hub, Global Environmental Facility (GEF) community of practice and CGIAR Programme on Climate Change, Agriculture and Food Security (CCAFS)

	A generic climate module for FS practice developed	0	Draft climate module by end of Year 2	1 generic climate module	Project report Generic climate module	Regional Project management team	
	Number of FS climate change adaptation issue papers developed	0	One issue paper per sub-national level	3 issue papers	Project report Issue paper	National focal point Regional Project management team	
Component 3: Climate informed decision making							
Outcome 3: Improved climate informed decision making in regional, national and sub-national institutions	Harmonized climate change response strategies for the region developed	TBD	Harmonized Climate Change Strategies for Kenya, Ethiopia and Uganda by end of year 2	Harmonized GHA Climate Change Strategy	Institutional Annual Reports; Strategy paper	WMO, ICPAC and NMHSs	**Risk:** Adoption of project lessons learned into the national and regional climate change adaptation strategies could be political interests Governments allocate funds according to nationally determined priorities and emergencies **Assumption:** Involvement of Government into project execution will ensure quick buy-in of project lessons and good practices
	Percentage change in national budgets allocated to climate adaptation activities	TBD	10% increase by end of year 2	15% increase	National budget ,	National governments	
	Percentage of households using tailored seasonal climate forecasts to plan their activities or enterprises	TBD	50%increase by year 2	70%	Household surveys Field Assessment reports	WMO, ICPAC and National focal points	

Output 3.1: Downscaled, location-specific seasonal climate forecasts and future projections generated regularly by ICPAC and participating NMHSs	Number of livelihood zones with specific climate information generated and disseminated	0	At least 1 sub-national unit per country by end of year 2	5 Sub national units	Project progress reports	ICPAC, NMHSs	**Risk:** There is currently inadequate capacity at ICPAC and in NMHSs to appropriately downscale seasonal climate forecasts to local scale Functional/Existing extension system in the target locations. Climate change and variability continue to affect agricultural productivity in the target countries **Assumption:** Strengthening of Downscaling Capacity ICPAC and NMHSs is prioritized. Climate information dissemination is one of the mandates of existing institutions/intermediaries. FS technology is operational in the target communities Downscaled seasonal climate information is necessary for seasonal agricultural planning and decision making in target communities necessitates Policy makers give audience
	Number of target sub-national institutions provided with seasonal and/or enterprise-specific climate information	0	At least 1 government institution per country by end of year 1	At least 6 (1 government extension institution and 1 NGO or CBO receiving downscaled forecasts from Met agencies).	Project Reports	NMHSs	
Output 3.2: An efficient agro-climatic advisory and feedback mechanism strengthened	Number of FS groups reporting timely receipt of climate advisories	0	30 FS Groups by end of year 2	60 FS groups	Project reports	NMHSs, FAO national focal points	
	Number of FS with localized climate monitoring systems	0	30 FS Groups by end of year 2	60 FS groups by end of project	Project reports	NMHSs, FAO national focal points	
Output 3.3: Agro-climatic advisories appropriately packaged and timely disseminated	Number of National Agricultural Planners produced	0	1 seasonal planner developed per country per year for 2 seasons	At least 4 seasonal planners developed per country	Project reports	ICPAC and NMHSs	
	Number of agro-climate advisories disseminated	0	1 seasonal advisory disseminated to intermediaries per country for 2 seasons	At least 4	Project reports	NMHSs	

Output 3.4: Evidence based climate information feeds into policy dialogues in the region	Number of good practices developed	0	At least 1 good practice per country	6 (2 per country)	Project report Good practice repository	National focal points (FAO/MET)	to climate scientists, communicators and users for dialogue.
	Number of policy dialogues on climate change adaptation conducted	TBD	At least 2 per country per year	At least 4 (national policy dialogue per country and 1 regional policy)	Project reports; Dialogue meetings	WMO, ICPAC and NMHSs	
	Number of updates on food and nutrition security developed for advocacy and response	TBD	At least 6 per year per country	24 monthly updates	Monthly Bulletins	ICPAC, NMHS, WMO	

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s)23	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Enhanced community adaptation practice	▪ Number of sub- national action plans reviewed and aligned to community priorities ▪ Number of FS that have integrated climate adaptation action plans in their activities ▪ Number of participatory technology developments (trials) linked to climate change adaptation ▪ Number of field days conducted by FS on climate change adaptation ▪ Number of FS trained in climate change adaptation proposal development ▪ Percentage of FS trained that developed climate adaptation proposals ▪ Percentage of approved, climate adaptation proposals, funded and implemented ▪ Number of intra-country FS visits conducted ▪ Number of inter-country FS visits conducted ▪ Number of regional agricultural climate resilience	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level; Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses; 3.2. Percentage of targeted population applying appropriate adaptation responses; 6.1 Percentage of households and communities having more secure access to livelihood assets; 6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	3,270,881.6

[23] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

	sharing and learning events held.			
Improved climate proofing of extension systems	▪ Percentage of households adopting new technologies/improved farming practices to cope with climate variability and extremes. ▪ A capacity development plan in place ▪ A training curriculum for climate proof extension system targeting various groups developed ▪ Number of training manuals on climate adaptation strategies developed and disseminated ▪ Number of extensions actors (% female) who demonstrate an increase in knowledge and skills on climate-sensitive extension methodologies ▪ A knowledge and experience sharing platform for extension actors on climate proofing methodologies established ▪ Number of community outreach forums on adaptation to climate change held and linked to the FS. ▪ Number of media-based partnerships developed for disseminating climate change	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets;	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	1,195,494.4

	adaptation information ▪ Proportion of identified FS service providers integrating climate related information in FS implementation ▪ A generic climate module for FS practice developed ▪ Number of FS climate change adaptation issue papers developed.			
Improved climate informed decision making	▪ Number of livelihood zones with specific climate information generated and disseminated ▪ Number of target sub-national institutions provided with seasonal and/or enterprise-specific climate information ▪ Number of FS groups reporting timely receipt of climate advisories ▪ Number of FS with localized climate monitoring systems ▪ Number of National Agricultural Planners produced ▪ Number of agro-climate advisories disseminated ▪ Number of good practices developed ▪ Number of policy dialogues on climate change adaptation conducted ▪ Number of updates on food	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level; Outcome 7: Improved policies and regulations that promote and enforce resilience measures	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses; 7. Climate change priorities are integrated into national development strategy	1,109,624.0

	and nutrition security developed for advocacy and response.			
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Sustainably enhanced productivity, production, livelihood diversification and income levels among targeted communities	▪ Percentage change in crop/livestock yields among targeted households ▪ Percentage change in quantity of crop and livestock produce among targeted communities. ▪ Percentage of households adopting new or scaling up existing climate adaptation practices (including indigenous knowledge) ▪ Percentage change in household incomes	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 (tangible and intangible) created or strengthened in support of individual or community livelihood strategies; 6.2.1. Type of income sources for households generated under climate change scenario	
Enhanced technical capacity of development and extension actors (national, sub-national, private sector, NGOs, CBOs) to support community level climate adaptation strategies	▪ Percentage of actors with knowledge and skills on climate change adaptation in target areas ▪ Percentage of extension workers who are integrating adaptation ▪ strategies in their work at the community level	Output 7: Improved integration of climate-resilience strategies into country development plans	7.2. No. of targeted development strategies with incorporated climate change priorities enforced	
Improved climate informed decision making in regional, national and sub-national institutions	▪ Harmonized climate change response strategies for the region developed ▪ Percentage change in national budgets allocated to climate adaptation activities ▪ Percentage of households	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities; Output 7: Improved	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses; 7.1. No. of policies introduced	

	using tailored seasonal climate forecasts to plan their activities or enterprises	integration of climate-resilience strategies into country development plans	or adjusted to address climate change risks (by sector); 7.2. No. of targeted development strategies with incorporated climate change priorities enforced	

G. Include a detailed budget with Budget notes, broken down by component as applicable, a budget on the Implementing Entity fee use, and an explanation and a breakdown of the execution costs

Component 1 Detailed Budget: Supporting Community Adaptation Practice

Component 1 : Supporting Community Adaptation Practice							
Outputs	**Description**	**Budget Notes / Activities**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Explanation**
Output 1.1	1.1 Participatory adaptation action plans produced in communities in line with the NAP framework.	10 day training at sub-national level of Agric and Met staff on Participatory planning approaches	**46,875**			**46,875.00**	# A regional consultation for preparation of training materials; travel & staff time # 3 training event, one in each country of approximately 20 staff participants; trainers fees, participants travel and accommodation, training venue, stationary
		Community sensitization, mobilization and launching of the community adaptation planning processes.	**12,000**			**12,000.00**	Mobilization in 10 communities per country; field travel approximately 1 days per community, officials allowances, stationary, field coordinator salary, site level stakeholder awareness meeting
		Context analysis and stocktaking at community level	**6,000**			**6,000.00**	Community dialogue in 10 communities per country; field travel, 5 days per community, officials allowances for multidisciplinary team of 5 members, stationary, field coordinator salary
		Seasonal short term adaptation planning of 1-2 days in each target community	**3,000**	**3,000**	**3,000**	**9,000.00**	Consultation in 10 communities per country; field travel, 3 days per community, officials allowances, stationary, field coordinator salary
		longer term adaptation planning over a period of seven to ten days in each community		**21,104**		**21,104.26**	Consultation in 10 communities per country; field travel approximately 7 days per community, multi-disciplinary team of 3, officials allowances, stationary, field coordinator salary
		Validation of community adaptation plans		**33,600**		**33,600.00**	2-day Local stakeholder meetings at each target district/county, procurement of communication support, editing and printing, consultant for compilation and review of plans
		Sub-total for 1.1				**128,579.26**	

Output 1.2	1.2 Functional climate sensitive FS groups involved in season long participatory learning and experimentation	Baseline and end line data collection	**153,600**		**38,400**	**192,000.00**	Baseline survey among 10% of target population in 10 villages per country; training of enumerators, enumerators salary and DSA, data entry clerk, analysis and report writing staff time
		4-week training of facilitators (ToFs) courses on the APFS approach	**200,400**	**50,100**		**250,500.00**	1 training per country of 25 staff; Master trainers fees 2 x 2 months (preparation of course content, field logistic preparation and course delivery) participants travel and accommodation, training venue, stationary
		Community Ground working will be undertaken in each target community	**18,750**			**18,750.00**	Community dialogue in 10 communities x 2 group sites per country; field travel approximately 5 days per community, officials allowances for multidisciplinary team of 5 members, stationary, field coordinator salary
		Facilitation of participatory learning in APFS group trough groups meeting on weekly basis over appr 1.5 years period	**18,000**	**18,000**		**36,000.00**	Field school software component for 20 groups per country; Facilitators allowance and travel, field days, graduation ceremony, regular support/mentor visits by APFS Master Trainer and participatory learning expert
		Provision of learning materials package/grants to APFS groups		**27,000**		**27,000.00**	Field inputs for 20 group experimental/demo sites per country (60 total) (farm inputs and materials; seeds, tools, construction materials, livestock etc.), stationary, learning materials
		Sub-total for 1.2				**524,250.00**	
Output 1.3	1.3 Viable community adaptation investment proposals are funded and implementation started.	Training of communities in village savings systems (VSLA/Vicoba) and financial management and support for establishment of community savings and banking schemes.		**84,000**		**84,000.00**	1 training per country of 4 days of 25 field staff; trainers fees 3 (1 per country) x 1 months (preparation of course content, course delivery and follow up on job support to trainees) participants travel and accommodation, training venue, stationary
		Support to development of community adaptation investment proposal in target communities.		**365,000**		**365,000.00**	Community dialogue in 10 communities per country; field travel approximately 5 days per community, officials allowances for subject matter specialists, stationary, field coordinator salary

		Technical review and screening of proposals through multi-sectoral proposal review group		**3,000**		**3,000.00**	National committee meeting x 4, travel and allowances
		Community investment grant financing		**1,725,000**		**1,725,000.00**	Release of community grants through letter of agreements or cash grants to 10 communities per country for field adaptation investments; FAO administrative and operation costs
		Technical backstopping and monitoring of beneficiary community investment project implementation.		**68,257**	**17,064**	**85,320.80**	Field missions of approximately 15 days per community, officials allowances and travel, for subject matter specialists, local government and FAO staff country and regional, stationary, field coordinator salary
		Sub-total for 1.3				**2,262,320.80**	
Output 1.4	1.4 Communities are engaged in a peer learning and knowledge sharing processes.	Within country community exchange visits		26,250	**26,250**	**52,500.00**	One exchange visits per group; local field travel and local government allowances
		Community and site participation in project review processes		**2,999**	**2,999**	**5,998.85**	International and national travel & DSA for 1 member per 10 sites/country to attend regional event
		Participation in field days and agriculture shows/fairs but target communities		**24,240**	**24,240**	**48,480.00**	National travel & DSA for 1 member per 5 sites/country to attend regional event
		knowledge exchange coalitions for climate change adaptation		36,000	**36,000**	**72,000.00**	local contracts for youth media outreach on adaptation practice per target district/county
		Sub-total for 1.4				**178,978.85**	
		GRAND TOTAL COMPONENT 1				**3,094,128.91**	

Component 2 Detailed Budget: Climate proofing of extension system

Component 2	Climate proofing of extension system						
Outputs	**Description**	**Budget Notes / Activities**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Explanation**
Output 2.1	2.1 Sub national extension actors' technical capacity on climate proof extension system analysed and capacity needs prioritized	Conduct stakeholder mapping and capacity needs assessment on integration of climate change in extension programmes at sub-national level.	**37,042**			**37,042.47**	Contract with actor for study, consultative meeting at country levels
		Development of a capacity development plan to integrate climate change in extension programmes at sub-national level.	**30,000**			**30,000.00**	Contract with actor for assessment, consultative meeting at country levels
		Sub-total for 2.1				**67,042.47**	
Output 2.2	2.2 National, sub-national, private sector, NGOs, CBOs extension and Field School actors' capacity on climate sensitive extension methodologies enhanced	Stocktaking and identification of actors				-	No cost - done through focal points
		National and sub-national training of extension actors on climate sensitive extension services.	**246,300**			**246,300.00**	1 national and 2 sub-national 3-day training events per country
		Review/Update FS training manuals on climate change adaptation best practices.	**82,500**			**82,500.00**	"write-shop" event at regional level 6 days x 20 pax: participants travel and accommodation, training venue, stationary, facilitators fees
		Workshop to validate the climate training curriculum and modules among key stakeholders followed by printing and dissemination of the curriculum		**63,300**		**63,300.00**	national level validation workshop 2 days/country, printing of curriculum at regional level, document distribution
		Sub-total for 2.2				**392,100.00**	
Output 2.3	2.3 Knowledge, information and communication	Establishment of a knowledge and experience sharing platform following review of existing information systems	**284,180**			**284,180.00**	web platform development & data hosting contract, part time data manager/consultant

	systems strengthened for community adaptation to climate change	Dissemination of timely information on climate impacts and weather forecasts through selected community radio, social media and print channels.	**75,000**			**75,000.00**	contract with private sector media channel, development of leaflets& printing
		Formation of dialogue groups for information exchange on climate adaptation.		**36,335**		**36,335.13**	Consultative meeting at national level and local level in country; participants travel and accommodation, training venue, stationary
		Sub-total for 2.3				**395,515.13**	
Output 2.4	2.4 Climate information services mainstreamed into Farmer Field Schools/ Agro-pastoral Field schools field practice.	Awareness creation workshops among FS support actors		**33,000**		**33,000.00**	FS actor sensitization meeting 2-days national level: participants travel and accommodation, training venue, stationary
		Development of a generic climate module for FS practice on climate change adaptation and ecosystem resilience strategies.	**30,000**			**30,000.00**	consultant fee
		Refresher training of practicing Field School Master trainers in the region on the climate module and adaptation strategies		**92,905**		**92,905.00**	10 -day training for Master Trainers at regional level; travel & staff time, approximately 20 staff participants; trainers fees, participants travel and accommodation, training venue, stationary
		Lobbying and advocacy for climate sensitive FS	**15,910**	**11,933**	**11,933**	**39,775.64**	features and info developed for FS network & web platform, travel and presentations at FS meetings and events
		Sub-total for 2.4				**195,680.64**	
		GRAND TOTAL COMPONENT 2				**1,050,338.24**	

Project Administrative and Operational Support (AOS) (6%)	**317,500**			**317,500.00**

Component 3 Detailed Budget:

Output	Description	Budget Notes/ Activities	Activity Budget in USD				Budget Managed By			Remarks
			YEAR 1	YEAR 2	YEAR 3	TOTAL	NMHSs	ICPAC	WMO	
Output 3.1	Downscaled, location-specific seasonal climate forecasts and future projections generated regularly by ICPAC and participating NMHSs	Improved tailored seasonal climate forecasts and climate change projections	60,000	60,000	60,000	180,000	9,000	171,000	0	Support to regional Seasonal climate forecasting process (GHACOF)of 20,000 per GHACOF
		Training and capacity building in downscaling techniques and communication of uncertainties	30,000	10,000	0	40,000	30,000	10,000	0	Capacity building in downscaling techniques at national level (year 1) and regional level (year 2)
		High resolution forecast downscaling to farming community level	10,000	10,000	10,000	30,000	30,000	0	0	Post GHACOF downscaling workshops at member states level involving NMHSs staff
		Establishment of historical climate baseline statistics, trends and historical and future climate change hotspots (areas of concern) for selected communities	10,000	10,000	0	20,000	0	20,000	0	Data acquisition and consultancy for data processing and validation workshop
Sub Total for Output 3.1			**110,000**	**90,000**	**70,000**	**270,000**	**69,000**	**201,000**	**0**	
Output 3.2	An efficient, two way feedback mechanism between climate information producers,	Database for intermediaries and famer users established	15,000	0	0	15,000	15,000	0	0	Participation in project baseline surveys by climate scientists
		Existing feedback mechanisms reviewed	5,000	5,000	0	10,000	10,000	0	0	Procurement of consultancy services to review existing feedback mechanisms

	communicators and users developed	A cost effective communication and feedback channel designed, tested and validated	15,000	10,000	10,000	35,000	30,000	5,000	0	Consultancy services to develop a draft prototype communication strategy and conducting validation workshops
Sub Total for Output 3.2			**35,000**	**15,000**	**10,000**	**60,000**	**55,000**	**5,000**	**0**	
Output 3.3	Agro-climatic advisories for farmers and pastoralists in the region appropriately packaged and regularly disseminated (in different languages)	Seasonal agriculture planners regularly produced through national participatory planning workshops	40,000	40,000	40,000	120,000	120,000	0	0	Cost of project staff travel, subsistence, venue and workshop logistics (one workshop per season for 2 seasons per country)
		Continuous monitoring and evaluation	30,000	30,000	30,000	90,000	75,000	15,000	0	Two monitoring visits involving meteorological staff per season per country for 2 seasons
		Identified intermediaries trained in PICSA and PSP approaches	15,000	15,000	10,000	40,000	29,000	11,000	0	1 training workshop per country in years 1 & 2 and a regional workshop in year 3.
		Advocacy and effective communication of project outcomes	56,000	56,000	56,000	168,000	0	0	168,000	Regional project consultancy on advocacy and effective communication of project outcomes
		Capacity for agro-met divisions at NMHS and ICPAC strengthened	50,000	50,000	42,000	142,000	126,000	16,000	0	Three automatic Weather Stations, other relevant equipment and software for the Agromet divisions of participating countries and refresher training courses for Agrometeorologists at ICPAC and NMHSs
Sub Total for Output 3.3			**191,000**	**191,000**	**178,000**	**560,000**	**350,000**	**42,000**	**168,000**	

Output 3.4	Evidence based policy dialogues on climate information and agriculture are facilitated in the region	Documentation and dissemination of good practices and lessons learned on the use of climate information in agricultural decision making	5,000	15,000	20,000	40,000	30,000	10,000	0	Consultancy services to document project lessons and good practices and conducting national and regional dissemination workshops
		Conducting regional and national learning forums	40,000	40,000	30,000	110,000	90,000	20,000	0	One national learning forum per country for year 1 & 2, and one regional learning forum in year 3.
		Improved regional food and nutrition security assessment coordination including capacity building on attribution of food insecurity to various climate related hazards.	20,000	20,000	20,000	60,000	0	60,000	0	Participation of national food and nutrition security coordination experts in regional FSNWG plenary and conducting of targeted trainings
		Publication of key findings in peer-reviewed journals	0	5,000	5,000	10,000	6,000	4,000	0	Publication fees and participation of lead authors in international academic foras
Total for Output 3.4			**65,000**	**80,000**	**75,000**	**220,000**	**126,000**	**94,000**	**0**	
Grand Total for Component 3			**401,000**	**376,000**	**333,000**	**1,110,000**	**600,000**	**322,000**	**168,000**	

Detailed Execution Budget Cost Budget Breakdown:
Project Title: Agricultural Climate Resilience Enhancement Initiative in Ethiopia, Kenya and Uganda

Outcome No	Accounts description	Description of Activity	Unit of Measurement	No. of Unit	Qty	Total Quantity	Cost/ unit $	Total cost $	Qty year 1	Qty year 2	Qty year 3	Total	Year 1	Year 2	Year 3	Total $
To provide overall management and coordination of the programme																
PSU Cost	Staff P3	Project Coordinator	month	1	19	19	9,800	186,200	12	7		19	117,600	68,600		186,200
PSU Cost	Staff	Secretary/Administration	month	1	36	36	1,200	43,200	12	12		24	14,400	14,400	0	28,800
	Staff	Driver	month	1	18	18	1,000	18,000	12	6		18	12,000	6,000	0	18,000
PSU Cost	Travel	PSU travel to project sites	Lump sum	2	2	4	1,600	6,400	2	2		4	3,200	3,200	0	6,400
PSU Cost	Motor Vehicle	Motor vehicle	Lump sum	1	1	1	50,000	50,000	1	0	0	1	50,000	0	0	50,000
PSU Cost	Expendable equipment	Office Furniture	Lump sum	2	2	4	2,000	8,000	4	0	0	4	8,000	0	0	8,000
PSU Cost	NEE	Office IT equipments (Computer and accessories etc.)	Lump sum	1	3	3	2,000	6,000	3			3	6,000	0	0	6,000
PSU Cost	GOE	General Operating Expenses	Lump sum	3	4	12	1,750	21,000	4	4	4	12	7,000	7,000	7,000	21,000
PSU Cost	GOE	Communication / Visibility	Lump sum	1	2	2	2,000	4,000	1	1		2	2,000	2,000	0	4,000
FAO	Staff	Part-time field drivers	month	3	9	27	700	18,900	9	9	9	27	6,300	6,300	6,300	18,900
FAO	Staff	Part-time Finance and Administration Officer country level	month	3	9	27	1,500	40,500	9	9	9	27	13,500	13,500	13,500	40,500
FAO	Non Expendable equipment	Office IT equipments (Computer and accessories etc.)	Lump sum	1	3	3	2,000	6,000	3			3	6,000	0	0	6,000

FAO	GOE	Airtime, internet, stationary	month	9	12	108	112	12,096	36	36	36	108	4,032	4,032	4,032	12,096
FAO	GOE	Vehicles maintenance	Lump sum	1	3	3	3,000	9,000	3	3	3	9	9,000	9,000	9,000	27,000
FAO	Staff	Part-time Component Manager	month	1	3	3	20,000	60,000	1	1	1	3	20,000	20,000	20,000	60,000
FAO	Staff	Part-time Programme Officer/PMU	month	1	6	6	2,000	12,000	2	2	2	6	4,000	4,000	4,000	12,000
FAO	Staff	Part-time Operations Officer	month	1	6	6	3,000	18,000	2	2	2	6	6,000	6,000	6,000	18,000
FAO	Staff	Part-time Finance and Admin Field Officer - regional	month	1	6	6	4,000	24,000	2	2	2	6	8,000	8,000	8,000	24,000
FAO	TSS	Reporting cost	Lump sum	1	1	1	6,650	6,650								6,650
FAO	GOE	Rent, Security, internet	Lump sum			3	4,000	12,000								12,000
ICPAC	Staff	Part-time Finance and Administration Officer	month	1	6	6	2,700	16,200	2	2	2	6	5,400	5,400	5,400	16,200
ICPAC	Staff	Part-time Agrometeorologist	month	1	6	6	4,500	27,000	2	2	2	6	9,000	9,000	9,000	27,000
ICPAC	Staff	Part-time Downscaling Assistant	month	1	6	6	1,500	9,000	2	2	2	6	3,000	3,000	3,000	9,000
ICPAC	Staff	Part-time Director	month	1	6	6	3,600	21,600	2	2	2	6	7,200	7,200	7,200	21,600
ICPAC	GOE	Office consumable & Bank charges	Lump sum	1	2	3	2,207	6,621	1	1	1	3	2,207	2,207	2,206	6,620
												Total	**226,500**	**107,500**	**13,300**	**645,966**

Activity	FAO Fee	WMO Fee	Description
Oversight and management of project development and project implementation	108,000	90,000	Project coordination: project planning, day to day project management and implementation
Financial management, including accounting, fiduciary standard monitoring, financial audits	120,000	110,000	Financial management practices complying with AF requirements ensuring financial reporting, efficient procurement processes. Estimation of bank costs for transfer operations and other transaction costs
Project staff functions	80,000	70,000	Technical support in risk management
Total	**308,000**	**270,000**	

H. Include a disbursement schedule with time-bound milestones

	Upon Agreement & signature			Total
Scheduled Date	**Jan 2017**	**Jan 2018**	**Jan 2019**	
Direct costs	2,788,000	2,230,400	557,600	5,576,000
Executions costs (9.5%)	323,000	258,400	64,600	646,000
IE Fee (8.5%)	289,000	231,200	57,800	578,000
Total Disbursements	**3,400,000**	**2,720,000**	**680,000**	**6,800,000**

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[24] *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project / programme. Add more lines as necessary. The endorsement letters should be attached as an annex to the project/programme proposal. Please attach the endorsement letters with this template; add as many participating governments if a regional project/programme:*

Ethiopia: H.E. Mr. Kare Chawicha Debessa, State Minister, Ministry of Environment and Forest	Date*: July, 26, 2016*
Kenya: Mr. Charles T. Sunkuli Principal Secretary, State Department of Environment & Regional Development Authorities, Ministry of Environment, Natural Resources & Regional Development Authorities	Date*: July, 26, 2016*
Uganda: Mr. Keith Muhakanizi Permanent Secretary / Secretary to the Treasury, Ministry of Finance, Planning and Economic Development	Date*: July, 26, 2016*

6. 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.

B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans 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 on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Mary Power, Acting Director, Development and Regional Activities, WMO *Signature.....* Implementing Entity Coordinator	
Date:	Tel. and email: Mpower@wmo.int
Project Contact Person: **Mr Jean-Paul Gaudechoux**	
Tel. And Email: +41 22 730 83 11 jpgaudechoux@wmo.int	