

# **Third Conference on Climate Change and Development in Africa (CCDA-III)**

**21-23 October 2013**

*Theme:*

*Africa on the Rise: Can the Opportunities from Climate Change Spring the  
Continent to Transformative Development?*

## **Full Report**



## Contents

Executive Summary .....	1
Sub-theme one: Climate science, data and services for Africa’s adaptation and mitigation .....	2
Sub-theme two: The role of policy in building Africa’s resilience to climate change impacts..	3
Sub-theme three: Climate Finance: What are the unexplored options?.....	4
Sub-theme four: Green economy: Which way for Africa?.....	5
Sub-theme five: Is the global climate change framework working for Africa? .....	6
Recommendations on Inclusion.....	6
Background.....	8
Climate change and Africa’s development.....	8
CCDA I and II.....	9
CCDA III .....	10
Overall Objectives .....	10
Specific objectives .....	10
Outcomes .....	10
Outputs.....	11
Conference Participation.....	11
Conference Format.....	11
Conference Proceedings.....	11
Day One .....	11
Session 1: Opening Ceremony.....	11
Session 2: High-Level Dialogue: Can the Opportunities from Climate Change Spring the Continent to Transformative Development?.....	15
Session 3: ClimDev-Africa Plenary.....	18
Day Two.....	20
Sub-theme 1: Climate Science, Data and Services for Africa’s Adaptation and Mitigation	20
Sub-Theme 2: The Role of Policy in Building Africa’s Resilience to Climate Change Impacts.....	25
Sub-Theme 3: Climate finance: What are the unexplored options? .....	32
Sub-Theme 4 : Green Economy: Which Way for Africa?.....	38
Sub- Theme 5: Is the Global Climate Change Framework Working for Africa?.....	39
Day 3:.....	43
Closing Session – Chaired by Dr. Fatima Denton, Officer-in-Charge, Special Initiatives Division (UNECA), Coordinator of ACPC .....	43

Other key events .....	44
Pre-Conference Events: .....	44
Side Events.....	45
Exhibition.....	45
Media .....	45

## Executive Summary

1. The Third Conference on Climate Change and Development in Africa (CCDA-II) was held from 21-23 October 2013 at the United Nations Conference Centre in Addis Ababa, Ethiopia. The meeting brought together more than 600 delegates from African Member States, Regional Economic Communities, River Basin Organisations, Non-Governmental Organisations, policy makers, the private sector, academia, research, practitioners and development partners. The conference was jointly organised by the three Climate for Development in Africa (ClimDev-Africa) partners, the African Union Commission (AUC), the United Nations Economic Commission for Africa (ECA) and the African Development Bank (AfDB), supported by the United Nations family and development partners.
2. The overall objective of the conference was to build on CCDAI and II and stimulate debate among experts and stakeholders on how opportunities in climate change can enhance Africa's transformative and inclusive economic growth and development agenda. CCDA-I and II provided critical input in defining the programme and activities of ClimDev-Africa, including investment in climate science data, information and service delivery in pilot countries, and development of a capacity enhancement programme in climate science research. It also advanced the dialogue on climate information services among stakeholders, including beneficiaries of the ClimDev-Africa programme.
3. The main theme of CCDA-III was *Africa on the Rise: Can the Opportunities from Climate Change Spring the Continent to Transformative Development?* The conference had five sub themes:
  - Sub-theme one:** Climate science, data and services for Africa's adaptation and mitigation
  - Sub-theme two:** The role of policy in building Africa's resilience to climate change impacts
  - Sub-theme three:** Climate Finance: What are the unexplored options?
  - Sub-theme four:** Green economy: Which way for Africa?
  - Sub-theme five:** Is the global climate change framework working for Africa?
4. Mr. Carlos Lopes, UN Under Secretary-General and Executive Secretary of the Economic Commission for Africa (ECA), Mr. Aly Abou-Sabaa, Vice President for Sector Operations II at the African Development Bank, and Her Excellency Tumusiime Rhoda Peace, Commissioner for Rural Economy and Agriculture at the African Union Commission, provided opening statements. They reiterated their institutions' commitment to ClimDev-Africa, an initiative to address the impacts of climate change on the continent. Mr. Lopes outlined six recommendations for addressing climate change in Africa, in the context of CCDA-III.
5. The Conference was officially opened by His Excellency Ato Alemayehu Tegenu, Minister of Water, Irrigation, and Energy of the Federal Republic of Ethiopia. He emphasised the need to integrate climate change in Africa's development frameworks. He reminded the delegates that climate change had set the world on a dangerous path that could only be contained

through climate resilient green growth, akin to Ethiopia's. The minister urged the African Group of Negotiators to continue their strong negotiations in the UNFCCC towards a legally binding agreement in 2015.

6. A high level dialogue set the scene for the conference. The dialogue included such distinguished personalities as H.E. Festus Mogae, former President of Botswana, H.E. Mary Robinson, former President of Ireland and Chairperson of the Mary Robinson Foundation, Hon. Saviour Kasukuwere, Minister of Environment, Water and Climate of Zimbabwe and Chair of the African Ministerial Council on Meteorology (AMCOMET), Hon. Mass Axi Gai, Minister of Fisheries and Water Resources, The Gambia, Mr. Jeremiah Lengoasa, Deputy Secretary-General of the World Meteorological Organisation (WMO) and Ambassador Gary Quince of the European Union Delegation to the African Union (AU). The discussion was chaired by Dr. Aly Abou-Sabaa, Vice President, African Development Bank.

### **Sub-theme one: Climate science, data and services for Africa's adaptation and mitigation**

#### **Key messages**

- African countries need to invest more in climate knowledge and services to address the continent's climate change challenges.
- There is need to improve understanding of the African climate system to ensure the provision of reliable advice for resilience and adaptation to climate variability and change, taking into accounts the different needs on the continent.
- The gathering of climate data, its analysis and dissemination, require a multi-disciplinary and multi-stakeholder orientation.
- Climate services do not reach those who need them the most. Identifying the needs of User Communities and meeting these needs is crucial.
- There is a great need for high quality and reliable forecasts and projections with the necessary temporal, spatial and user specificities.
- There are good examples of already implemented projects, programmes and lessons including projects of AMMA and ENACTS, programmes of AGRHYMET, ICPAC and ACMAD centres, together with new programmes such as GFCS and MESA. Any further new initiatives can build on the experiences of these programmes.
- There is a disconnect between research and user needs. Effective collaborative research programmes and better coordination in scientific related investment are urgently needed to enable Africa to deliver as one.

#### **Recommendations**

- Fully endorse the Arusha African Climate Conference 2013 (ACC2013) statement, and support outreach for its promotion among various constituencies.

- Promote implementation of the ACC2013 statement to advance climate research for development and knowledge in Africa.
- Propose that African institutions establish sustainable coordination platforms, under the leadership of ClimDev-Africa, WCRP and GFCS, on climate research in support of development initiatives in Africa.
- Promote the scaling out to more African countries of pilot projects being conducted by ACPC under the ClimDev-Africa programme.
- As a matter of urgency, ClimDev-Africa and its Partners should render the ClimDev-Africa Special Fund (CDSF) operational.
- Strengthen efforts made by NMHSs and other key institutions in the areas of data rescue, information management, data sharing, and investment in new data network systems and capacity development.
- African governments should invest more in activities related to climate and set aside appropriate budgets for climate research.
- African institutions and governments should be called upon to improve capacity in climate data modelling, use and application.
- There is need for stronger coordination among different initiatives, including ClimDev-Africa, GFCS, AMCOMET and other similar initiatives.

### **Sub-theme two: The role of policy in building Africa's resilience to climate change impacts.**

#### **Key messages**

- African countries should mainstream climate change into development strategies and policies, using a multi-sectoral approach rather than confining it to key focal point ministries.
- Africa needs to develop a political and practical understanding of climate change. There is need to enhance social protection and social safety nets to address the impacts of climate change on disadvantaged groups in Africa.
- There is a disconnect between scientific research and policy formulation.
- The role of women in agriculture and climate change, particularly in adaptation and mitigation discourses, is not adequately addressed, and needs to be mainstreamed in national planning and in relevant sector policies.
- Actions to mitigate the effects of climate change should not further increase the current burdens that vulnerable women have to contend with in many of the productive sectors

#### **Recommendations**

- Africa's sectoral ministries, researchers and practitioners should ensure that the adaptation, development and diffusion of agricultural technology to address climate change are linked to specific agro-ecological zones.
- Researchers must develop appropriate methodologies for full accounting of loss and damage as a result of climate change. Losses may be economic, social and cultural.
- Policy makers must be called upon to conduct a systematic review of all existing agricultural and other sectoral policies to ensure that they reflect climate change imperatives.
- All relevant institutions must be called upon to enhance the knowledge and capacities of grassroots farmers for climate adaptation, taking into account indigenous knowledge and innovation.
- Experts must develop policy tools for governments to use in addressing climate-induced poverty, including farmer advisory services, early warning, disaster risk reduction, financial instruments, input credit and risk insurance.
- Relevant actors must enhance the dialogue between farmers, scientists and policy-makers.
- African governments must reinforce the links between NAPAs and national investment plans while increasing investment in agriculture.

### **Sub-theme three: Climate Finance: What are the unexplored options?**

#### **Key messages**

- As Africa continues to seek international sources of finance, the mobilisation of domestic resources is critical.
- Climate finance is not meeting African expectations. There is a need for more clarity, coordination and complementarities between existing climate finance mechanisms.
- Africa must strengthen its ability to access global climate funds.

#### **Recommendations**

- Governments and regional economic communities must foster an enabling policy environment that promotes private sector investments in climate change interventions.
- African researchers and practitioners should analyse sources of climate finance, access by African countries and related information to support African negotiators and policy makers in their work.
- African negotiators should step up efforts to ensure that different negotiation tracks make available funds to support Africa's adaptation and mitigation programmes.
- RECs should play an active role in preparing member countries to absorb climate finance.

## Sub-theme four: Green economy: Which way for Africa?

### Key messages

- The green economy is a vehicle to achieve sustainable development and eradicate poverty.
- There is no question of a choice between economic growth and environmental protection. The green economy is about achieving green growth while at the same time protecting our environment.
- There can be no food security without conserving our natural environment. The challenge for Africa is to increase economic growth without creating imbalances in the environment.
- Africa, seen as the next frontier of global economic growth, has an opportunity to leapfrog into more efficient eco-friendly technologies. Sticking to old technologies will lock the continent on a pathway to adverse effects.
- African assets are now more valuable because of climate change. For example, carbon stored in Africa's forests and soils can provide financial opportunities under the REDD+ mechanism.
- Africa's demography is another opportunity, if the right skills are provided and economies are diversified, to make the continent more resilient and sustainable.
- Efficient natural resource use will increase economic efficiency, competitiveness, sustainability and build resilience to climate change as Africa increasingly integrates into the global economy.

### Recommendations

- Researchers must tap into the knowledge of African farmers, who are closest to the reality of green growth and efficient technology systems.
- Planners of development programmes and projects should include the valuation of Africa's ecosystems as part of their economic evaluations.
- Planners and experts must build credible, evidence-based, tracking, including an appropriate set of indicators, to plan for the green economy and evaluate if Africa is on course for inclusive green growth.
- Governments must provide enabling policies and regulations to attract investments from the private sector to support green development.
- Governments, partners and development agencies should support sustainable forest management practices.

## Sub-theme five: Is the global climate change framework working for Africa?

### Key messages

- It has taken 17 years to understand that the problems associated with climate change cannot be solved by a group of countries under the Kyoto Protocol, but must involve all, with common but differentiated responsibilities.
- The segmentation of African states into categories such as developing, LDC's, small islands, is a challenge because it can divide countries and undermine the continent's position in global negotiations.
- The global framework on climate change is slow and has not delivered tangible results to the continent, despite Africa's efforts at addressing the impacts of climate change. The process needs to productively engage with Africa and develop programmes that address Africa's specific needs.
- The Convention creates broad rules that pose a challenge for Africa because of limited capacity to meet them. This limits the benefits of the convention to the continent.
- Africa's participation in the UNFCCC process needs strengthening through robust preparation, supported by science-based evidence on each negotiation track.
- Industrialised countries have the responsibility and obligation to address the causes of climate change and support interventions to address its impacts on Africa.
- An institutional mechanism, rather than a market mechanism, is needed to enhance Africa's resource requirements to address loss and damage in the UNFCCC process.

### Recommendations

- ACPC must support African Negotiators as they strengthen mechanisms to agree and advocate common African positions in different UNFCCC processes.
- Africa must formulate, before each COP, realistic budget estimates for urgent step-by-step adaptation.
- Researchers and policy analysts should support the African Negotiators through evidence and science based knowledge.
- National negotiators should enhance domestication of decisions taken at COP's and other global and regional forums into national development agenda.

### Recommendations on Inclusion

- The poor in Africa suffer most from the impacts of climate change. African countries should adopt transformative and inclusive development strategies.
- Gender should be integrated into research, policy formulation and implementation of interventions and CCDA should develop a gender policy.

- People living with disabilities are particularly vulnerable to the effects of climate change and should be included in CCDA activities.
- The capacity of women and youth should be strengthened in the use of appropriate agricultural and livestock production technologies and practices that enhance resilience to climate change.
- African youth should be trained in entrepreneurship to enable them contribute to development and become change agents in adaptation and mitigation strategies.
- The organisers of CCDA III should facilitate the establishment of a network of African farmers, who are bearing the brunt of climate change and need a platform to exchange experiences.

## Background

### Climate change and Africa's development

For more than a decade, Africa's economies have been on the ascent, creating an unprecedented opportunity for the continent to improve the welfare of its peoples and raise millions of them out of poverty. At a national level, many African countries have embarked on economic and political transformation, implementing strategies and programmes for economic growth, poverty reduction and the general improvement of their citizens' welfare. The results have generally been impressive.

However, Africa will have to manage a number of other challenges if this positive momentum is to be sustained. One of the most important of these is climate change.

It is worth noting that during 2013, atmospheric carbon dioxide emissions exceeded 400 parts per million, the highest level in millennia. Earlier, the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) stated that temperatures in Africa would rise by between 0.2° to 0.5°C per decade up to the year 2100. One result of this rise in temperature will be more frequent storms, floods, droughts and a rise in sea levels likely to disrupt life as Africans have generally known it. Agriculture, food security, water supply, energy, security, migration, health, and biodiversity will be most vulnerable to the impacts of climate change.

African ministers of the environment, meeting in the fifth special session of the African Ministerial Conference on the Environment, held in Gaborone, Botswana, on 17 and 18 October 2013, warned: 'Africa faces numerous, severe and growing negative impacts arising from the adverse effects of climate change and that such impacts are undermining Africa's efforts to attain its development goals.' The ability of African states to cope with this challenge will be compromised by their low adaptive capacity.

The Africa Adaptation Gap Technical Report (2013) adds to this sense of urgency. It states that in a below 2°C warming pathway, adaptation costs in Africa in the medium to long-term are estimated at \$35 billion per year by the 2040s and \$200 billion per year by the 2070s, that beyond a 3.54°C warming pathway, adaptation costs in Africa are estimated at around \$45–50 billion per year by the 2040s and \$350 billion per year by the 2070s. Without adaptation total damages would reach 7 per cent of Africa's gross domestic product by the 2070s.

The Intergovernmental Panel on Climate Change (IPCC) warns that by 2020 some 75 to 250 million people will be exposed to increased water stress. Yields from rain-fed agriculture could be reduced by up to 50 percent in some regions by 2020 while agricultural production and access to food may be severely compromised.

It is thus clear that if they are to ensure sustained progress, African countries will have to integrate climate change as a critical component of their national, regional and continental development strategies, managing the threats that climate change poses and seizing the opportunities that it presents. Such mainstreaming of climate change into Africa's development agenda will demand the full cooperation of all key players, including climate and social scientists, development economists, policy and decision-makers.

## CCDA I and II

The conference series on Climate Change for Development in Africa (CCDA) are annual events organised under the auspices of the Climate for Development in Africa (ClimDev-Africa) programme. ClimDev-Africa programme is a joint initiative of the African Union Commission (AUC), the United Nations Economic Commission for Africa (UNECA) and the African Development Bank (AfDB).

CCDA I (2011) and CCDAII (2012) both sought to advance knowledge, policy and practice on climate change and development in Africa. They each created forums for dialogue that raised awareness on the importance of climate change, its impacts on development, and the link between science, policy and practice in addressing the challenge of climate change on development in Africa.

CCDA I was held under the theme '*Development First: Addressing Climate Change in Africa*'. It set out to establish a forum for dialogue, raise awareness of the challenges of climate change in Africa, and mobilize commitment and action from policy makers, academics and other stakeholders. The commitment of these key constituencies is critically essential for effective mainstreaming of climate change in development policies, strategies, and programmes in Africa. CCDAI also aimed to strengthen Africa's participation in international climate change negotiations.

The theme for CCDA II was '*Advancing Knowledge, Policy and Practice on Climate Change and Development*'. This theme was inspired by the desire to align Africa's equitable and sustainable development agenda with the imperatives of climate variability and climate change. It also sought to emphasize Africa's ownership of climate change policy formulation and decision-making processes.

CCDA II built on the work of CCDA-I by engaging policy makers, researchers, practitioners, civil society and other stakeholders to ensure that development policies, strategies, and programmes fully reflected the reality of climate variability and change. The conference also contributed to strengthening Africa's participation and position in the 18th Conference of Parties (COP 18/CMP 8), held in Doha, Qatar, from 26 November to 8 December 2012.

## CCDA III

### Overall Objectives

With the recognition that climate change presents challenges as well as opportunities with respect to Africa's development, CCDA III set out to provide a platform for climate experts and the various stakeholders in development policy and practice to confer on how opportunities presented by climate change can be tapped to enhance Africa's economic growth and development agenda. The Conference also explored opportunities for mainstreaming best practices– based on empirical and scientific assessments – in the development of national, regional and continental climate change response development policies and strategies. The conference objective was based on the recognition of the need for empirical basis for policy formulation and for effective responses to the challenges associated with climate change at all levels.

### Specific objectives

More specifically, CCDA-III had the following specific objectives:

- a) Demonstrate empirical lessons from best practice in investments in climate science, data and analysis, as well as the multiplier benefits of such investments to African economies;
- b) Deliberate on the effectiveness of policies on climate resilience in Africa and the role and relevance of international, regional and national frameworks and contexts;
- c) Debate Africa's transition to a green economy, especially clean energy access, low carbon development options, and climate finance;
- d) Deliberate on the relevance of the global climate change framework for Africa, how Africa needs to assert its development interests and influence on the global agenda, and whether Africa can find an alternative space to pursue its development goals.

### Outcomes

The following results were expected at the end of CCDA III:

- Increased understanding of the role of climate science data and analysis in Africa's development;
- Improved understanding by delegates of Africa's risk factors and vulnerability, and the role of policy in promoting innovative adaptation and mitigation measures;
- A better understanding of policy, strategy and practice for creating green economy pathways and the role of clean energy can play in African development, and
- Strengthened professional networking to promote active debate on key issues and lay the foundation for more analytical work.

## Outputs

Two main outputs were expected at the end of CCDA III. These included:

- A CCDA-III conference report;
- Peer reviewed CCDA-III proceedings.

## Conference Participation

CCDA III brought together nearly 600 delegates that included climate scientists, development experts, policy-makers from AU member-states, climate change focal points in African countries and Regional Economic Communities, representatives of regional and sub-regional climate centers, the UN and representatives of financing institutions, south-south cooperation institutions, the private sector, civil society organizations, media organizations, women and youth groups, farmers and community groups.

## Conference Format

The first day of the CCDA-III proceedings featured an opening session that was addressed by leading African and non-African figures, including the former presidents of Botswana and Ireland, Dr. Festus Mogae, Ms. Mary Robinson, respectively. This was followed by a high-level dialogue in which eminent African and non-African personalities and climate experts set the tone for the conference's discussion of critical issues in African development and climate change.

This session was followed by plenary presentations on ClimDev Africa and each of the conference sub-themes. These were:

- i. Climate science, data and services for Africa's adaptation and mitigation
- ii. The role of policy in building Africa's resilience to climate change impacts
- iii. Climate Finance: What are the unexplored options?
- iv. Is the concept of a green economy relevant for Africa? What are the opportunities?, and
- v. Is the global climate change framework working for Africa?

## Conference Proceedings

### Day One

#### Session 1: Opening Ceremony

The Conference was officially opened by His Excellency Ato Alemayehu Tegenu, Minister of Water, Irrigation, and Energy of the Federal Republic of Ethiopia. Prior to the official opening, the representative of ClimDev-Africa's partner institutions, Mr. Carlos Lopes, Under Secretary-General and Executive Secretary of the UNECA; Mr. Aly Abou-Sabaa, Vice President, Sector

Operations, African Development Bank, and Her Excellency Rhoda Peace Tumusiime, Commissioner of Rural Economy at the African Union Commission. The opening session was moderated by Dr. Fatima Denton, Officer-in-Charge, Special Initiatives Division and Coordinator of the African Climate Policy Centre (ACPC). The key messages during the conference opening session are summarized in the following section.

*Statement of Dr. Fatima Denton, Officer-in-Charge, Special Initiatives Division (UNECA), and Coordinator of the African Climate Policy Centre (ACPC), and ClimDev-Africa.*

Dr. Fatima Denton set the tone for the conference, noting that Africa's recent socio-economic progress may be difficult to sustain if the continent does not proactively address the challenges of climate change. She reiterated that climate change was now an important reality in Africa's development and that its impacts were being increasingly felt in nearly all developmental sectors. She observed that climate change was already robbing sections of African population of their sources of livelihoods, giving the examples of Cape Verde, Guinea, Guinea Bissau, Gambia and Senegal, where fishing communities faced multiple risks from rising sea level, salt water intrusion and more intense and frequent storms, all associated with climate change.

Dr. Denton drew attention of the audience to the immense challenge that confronted forums like CCDA III, i.e., to help improve the quality of decision-making for such vulnerable farming and fishing communities. Households and communities confront the impacts of climate change in their daily lives and need to make critical management decisions but are hampered by the lack of access to science-based forecasts.

Noting that important gatherings such as the Conferences of Parties that meets annually within the context of the UNFCCC, tended to marginalize the lives and livelihoods of vulnerable groups as discussion focused on semantics, markets, rights, technologies, institutions and who is entitled to what part of the atmospheric space. On the contrary, CCDA-III provided delegates the opportunity to examine and propose practical solutions to the challenge of climate change in Africa. With resolve, she said, Africa could make substantial progress in dealing with climate change. The goal for Africa was to ensure sustainable growth that is inclusive of its youth and women, the continent's single largest untapped potential.

She reminded the conference delegates that climate change was not all bad news. There was now an opening for Africa to address climate change as an investment opportunity and as part of the agenda for the continent's transformation. Africa must thus take a serious look at the opportunities climate change can provide, including the ability to invest in renewable technologies, increase financial flows to the continent, accelerate growth, and create a knowledge economy that supports climate research.

Dr. Denton regretted that the current pace of climate negotiations was costing African farmers, pastoralists, and fishing community's opportunities for the attainment of sustainable livelihoods.

*Statement of Dr. Carlos Lopes, Executive Secretary, United Nations Commission for Africa (UNECA)*

Dr. Carlos Lopes opened his remarks by noting that CCDA III offered a unique opportunity for Africa to make real progress on the critical challenge of climate change. He said there was now a need to convince the skeptics of just how vulnerable Africa had become to climate change. This should be done with the use of scientific data. He noted, for example, that African agriculture, with more than 90 per cent of its production under rain-fed conditions, is highly vulnerable to the impacts of climate change. The rapid urbanization and a population growth were other factors that could accelerate the competition for resources with devastating effects on Africa's unique biodiversity.

Dr. Lopes noted that it was indeed time for the continent to leverage the opportunities that climate change offers. He proposed a six point strategy for Africa's development in the context of climate change:

- Africa is not locked in any particular technology preference, giving the continent an opportunity to leapfrog old carbon-intensive development models, and shift into new, climate friendly technologies.
- Africa must ensure greater investment in climate science, services and the production of high quality data. This is to facilitate the development of early warning systems and initiate much needed research on climate impact, vulnerability and adaptation.
- Africa must develop appropriate institutional and policy capacity and ensure investment in a concerted engagement of all key players.
- To mitigate risk, there is need to investing in expanded South-South partnerships on climate change. This will facilitate the sharing of experiences and lessons learned.
- There is need to leverage Africa's agriculture, critical to many African economies.
- Africa must tap into its large tourism potential.

Mr. Lopes said the strategy may seem expensive to invest in. However, failure to make the investment would be catastrophic for Africa, a region that is arguably the least prepared for the impacts of climate change. Observing that economic development had clearly not been at the forefront of global negotiations on climate change and that the amount of funding that Africa continued to receive for its climate change adaptation work was negligible, Dr. Lopes urged Africa to take a more active role in climate negotiations in order to ensure that its interests were adequately represented.

*Statement of Mr. Aly Abou-Sabaa, Vice President, African Development Bank*

Mr. Aly Abou-Sabaa, Vice President at the African Development Bank noted that the timing for CCDA II, just ahead of COP 19, was excellent. He emphasized that Africa must fight poverty and climate change at the same time. Failure on one front will mean failure on the other. And as Africa grew and transformed itself economically, the quality of that growth and transformation remained a major concern. Observing that the demand for energy was only set to grow, the continent must nevertheless work to minimize its greenhouse gas emissions as it expands the energy sector.

With the knowledge currently available, Africa has the best opportunity to leap frog into ‘green’ development, backed by robust and effective institutions and clean technologies. However, there is no single approach to green growth and ‘green strategies’ need to be based on sustainable, long-term needs of individual countries.

He said Africa had an abundance of resources. The continent must, nevertheless, manage these resources better while ensuring that they obtain fair prices on the international markets. It was with this in mind that the AfDB had recently decided to make natural resources management as one of its new areas of focus.

*Statement of Ms. Rhoda Peace Tumusiime, Commissioner of Rural Economy of the African Union Commission (AUC)*

Ms. Rhoda Peace Tumusiime said that adaptation is critical to Africa’s climate change agenda noting that it is now clear that the continent needs to build strong coping mechanisms against the impacts of climate change.

Ms. Tumusiime said an IPCC report released in Stockholm, Sweden, a few weeks earlier had clearly shown that the pace of climate change is accelerating and that there is need for urgent action. She said massive resources will now be needed to build the necessary resilience in African countries. She urged African states to obtain the necessary technologies to enable them adapt to the impacts of climate change. She also stressed the importance of the international climate negotiations for Africa, especially with regard to capacity development and the improvement of financial flows to support adaptation on the continent.

She said CCDAIII was an important milestone in the development of a joint African strategy on climate change. Pan-Africanism, coupled with the implementation of flagship programmes, would help facilitate Africa’s renewal.

*Statement of Mr. Alemayehu Tegen, Minister of Water, Irrigation and Energy, Ethiopia.*

Mr. Ato Alemayehu Tegen, Ethiopia’s Minister of Water, Irrigation, and Energy officially opened the Conference. He said Ethiopia had set a good example in tackling climate change by adopting climate resilient policies and making climate change a part of its development planning. Ethiopia had also developed a green economy strategy and was making progress in its implementation through afforestation, reduction of soil and water degradation, and watershed management.

Mr. Tegen, however, expressed concern that global climate finance was not meeting Africa’s expectations and that the continent’s needs on adaptation, capacity building, and technology transfer were not getting adequate attention in international negotiations. The minister expressed the hope the 2015 agreement under the UNFCCC would be legally binding and urged African negotiators to deliver a fair deal for the continent.

## Session 2: High-Level Dialogue: Can the Opportunities from Climate Change Spring the Continent to Transformative Development?

The High-Level Dialogue consisted of six eminent personalities. The members of the panel were H.E. Mary Robinson, former President of Ireland and Chairperson of the Mary Robinson Foundation; H.E. Festus Mogae, former President of Botswana; Ambassador Gary Quince of the European Union Delegation to the African Union (AU); Mr. Jeremiah Lengoasa, Deputy Secretary-General of the World Meteorological Organisation (WMO); Hon. Mass Axi Gai, Minister of Fisheries and Water Resources, The Gambia, and Hon. Saviour Kasukuwere, Zimbabwe's Minister of Environment, Water and Climate and Chair of the African Ministerial Council on Meteorology (AMCOMET). The discussion was chaired by Dr. Aly Abou-Sabaa, a Vice President at the African Development Bank. The theme for the dialogue was '*Can the Opportunities from Climate Change Spring the Continent to Transformative Development?*' This dialogue was based on question and answer format.

*Mary Robinson, Mary Robinson Foundation*

Ms. Robinson said a pre-conference workshop held on the margins of CCDA III had revealed numerous examples of the resilience of African communities, particularly African women, to the impacts of climate change. She questioned the extent to which the UNFCCC is serving the interests of African countries and called for a more global focus on Africa's specific needs in the face of climate change. Ms. Robinson said there is a need to raise this issue of climate change impacts to the highest political levels.

She said access to sustainable energy for the poor is fair and just. Success in this area will, however, depend on how Africa is able to leap in the use of sustainable energy. Climate adaptation efforts, she said, must understand and support poorer communities, particularly from a gender perspective. Ms. Robinson said there was also a need to see how indigenous technologies could be updated in order to help transform local communities.

*Festus Mogae, Former President of Botswana*

Mr. Mogae said African countries should do the utmost to adapt to the impacts of climate change. This, he said, called for doubling of efforts to exploit existing potential for clean energy generation such as hydro-electric power from the continent's vast rivers.

Mr. Mogae said the continent lagged in the development of its own clean energy schemes and had continued to use greenhouse gas emitting fossil fuels such as coal as its leaders succumbed to immediate demands for more energy. Although Africa's contribution to greenhouse gas emissions is still negligible (only X percent of the global total), the continent did have a responsibility to reduce its own emissions and contribute to global emissions reductions. He urged Africans involved in the carbon trade to invest some of their earnings in the development of cleaner energy sources on the continent. He underscored the importance of international and intra-African collaboration in the efforts to explore and exploit opportunities in green energy development.

Mr. Mogae said climate change now threatened African livelihoods and had to be dealt with at the highest levels. He cited the depletion of water and fish in Lake Chad which has resulted in the impoverishment of fishing communities around the lake as an example. The diminishing size of the lake was also stirring conflict on water rights between pastoralists and the fishing communities. Mr. Mogae concluded his remarks by noting that the impact of climate change was more severe in rural communities and households than it was in the urban communities and households, and called for measures to address this imbalance. To continue with this state of affairs would be perpetuating an injustice.

*Ambassador Gary Quince, EU Delegation to African Union*

Briefing the session on the EU's response to climate change, Mr. Quince said the EU had already committed 20 per cent of its budget to climate relevant activities. The EU had also pledged a global target of Euro 100 billion for climate relevant activities by 2020.

He said the EU Commission's 'entire partnership' with the AU was about building capacity in the AU. In this regard, the EU Commission was working with ClimDev-Africa and UNECA in a number climate related areas. In a further example of its cooperation with the continent, the EU is opening up its satellite systems free of charge to Africa. Africa is also a major beneficiary of EU funding for climate research. In Kenya, the EU Commission is underwriting the risk for the geothermal projects.

Mr. Quince said the EU Commission wished to do more in African railways but this would very much depend on African governments creating the right policies and managing their railway assets better.

*Dr. Jeremiah Lengoasa, Deputy Secretary-General, World Meteorological Organization (WMO)*

Dr. Lengoasa appealed to African states to invest money earned from the export of their natural resources in alternative, eco-friendly ventures. He said the climate debate is based mainly on research done in other parts of the world. And that Africa lags in the debate because it does not play a key role in the generation of this knowledge. This is, partly due to the fact that Africa lacks the facilities for the generation of such knowledge.

There are, however, some important African initiatives in the climate change arena that should improve access to and use of science and science-based information. These include the Global Framework for Climate Services (GFCS) and the African Ministerial Council on Meteorology (AMCOMET) initiatives, the recent effort to develop a priority science agenda at the Africa Science Conference in Arusha, Tanzania, and the Climate for Development in Africa Programme (ClimDev-Africa). The sharing of knowledge on the continent is also promoted through Regional Climate Centers, the Climate Outlook Fora, and other initiatives.

Ultimately, however, earth's climate system is one, a global commons. The global community must thus agree on how best to transfer appropriate climate change knowledge to Africa, Dr. Lengoasa said.

*Hon Mas Axi Gai, Minister of Fisheries and Water Resources, The Gambia*

The Minister said climate change was an important issue for The Gambia's development and the national leadership actively engages the private sector and ordinary citizens in its efforts to tackle the issue.

Responding to a question on what it would take to have African countries to work together on climate change, Mr. Axi Gai said leadership was paramount. He cited an example of The Gambia, Guinea Conakry, and Guinea Bissau which, together, had proposed the construction of two dams that would generate hydro-electric power to be shared by the three countries. The countries were also working together to establish a joint fisheries commission to help restore fish stocks in surrounding waters.

Mr. Axi Gai outlined three areas that required immediate intervention with respect to climate data. He emphasized that the upgrading of Africa's climate observation systems; the rescuing of data that is in analogue format and hence hardly available for use; and the development of capacity of the national meteorological and hydrological services were critical if the continent is to address the issue of adaptation in any meaningful way.

He concluded by noting that in international negotiations, Africa needs to be able to negotiate on the basis of sound scientific knowledge.

*Mr. Saviour Kasukuwere, Minister of the Environment, Water and Climate and Chair of the African Ministerial Council on Meteorology (AMCOMET)*

The minister said Africa needed international support in order to be able to advance its climate change agenda. Noting that only two per cent of the world's climate funds found their way to Africa, he called for the development of a programme that would empower Africans with the ability to tap into international climate funds. He said that his country of Zimbabwe was currently focused on building human and other capacity to enable it adapt to the impacts of climate change and also build a robust green economy. He asked whether Africa was getting the most out of global opportunities that are currently available in climate finance.

The minister said Zimbabwe endorsed the six-point strategy for Africa's development in the face of climate change proposed by the Executive Secretary of UNECA, Mr. Carlos Lopes, at the conference.

*The Chair, Mr. Aly Abou-Sabaa, African Development Bank*

Closing the session, the chair, Mr. Aly Abou-Sabaa of the African Development Bank raised a number of observations. On whether or not the UNFCCC process was benefiting Africa, he said as part of the global community, Africa must remain a part of the 'global conversation' in the UNFCCC. It was, however, important that African negotiators in the UNFCCC were properly equipped with empirical and scientific evidence to be on an equal footing with other negotiators.

He urged African states to familiarize themselves with the procedures that would enable them to access a greater share of available climate change funds, saying there was a need to demystify these processes in African countries.

Dr. Abou-Sabaa said African countries were already making bold steps in accessing climate finance as well as green technologies. Equally important was the manner in which Africans managed their climate change initiatives. In Morocco, for instance, the critical factor at one point had been the structuring a public-private partnership rather than access to finance for solar power technology. The sharing of experiences and success stories between countries would help Africa's climate change and green growth agendas, he said.

Dr. Abou-Sabaa also urged African states to pursue multiple financing options, including domestic sources, rather than wait for funds pledged for 'year 2020', because the impacts of climate change will 'not wait'.

### **Session 3: ClimDev-Africa Plenary**

*Opening of the session: Dr. Fatima Denton, Officer-in-Charge, Special Initiatives Division and Coordinator of the African Climate Policy Centre (ACPC), UNECA, 'ClimDev-Africa'.*

Dr. Denton opened the session by outlining ClimDev-Africa's mission. She said the goal of programme, an initiative of the African Union Commission (AUC), the United Nations Economic Commission for Africa (UNECA) and the African Development Bank (AfDB), is to enhance the development of Africa's meteorological and hydrological infrastructure, develop quality analysis of climate information to inform decision making, raise awareness of climate issues and advocate for the use of climate information on the continent.

She said climate change is now an African reality and cited the high frequency of droughts and floods, and increases in temperatures, as examples of its impacts on the continent. These impacts are, in turn, being reflected in increased water scarcity, poor infrastructure development, and general poverty. Most affected were the poor who as a grouping had a low adaptive capacity.

Dr. Denton said climate change had added new challenges to Africa's transformation agenda. Buildings and other infrastructure on the continent would, for instance, have to conform to standards that showed they were climate change resilient. African institutions would have to be strengthened to ensure that they were able to meet these new standards and also raise the additional funds that climate resilient infrastructure would demand. Dr. Denton said Africa had been slow in its adoption of green technologies.

To adapt to climate change, it is important Africans have access climate finance. This requires an understanding of how to access such funding, which institutions to engage, and how to build internal capacities that enable African institutions to use these funds efficiently.

ClimDev-Africa funds, she said, are primarily for the development of climate science and knowledge in Africa. The funds are used, primarily, to support the development of meteorological and hydrological sciences on the continent. Another important function of

ClimDev-Africa is to facilitate the sharing of climate science knowledge and information in Africa.

Dr. Denton said ClimDev-Africa was a demand drive programme. Requests for funding must come from member countries, regional economic communities, the African Group of Negotiators and other stakeholders in the continent.

*Sub-Theme I- Climate Science, Data and Services for Africa's Adaptation and Mitigation (Plenary), Facilitator, Dr. Jeremiah Lengoasa, World Meteorological Organization (WMO)*

Dr. Jeremiah Lengoasa opened his presentation by providing key highlights of the Fifth Assessment Report of the IPCC's Working Group I for policy makers. He said that the world was seeing an increase of extreme weather and climate events. Sadly, however, the world still lacks the ability to predict weather and atmospheric changes beyond a single season. The prediction of droughts is an example.

Dr. Lengoasa said that reducing the impacts of natural disasters is now the focus of many institutions that had in the past been involved in disaster risk management. There is now a shift in investment towards the pre-disaster work, such as early warning. And for such disaster preventive measures to succeed, there is need to increase investments in meteorological infrastructure.

In the discussion that followed, the delegates agreed that Africa should not only invest in world-class meteorological and hydrological observations systems but also in biophysical and socio-economic data collection to facilitate vulnerability assessments in the face of climate change. Research to improve atmospheric observation systems in Africa should also be stepped up.

Dr. Lengoasa said critical challenges faced by the world today as a result of climate change include:

- Feeding nine billion people by the year 2050
- Valuing and protecting nature's service and biodiversity
- Adapting urban areas to climate change

*Sub-Theme II- The Role of Policy in Building Africa's Resilience to Climate Change Impacts, Facilitator, Dr. Alex Awiti, East Africa Institute of the Aga Khan University*

Dr. Alex Awiti said climate change is an added stress on Africa's already constrained systems. With a low adaptive capacity, Africa is most vulnerable to climate change. Most of the continent's economic sectors are also climate sensitive.

The delegates in the discussion that followed heard that climate change was both dynamic and uncertain. This was the case in Burkina Faso which was seeing anomalies in its rainfall patterns, making it difficult for the government to determine policy or the provision of reliable agricultural extension services. A delegate urged Africa's scientists, politicians and development workers to

work together to find solutions to this kind of challenge, before millions of Africans are impoverished by climate change.

*Sub-Theme III - Climate Finance: What are the unexplored options? Facilitator, André Laperrière, Global Environmental Facility,*

Mr. André Laperrière addressed the issue of climate finance and the reality of climate change. He observed that in the 1950's, extreme weather and climate events covered only one-third of the earth's surface. By 2013, coverage by extreme weather and climate events had increased to 50 per cent of the earth's surface. He also cautioned against the impact of global population which is projected to increase to 9 billion by year 2050.

He said one unexplored option for Africa's climate adaptation efforts was smart finance (or 'smart money'), which focuses on results. He said donations were becoming increasingly difficult to obtain. Mr. Tosi Mpanu, a past chair of the African Group of Negotiators to the UNFCCC, followed up with a brief on 'Climate Finance and African Group of Negotiators'.

He said adaptation had to be the continent's top priority. Africa had, however, been slow to tap into the finance from the Clean Development Mechanism (CDM), most of which now went to China, India and Brazil where CDM projects focus on mitigation.

## Day Two

Day two of CCDA III was dedicated to more in-depth discussions of the five conference sub-themes through a series of parallel sessions, each broken into a number of sub-topics.

### Sub-theme 1: Climate Science, Data and Services for Africa's Adaptation and Mitigation

#### African Climate Science Research: Lessons learned and new frontiers

- (i) *Paper 1: Sharing the Results of the African Climate Conference 2013 – by Dr. Seleshi Bekele of ACPC*

The African Climate Science Conference held was Arusha, Tanzania, from 15-18 October 2013 and focused on determining and advancing the priorities for climate research in Africa and putting climate knowledge into the hands of users. The key message from the conference was that climate researchers and research institutions in Africa must work together and deliver as 'one'. Dr. Bekele urged the use of African institutions to establish sustained coordination of climate research for development on the continent. He suggested that coordination framework be under the leadership of ClimDev-Africa, the World Climate Research Programme (WCRP), and the Global Framework for Climate Services (GFCS). He said capacity and skills gaps would need to be addressed in order to satisfy Africa's climate information and climate service needs.

- (ii) *Improved Climate Data for Improved Climate Services: Major gaps and ongoing efforts to bridge the gaps – by Dr. Tufa Dinku of Columbia University’s International Research Institute*

Dr. Dinku called for the strengthening and coordination of the various climate initiatives in Africa to in order to optimize the use of resources. He further underscored the need to create an optimal number of meteorological stations, improve the use of available data, and adopt better management practices on the continent. He proposed that a comprehensive evaluation be undertaken to improve and expand the use of Enhanced National Climatology Time Series (ENACTS) in Africa.

- (iii) *Investigating Critical Agro-climate Indices in a Changing Climate Over West Africa Sahel from a Regional Climate modeling Approach – by Dr. Abdoulaye Sarr of the National Meteorological Agency, Senegal*

Dr. Sarr said the Coordinated Regional Climate Downscaling Experiment (CORDEX), a project of the World Climate Research Programme, demonstrated the importance of climate modeling on a regional scale (in order to reduce uncertainties).

While noting that CORDEX was a commendable initiative, he expressed concern that Africa remained its weakest link, a situation that needs to be addressed urgently. This was due mainly to the continent’s inadequate computing capacity. He hoped the situation will begin to be resolved with CORDEX’s new support to its Africa Modeling and Analysis Teams (AMATs) and others on the continent.

### **Investments in Climate Data and Science**

- (i) *ACPC pilot projects summary in Ethiopia, the Gambia and Rwanda – by Seleshi Bekele of ACPC*

Dr. Seleshi Bekele said that climate change had become a critical development issue for Africa, but there was a persistent lag in the use climate science on the African continent. He said the greater use of science and observations in Africa could help reduce the risks arising out of climate change and improve Africa’s development prospects.

Dr. Bekele also noted that one of the key mandates of ClimDev-Africa programme is to build a solid foundation for climate science and observational infrastructure in Africa. ClimDev-Africa hoped to achieve this goal by actively promoting strong working partnerships among climate scientists, development experts, and other stakeholders in and outside Africa. The partnerships is expected to produce and strengthen available knowledge on climate science that will form the basis of informed policy and decision-making in at the government level while raising awareness and appropriate responses from the public and other stakeholders.

- (ii) *Remote Sensing-Based Time Series Model for Malaria Early Warning in the Highlands of Ethiopia –by Paulos Semuneguse of Ethiopia’s Health, Development and Anti-Malaria Association (HDAMA)*

The main goal of the study was to develop and evaluate the effectiveness of climate based models that predict malaria transmission in response to the need for a malaria early warning (MEW) in the country. This will enable the prediction of temporal and spatial patterns of malaria epidemics and result in improve the decision-making processes in Ethiopia's public health system.

The study covered the Amhara Regional State of Ethiopia in the north-western and central parts of the country. The state has a population of 18 million. Environmental indicators were measured using satellite sensors. The study found that cases of malaria in the region exhibited a lagged positive relationship with both temperature and moisture thereby making it possible to integrate environmental variables with malaria surveillance data in a modeling framework for better predictions of epidemics. The study concluded that coupling surveillance data and environmental modeling improves malaria forecasts. These forecasts could give decision-makers a one-to-three month advance warning of likelihood of malaria outbreak in the region, allowing them to take appropriate preventive measures.

(iii) *Local Scale Analysis of Rain fed Rice Yield Adaptation in Typical Sahelian Conditions*  
–by Aimé Sévérin Kima of the National Pintung University of Taiwan

Drought was a constant problem in Burkina Faso that lead to land degradation and periodic crop failures, consequences that raised the need for adaptation strategies. The study used 'time series' data from 1985 to 2010 and defined the rice growing period as the contiguous months of rainfall. The average monthly temperatures during the rice growing season and the total growing season's rainfall were considered. An empirical regression model based on the first difference of time series data was applied to track the causal interdependency between rain fed rice yields and major climate stressors. It was found that a fall of 200mm in rainfall and a rise of 1 degree C in temperature led to a reduction in yields of 7 to 21 per cent. The study proposed in investment in supplementary irrigation through the improved storage of water and its more efficient use.

Key recommendations from the study included the following:

- The development of water infrastructure, as well as water catchment techniques,
- Empowering local farmers by providing them with supplementary irrigation and efficient water use technologies that enable them adapt and promotion of enabling environment that facilitates appropriate investment and a strong institutional framework for climate adaptation in agriculture.

(iv) *Showcasing the Example of Policy and Capacity Needs Analysis of West African Aquifer System* – by Mr. Dam Mogbante of the Global West Water Partnership - West Africa

Mr. Mogbante noted that despite the importance of groundwater resources in West Africa, it is yet to receive the required attention, mainly due to the poor knowledge of the quantity, the quality and dynamics of ground water resources in the region. The lack of skilled personnel,

financial and institutional capacities as well as inadequate policy for groundwater development and management were other factors.

As part of the implementation of the regional water resources policy, the Global Water Partnership in West Africa (GWP –West Africa), in collaboration with the Economic Community of West African States' Water Resources Coordination Centre (ECOWAS/WRCC) and other partners conducted a diagnostic study of trans-boundary groundwater resources management in 2010 with a focus on the management of cross-border aquifers.

Key findings of the study were as follows:

- Groundwater is a key source of water in the climate change context, and is therefore critical for life and livelihoods in the region
- Due to their buffer function, the groundwater reservoirs play a vital role in resilience to climate change in West Africa
- Adequate knowledge on groundwater resources is a prerequisite for sound planning and development in the region
- There is need for institutions, a legal framework; and adequate funding that assure the sustainable management of the aquifer system in the region

The study concluded with a recommendation for a regional dialogue on the use of West Africa's groundwater as a tool in regional integration and development as well as resilience to climate change.

### **Leveraging Global Initiatives to Enhance African Climate Services**

- (i) *African Monsoon Multidisciplinary Analyses' (AMMA) – by Dr. Serge Janicot, a member of the AMMA team.*

AMMA is an international programmed signed to improve knowledge and understanding of the West African Monsoon (WAM) and its variability. It aims at providing improved prediction of the West African monsoon and its impacts on West African nations. The organization's work has led to an improved understanding of the West African Monsoon and its influence on the physical, chemical and biological environment, both regionally and globally, as well as health, water resources and food security for West African. It has established a large and active African scientific working community the AMMA-Africa Network (AMMANET).

Dr. Janicot said a challenge yet to be overcome is the effective integration of AMMA's multidisciplinary research into decision-making processes in West Africa.

- (ii) *Prototype Climate Data Services in Support of Climate Change Studies – by Prof. Muluneh Yitayew of the University of Arizona*

Prof. Yitayew noted that the key challenges for Africa's climate scientists related to climate data were its limited availability, its inaccessibility, its questionable reliability, and its being dispersed in research stations and government institutions all over the continent.

He noted that to improve its work on climate change, Africa would need a centralized dataset. Remote sensing, the backbone of global studies in climate change, terrestrial ecosystems and carbon cycle research, will also be an important means of improving the flow of reliable climate data. To optimize the use of remote sensing, Africa will need large amounts of data storage capacity, specialized imagery processing software, and a high-level of computing and data processing resources.

Prof. Yitayew concluded by noting that Africa could adopt a prototype system developed by the University of Arizona.

(iii) *Addressing the Climate Vulnerability of African Infrastructure – by Mr. Raffaello Cervingi of the World Bank*

Mr. Cervingi noted that current estimates that Africa will need to invest USD93 billion a year in its infrastructure in order to catch up with the rest of the developing world, do not take into account the imperatives of climate change. He observed that the strong consensus among scientists on the reality of climate change, even if uncertainty still remained on its magnitude, was sufficient to incorporate climate change proofing in infrastructure programmes in Africa. He identified three major realities for the development of African infrastructure in the face of climate change:

- Africa will no longer be able to plan and design its infrastructure as it did in the past
- The continent will need new approaches to deal with the changing, but uncertain, climate of the future
- The continent may have to incur higher costs as it develops its infrastructure in the face of climate change

Given this scenario, Mr. Cervingi said, the World Bank has established a partnership to support investments in Africa's infrastructure under an uncertain future climate. The goal of the partnership is to strengthen the analytical base for investments in Africa's infrastructure under a future uncertain climate, to facilitate and support climate resilient infrastructure development. More specifically, the partnership will:

- Estimate the impacts of climate change on the performance of a subset of infrastructure over a range of climate scenarios
- Develop and test a framework for the planning and design of infrastructure investment that is 'robust' under a wide range of climate outcomes
- Enhance the 'investment readiness' of African countries to use climate finance resources geared at increasing their resilience to climate variability and change.

(iv) *Monitoring for Environment and Security in Africa (MESA) – by Dr. Jolly Wasambo of the African Union Commission*

MESA is an EU-funded project owned by Africa's Regional Integration Communities (RECs). The project's goal is to support African decision-makers and planners in designing and implementing sustained national, regional and continental policies and development plans that advance the continent's socioeconomic progress.

The project works to attain this goal by increasing the information management, decision-making and planning capacity of African institutions and enhancing their access to and exploitation of relevant earth observation facilities in Africa.

The project also operates at regional and continental levels. At the continental level, it supports the African Centre of Meteorological Application for Development (ACAMAD). MESA is to run from 2013 – 2017.

(v) *Contribution of Global Framework for Climate Services (GFCS) to Climate Risk Management – by Mr. Filipe Lucio of the World Meteorological Association*

The GFCS's goal is to enable better management of the risks of climate variability and change, and adaptation to climate change through the development and incorporation of science-based climate information into planning, policy-making and practice at the global, regional, and national levels. The increase in the intensity and frequency of hazards has raised the vulnerability of communities and created the need for new coping mechanisms. This increased frequency and intensity of hazards is impacting energy supplies, water resources, food security, transport, health, industry and urban areas.

In Africa, the GFCS supports the African Ministerial Conference on Meteorology (AMCOMET). AMCOMET was created in response to Africa's challenges in developing and delivering weather and climate services. It provides political leadership and policy to support Africa's development through the science of meteorology. It also promotes the effective use of weather and climate services to help achieve Africa's Sustainable Development Goals.

The Integrated African Strategy on Meteorology (Weather and Climate Services) was approved by AMCOMET in 2012 and endorsed by the African Union Heads of State summit. It aims at enhancing cooperation between African countries in climate science and strengthening their National Meteorological Services (NMHSs). The Strategy serves as one of the key platforms for the implementation of a structured GFCS in Africa. Mr. Lucio concluded by noting that the areas covered by the GFCS in Africa include food security and disaster risk management.

## **Sub-Theme 2: The Role of Policy in Building Africa's Resilience to Climate Change Impacts**

### **Agricultural and food security policies and climate resilience**

(i) *Assessment of Agricultural Sector Policies and Climate Change in Malawi – The Nexus between Climate Change Related Policies, Research and Practice – by Dr. Weston Mwase of Lilongwe University of Agriculture and Natural Resources*

The study on agricultural policies in Malawi revealed that the sector, which contributes 36 per cent to Gross Domestic Product, remained highly vulnerable to climate change and extreme weather patterns. The study was carried out in order to assess the extent to which agricultural research in Malawi addresses the impacts of climate change and climate resilience in the agricultural sector.

The study found that Malawi's agricultural policies were generally outdated with regard to climate change, mainly because at the time the study was conducted, Malawi did not have a climate change policy. Most of the country's agricultural policies were formulated before 2004 and remained weak in mainstreaming climate change. The practice of agriculture has also tended to continue to depend on conventional research and indigenous knowledge.

The study concluded that Malawi had inadequate and ineffective policies for adapting its agriculture to climate change. Efforts by the different stakeholders, including donor partners, the Consultative Group on International Agricultural Research (CGIAR) programme on Climate Change, Agriculture and Food Security (CCAFS), government departments, NGOs, civil society and academia to address the issue of climate change in agriculture were uncoordinated and generally ineffectual.

- (ii) *Developing Effective Community Outreach Policy Communication Strategy - the East African Experience – Prof. Okaka of Kyambogo University in Uganda*

Prof. Okaka noted that lack of effective climate policy communication strategies was a major cause for the low levels of climate change awareness, especially in East Africa. He reminded the delegates that outreach is essential to raising awareness of the importance of climate change in Africa's development. He said that the solution lay in developing effective multi-sectoral policies for climate change outreach.

He said common weaknesses in climate policy outreach included:

- Poor packaging and execution of climate change outreach campaigns
- Inadequate and poor management of outreach personnel
- The lack of community participation in the design and execution of outreach campaigns
- The lack of defined and articulated policies upon which to base the campaigns

He recommended that the African Union should develop a cross-cultural communication campaign targeted at all climate policy stakeholders based on the following principles:

- Participatory approaches that ensure bottom-up rather top-down design and execution of campaigns
- Empowerment of all stakeholders
- A sound policy basis on which the campaigns
- Accountability to the communities in which climate outreach activities are carried out
- Gender equality
- Transparency and professionalism

- (iii) *Climate Change: Managing the Misconceptions and Challenges among Indigenous and Migrant Farmers in Southwest Nigeria – by Prof. Kunle Ajayi of the Department of Political Science at Ekiti State University in Nigeria*

The study was based on a survey of climate change awareness among indigenous and migrant farmers in three states in Southwest Nigeria. The results revealed that there existed very limited climate information in the communities surveyed. Most respondents were not aware of the scientific causes of climate change and generally believed its impacts were an ‘act of God’. The survey also found that ‘climate disorder’ was increasing poverty among the farmers in the three states as many of them lost their agricultural investments to either flooding, drought, or both.

The paper proposed providing climate change information in the native language of the communities would substantially bridge the knowledge gap and enhance the uptake of science into mitigation and adaptation approaches the community levels in the three states.

- (iv) *Linkage of Agricultural Productivity and Climate Change Mitigation Potentiality – by Dr. Labintan Constant of University of Cape’s Town Energy Research Center*

Dr. Constant noted that studies at the Energy Research Center had shown that countries like Kenya could achieve increases in agricultural productivity with increases in greenhouse gas emissions, thus illustrating the positive impacts that climate change could have on some African farmers.

- (v) *Policy implications of emerging climate change adaptation options for smallholder communities in Southern Africa: Evidence from the grassroots – by Dr. Paul Mapfumo of the Soil Fertility Consortium for Southern Africa (SOFECSA)*

Dr. Mapfumo noted that there is limited empirical evidence to support policy formulation on climate change in Southern African agriculture. Evidence from a study conducted to determine the policy implications of climate change on smallholder producers showed the following:

- Conditions for agriculture in Southern Africa are projected to worsen
- The region is seeing an increased frequency of drought
- Rainfall distribution in the region is worsening
- Areas for staple food production are diminishing

The study also found out that the level awareness of climate change and its impacts was high in the region, as was the political will for action. The major challenge observed was the link between policy options and evidence of climate change science. This situation was also linked to poor access to climate information, which remains a major challenge for adaptation by smallholder farmers who tended to rely mainly on indigenous knowledge for decision-making.

## Loss and Damage in Africa

- (i) *Enhancing Resilience to Loss and Damage Associated with Climate Change: Africa's Challenge – by Dr. Lawrence Flint of ENDA in Dakar, Senegal and Sus-Dev in the United Kingdom*

Dr. Flint cautioned that the UNFCCC process on loss and damage may not yield appropriate solutions for Africa, or other regions in view of the losses and damages that are likely to occur as a result of climate change. However, Africa cannot afford to wait for new climate regime and must take its own action and a critical first step is to understand loss and damage.

Policy makers must therefore take the lead in efforts to manage loss and damage and work with regional centres that serve as multi-disciplinary hubs. Key in the management of loss and damage is the generation and management of appropriate knowledge as well as development of communication strategies that bridge the 'disconnections' between the various stakeholders. It is important that non-economic loss and damage, including social and cultural losses are innovatively captured and addressed.

The knowledge and communication strategies should lead to greater exposure and sensitivity to the issue of climate change, adaptation and mitigation, and help generate appropriate commitment, policies and plans. It is imperative that assessments of loss and damage are based on accurate empirical data. Risk and hazard assessment processes must also be established, at national level. Further, countries must define the risks they were able to adapt to and the level of risk that they are willing to accept. Such assessments call for the strengthening capacity at national level, including the development of baseline information, appropriate economic data, and the capture non-economic loss and damage.

Dr. Flint said it is important that African states own and address loss and damage due to climate change. Their management of loss should, however, be based on global experience and current best practice. It should also be embedded in national policy and planning.

- (ii) *Loss and Damage from Droughts and Floods in Rural Africa – by Dr. Kees van der Geest of the United Nations University Institute for Environment and Human Security (UNU-EHS)*

In this study, the authors defined loss and damage as the adverse effects of climate variability and climate change that occur despite mitigation and adaptation efforts. The study was conducted across nine countries, five in Africa and four in Asia and explored loss and damage at household and community levels. The results showed that a household's potential loss and damage from climate change depends on its mitigation efforts, its vulnerability profile and its coping and adaptive capacity.

The study also determined a number of factors that lead to loss and damage at the household level. Loss and damage occurred because:

- Measures to cope with it are not adequate

- Coping and adaptive measures have costs (economic, social, cultural, among others) that are not recouped
- Coping and adaptive measures are helpful in the short-term, but have adverse long-term, effects
- The family does not take any or cannot take any adaptive measures

(iii) *Satellite Imagery Change Detection for Estimating the Loss and Damage Caused by Extreme Droughts in Vegetation Landscape in Sahel –by Dr. Seydou Traore of the Texas A&M University*

The study assessed loss and damage in individual households in northern Burkina Faso due to drought. Drought has been a major problem in the study area, the four provinces of northern Burkina Faso. For instance, the rates of precipitation fluctuated substantially between 1961 and 2004 with the number of days of rain in the year falling from 62 days in 1961 to 35 in 2004.

The study results showed that drought had severe effects on crop production, food prices, livestock production and fishing activities. It also had negative impacts on trade and business and the value of real estate. Despite measures to cope with the impact of droughts in the region, households still incurred loss and damage. Adaptation measures, including the modification of food consumption, the selling off of property, migration, and transhumance, were found to be inadequate to cushion them against the debilitating impacts of the severe drought.

The study was used remotely sensed data to assess the rainfall patterns and the authors concluded that remote sensing applications, coupled with climate finance, should be considered a key tool for supporting research to determine the cost of adaptation in Africa drought prone regions.

(iv) *Enhancing Adaptation to Climate Variability in Rain-Fed farming Systems: The role of soil and water conservation technologies in the central highlands of Kenya – by Ms. Irene Okeyo of Kenyatta University*

This study explored the potential of appropriate soil and water conservation measures in overcoming the biophysical constraints to crop production that are associated with climate change in the central Kenya highlands. The results showed that mulching and tied ridging reduced runoff and sediment yield and improved maize yield. Thus, this soil water conservation contributed to adaptation to the impacts of climate change and improved food security in the region.

The authors concluded that the challenge was now how to upscale these technologies and how to mechanize mulching and other soil water conservation technologies. To achieve this, appropriate policy framework is required as well as financing mechanisms to deliver the technologies to the end users.

### **Is Scientific Evidence Sufficient for Formulating Effective Climate Resilient Policies**

- (i) *A Personal Reflection on Lessons Learned from Drought in the Sahel – by Dr. Alessandra Giannini of the International Research Institute for Climate and Society at Columbia University in New York*

Dr. Giannini pointed that studying climate change in Africa and its impacts required a critical paradigm shift. African climate systems are part of the global climate system, especially the global oceans. Consequently, studies on African climate cannot be divorced from global climate systems. He observed, for example, that

- Changes in sea surface temperature can be used predict seasonal rainfall in the Sahel
- Changes in sea surface temperature are associated with droughts in the Sahel, which call into question the presumption that climate change in the region is caused by the emissions from the burning of fossil fuels
- Although changes in land cover and land use cannot cause drought, virtuous land management can perhaps reduce vulnerability to climate change

Dr. Giannini said land resource management in the Sahel and the African dry lands had changed since the 1970s and 1980s, in direct response to the ‘environmental crisis’. She said there were indications that suggested greater resilience in rural communities that had adopted strategies such as agro-forestry, soil and water conservation, sometimes termed ‘re-greening’. This finding was, however, inconclusive.

- (ii) *Coping with Climate Change in Kenya: An Analysis of Policy Achievements – Ms. Esther Munyuri of Kenyatta University*

This study assessed the efforts by the Government of Kenyan to manage the impacts of climate change. Ms. Munyuri said a number of institutions had been set up in the country to lead the country’s response to climate change. The Ministry of Environment and Mineral Resources (MEMR) is responsible for the coordination of climate change responses in the country. The National Climate Change Secretariat (NCCS) is a department in the Ministry and spearheads the development and implementation of climate change policies, strategies and action plans. It is also the national focal point for UNFCCC.

Also important is the Ministry of Planning and National Development which employs the Threshold 21 Model (T21), a simulation tool used in long-term development planning. The model integrates economic, social, and environmental factors in its analysis of the potential impact of development policies across a wide range of sectors.

Ms. Munyuri said Kenya’s greenhouse gas emissions were set to rise, contributing to climate change. While agriculture and forestry were the biggest emitters of greenhouse gases, emissions from the forestry sector were set to decline due to the afforestation programmes and improved land management practices.

Plans for mitigation include the ‘Restoration of Forests on Degraded Lands’ designed to restore forests on 960,000 hectares of land expected to cost between USD 2.2 - 3.4 billion. Meanwhile, Kenya plans to develop an additional 2,275 megawatts of geothermal energy at a cost of USD

10.3 - 13 billion. The country will also promote the use of improved and more efficient cooking stoves and liquefied petroleum gas stoves.

There are also adaptation plans for the agricultural, livestock, water, the environment, reforestation, infrastructure, and energy sectors, all estimated to cost USD 7.5 billion. Progress on mitigation and adaptation is monitored by the National Performance and Benefit Measurement Framework, an integrated framework for measuring, monitoring, valuating, verifying and reporting results of mitigation and adaptation activities, and the synergies between them.

Other climate change initiatives include knowledge management and capacity development for climate change, the integration of climate change into Kenya's education system, as well as public awareness and communication campaigns through the media.

*(iii) National Adaptation Programs of Action (NAPAs) and National Adaptation Plans (NAPs): Status challenges and opportunities – by Mr. Abebe Tadege of the Intergovernmental Council on Development (IGAD)*

Mr. Tadege said that as of June 2013, 49 Least Developed Countries (LDCs) had received funding for the preparation of their NAPAs. By October 2013, all had already submitted their NAPAs to the UNFCCC secretariat. Some 500 priority projects with an estimated cost of over USD 2 billion had been identified. Of the 49 countries, 45 had by March 2013 officially submitted one or more NAPA projects to the Global Environment Facility.

Mr. Tadege said the experiences and lessons learned from the NAPA process included:

- Taking a country-driven approach proved very useful
- NAPAs raised awareness of climate change across all levels of government and society
- The collected data and initial assessments in the NAPA process provide a good basis for more comprehensive assessments and planning
- Engaging national experts and multidisciplinary teams ensured a successful NAPA preparation process and contributed the development of national capacity
- Maintaining country teams was beneficial to the smooth implementation of NAPA projects
- Collaboration among the LEG, the GEF and its agencies, the UNFCCC Secretariat, and all concerned institutions, led to positive results in the formulation and implementation of NAPAs.
- Financial resources for preparation of the NAPAs fell short of the needs of especially larger LDCs
- The lack of clear guidance on policy and project design at the early stages of NAPA preparation led to slow implementation.
- Expectations raised by NAPAs were unmet because of slow disbursement and availability of funds

Challenges in the NAPs process included inadequate technical capacity. There was significant lack of appropriate information and knowledge as was the inadequacy of funding. Mr. Tadege concluded that the processes NAPs processes also faced some major coordination and management challenges.

- (iv) *Policy Engagement for Effective Use of Science in Climate Change Adaptation Planning in Agriculture: Lessons for fixing the science-policy divide in Tanzania – by Dr. Khamaldin Mutabazi of Sokoine University of Agriculture in Tanzania*

Dr. Mutabazi noted that the disconnect between science and the policy making processes was a major challenge for Africa. Rarely did credible science inform Africa's climate change policy processes. However, the lack science-policy discontinuity is partly attributable to the uncertainties in Africa's climate science. Other challenges include the limited capacity of researchers to generate credible and policy-relevant evidence, the lack of means for science-policy engagement, and the reluctance of policy-makers to use scientific evidence as a basis for policy making.

Nevertheless, Tanzania has had a positive experience with regard to its first national climate change strategy. The strategy process has been able to leverage scientific knowledge by creating trust between climate scientists and policy makers in the early stages of engagement, constant and meaningful engagement (rather than mere participation in meetings), and the commitment of project funds to support the process.

Despite the positive experience, there is still need to enhance the capacities of Tanzanian researchers to generate credible and policy-relevant research and to engage with policymakers. This requires special inter-disciplinary coordination, capacity building and creation of enabling platforms for service delivery.

- (v) *Using ICT for Water Adaptation in Uganda: Targeting the right constituencies with the right messages – by Berhane Gebru, Director of Programs, TechLab FHI 360*

Mr. Gebru presented a project designed to promote adaptation using ICT. The project was developed to strengthen the adaptive capacity of the 'cattle corridor' communities in Uganda to climate-induced water stress and hazards by the use of information and communication technologies. Climate induced water stress in the corridor has led to water shortages, the loss of crops and livestock, diminished livelihoods, migration, conflict, and sale of assets. It has also led to outbreaks of diseases, deforestation, abuse of women and children and termite infestation.

At the community level, the project has seen an upsurge in requests for adaptation information. Members of the communities served by the project are also making better adaptation decisions, based on the information now available to them. At the national level, the project works closely with the Uganda Government delegation to the Conference of Parties (COP).

### **Sub-Theme 3: Climate finance: What are the unexplored options?**

#### **Existing Funding Mechanisms**

- (i) *Serving Africa as Financial Intermediaries and Implementing Agency – by Olufunso Somorin of the African Development Bank’s Energy, Environment and Climate Change Department*

Mr. Somorin opened with an outline of the African Development Bank’s (AfDB’s) Action Plan for 2011-2015. He said the programme aims to promote climate resilient and low carbon development through:

- Enhanced investments in clean energy and energy efficiency
- Promoting sustainable transport
- Promoting sustainable land and forestry management
- Promoting sustainable land use and water resources management
- Building resilience in key infrastructure and urban systems
- Climate-proofing the Bank’s projects

The programme is funded through the mobilization of concessionary resources, private capital and by ‘optimizing’ market mechanisms. The AfDB’s climate finance comes primarily from the Bank’s own ‘statutory’ resources and donor funding managed it manages. The bank also supports the programme by promoting policy reform, the generation of knowledge, and the building of competencies.

In addition, the Bank manages the Sustainable Energy Fund for Africa (SEFA), a multi-donor trust fund that promotes private sector investments in small to medium size renewable energy and energy efficient projects. SEFA operates at three levels. These are project preparation grants to bring projects to bankability, equity investments through a private equity fund, and grants to facilitate the creation of enabling environments in the energy sector.

The Bank is also a key partner is the Global Environment Facility from which it has obtained USD 160 million that has been invested in 23 projects and programmes. This amount has been used to further leverage USD 1.1 billion in co-financing from bank investments, recipient country governments and the private sector. Sectors financed include water, transport, agriculture, energy and the private sector.

- (ii) *The Congo Basin Forest Fund: A global solution to a global problem – by Ms. Mollo Ngomba of Congo Basin Forest Fund*

Ms. Ngomba said the fund had been launched in London in June 2008 by United Kingdom, Norway and COMIFAC (the Central African Forest Commission) in response to the threat of climate change. The fund is now hosted by the African Development Bank (AFDB). The fund aims to address the challenges of climate change by curbing and, eventually, reversing the rate of deforestation and forest degradation in the Congo Basin. Another key goal is the alleviation of poverty in the Congo Basin region. Initial capitalization of the fund was EUR 117 million while Canada in 2012 pledged 20 million Canadian dollars.

Covering 2.1 million square kilometers, the Congo Basin is the second largest tropical forest on earth and had 26 per cent of the world's remaining rainforest. It also has a unique and threatened biodiversity and some 50 to 60 million people dependent on its resources. It removes some 30 million tons of carbon dioxide from the atmosphere every year.

Major threats to the Congo Basin Forest include logging, shifting agriculture, population growth coupled with poverty, mining and oil production, trade in endangered species of animals and plants, forest degradation, and the harvesting of certain commercially valuable species.

(iii) *New and Innovative Climate Finance Sources for Africa: ClimDev-Africa Special Fund – Dr. Tounkara Samba of the ClimDev-Africa Special Fund at the African Development Bank*

Dr. Tounkara opened his remarks by reminding the delegates that Africa was the continent most vulnerable to the adverse impacts of climate change, which seriously threatened sustainable development, poverty reduction and the achievement of the Millennium Development Goals.

He said the cost of climate change on the continent would be 3 per cent of GDP by 2030, or USD 40 billion each year. The continent will also have to cope with recurrent climate-related disasters, including flooding, drought, disease, and famine, as well as resource gaps for its sustainable development.

Dr. Tounkara said the ClimDev-Africa Special Fund (CDSF) had been established as a special multi-donor initiative whose goal is to contribute to the sustainable development of the continent in the face of climate change. This is done by support for the preparation and implementation of development programs in Africa that mainstream climate change at all levels. The fund also works to strengthen the institutional capacities of national and sub-regional bodies to formulate and implement effective climate-sensitive policies.

### **Domestic Sources of Climate Finance**

(i) *Private financing for adaptation in Africa: Potential, or improbable? – by Clarisse Kehler of Siebert of Stockholm Environment Institute*

Ms. Siebert said the widely held assumption that private sources will foot significant portions of the bill for climate change adaptation fails to seriously consider the reality on the ground. She said the priority sectors for adaptation are not usually the ones that attract private investment. Drawing private investment in climate change adaptation will thus demand new and explicit policy and institutional arrangements.

She said a study of Ethiopia, Mozambique, Sierra Leone, and Zambia, had found private investment in the four countries mainly focused on mining and extractive industries, telecommunications, tourism, manufacturing and real estate, and very little in sectors covered in national adaptation programmes of action, such as coastal zones and marine ecosystems, health, and terrestrial ecosystems.

Ms. Siebert said it was clear that the size and scope of private finance for adaptation in Least Developed Countries (LDCs) was limited. Unregulated foreign direct investment (FDI) in African and other LDC states could also lead to 'maladaptation'. However, the creative use of regulations and policies could attract private investments toward adaptation priorities. She said national laws and governance could be used as tools to guide, provide incentives and manage private investment for adaptation programmes.

- (ii) *Exploring the role of existing and upcoming channels of finance for future carbon market instruments in Africa*, Ms. Swati Agarwal of *The Energy and Resource Institute in New Delhi, India*

Ms. Agarwal, noted that carbon trade markets in Africa lagged those of other parts of the world. Market based mechanisms such as that used in carbon trading presupposed that markets and the private sector in a given country were adequately developed, which he noted was not always the case in Africa. Barriers to a larger carbon trading in Africa include perceptions of the continent as a poor investment destination ridden with high country risks, weak capital markets, information asymmetry, high transaction costs, inadequate governance, institutional instability, underdeveloped financial systems, poor project preparation and the lack of co-ordination within systems.

Ms. Agarwal said the financial sector in most African countries remains small and fragmented. Equity and debt markets are sufficiently developed in some countries but capital is not always available for non-conventional investments. In lower income countries, equity and debt markets remained insufficiently developed. In such countries, public finance vehicles could help leverage private finance.

Ms. Agarwal said the desire among foreign institutions to invest in Africa is likely to grow as innovative financial vehicles, including funds and facilities, are developed. Multilateral and bilateral institutions could also play an important role in addressing market barriers in Africa.

- (iii) *Adaptation for Smallholder Agriculture Programme: Making Finance Work for Smallholder Agriculture – by Paxina Chileshe of IFAD*

IFAD's mandate was to enable the rural poor to overcome poverty. The specific goal of the Adaptation for Smallholder Agriculture Programme (ASAP) was to increase the resilience of poor smallholder farmers to climate change by the use of multiple adaptation approaches. The programme is based on the belief that it is most unlikely that smallholders will be able to adapt to the impacts of climate change using only their historic experience and traditional knowledge.

Typical climate-induced problems addressed through ASAP are in smallholder production, processing, crop storage, and market access. Under ASAP, infrastructure refers to land degradation, crop losses, and pests and diseases on the farms. Processing includes processing sites, energy requirements, and water availability. Storage covers storage losses, new storage requirements, and the management of pests and diseases. Market access includes infrastructure, transport routes, and price fluctuations.

ASAP was also introducing a number of new adaptation solutions including early warning systems, better risk analysis and preparedness, financial services for climate risk management, and more robust and flexible infrastructure. The programme was also providing assistance on weather information, better post-harvest protection, green technologies for heating, cooling, pumping water, and drought, and the introduction of salt and flood tolerant crop varieties. In addition, some tested adaptation solutions like agro forestry, drip irrigation, rangeland management, rainwater harvesting, watershed management, biogas, conservation agriculture, and reforestation and afforestation were also being promoted.

## **Climate Change and Gender**

- (i) *Gender Dimensions of Indigenous Innovations for Climate Change Adaptation among Rural Households in the Niger Delta Region of Nigeria – by Ms. Chukwudumebi Egbule of the University of Nigeria, Nsukka*

The results of this study showed that all smallholder farmers in the region will be affected by climate change, with women taking more of the brunt of the impacts. The authors also noted that households in drought and flood-affected communities in the region were already undertaking adaptation strategies to protect their assets and food security.

However, lack of disaggregated data on climate change adaptation could lead to maladaptation as emerging adaptation measures may be too general to meet the specific needs of the different genders. Ms. Chukwudumebi said it is important that climate change adaptation measures are designed to meet the individual needs of gender (men and women farmers) as climate change has been seen to have different effects on them.

The study found that 90.2% of males and 88.7% of females in the region were aware of climate change. Acquaintances were the main source of climate change information, followed by extension agents, farmers' cooperatives and politicians. The perceived causes of climate change in the region include the burning of fossil fuels by industries, the use of generators and gas flaring at installations, the burning of bushes, and gas emissions from motor vehicles.

- (ii) *Policy Perspectives on Hunger, Nutrition and Climate Justice: Lessons for Africa from global contexts –by Prof. Baharul Islam of the Development Gateway, Mauritius*

Prof Islam observed that climate change is a multiplier of current threats to global food security and that the current levels of malnutrition could rise by up to 20 per cent by 2050 as its impacts grow. Climate change will also affect the four dimensions of food security, namely availability, access, stability and utilization. Prof. Islam cited an Inter-Governmental Panel on Climate Change report (2007) that states that by 2020, climate change will cause a significant decrease in crop yields in some rain-fed African systems. Climate change is also expected to lead to high levels of desertification and soil salinization that will affect food production in Sub-Saharan Africa.

These changes will demand shifts in current policy to ensure sustainable agricultural productivity as traditional coping systems become inadequate. Policy will need to focus on technical innovation, coupled with traditional knowledge resources, enhanced social protection, and institutional support. The impact of climate change will also demand a ‘resilient community based development approach’, a transition towards ‘climate-smart’ relief, as well as appropriate investment and the participation of stakeholders in determining policy.

Policy perspectives for Africa will also need to include putting gender at the center of the policy debate and policy formulation, implementing programmes through linkages that provide for effective participation of civil society and local government institutions, and public private-partnerships.

Continuing on policy, gender and climate change, COMESA’s Emiliana Tembo presented delegates with a concept note for a project on the mainstreaming of gender into climate change policy, particularly at the regional and global levels, being spearheaded by a COMESA-ECA-SADC Tripartite Programme on Climate Change.

(iii) *Mainstreaming Gender in Climate Change Initiatives – by Ms. Tembo said of the Common Market for Eastern and Central Africa (COMESA)*

COMESA had a gender policy developed in 2006 that commits member-states to mainstream gender issues into all development policies. However, the policy does not explicitly mention climate change. UNECA has agreed to work with Africa’s Regional Economic Communities in the implementation of an African regional project that includes:

- A Conceptual Framework on Gender and Climate Change that outlines key elements that could inform sub-regional and national climate change policies, strategies and action plans, and
- A Regional Framework on capacity building, education, training and awareness on Gender and Climate Change to be implemented by various stakeholders at different levels.

(iv) *Climate Change and Gender in Burkina Faso’s Sahel Region: Experiences of loss and damage, and vulnerability – by Ms. Laetitia Kabore of the University of Nigeria*

Ms. Kabore said drought and flooding were two extreme events that affected the lives of women in the Sahel region of northern Burkina Faso. The impact of drought on women’s livelihoods in the region included heavy losses of livestock and milk production that also led to negative changes in household diets.

These impacts were exacerbated by underlying factors such as poverty and the low literacy rates among women. Strategies adopted by women to cope with the impacts of droughts and flooding included saving on water, organic farming and re-forestation. Nevertheless, these measures were hardly sufficient as each extreme event left households worse off than they were before.

## Sub-Theme 4 : Green Economy: Which Way for Africa?

### Green Economy Opportunities for Africa

- (i) *Challenges, Opportunities including Early Lessons Learned on Transitioning to Green Growth in Africa – by Mr. Frank Sperling of the African Development Bank*

Mr. Sperling noted that the rationale for green growth is that humanity is crossing global thresholds that now critically threaten life support systems. The challenge for Africa is to adapt to realities created by climate change through a development agenda that makes it one of its priorities.

He said green growth means growing the economy in a sustainable manner by maintaining and increasing environmental and social assets. Green growth takes care of the economy, the environment, and the social aspects of life. In contrast, ‘traditional’ growth or ‘business as usual’ leads to the depletion of environmental and/or social assets.

Green growth emphasizes the attainment of development objectives and growth targets while maximizing natural resource use efficiency and minimizing waste and pollution. Transitioning to a green economy requires the strengthening of an enabling environment based on regulations, budgeting and incentive structures, and financing of the transition with external and domestic resources. Mr. Sperling concluded that Africa now has the opportunity for sustainable development through green growth that leapfrogs the continent into to more efficient technologies.

- (ii) *Trade in Forest Products: Potentials, Opportunities and Challenges in Africa – by Dr. Mkpado Mmaduabuchukwu of the Federal University Oye-Ekiti, Nigeria*

Dr. Mmaduabuchukwu noted that Africa’s forest products create both opportunities and challenges for the continent and its people. The global market in forest products is expected to reach USD 1.2 trillion by 2015, creating new opportunities for Africa. African forestry can also benefit from carbon sequestration projects.

On the other hand, the main challenges were the faster degradation of forest resources in Africa due to rising global demand for forest products, poor forest management, biodiversity loss and increasing demand for farm and grazing land. Others included inadequate funding for forest initiatives, illegal logging, the smuggling of forest products and corruption among officials responsible for forest management.

A number of initiatives can, however, be undertaken to assure the sustainability of the trade in Africa’s forest products. A major option could be the use of parts of the official development assistance (ODA) to support the management of Africa’s forests. African countries could also implement the recommendation of the New Economic Partnership for African Development (NEPAD) that they invest at least 10 percent of their annual budgets in agriculture, including forestry.

(iii) *Green Economy Opportunities for Africa – by Mr. Edward Awafo Kwame Nkrumah  
University of Science and Technology in Ghana*

Conventional development was more resource-intensive and environmentally costly than green development, Mr. Awafo noted. He emphasized that the ‘business as usual’ model of development was outdated and would lead to rising costs of production, the loss of productivity and disruption of economic activity. In a “business as usual’ scenario, global productivity levels would have dropped by 2.4% in 2030 and 7.2% by 2050. A green economy could however, create millions of green jobs. He estimated that nearly 1.5 billion people could benefit from the transition to a greener economy.

Mr. Awafo described a green economy as ‘one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient and socially inclusive.

One advantage of a green economy is that it offers African countries a vision in which social inclusiveness is not a by-product of growth but is itself, a driver of growth. The economic benefits of a green economy include increased efficiency and innovation, increased resilience to exogenous shocks, including fuel and other commodity prices, increased competitiveness, and an improved balance of trade. On the environmental front, benefits included lower pollution, resilience to climate change, and improved biodiversity, among others. Socially, green economy would also lead to greater poverty alleviation and job creation.

Mr. Awafo said Africa has the opportunity to leapfrog polluting and harmful aspects of traditional economic development models by introducing greener and more efficient infrastructure, technologies, agricultural and environmental management systems. He said the green economy should be seen as an innovative way of doing business. Even if the transition to a green economy may come with significant additional costs, its medium to long-term benefits presents the best opportunities for sustainable development making the investment worthwhile. The eight key sectors expected to play a central role in the transition are agriculture, forestry, fishing, energy, resource-intensive manufacturing, recycling, building and transport.

### **Sub- Theme 5: Is the Global Climate Change Framework Working for Africa?**

#### **Why is Africa Still at the Negotiating Table?**

(i) *Africa and the Global Climate Change Negotiations – by Dr. Essam Hassan an independent consultant, Egypt*

Dr. Hassan opened his presentation by noting that the reason the UNFCCC process has failed to achieve meaningful progress is that it does not cover major contributors to greenhouse gases such as China and the United States of America. The current situation is even more challenging as some countries are pulling out of the agreement while others are threatening to do so.

At the COP 15 meeting in Copenhagen in 2009, the developed countries had agreed to mobilize US\$100 billion by 2020 to assist developing countries in adaptation and mitigation efforts. The

developed countries also pledged to deliver ‘fast start finance’ approaching US\$30 billion by 2012. However, the situation on the ground is that of the US\$29.2 billion pledged since 2009, only 45 per cent has been ‘committed’, 33 per cent ‘allocated’, and about 7 per cent actually ‘disbursed’.

Dr. Hassan urged African states to get over their internal disagreements and put together a strong African negotiation action plan, in co-operation with the G77 and China, in readiness for COP 19. He said Africa needs to take advantage of the opportunities in COP19 to ensure its adaptation issues obtain a high priority in the negotiations. He observed that the key issue that needed to be resolved by Africa for COP19 is ensuring the 2015 negotiations will come up with a new, air and legally binding agreement.

Dr. Hassam said a basic weakness in the African Group of Negotiators has been a lack of both climate change knowledge and information. He attributed this partly to poor quality of climate data in Africa.

- (ii) *Integrating Climate Resilience into Long-Term Development Paths: A domestic approach for an African global climate change framework – by Dr. Anthony Dane of the Energy Research Centre at the University of Cape Town in South Africa*

Dr. Dane reiterated the need to improve the quality of African negotiations in international fora. It was therefore essential that Africa went into international climate change negotiations with ‘strong positions’ based on well-researched evidence and supportive empirical science.

He proceeded to describe the success of the Mitigation Action Plans and Scenarios (MAPS) process that had been developed by the University of Cape Town. Due to this success, he said a number of Latin American countries are now experimenting with MAPS. At the core of MAPS is a process that supports the development of a climate-resilient development path, including the mainstreaming of climate change and sustainable development into development strategies. MAPS also supports the management of complex, multi-disciplinary systems. Dr. Dane noted that it is important that green growth development paths are assessed against other development options so that informed decisions are made.

### **Key Issues and Positions in COP 19**

- (i) *Equality Lessons from Multilateral Regimes – by Mr. David Waskow of the World Resource Institute*

Equity is a critical aspect of global climate change negotiations if they are to be credible and obtain commitment from the different parties involved. The notion of ‘fairness’ is key in trying to deliver equity in climate change negotiations, Mr. Waskow emphasized.

He added that ensuring equity in the establishment of institutions and procedures around climate change negotiations strengthened participation and contributed to better results. Mr. Waskow said facilitative rather than coercive approaches promoted equity in negotiations. The provision

of finance and support to enhance access to specific technologies, know-how and capacity for those that do not have them is equally important in creating equity.

(ii) *New Market Mechanisms: Opportunities and challenges for Africa – by Ms. Ritika Tewari of TERI University in India*

Given the growing number of market-based approaches to mitigation in Africa, it is imperative that Africa develops a proactive action plan for COP 19. Ms. Tewari proposed that the African Group of Negotiators (AGN) consider proposing specialized funds to address the challenges of implementing the Clean Development Mechanism on the continent.

(iii) *FIT for Renewables? Design options for the Green Climate Fund to support renewable energy feed-in-tariffs in developing countries – by Mr. Ansgar Kiene of the Africa Renewable Energy Alliance*

Mr. Kiene said the growing demand for energy in Africa provided an opportunity for the continent to increasingly turn to renewable sources of power. He said the Renewable Energy Feed-in Tariffs (REFiTs) approach was successful in encouraging the use of renewable technologies worldwide and could perhaps be adopted in Africa. REFiTs is a policy approach designed to encourage investments in renewable energy. It does this by offering the suppliers of renewable energy long-term contracts that enable them recoup their investments.

Mr. Kiene said a major challenge with this policy approach is that the cost of providing renewable energy is initially higher than that of using conventional sources and that these costs have to be borne by consumers, a position that politicians and other policy makers often find difficult to endorse. Although initial capital outlays for the generation of renewable energy were costly, generating renewable energy was inexpensive, in the longer run.

For Africa, funding for this approach should come from the \$100 billion climate fund proposed by developed nations for 2020. This investment could be used to protect electricity consumers from possible increases in tariffs as Africa transitions into renewable energy. Mr. Kiene said it is important for African countries to document and compare the lifecycle costs of renewable energy to investments in the exploitation of more fossil fuels for electric power generation. Such proposals will put African nations in a stronger position when negotiating for global support for their transition to renewable energy.

(iv) *Africa Climate Equity: Implications of New Interpretations of the Common but Differentiated Responsibility’, Dr. Chukwumerije Okereke of the University of Reading in the United Kingdom*

Dr. Okereke sounded a warning that commitments by developed nations are being gradually ‘watered down’ for the 2020 regime and that instead the developing countries are being asked to do more and more. He said Common but Differentiated Responsibility (CBDR) was the bedrock behind the principle of equity. More recently however, developed nations are reinterpreting the CBDR with serious implications for Africa.

Dr. Okereke said the CDM funding Africa has received remains small and that there was a large difference between the amount pledged and the amount disbursed. Africa's standing in global climate change negotiations is likely to worsen as industrialized countries abandon the Kyoto Protocol to which African countries adhere. The disadvantages Africa is likely to suffer because of the changing stance of the developed nations include a lowering of greenhouse gas emissions reduction commitments for developed countries, a reduction in climate finance, a larger funding gap, a trickle of capacity and technology transfer for Africa's adaptation, a rising mitigation burden, and more climate impact and underdevelopment.

Dr. Okereke said capacity building and technology transfer for Africa are still major challenges as the continent struggles to adapt to climate change. He said the large disparity in the number of African delegates sent by African countries to the COP conferences, compared to those of the developed countries, puts Africa at a disadvantage. He said Africa also needs to do more to ensure it has the right negotiators at the negotiating table. He said Africa can obtain more from climate change negotiations by adopting a more informed and proactive stance.

### **The Post-2020 Regime – Implications for Africa**

- (i) *Climate Change Adaptation for Development: Strategic or Risky? – by Dr. Aondover Tarhule of the University of Oklahoma*

Dr. Tarhule critiqued many of the approaches to climate change in Africa that tended to focus on single solutions at any given time, much the same as the many development approaches undertaken on the continent since independence. In the 1970s, for instance, the emphasis was on creating green revolutions and agricultural mechanization. In the 1980s, the emphasis shifted to structural adjustment programmes. A pertinent observation was that all these initiatives were externally driven, which seems evident in current activities as Africa tries to grapple with the challenge of climate change.

He wondered whether there was evidence that linking climate change adaptation with development would be a more effective strategy that would have a better chance of bringing about sustained development where previous policies have failed. He asked whether the strong emphasis on climate change would not have an adverse effect on Africa's development as a whole, especially given that scientific predictions on climate change are not always accurate. For instance, in 2007, the IPCC predicted significant losses in cereal yields in the Sahel due to climate change. Despite reduced rainfall, however, yields in the region have continued to rise.

Dr. Tarhule said true development is like an ecosystem in which a society increases its capacity for dealing with the environment, including extreme environmental conditions that create disasters. This capacity depends on the extent to which a particular society understands the laws of nature (science), the extent to which it puts this understanding into practice (technology), and the manner in which society is organized.

Furthermore, if a society is dependent on external science or technology, if its elite is oriented toward a foreign metropole – as seemed to be the case with Africa's climate change issues – then

that society is not developing. He suggested three levels at which African societies can respond to the challenges of climate change. These were:

- As powerless spectators that have weak adaptive capacity and little capacity to govern. Because of a lack of knowledge, they are either unaware of the threats facing them, or have a misguided awareness.
- Coping actors that have the capacity to adapt to change but are not managing their social–ecological systems. These rely on financial capital, infrastructure, and technology to cope with environmental threats.
- Adaptive co-managers that have both the capacity to adapt and the governance capacity to sustain and internalize this adaptation in the long term. They invest in the long-term management of their ecosystem services. Such communities are not only aware of the threats, but also take appropriate action for long-term sustainability.

Dr. Turhale warned that the links between climate change and development are not entirely clear and need greater intellectual exploration.

(ii) *Climate Change, Wildlife Conservation, Policy and Management Implications in Africa – by Mr. Wisdom Mdzumgairi of Newsday in Zimbabwe*

Mr. Mdzumgairi said changing climatic conditions in Africa’s vast wildlife sanctuaries have decimated large numbers of game, including elephants, buffaloes, lions, leopards, cheetahs, and black rhinos. The predicted rise in global warming will continue to have far-reaching impacts on wildlife and habitat management. Scores of animals will succumb to the impacts of climate change, particularly the lack of drinking water and grazing lands.

Despite efforts to provide water by pumping to avert the water shortages in most of the wildlife parks across Africa, scorching temperatures have seen perennial water holes and pans dry up and the water table deepening, resulting in boreholes failing to cope with demand. Small species around the water holes dotted in the dry wildlife parks have already succumbed to thirst, en bloc, as they cannot compete with big game and dangerous predators for the finite water resources in the parks. It is clear that wildlife authorities across Africa no longer have the capacity or financial resources to deal with the water scarcity challenges in these parks.

A possible solution may be the provision of some climate change funds to ensure the sustainable management of Africa’s wildlife parks. Africa could also sell off some of its wildlife, including elephants, in line with the Convention on the International Trade in Endangered Species of Wild Fauna and Flora to raise funds to sustain wildlife.

### **Day 3:**

**Closing Session – Chaired by Dr. Fatima Denton, Officer-in-Charge, Special Initiatives Division (UNECA), Coordinator of ACPC**

Mr. Mass Axi Gai, Minister of Fisheries and Water Resources for the Gambia, officiated at the closing of the conference. He congratulated the conference organizers for a job well done and hoped CCDA IV would provide another important forum for reflection and action on African development in the face of climate change and also serve as a basis for appropriate action.

In a closing statement, Dr. Denton said the pace and quality of Africa's transformation remained a concern. She said it was important that this was seen in the context of Africa's role in the global architecture and that Africa's transformation could be given a new meaning if linked with the continent's natural resource wealth. This use of African resources for the continent's development would, however, have to be conducted in an environmentally sustainable manner that also supports leapfrogging into the use of climate-friendly technologies.

Dr. Denton called for a sharpening of Africa's narrative in global climate change negotiations so that it made the continent's vulnerability clear and made the rich nations of the world truly accountable for their responsibilities.

It was also time for Africa to think of new market and investment opportunities that should arise from climate change. To optimize exploitation of such opportunities, Africa would need to make some important internal changes, such as unlocking the barriers that hamper the full participation of women and youth in society's activities. It was also imperative that women Africa's women and youth were well-integrated into the continent's climate change response strategies.

Africa, she said, needed a knowledge infrastructure based on strong science and research. Equally, there is a need for Africa to improve the links and cooperation between its various climate-related research efforts. The continent should also better organize itself to make the best use of emerging research findings. Dr. Denton urged the African Group of Negotiators and similar groupings to speak with one voice. Finally, she called on African to maintain a high level of ambition with regard to the development of the continent, including the creation of green economies throughout Africa.

### **Other key events**

Other activities were held on the margins of CCDA III. These were designed to explore emerging issues in climate change and build the capacities of African stakeholders as they respond to the effects of climate change. The events were also designed to showcase the creativity in Africa's adaptation and mitigation activities.

### **Pre-Conference Events:**

- Pan-African Climate Justice Alliance (PACJA), Mary Robinson Foundation, World Resources Institute (WRI) in collaboration with ClimDev-Africa will convene a pre-event entitled "Climate Justice Dialogue: shaping an equitable climate agreement responsive to Africa".
- Gender and climate change: Co-organized by ClimDev-Africa, South Africa Development Cooperation (SADC) and the ECA capacity development division to focus on equity, gender equality and women's empowerment in the context of climate change;

- The role of civil society in climate change : training on the role of civil society in promoting mainstreaming climate change in community development activities and planning;
- Media and climate change: Capacity building of journalists on reporting, advocacy and awareness raising on climate change and development;
- USAID/ACPC local level adaptation strategies pre-event: to focus on building critical mass of climate change expert through supporting young fellowship program;
- Pilot countries pre-event: to share experience, best practices in upgrading meteorological and hydrology observation network management and dissemination of climate information.
- Farmers and cooperatives on climate change.

### Side Events

- World Meteorological Organization (WMO) event on ‘Synergies between the African Ministerial Conference on Meteorology (AMCOMET) and the Integrated African Strategy on Meteorology (Weather and Climate Services)’.
- International Institute for Environment and Development (IIED) and ClimDev-Africa Programme event on Monitoring and Evaluation (M&E) of climate change and development programmes
- ACPC and partners event on climate change, youth and development

### Exhibition

The conference also hosted an exhibition of local, national, sub-regional and continental initiatives, organizations and government offices. This allowed the exhibitors to showcase their various climate change adaptation and mitigation efforts. It also allowed exhibitors and visitors the opportunity to network and exchange ideas.

### Media

Conscious of the of the challenges that communicators face in trying to convey climate change issues to the public, and convinced of the central place that communication occupies in climate change policy and practice, the conference organizers used CCDA III to continue to strengthen for media coverage of climate change in Africa.

A one-day training workshop for reporters and editors was held as a side event of CCDA III. The main goals of the workshop were to encourage the accurate reporting of climate change in Africa and to convey the importance of climate change in African development. Participants later reported that the workshop had helped to improve knowledge of the enormity of climate change impacts on Africa and the role the media can play in enhancing the adaptive capacity of local communities.

There was broad international coverage of conference proceedings in both print and electronic media in Africa.

