ClimDev-Africa
Leading the response to climate change in Africa

United Nations
Economic Commission for Africa

Fourth Conference on Climate Change and Development in Africa (CCDA-IV)

Africa can feed Africa now: translating climate knowledge into action

Concept note

ClimDev-Africa

I. Background

Despite the global economic downturn, African economies have grown over the past decade, and growth is expected to continue at an average rate of 5.3 per cent in 2014 (African Economic Outlook, 2013). However, the wealth generated from economic growth has yet to spread to the poor majority, whose livelihoods depend mainly on climate-sensitive sectors such as agriculture and fishing. The inability of Africa's agriculture to match the needs of its growing population has left around 300 million people hungry and forced the continent to spend billions of dollars on food imports annually.

Climate change is expected to complicate efforts to find solutions to the problem, as it causes severe disruptions to agricultural production systems, the environment and biodiversity. According to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, a rise in temperature of more than 2°C could exacerbate the existing food deficit and prevent the majority of African countries from attaining Goal 1 of the Millennium Development Goals (reducing extreme poverty and ending hunger by 2015). Africa must, therefore, consider other options, such as improving agricultural performance and enhancing capacity, with a view to turning climate challenges into opportunities and facilitating broad-based poverty reduction and food security for all.

Africa has the potential to rise to the challenge and reverse the perennial food deficit scenario. Given the continent's vast land resources suitable for agriculture (60 per cent of which are unutilized) and ample freshwater bodies, Africa could transform its agricultural production systems. If African farmers were empowered with climate change information and knowledge, they would be able not only to produce food for themselves and their families but also to set up businesses and earn an income. In addition, by spreading climate knowledge, losses resulting from storage, high transport costs and poor processing and retailing practices could be reduced. Focusing on agricultural value chains, rural entrepreneurship and information and communications technology could also bring lucrative employment opportunities to rural areas and curb the rate of youth rural-urban migration. Attracting and retaining young people in the agricultural sector is critical for enhancing the performance and sustainability of agriculture.

Africa's capacity to feed itself now and in the future will require increased investment in climate change research, biotechnology research and development and innovation. In addition, there is a real need to make technology accessible and affordable for farmers, to enhance opportunities for easy access to agricultural finance and insurance, to facilitate trading and access to markets at all levels, and to create an enabling environment for private sector investment in the agricultural value chain. Enhanced agricultural performance cannot be achieved without investing in clean and efficient energy. Equally important is a better understanding of the agriculture, energy and water nexus, and of how Africa can harness ecosystems and natural capital to feed itself.

Agriculture will remain a key driver of Africa's economic growth, providing employment opportunities for its young and rapidly growing population. The continent's agricultural value chain provides multiple entry points and pathways for

advancing Africa's transformative agenda towards a green economy and low carbon development. The four sub-themes of the Fourth Conference on Climate Change and Development in Africa will provide in-depth analyses of the agricultural value chain, with a view to reinvigorating productivity and achieving food security and sufficiency throughout the continent. The sub-themes will also identify strategic areas for aligning the agricultural value chain and propelling Africa into green and low-carbon development. The ensuing discussions on the green economy will bring together the elements that emerge from the sub-themes.

The Climate for Development in Africa programme (ClimDev-Africa) is organizing the Conference as part of continuing efforts to promote the use of climate information to enhance agricultural performance in a changing climate and to maintain the momentum of economic growth, with a view to helping Africa to feed itself and eliminating poverty. The Conference will focus on how the continent can feed its people and sustain growth in the face of climate change challenges. Specifically, it will address how to make use of available climate information, clean energy technology, innovation, research and development to enhance agricultural performance and achieve economic structural transformation. The Conference will provide a platform for sharing experiences, addressing emerging climate challenges, drawing upon new knowledge, and exploring opportunities related to climate change, to enhance the agricultural value chain and ensure food security both now and in the future.

The theme of the upcoming Conference, "Africa can feed Africa now: translating climate knowledge into action", is especially relevant as the African Union has declared 2014 the year of agriculture and food security.

The Conference will be held in Marrakech, Morocco, from 8 to 10 October 2014.

II. Objectives of the Conference

The overall objective is to provide a platform for deliberations on how Africa can utilize climate knowledge to transform its agricultural production systems in order to feed itself, both now and in the future, and to improve the socioeconomic well-being of its people.

More specifically, the objectives are to:

1. Understand the role of climate data, information services and climate knowledge in transforming and managing risks and opportunities throughout the agricultural value chain;
2. Examine the implications of recent climate trends and projections for agricultural production systems and related infrastructure;
3. Better understand the importance of natural capital and ecosystem services in agricultural performance and sustainability;
4. Identify finance and technology challenges and opportunities for climate-resilient agricultural value chains;

5. Build on the recommendations of the Third Conference on Climate Change and Development in Africa and the climate research frontiers identified at the 2013 African Climate Conference.

III. Expected outputs and outcomes

A. Outputs

- Conference summary statement
- Conference report
- Policy briefs
- Web publications
- Daily publications
- Press releases
- Peer-reviewed Conference proceedings

B. Outcomes

- Greater understanding of the importance and necessity of collecting climate data and generating and disseminating information and knowledge, in order to help Africa to feed itself in the face of climate change
- Better understanding of recent climate change trends and the implications for Africa's agricultural production and development
- Improved knowledge of the linkages between food, energy, water and ecosystem services in the agricultural value chain
- Increased focus on investment and partnerships within the field of climate research for development by African Governments and partners
- Improved knowledge of the opportunities for clean energy development
- Better informed African negotiators in the United Nations Framework Convention on Climate Change process with regard to improved agricultural production
- Concrete recommendations to inform negotiations in the run-up to the twenty-first session of the Conference of the Parties
- Enhanced knowledge and understanding of the impact of climate change on rural and urban interdependences
- Recommendations on how to translate climate change knowledge into action to enhance Africa's agricultural performance and boost food security

IV. Sub-themes

Sub-theme 1: Improving and harnessing climate data, information and knowledge in support of agricultural production, water resources management and food security in Africa

Sub-theme 2: Agricultural opportunities for renewable energy development in Africa

Sub-theme 3: Enhancing Africa's capacity to mobilize and access climate finance and investment for climate-resilient agricultural transformation

Sub-theme 4: Innovation, technology transfer and deployment to enhance agricultural transformation in a changing climate

Sub-theme 1: Improving and harnessing climate data, information and knowledge in support of agricultural production, water resources management and food security in Africa

Agriculture is one of the most important sectors in Africa: it accounts for about 30 per cent of gross domestic product and 50 per cent of total exports, and employs more than 70 per cent of the population in most non-oil exporting African countries. However, the sector is vulnerable to climate variability and change as it relies heavily on rainfall. General circulation models predict that temperatures will increase in Africa, which will have a negative impact on the continent's agricultural production. The impact of climate change is particularly serious in Africa because of the continent's low adaptive capacity, which is due to its institutional, economic and financial limitations.

Understanding the potential impacts of current and projected climate change on African agriculture and identifying ways to adapt and mitigate them is critical to improving agricultural performance and sustainability. An understanding of the role of ecosystems, natural capital and efficient agricultural water management is also key to improving productivity. African countries must, therefore, adopt and develop policies that strengthen agricultural water resources management, all while taking the needs of the continent's ecosystems into consideration, with a view to making agriculture inclusive and resilient to the predicted impacts of climate change.

In recent years, greater emphasis has been placed on improving climate data and information in Africa by upgrading observation networks, retrieving and storing records and assimilating sparse observations with remote-sensor and reanalysis products. The improved climate data and information could be further analysed and packaged into standard baseline climatology, knowledge-bases and decision-support tools, tailored to the prevailing climatic conditions in Africa. The packaging and translation of available climate data into useful information for end users, and the scaling up of services, could contribute significantly to reducing the risks and uncertainties presented by a changing climate. Improved climate information will also make for better management of agricultural water resources, timely planting and harvesting, storage, processing and transportation to markets. Climate knowledge bases and decision-support tools would provide climate-related scientific evidence for policy formulation and decision-making in the agricultural sector and in other development sectors. They would also provide evidence for plausible adaptation options and alternative climate-resilient development pathways in Africa.

Urban dwellers will also be affected by climate extremes because they depend on food from rural areas and may suffer from escalating prices stemming from shortfalls in agricultural production. As a result, bridging the rural-urban divide and strengthening linkages between the two communities is essential for enhancing agricultural performance, preventing and managing risks, reducing vulnerability, and building a climate-resilient agriculture sector that is capable of producing enough food for Africa and surplus to sell on other markets. Farmers in rural areas need to have direct access to urban markets to increase their income and encourage shifts to higher-value crops and livestock.

This sub-theme seeks to assess the implications of recent climate trends for agricultural production in Africa and to encourage the use of such information to advise policymakers on their investment priorities. It also seeks to encourage the best use of climate change opportunities for adapting African agriculture to climate variability and change, in order to enhance agricultural performance so that Africa can eventually feed itself. The sub-theme will examine options for making timely climate information available to end users – that is, farmers – at the local level. It will also initiate dialogue among policymakers and other stakeholders on how to narrow the urban-rural divide. Lastly, it will discuss options for strengthening linkages throughout the agricultural value chain, as well as the impact of migration on food production and security.

Discussions under sub-theme 1 will focus on the following topics:

Topic 1.1: Improving the capacity of climate knowledge management, forecasting and projection, and early warning and disaster management in the agricultural sector
Topic 1.2: Climate impacts and trends in agricultural production systems: options for enhancing responsiveness through timely climate information at all levels
Topic 1.3: Harnessing ecosystems and natural capital to enable Africa to feed itself in a sustainable manner
Topic 1.4: Policy options and measures for bridging the rural-urban divide and reducing vulnerabilities to climate change

Sub-theme 2: Agricultural opportunities for renewable energy development in Africa

Lack of access to energy is one of the main challenges hampering economic development in Africa. Food security – which is the ultimate goal and a prerequisite for achieving transformative and sustainable development – cannot be achieved without sufficient energy. Just 31 per cent of the population of sub-Saharan Africa has access to electricity, a figure that drops to 14 per cent in rural areas. Energy drives not only agricultural production, transformation and value addition but also transportation, trade and consumption. An insufficient energy supply and limited access to generated power have contributed immensely to continued poverty in Africa.

Many experts believe that the continent's energy deficit could be addressed adequately by promoting the development of green energy. The impact of climate change on renewable energy systems (e.g. hydropower) is significant, as climate change can affect hydrological flows and the allocation of variable and scarce water resources among competing end users. The complexity of risk-benefit management of climate change in the energy sector and the broader consideration of competing uses of water call for the need to enhance awareness, mainstream climate change into energy policies and coordinate planning along the water-food-energy nexus. The issue of food security in Africa, therefore, should be seen in connection with secure energy and water supplies and the impact these supplies could have on agricultural productivity and ecosystems in a changing climate.

The issue of innovation in forestry and biofuel resources will need to be addressed as it impacts agricultural productivity. Indeed, over 80 per cent of Africa's population relies on biomass as a primary source of energy, and the demand for forest resources is not showing any signs of abating (ECA, 2014). The growing demand placed on forest resources requires an improved management framework, better forest stock data and an overall biomass management strategy and policy. The development of biofuels and their potential impact on agriculture in Africa should be fully examined.

Energy technologies have a direct beneficial effect on food security and enhanced efficiency throughout the agricultural value chain. Effective deployment of energy technologies would entail implementing best practices and technologies and creating policies that fully address the links between energy technologies and food security.

Discussions under sub-theme 2 will focus on the following topics:

Topic 2.1: Understanding the water-food-energy nexus in a changing climate
Topic 2.2: Leveraging renewable energy technology opportunities in the agricultural value chain
Topic 2.3 Biomass energy and biofuels: challenges and opportunities for food security

Sub-theme 3: Enhancing Africa's capacity to mobilize and access climate finance and investment for climate-resilient agricultural transformation

The resilience of Africa's agriculture in the face of a changing climate requires, among other things, enabling policies and strategies for accessing finance and increasing investment in the sector. Climate financing is one of the mechanisms that could be used to exploit opportunities related to climate change. Strategies and incentives such as the Clean Development Mechanism, the programme for reducing emissions from deforestation and forest degradation in developing countries (REDD and REDD+) and the green climate fund, which are designed to reduce emissions from forests and enhance carbon stocks, have emerged as key international financing mechanisms under the United Nations Framework Convention on Climate Change. However, until now, the continent has had little access to global financing mechanisms and has hardly participated in carbon markets. Indeed, so far Africa has only managed to obtain 2 per cent of all the projects registered under the Clean Development Mechanism, and thus needs to strengthen its capacity to access and absorb funds available from external sources and create an enabling environment for private sector investment.

Agriculture also offers great potential for mitigating climate change through carbon sequestration. The amount of carbon dioxide sequestered in this sector annually is estimated at 6 billion tons, 70 per cent of which lies in developing countries. The Kyoto Protocol, however, overlooks carbon sequestration in agriculture, making it ineligible for climate financing despite its potential for providing additional income opportunities for farmers. In the Nairobi work programme, African leaders and other developing countries called for the agricultural sector to be included in global climate financing and for the introduction of a mechanism to assess and valorize

agricultural carbon sequestration. Such negotiations should be continued in ongoing global climate finance negotiations, while efforts should also be made to improve the continent's capacity to access the climate adaptation and mitigation funds already available. Moreover, the capacity of African countries to absorb climate funds should be enhanced. Developing innovative domestic financing mechanisms and creating an enabling environment to encourage private sector investment in agriculture are also vital to ensuring enhanced agricultural performance and food security in Africa.

This sub-theme thus seeks to address climate finance issues in negotiations, with a view to enhancing Africa's capacity to access global climate financing, developing effective local financing mechanisms and creating an enabling environment for private sector involvement in the agricultural sector. The sub-theme will provide opportunities for sharing experiences regarding the development and implementation of national climate change policies and strategies for accessing climate financing, including through the Global Alliance for Climate-Smart Agriculture. The role of gender and the private sector in enhancing Africa's capacity to mobilize, access and implement climate finance will also be discussed.

Discussions under sub-theme 3 will focus on the following topics:

Topic 3.1: Options for enhancing Africa's capacity to access climate finance mechanisms for agricultural transformation
Topic3.2: Agriculture in the negotiations on the Framework Convention on Climate Change: what are the opportunities for Africa?
Topic3.3: Finance mechanisms (including REDD+, the green climate fund, insurance schemes and private financing)
Topic 3.4: Enhancing private sector financing and investments in climate-resilient agriculture

Sub-theme 4: Innovation, technology transfer and deployment to enhance agricultural transformation in a changing climate

Millions of Africans who live in rural areas are directly dependent on agriculture, and they encounter technical, economic, social, cultural and traditional obstacles to improving their livelihoods. To cope with these obstacles, they rely on indigenous knowledge and innovation through local experimentation and adaptation, but that is not enough to deal with the complex problems facing the agricultural sector. Emerging issues, including climate change, require complementary innovative, science-based technologies and supportive policies. Scientific advancements and innovation are the keys to transforming African agriculture. In this context, significant efforts have been made during the past decade to develop, for instance, high-yielding crop varieties that are resistant to drought, pests and disease, through public and private partnerships and international research institutions.

The potential of such agricultural advances and technologies to improve the economic welfare and food security of smallholder farmers is largely underutilized, as much of the findings remain in research centres, unknown and unutilized by farmers. Indeed, many public research institutions do not have sufficient resources to disseminate, distribute and push for the adoption of their research outputs in rural

areas. Adoption of new technologies is limited by elevated input costs and the potential risks involved, which put off many smallholder farmers. Information and communications technology could also play a significant role in improving the productivity of the agriculture sector through the timely provision of decision support and climate information to end users, using platforms such as mobile phone networks and rural radios. However, information and communications technology is not fully integrated into national agricultural strategies in Africa, and consequently the majority of such initiatives are used in small-scale pilot projects and do not target overall agricultural developmental policy goals.

This sub-theme will review existing technological innovations, including information and communications technology, which could be leveraged to address the impacts of climate change and increase agricultural production, food security and the transformation of the agricultural value chain.

Discussions under sub-theme 4 will focus on the following topics:

Topic 4.1: Agricultural research and innovations, with a particular emphasis on low-carbon development
Topic 4.2: Strengthening policies and financing for development and the transfer of green technologies in agriculture
Topic 4.3: Options for enhancing the use of information and communications technology in disseminating climate information throughout the agricultural value chain

V. Format of the Conference

The Conference will consist of a high-level dialogue, plenary sessions, parallel sessions, pre-events, side events and post-events. A number of eminent participants will deliver keynote addresses on the challenges and opportunities that climate change presents, and the implications for food security. Speakers and experts will provide the contextual analyses for achieving the overarching goal of ensuring food security. The Conference will also feature prominent roles for civil society organizations, gender groups, young people and farmers.

On the first day of the Conference, a high-level plenary session will be held, during which ministers and prominent experts will discuss the theme and set the tone for the rest of the Conference. The session will be followed by a number of speeches introducing the plenary discussions on each sub-theme. A plenary session on the green economy perspectives of the four sub-themes will conclude the first day. Participants will have the opportunity to engage the panellists and presenters to further explore the points raised in the presentations.

To open up the space for more in-depth discussions on specific climate change and development topics identified under the sub-themes, the second day will be dedicated to five parallel sessions. Presentations, tailored to each topic, will be moderated by experts on each sub-theme.

A. Pre-events

A pre-event forum will be held to discuss the role of regional integration and trade liberalization in food security in Africa, gender issues, and the urgency of mechanizing smallholder agriculture.

B. Side events

1. United Nations Environment Programme
2. Network of African Science Academies
3. National focal point discussions on climate change
4. Gender, youth and climate change (in collaboration with the Social Development Policy Division of the Economic Commission for Africa)
5. Climate change, agriculture, trade and energy nexus
6. Role of the media in communicating climate-related impacts and adaptation options
7. Role of African farmers in local adaptation initiatives
8. Vulnerability of agricultural production in Africa's small island developing States
9. Capacity development for climate change
10. Sharing lessons among the African pilot countries

C. Exhibition

A poster exhibition, to be held on the margins of the Conference, will provide an opportunity for networking and exchanging views on the options within and outside Africa for translating climate knowledge into action, in order to achieve climate-resilient agricultural transformation and cope with the impact of climate change.