



# Note

## Climate Adaptation in Agriculture

### Setting the EAC scene and remaining needs

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#### Summary

EAC negotiators are engaged in negotiations under the UNFCCC that have implications for agriculture and agro-processing, especially under the Koronivia Joint Work on Agriculture . The information from the ground may help them in advancing their negotiating agenda, as appropriate, with concrete examples and stories. This note will seek to give an overview of the current policy/strategy framework of EAC governments to support agriculture adaptation to climate change, as well as the current programmes/projects being implemented in the region. The diverse benefits of such policies and projects will also be presented, before discussing what the governments and their UNFCCC negotiators may do to go beyond what is already in place in their country/region.

## Introduction

Agriculture is pivotal to the economies of East African countries. Climate change, with its effect on temperature and precipitation, threatens this important economic activity. As agriculture accounts for roughly 43% of nations' annual GDP on average, it is imperative to be able to foresee the risk posed by climate change to agriculture sector and adopt appropriate policy measures in these states, to mitigate the harmful effects of climate change.

The central focus of concerns relating to agriculture are the farmers and small landholders who till the soil and are heavily reliant on rainfall. These people face the challenge of land degradation, poor soil fertility management, and continuous cropping. Sluggish growth in agricultural productivity translates into slow overall growth and generally low per capital income levels.

Amidst these issues, is a looming reality of climate change. Rainfalls are erratic, average global temperature is rising beyond tolerable levels, acute water shortage in some areas and flooding in others is a common sight, productivity of land is drastically falling, PPM concentrations in the atmosphere is causing severe health effects. The EAC region is highly risk-prone and in this region, agriculture sector receives the first impact.

## Setting the scene: Agriculture policies relating to climate change

EAC member states have broadly prioritised agriculture sector quite ahead of other sectors in climate adaptation. At the same time, it is not unknown to EAC states that they are experiencing high vulnerability to climate change. The current and expected effects of climate change differ locally,

nationally and regionally and its effects on livelihood, food, water security, ecosystems, infrastructure differ per country and regions, also between community and individuals.

Below are some examples of policies that are being implemented in the region, to support climate adaptation in the agriculture sector.

### Kenya

The President of Kenya acknowledges that agriculture is one of the critical but climate sensitive sectors, and has prioritised this issue on his country's development agenda. Kenya has implemented broadly 5 policies that inform climate change adaptation within agriculture sector. The first of these policies was launched in 2010, which provided a basis for strengthening and focusing nationwide action towards climate change adaptation and mitigation. Another policy has identified action points in agriculture adaptation, namely, 1) coordination and mainstreaming of climate change into agricultural extension, 2) establishment and maintenance of climate change related information for agriculture, 3) promotion and bulking of drought tolerant traditional high value crops, 4) promotion of climate smart agriculture, and 5) development and application of performance benefit management methodologies for adaptation, mitigation and development. Kenya has also made significant progress in establishment of climate change funds.

A significant milestone achieved by Kenya is assimilation of climate change concerns into its long term 2030 vision. All interviewed stakeholders referred to Kenya Climate Smart Agriculture Strategy (2017-2026) as the most prominent policy guiding adaptation in agriculture sector. The policy outlines interventions based on principles of enhancing productivity, building resilience, and emissions reduction.

## Uganda

Uganda is facing impacts of climate change in the form of frequency and severity of droughts leading to water stress and severe water shortage, increased incidences of pests and diseases and decline in crop yields with potentially widespread food shortages. Hence, in order to reduce vulnerability to climate change, there is a need for innovative approaches for managing climate change risks while also helping farmers to adapt to climate change. Uganda's priority is adaptation and government has established various programs to combat this problem, which guide farmers, technical officers and decision makers on investments that will build resilient communities, systems and institutions as Uganda proceeds to upgrade its agricultural sector.

Uganda has also put in place a Vision 2040 which has incorporated climate change on its agenda. The idea is to mainstream climate adaptation and mitigation into sector planning and implementation. This involves emphasis on renewable energy, knowledge and information sharing on climate change, increased coordination and capacity and improved monitoring/evaluation of climate change interventions. Another framework called NAP-Ag presents 21 priority adaptation options in key areas of crop production, livestock production, fisheries management, climate information, early warning and disaster preparedness, forestry, land and natural resources management, etc.

## Tanzania

Tanzania has developed a number of agricultural strategies that support development and adaptation to climate change. However, only two such policies were specifically identified to be the sector's plan that support adaptation to climate change meaning that their primary objectives were on climate change

and not general sector development. The first plan launched in 2014 and ending in 2019 was developed to identify and respond to the most urgent impacts posed by climate variability and climate change to crop subsector. It serves as a roadmap for mainstreaming climate change within current agricultural policies, plans and practices. The second program, namely, Climate Smart Agriculture Program (2015-2025) aims to build resilience of agriculture farming systems for enhanced food and nutrition security.

## Programs implemented by international organisations, NGOs and/or businesses themselves

Beyond the policy framework in place, in the region different public and private stakeholders are implementing projects to support farmers and agriculture actors to adapt to the adverse effects of climate change. Below are few examples of what is being done in 5 EAC countries concerned by the PACT EAC2 project.

## Rwanda

In Rwanda, there is a good number of programs/projects implemented to promote climate adaptation by international organisations, NGOs and or businesses and farmers themselves. There are six projects identified, funded by Rwanda Green Fund and implemented either by Government institutions, NGOs or farmers cooperatives.

One such is the National Climate Change and Environment fund, which is a demand based, donor basket fund which aims to generate sustainable financing for environment and climate change projects and programs, builds capacity for managing climate finance and supports access to international climate funds, among other initiatives. This fund

provides grants to civil society organisations and NGOs to implement projects.

The project would reduce dependence of poor households on subsistence cultivation systems which is increasingly affected by low rainfall, erosion, and poor soil quality.

## **Uganda**

In Uganda, a CHAI program is being implemented which uses a set of ICT tools to collect, analyse and send out agricultural advisories, crop market information and weather data to Ugandan farmers and agro-processors. Farmers receive short-term weather forecasts, weekly livestock and crop market information and guidance on low-cost rainwater harvesting techniques and drought and flood coping mechanisms via mobile app subscription. As a result, they are able to minimize crop damage and loss and increase their household income.

## **Kenya**

In Kenya, several projects have been implemented in partnerships with international organisations. The World Bank has funded a five year project, named CSA project, to increase agricultural productivity and build climate resilience amongst small holder farming and pastoral communities as well as provide immediate and effective response in case of emergencies.

In 2016, UNDP and FAO partnered with Kenyan government to support integration of agriculture into National Adaptation Plan process. The 3 year technical assistance program had earmarked USD 700,000 in Kenya for implementation of activities for the period 2016-18.

## **Tanzania**

Tanzania has also partnered with several international agencies in implementing climate

change projects. The government has partnered with Global Environmental Facility to develop core capacity to address climate change in productive coastal zones. The objective of this project is to develop institutional capacities to manage climate change impacts through improved climate information, technical capacity, establishment of demonstration projects to reduce vulnerability in key vulnerable areas.

There is also partnership with UNEP to implement ecosystem-based adaptation project for rural resilience. The objective is to increase resilience in climate change in rural communities of Tanzania by strengthening ecosystem resilience and diversifying livelihoods.

## **Burundi**

The PIPARV-B (Intensification of Agricultural Production and Vulnerability Reduction Project in Burundi) is funded by the International Fund for Agricultural Development-IFAD, World Food Program-WFP, The Organization for the Petroleum Exporting Countries (OPEC) and African Development Bank-ADB for the period 2017-2022. The overall objective of this project is to contribute to the improvement of the living conditions and resilience of the rural populations of the central Burundian plateau through an integrated land management approach via the optimal use of natural resources adapted to increasing demographic pressure. It pursues the SDGs 1: Eliminating poverty in all its forms and all over the world, SDG 2: Eliminate hunger, ensure food security, improve nutrition and promote sustainable agriculture, between others. More specifically, it aims to strengthen the adaptation of the agricultural sector to climate change by (1) mastering techniques adapted to climate change, (2) resilience increase in the area of agricultural land with hydraulic infrastructure built or rehabilitated ( 2500 ha), (3)



increased productivity and production (that of beans increases from 30,000 to 60,000 tons, Pdt from 25,000 to 71,000 tons, and (4) improved productivity of swamp rice which goes from 1.5 t / ha to 4t / ha, 10,000 ha of reforested land, 60,000 ha of developed hills and 20,000ha with erosion control structures. The project also aims at better access to markets and increased household income: banana 2700 USD / and bean SD 220 / year, USD 17,500,000 generated over 5 years for 115,000 jobs.

## **Economic, Social and Environmental Benefits of these Policies & Projects**

The policy efforts alongside the implementation of programmes and projects aiming at enhancing the adaptation of the agriculture sector in the face of climate change, present economic, social and environmental (potential) benefits for individuals, communities and businesses in the EAC region. Here are some of the (potential) benefits that have been identified in the region:

### **Economic benefits**

Economic benefits (could) include increased market access and premium prices for entities practicing conservation and environmental sustainability, risk management facilitation that cushions farmers from likely losses, soil testing which enhances yields, increased income at household levels, increased private sector investment in climate change adaptation, creation of employment, and integration of marginalised communities into the economy.

Interestingly, in Uganda it was highlighted that economic benefits of government's investment in improved technology solutions has a positive impact on people's health while ensuring availability of energy,

### **Social benefits**

Social benefits (could) include reduction of environmental hazards, improved food security through better suited technologies, capacity building of private sector and communities, enhanced access to water and resilience building of communities to withstand climatic shocks and stresses.

Some of the positive social impacts could also relate to an increased awareness of farmers about climate adaptation methods, increased expectations and participation levels of vulnerable communities and improved community livelihoods and continuous diversification from routine farming.

### **Environmental benefits**

Environmental benefits (could) include promotion of water efficiency (by promoting appropriate irrigation systems, facilitating and promoting water recycling and reuse); protection of water catchments, reduction of deforestation; addressing soil and land degradation; enhanced management of agricultural wastes and promotion of development and diffusion of appropriate efficient small-scale irrigation technological packages.

## **The Way Ahead: Providing best support to agriculture sector in the face of climate change**

Based on the interviews of farmers, agro-processors and other institutions concern by the challenges posed by climate change in the agriculture sector, and the difficulties in adapting to those changing environments, below are some of the actions that could be taken by governments, including UNFCCC negotiators.

Negotiators need to emphasize more on availing

means of implementation of NDCs including capacity building and financing through different arms of UNFCCC, including through Climate technology Centre and Network.

UNFCCC delegates are also encouraged to ensure transparency on climate technology transfer and climate financing issues by adopting MRV system (measuring, reporting and verification).

Policy makers and negotiators should make sure that their agriculture stakeholders can access climate funds that are focusing on climate adaptation such as the Adaptation Fund from UNFCCC, in order to reduce vulnerability of their citizens and infrastructures resulting from climate change. Policy makers are also required to increase their outreach programs so that all stakeholders especially agro-processing industry representatives can be aware of all international, regional and national mechanisms

and conditions of accessing those funds.

General issues for effective adaptation within agricultural sector should include: (i) Finances - support is needed in getting data, consolidating and setting up data systems; (ii) Capacity building - in order to bring countries up to speed on climate science, capacity building is required; (iii) Technology - These include irrigation technologies. There is a lot of focus on energy and water efficiency in ongoing projects, for which technologie will be needed; and (iv) Inclusion - negotiations should be based on ideas generated from consultations right from farm level. Government should also share the outcomes of UNFCCC-COPs and provide ample opportunities for agricultural stakeholders to share their views on country position papers or elements to be included in the sessions of UNFCCC subsidiary bodies.



## CUTS International, Geneva

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