CLIMATE CHANGE, RENEWABLE ENERGIES AND SUSTAINABLE USE OF NATURAL RESOURCES IN EAST AFRICA

THE ROLE OF CLIMATE FINANCE

FORUM CC

Konrad Adenauer Stiftung

Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa

The Role of Climate Finance

May, 2016

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Konrad Adenauer Stiftung

Isimani Street 24, Upanga
P.O. Box 6992
Dar es Salaam, Tanzania
Phone: +255 22 2153174
Web: www.kas.de/tansania

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AF	Adaptation Fund
AfDB	African Development Bank
APCCC	African Partnership on Climate Change Coalition
APR	African Progress Report
ASAP	Adaptation for Smallholders Agriculture Programme
CC	Climate Change
CDM	Clean Development Mechanism
CFL	Compact Fluorescent
CIF	Climate Investment Fund
COP	Conference of the Parties
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CSOs	Civil Society Organisations
DfID	Department for International Development
EABC	East Africa Business Council
EAC	East African Community
EACJ	East African Court of Justice
EACREEE	East Africa Centre for Renewable Energy and Energy Efficiency
EAWLS	East African Wild Life Society
EE	Energy Efficiency
EUCL	Energy Utility Corporation Limited
FONERWA	Fund for Environment and Climate Change in Rwanda
GCCA	Global Climate Change Alliance
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
HEP	Hydroelectric Power
HH	Household
ICF	International Climate Fund

JICA	Japan International Cooperation Agency
KAS	Konrad-Adenauer-Stiftung
LDCF	Least Developed Countries Fund
LPG	Liquid Petroleum Gas
MDB	Multilateral Development Bank
MDGs	Millenium Development Goals
MINECOFIN	Ministry of Finance and Economic Planning (Rwanda)
MININFRA	Ministry of Infrastructure (Rwanda)
MINIRENA	Ministry of Natural Resources (Rwanda)
MoFPED	Ministry of Finance, Planning, and Economic Development (Uganda)
MW	Megawatt
MWECAU	Mwenge Catholic University
NAPA	National Adaptation Programmes of Action
NDA	National Designated Authority
NEMA	National Environment Management Authority
NGO	Non-Governmental Organisation
NIE	National Implementing Entity
PPP	Public Private Partnership
PV	Photovoltaic
RBO	Rwanda Bamboo Organisation
RE	Renewable Energy
REDD	Reducing Emissions from Deforestation and Forest Degradation
RIE	Regional Implementing Entity
SCCF	Special Climate Change Fund
SDGs	Sustainable Development Goals
SE4ALL	Sustainable Energy for All
SMEs	Small and Medium Enterprises
SSA	Sub Sahara Africa
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organisation
US	United States
WHO	World Health Organisation

PREFACE

The East African Community (EAC) is the regional intergovernmental organisation of the Republics of Burundi, Kenya, Rwanda, South Sudan, the United Republic of Tanzania, and the Republic of Uganda, with its headquarters in Arusha, Tanzania. The Treaty for Establishment of the EAC was signed on 30th November 1999 and entered into force on 7th July 2000 following its ratification by the original three Partner States – Kenya, Tanzania and Uganda. The Republic of Rwanda and the Republic of Burundi acceded to the EAC Treaty on 18th June 2007 and became full Members of the Community with effect from 1st July 2007. The Republic of South Sudan acceded to the Treaty on 15th of April 2016 and shall become full Member once the instruments of ratification of the Treaty are deposited with the Secretary General of the Community. The EAC aims at widening and deepening co-operation among the Partner States in, among others, political, economic and social fields for their mutual benefit in order to improve the quality of life of the people in East Africa. The EAC Climate Change Policy was approved by the EAC Heads of State Summit on 9th April 2011 and represents the high level political commitment of the partner states to address climate change.

The Konrad-Adenauer-Stiftung (KAS) is one of the six German political foundations. It is named after the first chancellor of the Federal Republic of Germany. The current German Federal Chancellor, H. E. Angela Merkel, is a Board Member of KAS. The Former German President, Dr. Horst Köhler, is a trustee of KAS. Freedom, justice and solidarity are the basic principles underlying the work of the foundation. KAS currently holds around 80 offices abroad and performs projects in more than 100 countries. KAS has been operating in Tanzania since 1964. The key thrust of its work is to promote democracy, sustainable development, good governance, international relations and regional integration. The KAS strategy pertaining to climate change was developed and agreed during the meeting of the country directors in Arusha in March 2012.

ForumCC – the Tanzanian Civil Society Forum on Climate Change – is a non-profit member based organization committed to work on climate change in Tanzania and beyond. ForumCC has been operating since October 2008. The Forum was formalized in October 2009. The purpose of the Forum is to ensure effective engagement of civil society organizations (CSOs) in Tanzania on climate change issues for the benefit of the environment and people in poverty who are affected. It is therefore established to provide leadership and coordination, lobbying and advocate for accountable climate actions, information sharing and climate change policy engagement in particular with the government of Tanzania around its policies, positions and national implementation of responses to climate change. The Forum has three main areas of engagement, these are: information and knowledge generation and dissemination; policy engagement and advocacy; and learning, networking, and institutional strengthening.

Recognizing that climate change is a great challenge of modern times and that the East African Community is facing enormous challenges for sustainable development while being rich in natural resources, the EAC Secretariat, KAS Tanzania and ForumCC jointly convened a conference on the nexus of climate change, natural resources and sustainable development. In this context, special attention was drawn to the role of climate finance. The objective, program, main findings and conclusions as well as all presentations of the meeting are documented in this publication. EAC and KAS are happy to continue and extend their joint efforts based on their past successful collaboration towards the implementation of the EAC Climate Change Policy, Strategy and Master Plan, and to be able, together with ForumCC, to strengthen a vivid exchange with civil society.

Hon. Jesca Eriyo
Deputy Secretary General, Productive and Social Sectors
EAC Secretariat

Daniel El-Noshokaty
Resident Representative
KAS Tanzania

Euster Kibona
Chairperson
ForumCC

1 INTRODUCTION

The EAC Secretariat, KAS Tanzania and ForumCC jointly organized a conference titled "*Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa – The Role of Climate Finance*". The event was held on the 23rd November 2015 at Mount Meru Hotel, Arusha (Tanzania) and brought together a total of 21 participants (17 male and 4 female) across the East African region coming from both governmental and non-governmental institutions. The event was a build-up on the first joint conference of the EAC Secretariat and KAS in December 2013 which was meant as a kick-off meeting to discuss how collective action under the umbrella of the EAC can be strengthened in the future.

According to the United Nations Framework Convention on Climate Change (UNFCCC) climate finance "refers to local, national or transnational financing, which may be drawn from public, private and alternative sources of financing"[1]. Climate finance is fundamental to address climate change and vital for a broad implementation of mitigation as well as adaptation measures. Pertaining to the principle of common but differentiated responsibility and respective capabilities, developed country parties are obliged to provide financial resources to support developing country parties in undertaking mitigation and adaptation activities. To deploy financial resources effectively it is imperative to understand and assess the financial needs of the respective countries and to be familiar with the mobilization, administration and governance, as well as disbursement mechanisms and principles of the financial means.

1 UNFCCC (2014): Climate Finance, URL: http://unfccc.int/focus/climate_finance/items/7001.php; accessed on 2nd, September 2015.

2 OBJECTIVE AND PROGRAM

This conference was organized with the aim of conducting a joint analysis and evaluation of the current climate finance architecture and its opportunities for use in East Africa. In particular, the conference focused on the question "*How climate finance mechanisms can help boost the sustainable use of natural resources and renewable energy in the region?*". It intended to draw conclusions, provide expertise and elaborate recommendations for representatives of the decision making institutions within the East African Community and its member states. Moreover, in line with the East African Community Climate Change Policy and the respective action plan and the EAC Protocol on Environment and Natural Resources Management, the conference also intended to engage civil society as a crucial stakeholder.

Jean Baptiste Havugimana (EAC) officially opens the conference.

Following an introduction to climate change on the 22nd of November 2015 which was honoured by the presence of Hon. Judge President, Hon. Justice Dr. Emmanuel Ugirashebuja (EACJ), the conference on the 23rd of November 2015 contained four sessions and a concluding discussion and was officially opened by Jean Baptiste Havugimana, Director Productive Sectors (EAC).

Jackson Muro, Board Director of ForumCC, gave a welcome note. Richard Shaba, KAS Programme Coordinator, delivered greetings from KAS. All speakers emphasized the importance of the topic and

highlighted the joint efforts as a vital component in the sustainable development equation in East Africa.

The first session addressed natural resources, renewable energies and climate change in East Africa. Gerard Hendriksen, consultant and renewable energy expert, opened this session by giving an overview on the status and potential of natural resources, renewable energies and energy efficiency in the East African Community. Next, Rev. Prof. Dr. Aidan G. Msafiri, Lecturer at Mwenge Catholic University (MWECAU) and Climate Change Ambassador of Tanzania, presented impacts of climate change and their influence on and meaning for natural resources and renewable energies in the East African Region.

Session two was devoted to the climate finance architecture including an overview of related opportunities and challenges for the East African Region. Celline Achieng Oduor, Project Coordinator for the East African Wild Life Society (EAWLS) from Kenya, opened this session with her presentation "The Global Climate Finance Architecture – Principles, Criteria and Status Quo". Subsequently, Brian Otiende, Climate Change Coordinator to the EAC, explained perspectives of climate finance in the EAC and elaborated on the EAC Climate Change Fund.

Session three addressed national perspectives pertaining to climate finance and linked them with opportunities and challenges for the use of natural resources and renewable energies in the respective EAC member states. Jules Kazungu, Senior Program Officer in Energy, Climate Change and Chemicals Management at the Rwanda Bamboo Organisation (RBO), outlined the Rwandan perspective as well as related opportunities and challenges for the use of natural resources and renewable energies in Rwanda. Amie Claude Ntahorwamiye, Technical Adviser of the Ministry of Finances and Economic Development Planning in Burundi, addressed the topic from a Burundian point of view. Andrew Masaba, Senior Economist of the Ministry of Finance, Planning and Economic Development

in Uganda, gave a presentation on climate finance mechanisms and related opportunities and challenges for the use of natural resources and renewable energies in Uganda.

Session four dealt with the role of East African Civil Society pertaining to the challenges of climate finance in the light of renewable energies and the sustainable use of natural resources. Edward Paul Munaaba, Executive Director of the African Partnership on Climate Change Coalition (APCCC), presented the role of East African CSOs. Lilian Awinja, acting Executive Director of the East African Business Council (EABC), elaborated on the role of the private sector.

The concluding discussion focused on five key questions. These are: 1. How can climate finance mechanisms help support the sustainable use of natural resources and renewable energy in the region?; 2. How to coordinate national perspectives and strengthen regional efforts within the EAC?; 3. How to improve the cooperation of the EAC Member States on the international level (e. g. with regard to future COPs)?; and 4. How to link the expertise of civil society best with the political decision-makers?. Subsequently, the participants discussed 5. the way forward including a joint approach for further action. The conference was closed by a vote of thanks from Celline Achieng Oduor.

Program Overview

Sunday, 22nd November 2015	
18.45 h	**Introduction to Climate Change** Guest Speaker: **Hon. Judge President, Hon. Justice Dr. Emmanuel Ugirashebuja (EACJ)**
Monday, 23rd November 2015	
9:00 h	Welcome Note by **Jackson Muro**, Director, ForumCC
9:05 h	Greetings from KAS by **Richard Shaba**, Programme Coordinator, Konrad-Adenauer-Stiftung (KAS) Tanzania
9:10 h	Official Opening by **Jean Baptiste Havugimana**, Director Productive Sectors, East African Community (EAC) Secretariat
Session 1:	**Natural Resources, Renewable Energies and Climate Change in East Africa** **Moderation**: Stefanie Brinkel, Project Manager, Konrad-Adenauer-Stiftung Tanzania
9:20 h	Impuls 1: Natural Resources, Renewable Energies and Energy Efficiency in East Africa **Gerard Hendriksen**, Consultant and Renewable Energy Expert
9:40 h	Impuls 2: Climate Change – Impacts and Linkage to Natural Resources and Renewable Energies in the East African Region **Rev. Prof. Dr. Aidan G. Msafiri**, Mwenge Catholic University (MWECAU)
10:00 h	Questions & Answers, Comments from the Floor
10:30 h	**Coffee Break & Group Photo**

Session 2:	**Climate Finance: An Overview of Opportunities and Challenges for the East African Region** **Moderation**: Stefanie Brinkel
11:00 h	Impuls 1: The Global Climate Finance Architecture – Principles, Criteria and Status Quo **Celline Achieng Oduor**, Kenya, Project Coordinator, East African Wild Life Society (EAWLS)
11:30 h	Impuls 2: Climate Finance in the EAC – Perspectives and the EAC Climate Change Fund **Brian Otiende,** Climate Change Coordinator, East African Community (EAC) Secretariat
12:00 h	Questions & Answers, Comments from the Floor
13:00 h	**Lunch**
Session 3:	**Climate Finance and the Use of Natural Resources and Renewable Energies in the EAC: National Perspectives** **Moderation**: Richard Shaba, Programme Coordinator, Konrad-Adenauer-Stiftung Tanzania
14:00	Comment 1: The Rwandan Perspective **Jules Kazungu,** Senior Program Officer in Energy, Climate Change and Chemicals Management, Rwanda Bamboo Organisation (RBO)
14:20 h	Comment 2: The Burundian Perspective **Amie Claude Ntahorwamiye**, Technical Adviser, Ministry of Finances and Economic Development Planning, Green Climate Fund Focal Point Burundi
14:40 h	Comment 3: The Ugandan Perspective **Andrew Masaba,** Senior Economist/Climate Finance Desk, Ministry of Finance, Planning and Economic Development, Green Climate Fund National Designated Authority Uganda

15:00 h	Questions & Answers, Comments from the Floor
15:45 h	**Coffee Break**
Session 4:	**Challenges of Climate Finance in the Light of Renewable Energies and Sustainable Use of Natural Resources: the Role of East African Civil Society and the Private Sector** **Moderation**: Richard Shaba
16:00 h	Impuls 1: The Role of East African Civil Society Organisations **Edward Paul Munaaba,** Executive Director, African Partnership on Climate Change Coalition (APCCC)
16:15 h	Impuls 2: The Role of the Private Sector **Lilian Awinja,** Acting Executive Director of East African Business Council (EABC)
16:30 h	Questions & Answers, Comments from the Floor
17:00 h	**Concluding Discussion** **Moderation**: Stefanie Brinkel
17:45 h	Vote of Thanks from the Floor
18:00 h	**End of Conference**

3 MAIN FINDINGS

3.1 Natural Resources, Renewable Energies and Climate Change in the East African Community

The term Natural Resources refers to naturally appearing or occurring substances or elements. These can be renewable or non-renewable, non-finite or finite, which can be found on or underneath the earth's surface. East Africa is endowed with huge amounts.

At the same time, climate change is supposed to severely affect the East African region. According to Rev. Prof. Dr. Aidan G. Msafiri there is quantitative as well as qualitative evidence of the impact of climate change to natural resources in Tanzania, both in short- and long-term consequences. These range from famine leading to food insecurity to multiple health hazards, water scarcity, hydroelectric power crisis, rising sea levels, extinction of biodiversity, wildlife resource depletion and soil infertility.

Rev. Dr. Aidan Msafiri presenting during the conference

There is a critical and intrinsic nexus between climate change and the future of sustainable energies in Tanzania in particular and East Africa in general. From a negative

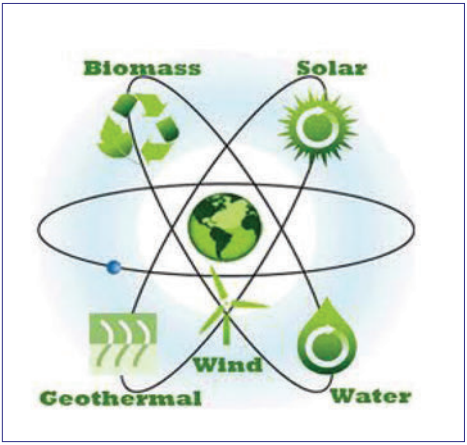
viewpoint, climate change in the EAC puts resources that provide energy at higher risks. On the other hand, a smart approach in using East African resources of sustainable energy could substantially and remarkably reduce natural resource overuse. Hence the shift to environmentally sound and sustainable energies such as wind, solar, biomass, geothermal and hydro is a welcome approach.

There is a crucial need to see the deeper linkages between climate change and destruction of natural resources and to develop a proactive culture in responding to the climate crises. This contains steps at all levels including politics, businesses and society. For example it implies to set a special regional climate change agenda as a number one priority area. It calls for a radical behaviour change towards the handling of solid waste and for bridging the information gap on climate change and renewable energy matters. In this situation the need for the EAC and its member states arises to assume greater accountability and responsibility, particularly in promoting Renewable Energy (RE) and Energy Efficiency (EE) models as a whole, and to embark on and adopt a truly innovative and transformative energy model. Furthermore, there is the need to speak the same language particularly at COPs and in matters pertaining to climate change finance.

Gerard Hendriksen elaborated on renewable energy and energy efficiency in East Africa. Looking at the electricity consumption in Africa from a global perspective a massive energy gap is observed. According to the "*Africa Progress Report 2015*" the Sub-Saharan Africa average electricity consumption is only 162 kWh/capita, whereas the electricity consumption e.g. in the United Kingdom is 5,000 kWh/capita and 12,200 kWh/capita in the United States. Additionally there are huge differences among the various states in Sub-Saharan Africa itself. While electricity consumption in South Africa is 4,047 kWh/capita, people in Kenya only consume 153 kWh/capita. The data was collected for the year 2012. In order to satisfy growing energy needs, the report calls to raise ambitions. This includes the increase of power generation seizing low carbon opportunities such as hydro,

geothermal, solar and wind and using the potential of off-grid systems and aiming at universal access to modern energy services by 2030. An important measure to foster these ambitions is the Sustainable Energy for All (SE4All) initiative.

A summary of energy data in the EAC reveals that with regard to electricity supply the dominance of hydropower in the East African region remains. Additionally, in the year 2015 a change from oil to natural gas in Tanzania, new geothermal opportunities in Kenya and gas findings at Lake Kivu have been observed. Access to electricity varies widely between countries in the EAC; a comparison between 2013 and 2015 shows only few changes. Burundi is the EAC member with the smallest electrification rate (4%). Tanzania (30%) and Kenya (28%) lead the list. The electrification rate in urban areas exceeds the rate in rural areas. Despite its dominance, a reduction of large hydro power facilities as source of energy has been observed. At the same time geothermal energy sources are expanding. While wind power is important worldwide its use is only starting in the region and not suitable to cover the base load. Even though costs for solar power are coming down batteries are still expensive. Grid connected solar power solutions are still emerging. They are not suitable for base load but as part of the energy mix. At the same time pico/small scale photovoltaic (PV) solutions are used increasingly, especially for lighting and charging. Furthermore, the use of biomass for commercial applications is emerging.



Analysing the primary energy balance, biomass is by far the largest source. It is especially used for cooking and heating. It is anticipated that (green) mini grids will make 40 % of connections in 2030 in rural areas. In this private sector led development, an increasing range of technical options is available. With regard to energy efficiency technologies energy saving lights and solar water heaters are prominent options in the East African region.

In order to analyse and foster renewable energy and energy efficiency options in the region, the East Africa Centre for Renewable Energy and Energy Efficieny (EACREEE) has been established. It was approved by the EAC Council on Energy in 2014.

Natural Resources, Renewable Energies and Climate Change in the East African Community

- ✓ Climate change is a **long-term seasonal variability** which is a result of natural and human induced causes. Though, **human-induced factors contribute for much** of the higher and quicker changes than naturally-induced factors;
- ✓ Climate change **affects all sectors** including agriculture, wildlife and tourism, water, and energy;
- ✓ East African countries are **blessed with abundant sources of energy** which include Hydro, Geothermal, Wind power, PV Solar (on and off grid) and Biomass;
- ✓ Sub-Saharan **average energy consumption is low** but supposed to rise and therefore there is a strong need to **increase power generation**; and
- ✓ Use of **renewable energy and energy mix** can help in both – reducing emissions and stress on environment/natural resources.

3.2 Overview of Climate Finance for the East African Community

Despite scientific discrepancies pertaining to the definition of the term "climate finance" it is observed that in practice diverse channels for so-called climate finance are available.

With regard to common elements that are used in different operational definitions by data collectors and aggregators the following characterisation can be found: climate finance aims at reducing emissions, and enhancing sinks of greenhouse gases and at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts. A narrow definition of the term "climate finance" includes finance that supports discrete climate activities but it excludes activities in which climate considerations are mainstreamed into traditional development assistance through a "climate-proofing" process. A broad definition includes some or all of the finance towards any development project that includes climate benefits.

Climate finance channels include multilateral and bilateral channels for climate finance as well as national climate change funds. The nature of climate finance available via these channels varies from grants and loans to guarantees and private equity.

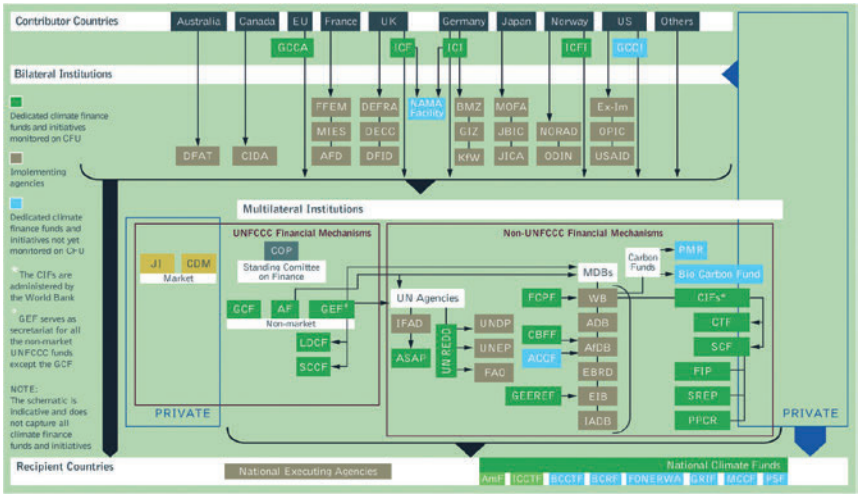
Multilateral climate finance initiatives comprise the Global Environment Facility (GEF); the Adaptation Fund (AF); the Climate Investment Funds (CIFs) and climate finance initiatives by Multilateral Development Banks (MDBs). MDBs, next to UN agencies, also act as implementing entities for the GEF and AF among others.

Celine Odour responding to questions during the session.

In 2011 at COP 17 in Durban another initiative was agreed. This is the Green Climate Fund (GCF), which is expected to become the primary channel for international public climate finance. It was estimated that the GCF may start funding programmes and projects in late 2015. The GCF seeks to raise at least USD 10 billion; this mobilization process is still ongoing.

Additionally, a big portion of public climate finance means is spent bilaterally. It is administered largely via existing development agencies. For example, the German International Climate Initiative has approved USD 1.1 billion, UK's International Climate Fund has pledged USD 5.95 billion and Norway's International Forest Climate Initiative had up to 2012 approved a total of USD 305 million. Meanwhile some developing countries have established national funds. These may have various forms and functions. Financial resources may derive from international finance and/or domestic budget allocations and the domestic private sector. In the East African Community, Rwanda is the only member state that is operating a national fund so far.

The following figure gives on overview of the global climate finance architecture.



Source: Nakhooda, Smita/Watson,Charlene/Schalatek, Liane (2014): The Global Climate Finance Architecture, p. 1: URL: http://www.climatefundsupdate.org/.

Brian Otiende presenting on EAC climate change funding during the session.

According to Brian Otiende, Climate Change Coordinator at the EAC Secretariat, the average cost of climate change on African economies is estimated at 1.5 - 3% of GDP by 2030 and is projected to rise. The current warming could result to climate change adaptation costs rise to US$50 billion per year for Africa by 2050. Climate finance plays a crucial role in this situation. While the level of financing that is required for climate resilience and low carbon development pathway cannot be available from Africa's domestic resources, a lack of institutional arrangements to access climate finance has been observed. Therefore, African states have been urged to put in place systems and structures for Africa to take full advantage of global mechanisms for climate adaptation and mitigation. These include National Designated Authorities (NDA), National Implementing Entities (NIE), and Regional Implementing Entities (RIE) to facilitate access to and utilization of financial resources.

In East Africa, the EAC Climate Change Policy calls for adequate, sustainable and predictable finance to implement climate change initiatives, projects and programmes in the region. The Policy requires instituting appropriate measures for ensuring equity in the allocation of funds, based on needs and according to vulnerability criteria. The Policy further requires partner states to jointly engage in financial resource mobilization to support climate change adaptation and mitigation interventions; and to establish and operationalize the EAC Climate Change Fund as a financial mechanism to support climate change response in the region.

With regard to climate finance mechanisms in the EAC partner states it was found that in Rwanda the Ministry of Natural Resources (MINIRENA) has been approved as the NIE for the AF. Also, a National Fund for Environment (FONERWA) was established in 2012 as the national financing mechanism for all environment, climate change and natural resources projects and programmes. In Kenya the National Environment Management Authority (NEMA) was approved as NIE for the AF in 2012. Also, Kenya proposes to adopt a climate finance strategy and establish an appropriate fund mechanism. In Uganda the Ministry of Finance, Planning and Economic Development is coordinating the country's initiatives in identifying a NIE, with the National Environmental Management Authority and Ministry of Water and Environment being under consideration. In Tanzania the application for NIE has been submitted and is still being assessed at the AF. The country has also initiated the process of establishing a National Climate Change Fund. Burundi has not yet started these processes.

Furthermore, it has been agreed to set up the EAC Climate Change Fund. It is meant to address inadequacy, unsustainability, unpredictability and inaccessibility of climate change funding to support regional climate change priorities as identified and elaborated in the EAC Climate Change Policy, Strategy and Master Plan. Its objectives are to identify, develop and operationalize strategies for mobilizing financial resources for regional climate change activities; to enhance the EAC's technical and institutional capacities to effectively coordinate climate change projects and programmes; and to enhance and strengthen the regional and national capacities to access direct funding from existing and emerging regional and international climate change finance mechanism through RIEs and NIEs. Its governance structure shall have a Council of Ministers, a Steering Committee, Technical Committees (Productive, Social and Infrastructural) and a Fund Administrator. Secretariat shall be provided by the EAC Secretariat. Potential sources of funding are international funds (multi-lateral and bilateral), partner states contributions, and other innovative

sources such as Public-Private-Partnerships (PPPs), corporate social responsibility investments, and donations from non-state actors. Ongoing regional efforts include, among others, the support of the accreditation of EAC as a RIE under the AF and the GCF. This could facilitate direct access modalities and strengthen NIEs. Additionally further steps to be taken shall contain the operationalization of the EAC Climate Change Fund, the development of concrete adaptation and mitigation projects and the formulation and enactment of an EAC Climate Change Bill.

Overview of Climate Finance for the East African Community

- ✓ There is **no unified definition** of the term "climate finance";
- ✓ Climate finance channels are divided into three groups, which are **multilateral climate funds, bilateral climate funding,** and **national funds**;
- ✓ The nature of climate finance available via these channels varies **from grants and loans to guarantees and private equity**;
- ✓ **GCF is expected to become a primary channel** through which international climate finance will flow;
- ✓ Climate change **adaptation costs** for African economies are estimated to be **US $ 50 billion per year by 2050** and on average **1.5-3% of GDP by 2030**;
- ✓ Africa's **domestic resources** are **inadequate to meet the investment requirements** for climate resilience and low carbon development pathway;
- ✓ **EAC Member States have made progress** on climate finance mechanisms while **Burundi is lagging behind**;
- ✓ **EAC Climate Change Fund** as instrument to support mobilizing and coordinating financial resources for regional climate change activities (adaptation, mitigation, capacity building and other cross-cutting issues);
- ✓ EAC strives for **accreditation as RIE**.

3.3 National Perspectives of Climate Finance and the Use of Natural Resources and Renewable Energies

The energy sector is pivotal to the Rwandan economy. The country has various sources of energy which include hydropower, solar, methane gas, peat, geothermal, biomass and waste. The main consumers of energy in the country are households (91%), transport sector (4%), industry (3%), and public services (2%). Nonetheless, a limited number of people has access to electricity. Additionally, the increase in population puts pressure on scarce resources. However, the Government resources alone are inadequate to meet the large investment requirements of scaling up energy/renewable energy services. A total financing requirement of the energy sector plan for the timeframe 2014 to 2018 is estimated at roughly USD 4 billion.

Jules Kazungu contributing to the discussion pertaining to national perspectives on the use of natural resources and renewable energy.

Funding for energy is received from the government (through its ministries), finance institutions, public agencies, private sector, donors (multilateral and bilateral), and NGOs. Rwanda is the only EAC member state that operates a national fund pertaining to climate finance. This National Fund for Environment, abbreviated as FONERWA, under Organic Law No 04/2005 determines the modalities of protection, conservation and promotion of environment in Rwanda. Its ultimate purpose is to spearhead resource mobilization from diverse sources so that it grows to meet the rising needs of the country. It aims at supporting climate change activities.

The Burundian Government and its development partners such as World Bank, UNDP, AfDB, JICA, KfW and NGOs finance the natural resource and renewable energy sectors through programs and projects. The total amount estimated for the two sectors is $ 105,652,320 for three years. Projects planned to be implemented include, among others, the electrification by photovoltaic solar energy in the city of Bujumbura and the expansion of biogas installations to public authorities. Despite the fact that the National Action Plan for Climate Change Adaptation highlights priority adaptation measures in the short term to address climate change and the rational use of natural resources and promotion of renewable energy, the funding remains problematic. Therefore, Burundi has submitted project proposals to the GCF on rational use of natural resources and renewable energy financing and is waiting for approval. Burundi also intends to approach other development partners to implement the NAPA and other strategies for the rational use of natural resources and renewable energy.

Andrew Masaba explaining available climate funding opportunities in Uganda.

Uganda has been endowed with abundant natural resources and renewable energies but the potential, with the exception of biomass, has been underexploited. Despite the various multilateral funding opportunities, Uganda has received a low level of multilateral climate finance with only $49million since 2002. This includes funds received from the GEF which totals $34 million between 2002 and 2015 and $14.67million from the Global Climate Change Alliance (GCCA) in 2011. On the bilateral side Uganda has managed to access funds from the UK International Climate Fund (ICF) for three programs worth £ 146 million. Other bilateral funds, on a smaller scale, have been

provided by Norway and Japan. Two further programs have received approval but funds are still to be disbursed worth $10m and $1.9m from the Adaptation for Smallholder Agriculture Programme (ASAP) and the UK ICF respectively. The funded projects address, among others, water and sanitation, food security and livestock activities. The support of the sustainable use of natural resources and renewable energy is rather marginal. For the future, a lot of expectations are raised with regard to the GCF. The Ministry of Finance, Planning and Economic Development (MoFPED) in Uganda acts as NDA for the GCF. Additionally, Uganda has submitted its NIE application to the AF. Despite these efforts, further steps still need to be taken including the preparation of readiness programmes.

National Perspectives of Climate Finance and the Use of Natural Resources and Renewable Energies

- ✓ *Rwanda:* the country has **various sources of energy** which include hydropower, solar, methane gas, peat, geothermal and biomass among others**;**
- ✓ Government resources alone do not meet the **large investment requirements of scaling up E/RE services;**
- ✓ a **national fund (FONERWA)** is operated to spearhead financial resource mobilization from diverse sources;
- ✓ *Burundi:* financing natural resources and renewable energies to cost **more than US $ 100million** in three years (estimated);
- ✓ access to funds **challenging;**
- ✓ *Uganda:* apart from biogas, the potential of **natural resources and renewable energies has been underexploited;**
- ✓ the country has received about **US $49million of multilateral climate finance** since 2002, and about **US $146million bilaterally;**
- ✓ *All three states:* the approved current support for a sustainable use of natural resources and renewable energies through climate finance is relatively low.

3.4 The Role of East African Civil Society and the Private Sector

East African CSOs may play a crucial role in promoting renewable energies and the sustainable use of natural resources. Their potentials with regard to the climate change and energy equation include creating awareness on climate change, supporting the mitigation of factors that contribute to climate change and strengthening the adaptive capacity of communities and institutions in Africa.

Edward Munaaba sharing CSOs experience on climate finance with link to renewable energy.

The African Partnership on Climate Change Coalition (APCCC), a trans-boundary NGO operating in Tanzania, Uganda and Malawi, has already carried out numerous initiatives in this regard. Among others, these comprise solar cooker projects in Temeke, Muleba Missenyi and Bukoba in cooperation with "EG Solar Germany" and a community solar lights installation funded by UNDP. Such projects are of immense importance for communities in East Africa. As it is not possible in the immediate to near-future e. g. for every household in rural Tanzania to have a light bulb, basically it is possible for each community to have a 'Community Light Center' where community members can meet their needs provided by sustainable modern energy services powered by the sun, Mr. Munaaba told the audience.

However, in practice it is observed that APCCC and other CSOs are facing different challenges pertaining to the funding of such projects. These include donor interest; limited financial resources; co-financing conditionality; peoples' reluctance at the local level; high transaction

costs; limitation to access of climate funds for comprehensive project implementation beyond the pilot experiment; and inadequate capacity to track climate finance opportunities. While these issues need to be addressed in order to promote the use of renewable energies and the sustainable use of natural resources, CSOs are prompted to e. g. sensitize the communities to perceive renewable energy as a business not as service/commodity; to convince institutions and communities to adopt solar energy; and to build capacity of local technicians and businesses at the grassroots level.

Just as CSOs, the private sector may also play a vital role in promoting renewable energies and the sustainable use of natural resources. At the moment, despite the fact that the EAC has a policy on climate change, the East African Business Council (EABC) has not yet targeted a work plan to be able to engage the business community on the subject but hopes to leverage on the EAC Climate Change Fund when it is fully operational. Meanwhile the EABC and the EAC Secretariat have jointly started to convene a renewable energy forum, which is meant to take place every two years bringing together renewable energy associations, the private sector and the public sector to find ways of improving the uptake by the private sector to invest more in renewable energy.

Despite the fact that the EAC countries have a lot of natural resources and also a policy on renewable energy which encourages investment in this area, a lot still needs to be done to raise private sector involvement. The countries are facing a number of challenges. These include deficits on enabling policies and programs that

Lilian Awinja outlining challenges that EAC countries are facing with regard to investing in renewable energies and addressing climate change.

will boost investment in renewable energy; an information gap on climate change issues and opportunities to corporates, e. g. carbon credits; and a limited budget of Small and Medium Enterprises (SMEs).

Recommendations to address such challenges contain: to make climate change mitigation an opportunity for investment; to improve the capacity of National Environment Management Authorities (NEMA); to integrate climate change management into major national programs; to provide incentives to businesses that go the extra mile; to make climate change a priority in all regional and national plans; and to support SMEs involved in the sustainable use of resources, in renewable energy and energy efficiency.

The Role of East African Civil Society and the Private Sector

- ✓ East African CSOs as well as the private sector may play a **crucial role in promoting renewable energies and the sustainable use of natural resources**;
- ✓ *CSOs:* **numerous initiatives**;
- ✓ but: different **challenges** pertaining to the funding of respective projects, e. g. **donor interest**; **limited financial resources**; **co-financing conditionality**; peoples' **reluctance** at the local level; **high transaction costs**; **limitation to access climate funds** for comprehensive project implementation **beyond pilot experiment**; and **inadequate capacity** to track climate finance opportunities;
- ✓ *private sector:* EABC has **not yet targeted a work plan** to be able to engage the business community on the subject, but: **renewable energy forum**;
- ✓ **challenges** for private sector involvement: **deficits on enabling policies and programs** that will boost investment in renewable energy; an **information gap** on climate change issues and opportunities to corporates, e. g. carbon credits; and a **limited budget** of SMEs.

4 PRESENTATION DOCUMENTATION

4.1 Natural Resources, Renewable Energies and Climate Change in East Africa

4.1.1 Natural Resources, Renewable Energy and Energy Efficiency in East Africa

[Gerard Hendriksen, Consultant and Renewable Energy Expert]

African Progress Report 2015

The African Progress Report deals with Africa's energy and climate opportunities. Among others, it elaborates on the global gap pertaining to electricity consumption.

The Gap

Electricity consumption (kWh/Capita)

- SSA average 162
- Kenya 153
- South Africa 4,047
- UK 5,000
- USA 12,200

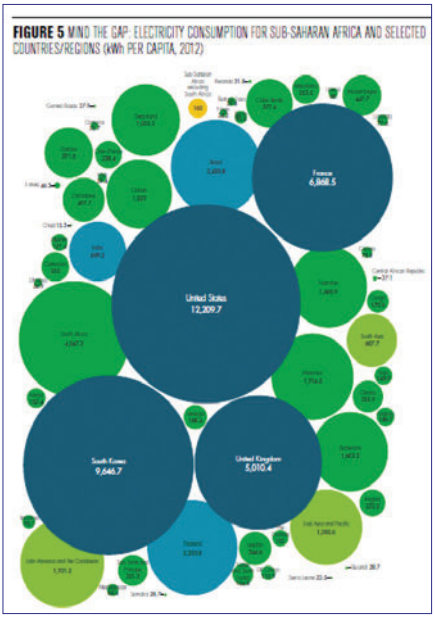


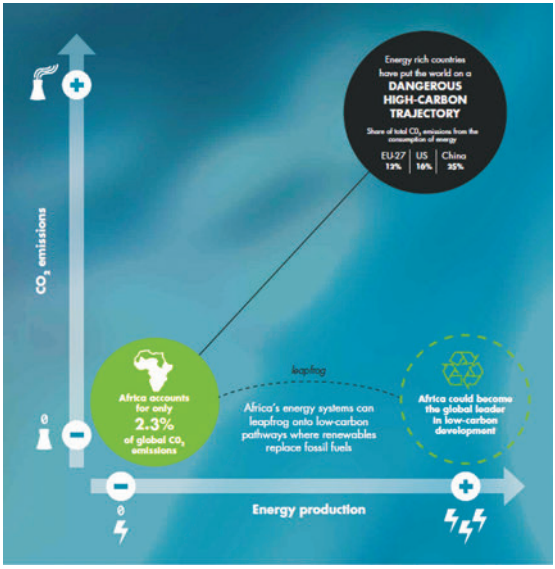
FIGURE 5 MIND THE GAP: ELECTRICITY CONSUMPTION FOR SUB-SAHARAN AFRICA AND SELECTED COUNTRIES/REGIONS (kWh PER CAPITA, 2012)

APR message: raise ambition

- 10 fold increase in power generation by 2040
- seize low carbon opportunities; hydro, geothermal, solar and wind
- potential of off-grid systems, already 5% of SSA HHs are reported to use solar
- leave no one behind: SDG7 universal access to modern energy services by 2030

Vietnam from 14% to almost 100% access in 15 years!

Transitioning to a low carbon economy



EU 12%

USA 18%

China 25%

IEA: 3% by 2040

SE4ALL/SDG7

SDG7 objective: Ensure access to affordable, reliable, sustainable and modern energy for all.

SE4ALL objectives 2030:

1) Ensuring universal access to modern energy services.
2) Doubling the global rate of improvement in energy efficiency.
3) Doubling the share of renewable energy in the global energy mix.

SE4ALL Africa Hub

- AfDB: Secretariat and Oversight and Operations Committee
- Funding
    - o African Climate Technology and Finance Centre
    - o Sustainable Energy Fund for Africa

- Quote: "Nothing is more important to achieving the SDGs in Africa than access to energy services." Dr. Akinwumi Adesina, President, AfDB.

Action Plan Rwanda (example)

SE4All Pillar	Issue	2030 Goal
Access to clean and sustainable cooking	Biomass sustainability	100% renewable biomass
	Universal access to clean cooking	100% access to clean cooking
	Reduction in charcoal dependence	Charcoal use less than 25% of cooking fuel in urban areas
	Increase productivity of forests and plantations (from 2009 level of 9.5 t/ha/yr)	15 t/ha/yr
Access to electricity	Total households	100% access
	Urban households	100% on-grid
	Rural households	65-80% on-grid 20-35% off-grid
Renewables	Share of renewables in total primary energy supply	50%
	Share of RE in cooking energy	80%
	Share of electricity generated from renewables	45%
Energy efficiency	Energy intensity of the economy (relative to 2010)	33%

Summary of EAC energy data (2013 regional report)

Few facts/figures from EAC countries

Partner State	land area (1000 km^2)	population (millions)	pop density (people/km^2)	pop. growth (%)
Burundi	25.0	8.7	312	2.5
Kenya	580.7	38.6	68	1.3
Rwanda	24.2	10.7	406	2.9
Uganda	199.8	32.9	165	3.2
UR Tanzania	886.4	44.9	49	2.7

- large differences in populations and densities
- GDP/Capita ranging from US$ 270 - 820

Installed Gen Capacity (MW)

Partner State	hydro	thermal	natural gas	geo-thermal	biomass/ others	totals
Burundi	32	21			2	55
Kenya	745	463		189	31	1,428
Rwanda	59	40			1	100
Uganda	690	150			21	861
Tanzania	556	485	431		19	1,491
Total	2,083	1,189	431	189	74	3,965

Updates in 2015:

- Tanzania: changes from oil to natural gas
- Kenya: new geothermal 280 MW
- Rwanda: 160 MW: mainly new hydro plus 8.5 MW solar, Lake Kivu gas 25 MW (Nov 2015)

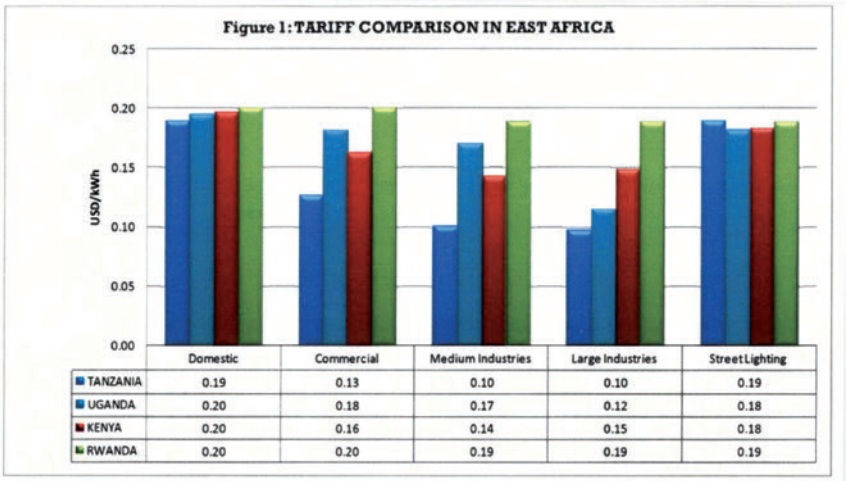
Access to Electricity varies widely between countries and urban/ rural

Partner State		electrification rate (%)	urban(%)	rural(%)
Burundi		3.6	3.3	0.3
Kenya		28	54	22
Rwanda		16	na	na
Uganda	*grid connected*	14.9	52.4	6.9
	solar	10.6	*3.3*	*12.1*
Tanzania		18.4	na	4.6

Few updates in 2015:

- Burundi 4%
- Tanzania 30%
- Rwanda 522,000 connections (RURA) or 18%

Comparison in tariffs $/kWh (EWURA study)



Social tariffs not shown: about $0.05/kWh except in Rwanda.

Status of renewable energy and energy efficiency

Hydro Power: largest source of renewable energy in region

- large hydro main source of electricity generation for decades (reduced to 50% now)
- new large dams planned in Uganda, Tanzania and Rwanda/ Burundi/DRC
- Ethiopia: large dams (6,000 MW), export to Kenya/Rwanda
- small Hydro Power of up to 10 – 20 MW large potential using PPP and Feed in Tariffs
- Burundi; 250 MW over 14 sites
- Kenya; 600 MW, 300 sites
- Rwanda; 100 MW, many small sites
- Uganda; 192 MW, 6 sites listed
- Tanzania; 480 MW through potential sites of <10 MW

Geothermal energy: expanding

- stable source of energy, not influenced by weather and climate change, sun or wind
- Kenya leading with installed capacity of 480 MW, started before 1980 and expanding rapidly
- donor support to reduce risks: Geothermal Risk Mitigation Facility (GRMF), USAID East Africa Geothermal Partnership; estimates of up to 15,000 MW in region
- Tanzania: target 200 MW by 2020, 800 MW by 2033
- Rwanda: program scaled down (first drillings disappointing), expectations now around 90 MW
- Ethiopia: large programme

Wind Power: important worldwide, starting in the region

- regional progress: Kenya: 5 MW in Ngong Hills, 300 MW in Turkana under progress, total 2,000 MW planned for 2030; Tanzania: wind studies in progress, 2 sites of 50 – 100 MW under preparation (financing); Zanzibar: studies in preparation for 2 - 5 MW
- NOT suitable for base load: up to 20 % (?) of total mix
- wind spots can be far from urban centres (Turkana)
- capital costs are high; wind power requires attractive feed in tariffs to be financially viable
- need to get more resource data on wind power

PV Solar: on grid and off grid

- costs are coming down (but batteries double costs!)
- NOT suitable for base load: only part of energy mix (10-20%)
- grid connected: Rwanda 8.5 MW connected, 10 MW in the pipeline (PPP); Tanzania: SSPAs signed for 2 times 1 MW plants; roof mounted systems with net metering not yet taken off
- roof mounted PV: net metering still in early stages
- large scale storage: hydro but other solutions emerging
- pico/small PV with battery increasingly used for lighting/charging: Uganda reports 12% of rural households using PV; Tanzania 2% in REA survey; Kenya 200,000 HHs reported; M-pesa connected technologies gaining ground rapidly

Biomass: for commercial applications emerging

Examples are:

- bagasse from sugar for electricity; widely used
- wood: Tanwat produces 1,5 MW from wood waste; SAO Hills

preparing for 6 MW from wood waste; Mafia Island 1 MW using coconut wood and residues; Symbion developing 3.5 MW using bambo plantation in Kigoma

- agricultural waste used by HIMA cement in Uganda to replace 70% of heating oil (coffee husks etc.)
- biogas from agricultural waste such as from flowers, sisal and rice husks
- biofuels: ethanol and bio diesel only on limited scale so far

(Green) Mini Grids

- IAE: 40% of connections in 2030 will be mini grids (rural areas)
- increasing range of technical options: mini hydro, solar, wind, biomass, diesel hybrid and battery storage, mobile phone towers
- private sector led development
- challenges: high costs, few customers, low incomes
- regulatory issues: permits and tariffs
- increasing donor support: DfID, AFD, KfW, Power Africa, GCF

Energy Efficiency: reduces investments in generation

- Energy Saving Lights for quick impacts: 800,000 CLFs in Kampala, peak load reduced by 30 MW; CFL programs in all EAC countries
- Solar Water Heaters: Rwanda program provides subsidies to HHs, target 12,000 units by 2015; Kenya starting program (regulations are developed)
- Building codes for new construction can reduce energy use by 40-50%, existing buildings 20-30% (UN-Habitat program). Some energy audits in buildings and industries are carried out but follow up less clear.

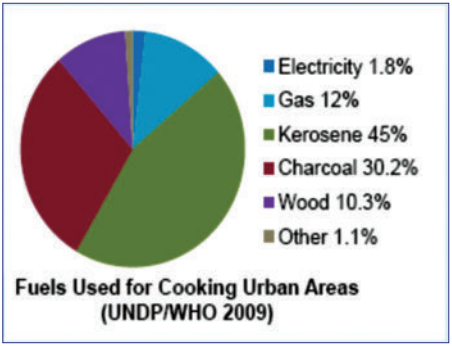
Primary energy balance: biomass largest source (68%- 96%)

Partner State	biomass	petroleum products	electricity	others
Burundi	96	2	1.3	0.7
Kenya	68	22	9	1
Rwanda	86	11	4	
Uganda	88.3	9.7	1.4	
Tanzania	88.6	9.2	1.8	0.5

- biomass: mostly wood and charcoal for cooking/heating
- petroleum: for transport etc. and some for electricity production
- electricity: from hydro and geothermal
- others: some bagasse for electricity generation

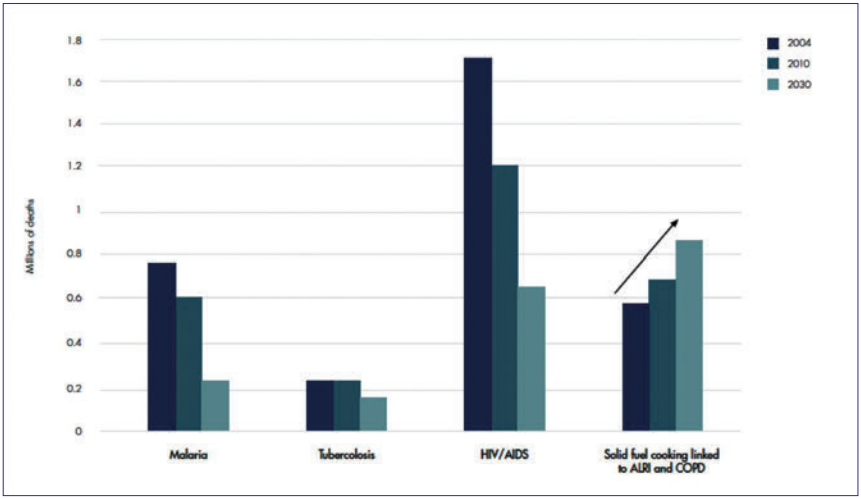
Biomass for cooking: biomass will remain largest source for long

- Global Alliance for Clean Cookstove: initiative by UN, Governments and DPs
- What are alternatives to wood/charcoal?
- NOT electricity!!!
- efficient stoves: savings possible of 25 – 50%
- increase in sustainable wood production
- health aspects of use of biomass



Fuels Used for Cooking Urban Areas (UNDP/WHO 2009)

Indoor air pollution from cooking with biomass



- WHO: 600 000 premature deaths/year in SSA; and number increasing!

East African Regional Centre for RE&EE

- following RE&EE centre in West Africa, Cape Verde
- EACREEE approved by EAC Council on Energy in 2014
- Makerere University to host the centre
- UNIDO technical support
- seed funding from Austrian Development Cooperation
- other funding expected

4.1.2 Climate Change – Impacts and Linkage to Natural Resources and Renewable Energies in the East African Region

[Rev. Prof. Dr. Aidan G. Msafiri, Mwenge Catholic University]

OVERVIEW

1.0 INTRODUCTION

1.1 TERMINOLOGY

1.1.1 Climate Change: The term Climate Change refers to long-term seasonal variability in terms of 30 years. In practice, climate varies on time scales in terms of few years to few decades. There are naturally- and human-induced causes of climatic variability. However, it is commonly agreed upon that human-induced factors contribute for much of the higher and quicker changes than naturally-induced factors.

1.1.2 Natural Resources: The term Natural Resources refers to naturally-appearing or occurring substances or elements. These can be renewable or non-renewable, non-finite or finite, which can be found on or underneath the earth's surface. Tanzania is endowed with huge amounts of both natural and non-natural resources. Among others these include huge amounts of natural gas, wildlife, beautiful mountains, national parks, agricultural wetlands, long coastal beaches, forests, soil flora, soil fauna, as well as mineral riches. These include diamond, gold, gemstones, copper, uranium, to mention a few.

Today, these resources are increasingly being stressed due to ever-growing consumption trends and mismanagement systems and cultures, consequently, leading not only to resource scarcity, but also to climate change scenarios and impact at local, regional and global levels.

1.2 JUSTIFICATION/RATIONALE

1.2.1 There is quantitative and qualitative evidence of the impact of climate change to natural resources in Tanzania, both in short- and long-term consequences. These range from famine leading to food insecurity to multiple health hazards, water scarcity, hydroelectric power crisis, rising sea levels, extinction of biodiversity, wildlife resource depletion and soil infertility.

There is a critical and intrinsic nexus between climate change and the future of sustainable energies in Tanzania in particular and East Africa in general. From a negative viewpoint, climate change in the EAC puts resources that provide energy at higher risks. On the other hand, a smart approach in using East African resources of sustainable energy could substantially and remarkably reduce natural resource overuse. Hence the shift to environmentally sound and sustainable energies such as wind, solar, biomass, geothermal and hydro is a welcome approach.

1.3 SOUL-WRESTLING AND THOUGHT-PROVOKING QUESTIONS

1.3.1 What are the main anthropogenic (human-induced) causes of CO_2 and Green House Gas (GHG) emissions in the East African Community (EAC)? Why are countries in the EAC not engaging deeply and seriously in unpacking the nexus between climate change and energy crises? Which country the EAC has a higher carbon footprint and why has that happened? Is it always meaningful to simply discuss the sustainable energy potential in the East African region and glorify the numbers only? What makes policy makers, CBOs, FBOs, environmental lawyers and heads of state avoid embarking on concrete steps for energy reform models such as the German model *(Energiewende)*? Are there concrete joint resolutions taken by the EAC to make COP 21 in December 2015 a concrete

breakthrough and success story or it is business as usual? Is it now the right time to shift from the cancer of pledging to ethics of commitment from indifferentism to affirmative actions from information to transformation? Which local and international best practices can Tanzania and the EAC learn from, Rwanda and Germany? Do we see the urgent need to make a synergy particularly between the academia, politicians, policy makers, business community, faith organizations, etc., in making sure that the COPs change from being "Conferences of Polluters" to "Conferences of Peoples"? Should the people of the EAC stop lamenting and pointing fingers to the Western World and uncover their direct and indirect carbon footprints (Ref. "Deforestation practices as well as massive importation of thrown away products from China!!")?

1.4 STRUCTURE OF THE PAPER

1.4.1 This work entails two main parts. In Part One, an attempt is made to uncover the qualitative and quantitative impact and consequences of climate change in Tanzania in particular, and in the EAC in general. Part Two tries to underscore the basic link or nexus particularly between climate change and renewable energy, positively (strengths and opportunities) as well as negatively (stress, risks and dangers).

PART ONE

1.0 CRITICAL QUALITATIVE AND QUANTITATIVE IMPACT AND RISKS

1.1 Destructive Impact on Agriculture, Food Productivity and Security

Due to prolonged drought spells as a result of increased mean annual temperatures and ever-changing rainfall patterns in the past 10 years, staple food productivity has substantially declined. This is significant agricultural vulnerability scenario.

According to the World Bank, "food crop production accounts for about 65% of the agricultural GDP of Tanzania, while cash crops account for only about 10%. Among food crops, maize is the most important, accounting for over 20% of the total agricultural GDP, followed by rice, beans, cassava, sorghum and wheat."[2]

In spite of Tanzania's huge potential for agricultural irrigation, with the size of land available for irrigation estimated to be 29.4 million hectares, only about 450,000 hectares is being utilized. This is about 15% of the land available for irrigation farming.[3]

What does this mean or imply? It means that agricultural yields are getting less and less, despite the expansion of cultivation land. This is the direct result of the major driving factors of deforestation, which have resulted in the decrease of both precipitation (rain) and ground water aquifers, springs and rivers, hence giving way to food insecurity, famine, desertification, conflicts between pastoralists and farmers, etc. In short, rainfall and foods security are closely interconnected and interdependent.

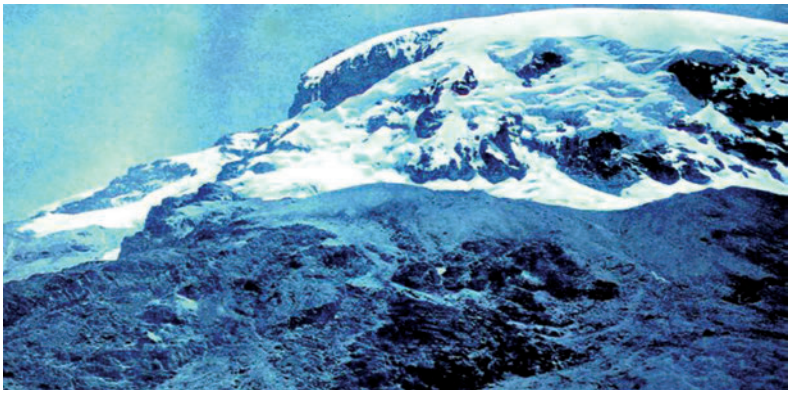
2 The World Bank: Tanzania Agricultural Sector Risk Assessment.

3 The United Republic of Tanzania: Ministry of Agriculture, Food Security and Cooperatives (BRN): p. 1-10.

1.2 Substantial Decrease in Freshwater Resources

Due to the ever-growing rainfall unreliability, rains and the reliability of water has decreases significantly, particularly in Lake Victoria, Lake Manyara, Lake Rukwa, Nyumba ya Mungu Dam, and Lake Eyasi, at the rate of 0.5-6% annually.[4] This is mainly due to the fact that many ecosystems, wetlands, groundwater aquifers, rivers and springs in Tanzania and in the neighboring East African countries (Kenya, Uganda, Burundi, Rwanda) are undergoing severe and recurrent La Niña rains and immense water evaporation leading to enormous water-stress scenarios in both the rural and urban areas.

Also, due to ever-rising temperatures induced by increased urbanization and motorization cultures and lifestyles in Tanzania and East Africa leading to massive GHG emissions, most of the beautiful glaciers and snow on the peaks of East African Mountains are vanishing year after year. It is estimated that the amount of snow on Mount Kilimanjaro has dwindled by about 80% in the last 50 years due to climate change, and it is estimated that the remaining snow might disappear completely in the next 10 years.



Mount Kilimanjaro in 1912

4 United Republic of Tanzania (2011): National Climate Change Strategy and Action Plan, Dar es Salaam – Vice President's Office (Division of Environment). p. 16.

Mount Kilimanjaro in 2015

1.3 Critical Impact on Wildlife and Tourism

Tanzania and East African countries are endowed with the world's largest numbers of renowned wildlife species, as well as abundant biodiversity in national parks, such as Serengeti, Ngorongoro, Tarangire, Ruaha, Kilimanjaro, Arusha, Selous, Mikumi, etc.; and Maasai Mara and Tsavo, in Kenya. These countries also are endowed with large game reserves and long coastal lines and beaches. Some of us may be familiar with the famous film *"Serengeti darf nicht sterben"*, which was produced by a German filmmaker years ago.

A recent study carried out by the Tanzania Wildlife Research Institute (TAWIRI) in collaboration with other researchers, reveals the impact of climate in change in altering tropical ecosystems in the Serengeti National Park ecosystems and biodiversity. The study claims that a greater proportion of species affected by climate change in Serengeti is the soil fauna (e.g. elephants, antelopes, birds, herbivorous vertebrate feeders, etc.) as well as soil flora (different plant species), which are increasingly disappearing in numbers.[5]

5 Sinclair et al. (2014), Africa Journal of Ornithology – Proof TOST 901430 p. 5-15 passim.

1.4 Critical Hydroelectric Power (HEP) Crises

In the last 50 years due to severe and prolonged drought spells occurring in many regions in Tanzania, there have been ever-increasing instances of power blackouts. These have caused by a constant decline of water levels at Tanzania's main HEP generating dams due to fewer rains that are the main water source of the rivers that flow into the dams, such as Ruaha River and Pangani River, the main water sources for the Mtera, Nyumba ya Mungu, Hale and other HEP dams.

Increased drought spells in Tanzania due to climate change and environmental degradation will definitely be a significant obstacle to Tanzania's Power System Master Plan (PSMP), which comprises of 16 HEP projects that have an estimated power capacity generation of 3,000 MW.[6] This means that the large HEP projects might become mere "white elephants" and thus become massive losses of capital and national financial resources.

It is also claimed that "charcoal demand has increased rapidly in the last 10 years, driven by rapid urbanization and the relatively high prices or scarcity of energy substitutes (such as kerosene, electricity, biogas, biomass, briquettes and LPG). Natural gas usage in households, which is an abundant fuel resource in Tanzania, still remains negligible. This is the result of an almost inexistent natural gas distribution network in urban centers, apart from a pilot project in Dar es Salaam."[7] In this Mega City that is home to about 5 million people, the major source of cooking fuel is charcoal, therefore it is a significant contributor to climate change through the decimation of forests for charcoal production to meet the large and growing demand for household energy.

6 The United Republic of Tanzania: Ministry of Energy and Minerals (MEM), November 2012. p. 1-10 passim.

7 The United Republic of Tanzania: Ministry of Energy and Minerals (MEM): Sustainable Energy for All – Tanzania's 5E4 All Action Agenda. 29 September 2015. p. 15.

1.5 Critical Impact on Land

From our Environmental Impact Assessment (EIA) perspective, "large scale mining activities in Tanzania (Geita, Buzwagi, Mwadui, Ngara, Chunya, etc.) have given rise to massive deforestation and environmental damage. This is largely due to uncontrolled forest clearing and other practices. Further, speculative mining particularly by the youth has resulted in less food productivity and thus leading to food insecurity and famine. Large artisanal activities eventually lead to bush fires, which destroy soil flora and drive away wildlife".[8]

Last but not least, uncontrolled decimation and downsizing of the viable and available finite pieces of land for economic purposes has led to multiple injustices and stress, both qualitatively and quantitatively, hence, giving way directly and/or indirectly to climate change risks. Let us now try to unpack the intrinsic with interconnectedness and dependency, particularly between Climate Change (CC) and Renewable Energies (RE) from a Tanzanian perspective.

8 "Land Justice for Sustainable Peace in Tanzania" - Aidan G. Msafiri, Dar es Salaam (SEKOMU) 2013. p. 74.

PART TWO

2.0 CLIMATE CHANGE AND RENEWABLE ENERGIES AND THE NEXUS – STRENGTHS AND BENEFITS

2.1 Nexus 1: Reducing the stress on Climate Change and Environmental Degradation through the use of RE and energy mix scenarios in Tanzania

2.2 Nexus 2: Sustainable energies (solar, geothermal, wind, etc.) will enable the future, thereby reducing further destruction of resources and climate change, as well as reducing the future anthropogenic impact in the human-induced carbon footprint of Tanzania and in the EAC. This requires a paradigm shift to enable a zero carbon footprint in the EAC through the reduction of GHGs. ("Your task is not to foresee the future but to enable it." – Antoine de Saint-Exupery).

2.3 Nexus 3: Renewable Energies (RE) as Key towards Energy Efficiency.

This has a direct positive impact in reducing resource stress and depletion, particularly on the use of fossil fuels and charcoal in general.

2.4 Nexus 4: Energy Payback and Sustainability

Solar energy, for instance, through the use of photovoltaic (PV) modules in Tanzania and East Africa has the potential to become reliable and eco-friendly energy sources with the least negative impact on the climate and natural resources. The current impact of solar PV on resources is almost insignificant. Although "the rate of solar energy capture per square metre of land by PV and CST is very low compared with that of agriculture,"[9] it has the potential of substantially reducing ecological destruction and resource stress, which are the main causes of climate change in Tanzania and East Africa.

9 Mark Dresendorf: Sustainable Energy Solutions for Climate Change.

2.5 Nexus 5: Shifting from a Quantified Costs: Unquantified Benefits

Tanzania and the EACT can and need to realize the ecological and economic truth that, in most of the Renewable Energies (RE) technologies, the required fuel is always free. Indeed, almost all of the incurred cost(s) is capital cost, measured in Kilowatts of electricity (e.g. TShs/KShs/UShs/KwH)

2.6 Nexus 6: Shifting from Fossil Fuels to Bioenergy

A substantial amount of environmental degradation and carbon footprint can remarkably be reduced in Tanzania and in the EAC by using residue and waste material, particularly from food, agriculture, forestry, etc., hence strengthening sustainable use of natural resources such as forests and other biodiversity, therefore offsetting further GHG emissions into the atmosphere.

However, on a negative tone, large reservoirs can have massive long-term environmental and climatic repercussions, whether they are designed for HEP or tidal power. Among others, these may include substantial loss of biodiversity as well as a substantial production of GHGs, particularly in the form of methane.

2.7 Nexus 7: Job Creation in Renewable Energy

Recently, researchers at the University of California Berkeley (UC Berkeley) have come up with new findings showing that new Renewable Energy (RE) and Efficient Energy (EE) models have double advantages. They are low-carbon technologies that create more jobs per unit than that of coal and gas as a whole.[10]

2.8 Nexus 8: Smarter Systems for Transport and Motorization

There are significant negative impacts of the use of traditional transportation (fossil fuel based) technologies, such as cars and trucks, to both the climate and natural resources' sustainability

10 Mark Dresendorf: p. 135.

and integrity, hence the need to shift from "black" electrons to "green" electrons. A new and radical shift and hybrid innovation could and will revolutionize transport technology, therefore create less impact to nature and the climate.

At this juncture, Thomas L. Friedman's comment on the so-called Toyota Prius hybrid car is worth paraphrasing:

"The Toyota Prius is a perfect example of a new system replacing an old one and creating a whole new function that is greater than the sum of its parts. The prius is not a better car. It is a better system! The Prius has brakes. All cars have brakes. The Prius has a battery. All cars have batteries. The Prius has an engine. All cars have engines. What is new about the Prius is that its designers looked at it as a system that could perform more than one function – not just as a collection of car parts whose primary function was to turn the wheels. They said to themselves 'Why not use the energy from braking to generate electrons that we could store in the battery and then use that for driving as many miles as possible, instead of using the gasoline in the tank? And when the Prius is going downhill, let's use that kinetic energy created by the spinning of the wheels and store that in the battery too, to power the car when it wants to go uphill." [11]

This is amazing; it is new model of systemic approach from an incremental change as a whole. Let us now try to uncover the major ideological, political, sociological and anthropological gaps, discrepancies and obstacles.

11 Thomas L. Friedman – "Hot, Flat and Crowded"; London. Penguin Books (2009) p. 255.

WAY FORWARD

3.0 FILLING THE GAPS, DISCREPANCIES, OBSTACLES AND MISSING LINKS

3.1 Deconstruction of Ignorance and False Perceptions on Climate Change

- Need for Tanzania and the EACE to see the deeper linkages between Climate Change and destruction of natural resources
- Need for radical behaviour change particularly towards handling solid waste (plastic, tin cans, etc.) – Ref. 4Rs: Reduce, Re-use, Recycle and Respect
- Need for the EAC to develop a proactive culture in responding to climate crises, e.g. NAPA, REDDs Strategic Plans
- Need to shift from the current syndromes on "none of my business", "business as usual", "busy bee", "the bottom line", etc.
- Need to bridge the information gap on matters of climate change and renewable energy, particularly at the Bottom of the Pyramid (BOP)
- Need for policy and decision makers on national and regional levels to move away from "talk shop workshops" on climate change issues, hence avoiding the "per diem interests and motives
- Need for the EAC to stop pointing fingers to the West as the only major source(s) of GHG emissions
- Need to synergize and spearhead national, regional, continental and global models, practices, legislation, frameworks, etc., with all stakeholders for a common good and sustainability of the earth and its resources

- Need for Tanzania and the EAC to assume greater accountability and responsibility, particularly in promoting RE and EE models as a whole
- Need for the EAC to set a special regional climate change agenda as a number one priority area whose impact are hard-hitting the poorest of the poor on a daily basis
- Need for the EAC to embark on and adopt a truly innovative and transformative energy model, such as the German model, hence shifting to more energy efficient and renewable energy models nationally and regionally
- Need to press the developed nations to shift from the "pledging syndrome" to the "commitment" stance
- Need to speak the same language particularly at COPs and in matters pertaining to climate change finance – REDDs, CDMs, etc.
- Need for systemic and systematic efficiency revolution in the EAC, particularly in responding to the climate change and energy challenges for a better life, less pollution rates, security, peace and justice with the Mother Earth

Lastly, here are some few questions for reflecting and action. Do we know that the time for talking has passed? Is the EAC going to map COP 21 a success story? Are we ready to build the momentum and get ready for business as the business of business is business? Has the EAC fully involved the negotiating potentials (FBOs, CBOs, academia, private sector, etc.)? Do we agree that failure is not an option? Has economics beaten politics? Do we agree that less is more? Are the answers against a further rise in mean climate temperatures in Paris or in our hearts and minds?

CONCLUSION

Our critical analysis, particularly in unveiling the impact and linkages between climate change on resources and renewable energy cannot be exaggerated. There is a profound link – the Nexus – which is the dependency and interdependency mechanism among them. As Tanzanians and East African citizens, politicians, academicians, FBOs and CBOs, we carry a huge responsibility particularly in the quest for sustainable solutions to the ever-growing crisis of climate change, resource overuse, conflict resolution and socio-economic welfare.

Allow me to conclude my paper by inspiring the words of Pope Francis as echoed in his painstaking Encyclical Letter "Laudato Si Me" ("Praise be to you my Lord"). Indeed. Statistically, this Encyclical Letter has won and touched the minds and hearts of heads states, climate scientists, academicians, politicians, policy makers, business leaders and people from all walks of life and faith!

The Pope says "Given the complexity of the ecological crisis and its multiple cause, we need to realize that the solutions will not emerge from just one way of interpreting and transforming reality. Respect must also be shown for the various cultural riches of different people; their art and poetry, their interior life and spirituality…"[12]

Lastly but not least, let us know if the rich or the pore ignore this call, we are all going to sink. Definitely, some of us will sink earlier and some of us will sink much later. Let us not wait until it is too late to jump from this sinking boat.

12 Encyclical Letter "Laudato Si Me" – No. 63.

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4.2 Climate Finance: An Overview of Opportunities and Challenges for the East African Region

4.2.1 The Global Climate Finance Architecture: Principles, Criteria and Status Quo

[Celline Achieng Oduor, Project Coordinator, East African Wild Life Society]

Definition/Characterization of Climate Finance

The United Nations Framework Convention on Climate Change (UNFCCC) does not have a definition of climate finance. However: Data collectors and aggregators use different operational definitions but with common elements. (*From the 2014 Biennial Assessment and Overview of Climate Finance Flows Report- UNFCCC Committee on Finance)*

Definition by Data Collectors and Aggregators

"Climate finance aims at reducing emissions, and enhancing sinks of greenhouse gases and at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts".

A Narrow Definition

- Might include finance that supports discrete climate activities,
- but excludes activities in which climate considerations are

mainstreamed into traditional development assistance through a "climate-proofing" process.

A Broader Definition

- Might include some or all of the finance toward any development project that includes climate benefits.

Overview of Climate Finance Channels/Funds That Are Available Globally

Channels of Flow of Climate Finance

1. Multilateral Climate Funds: dedicated to address climate change.
2. Bilateral Development Assistance Institutions: done by several developed countries.
3. National Funds to receive Climate Finance: many developing countries, in form of grants and concessional loans, to guarantees and private equity.

Multilateral Climate Funds

1. Global Environment Facility (GEF)
2. Adaptation Fund (AF)
3. Climate Investment Funds (CIFs)
4. Multilateral Development Banks (MDBs)

1. Global Environment Facility (GEF)

It was established in 1991 and allocates resources according to the impacts of dollars spent on environmental outcomes, but ensures that all developing countries have a share of the funding.

- ✓ Under the 5th replenishment (2011-2014): 40 donor countries pledged US$ 1.35 Billion to the Climate Change Focal area.
- ✓ GEF had approved US$ 799 for 232 projects.
- ✓ The 6th replenishment (201-2018) will allow GEF to make an estimated US$ 3 Billion available for climate change.
- ✓ With 30 donor countries pledging US$ 4.43 Billion over all focal areas

This breaks from contributor country-dominated governance structures, typical in development finance institutions. So, what is the Advantage of this?

- It gives developing country governments greater voice and representation in decision-making.
- Besides, steps to increase inclusion and accountability in multilateral fund governance have also been taken. This includes creating a role for Non-Governmental stakeholders as observers to fund meetings with varying degrees of active participation opportunities.

The GEF also administers:

i. The Least Developed Countries Fund (LDCF); has approved US$ 733 million since inception in 2002 and;

ii. The Special Climate Change Fund (SCCF); approved US$ 254 million since 2002 both across 90 countries.

Both work under the guidance of the UNFCCC-COP. Functions of these two funds are to support national adaptation plan development and their implementation, although through smaller scale projects (country ceiling of US$ 20 million).

2. Adaptation Fund

The Adaptation Fund (AF) (also formally linked to the UNFCCC) is operational since 2009.

- Formally financed through a levy of 2% on the sale of emission credits from the Clean Development Mechanism of the Kyoto Protocol.
- Total capitalization including least developed countries' commitments is US$ 642 million.
- AF pioneered direct access to finance for developing countries through National Implementing Entities to enable them meet agreed fiduciary standards as opposed to working through UN agencies and Multilateral Development Banks (MDBs) as multilateral implementing agencies.

3. Climate Investment Funds

The Climate Investment Funds (CIF) was established in 2008 and administered by the World Bank but operates with regional development banks including:

i. African Development Bank (AfDB)

ii. Asian Development Bank (ADB)

iii. The European Bank for Reconstruction and Development (EBRD)

iv. The Inter-American Development Bank (IDB)

The CIFs finance programmatic interventions in selected developing countries with the objective of improving understanding of how public finance is best deployed at scale to assist transformation of development trajectories.

The CIF has a total pledge of US$ 7.52 Billion including:

- Clean Technology Fund; US$ 5.2 Billion
- Strategic Climate Fund composed of the Pilot Program for Climate Resilience (PPCR); US$ 1.16 billion
- Forest Investment Program (FIP); US$ 0.6 Billion
- Scaling-up Renewable Energy for Low Income Countries (SREP); US$ 0.5 Billion.

4. Multilateral Development Banks (MDBs)

i. The WORLD BANK

ii. African Development Bank

Many have incorporated climate finance considerations into their core lending and operations and now administer climate finance initiatives with a regional and thematic scope.

The World Bank

- The World Banks's carbon finance unit has established the Forest Carbon Partnership Facility (FCPF) to explore how carbon market revenues could be harnessed to reduce emissions from deforestation and forest degradation.

- The World Bank also manages the Partnership for Market Readiness aimed at helping developing countries establish market based mechanisms to respond to climate change.
- Bio Carbon Fun: a PPP that mobilizes finance for sequestration or conservation of carbon in the land use sector.

African Development Bank

The African Development Bank administers:

i. The Congo Basin Forest Fund (CBFF) and;

ii. The European Investment Bank the EU Global Energy Efficiency and Renewable Energy Fund (GEEREF).

iii. Also aims to enhance climate finance readiness in African countries through the African Climate Change Fund (ACCF).

Summary of Multilateral Climate Finance

- Both the MDBs and UN Agencies act as implementing entities for the GEF, SCCF, LDCF, and the AF.
- UN Agencies commonly take on the role of administrator and/or intermediary of climate finance.
- The UN-REDD Programme, operational in 2008, brings together UNDP, UNEP, and the FAO to support REDD+ activities with the governance structure giving representatives of Civil Society and Indigenous People's Organizations a formal voice.
- In addition, the International Fund for Agriculture and Development now administers the Adaptation for Smallholder Agriculture Programme.

Bilateral Channels for Climate Finance

1. Germany's International Climate Initiative: has approved US$ 1.1 Billion for a total of 377 mitigation, adaptation, REDD+ projects.

2. The UK's International Climate Fund: has pledged US$ 5.95 Billion. It has channelled the majority of its deposited US$ 1.32 billion through CIF; but reviewing the strategy.

3. Together with Germany, the UK also contributes to the NAMA Facility that supports nationally appropriate mitigation actions (NAMA) in developing countries and emerging economies.

4. Norway's International Forest Climate Initiative: has approved US$ 305 million through bilateral channels up to 2012. Sizeable pledges have been made for REDD+ activities in Brazil, Indonesia, Tanzania, and Guyana.

5. Australia has approved US$ 126 million through its International Forest Carbon Initiative (IFCI) with the main recipients being Papua New Guinea and Indonesia.

Although the Initiative was terminated in 2012.

National Climate Change Funds

- Sourced through international finance and/or domestic budget allocations and the domestic private sector.
- Indonesian Climate Change Trust Fund
- Brazil's Amazon Fund, administered by the Brazilian National Development Bank (BNDES); largest national climate fund with a commitment of more than US$ 1 billion from Norway.
- There are also national climate change funds in Guyana, Bangladesh, the Philippines, Rwanda, Kenya and Mexico.

- Many more countries have proposed national climate funds in their climate change strategies and action plans.
- NB: In many cases, UNDP has acted as the administrator of national funds, increasing donor trust that god fiduciary standards will be met.

Status Quo on Multilateral, Bilateral, National, Private Sector Channels/Funds

Multilateral Climate Funding	UNFCCC Fund	MDB Finance	Climate related ODA
US$ 1.5 billion annually	US$ 0.6 billion annually	US$±15-23	US$± 19.5-23

All financial flows from developed counties (including both public and 14private flows of finance)	Flows to developing countries through public institutions	Other official flows
± 40-175 billion annually	± 35-50 billion annually	± 14-15

Outlook - What is expected for the future pertaining to the development of climate finance?

- The Green Climate Fund (GCF) of the UNFCCC was agreed at the Durban COP, and is expected to become the primary channel through which international public climate finance will flow over time.
- The initial resource mobilization process for the GCF, which is in its full stages, is seeking to raise at least US$ 10 Billion.

- The GCF could begin to fund programmes and projects in late 2015.
- Countries can access the GCF both through MDBs and the UN agencies, as well as directly through accredited National, Regional and Sub-National Implementing Entities.
- To date, US$ 2.30 Billion has been pledged to the GCF.

4.2.2 Climate Finance in the EAC – Perspectives and the EAC Climate Change Fund

[Brian Otiende, Climate Change Coordinator, East African Community Secretariat]

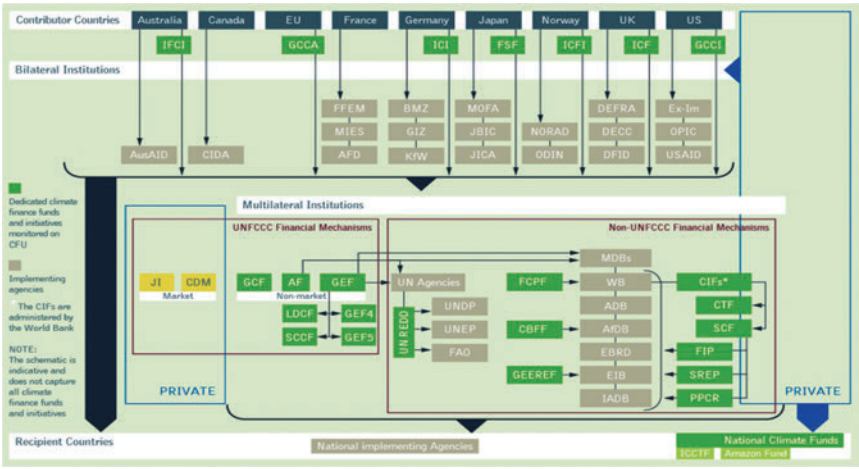
Introduction & Context

- The average cost of climate change on African economies is estimated at 1.5 -3% of GDP by 2030 and is protected to rise.
- Current warming could result to climate change adaptation costs rise to US$50 bn/yr by 2050, despite international efforts keep

global warming below 2°C this century (2nd Africa's Adaptation Gap/UNEP's Emissions Gap Report 2014, UNEP's Global Adaptation Gap Report 2014)

- Adaptation costs in developing countries cumulatively could rise as high as US$250-500bn/year by 2050.

The Architecture of Climate Funds



Source: www.climatefundsupdate.org

Climate Change Financing in EAC

- The EAC Climate Change Policy calls for adequate, sustainable and predictable finance to implement climate change initiatives, projects and programmes.
- The Policy requires instituting appropriate measures for ensuring equity in the allocation of funds, based on needs and according to vulnerability criteria.
- This could be achieved through development of effective mechanisms and systems to ensure transparency and accountability.
- The Policy further requires Partner States to:

- jointly engage in financial resource mobilization to support climate change adaptation and mitigation interventions; and
- establish and operationalize the EAC Climate Change Fund as a financial mechanism to support climate change response in the region.

Aim and Objective

- Explore mechanisms to support EAC's climate change financing options by strengthening regional and national institutional capacities to mobilize climate change resources and creation of the enabling environment for accessing funds.
- Specific Objectives
  - develop appropriate resource mobilization strategies, plans and putting in place requisite legal and institutional framework for climate change financing
  - enhance climate change institutional, technical and project development and implementation capacities

Status of CC Financing Mechanisms in EAC Partner States

- Rwanda's Ministry of Natural Resources (MINIRENA) has been approved as the National Implementing Entity (NIE) for the Adaptation Fund established under the UNFCCC.
- In 2012, Rwanda established a National Fund for Environment (FONERWA) as the national financing mechanism for all environment, climate change and natural resources projects and programmes. The Environment Fund shall be resourced through development partners and national budget to be raised through environmental taxes among other sources.
- Kenya's National Environment Management Authority's (NEMA) application as the National Implementing Entity (NIE) was accepted by the Adaptation Fund Board in March 2012. Kenya

also proposes to adopt a climate finance strategy and establish an appropriate fund mechanism.

- Uganda's Ministry of Finance, Planning and Economic Development through the Aid Liaison Department is coordinating Uganda's initiative in identifying a National Implementing Entity (NIE).
- Several institutions including the National Environmental Management Authority, Ministry of Water and Environment are under consideration. In the meantime other Multilateral Implementing Entities (MIE) such as UNDP can be used to access funds from the Adaptation Fund. The Ministry of Finance, Planning and Economic Development through the Aid Liaison Department is serving on interim basis.
- The United Republic of Tanzania's application for NIE has been submitted and the assessment process is ongoing. Tanzania has also initiated the process of establishing a National Climate Change Fund.
- Burundi: yet to commence.

EAC Climate Change Fund – Rationale

- Multiple challenges related to climate change financing: inadequacy, inaccessibility, unpredictability and unsustainability, equitability, additionality, co-financing conditionalities, and high transaction costs, especially for mitigation actions and delivery mechanisms.
- Uganda has changed her implementing agency under the Global Environment Facility (GEF) from UNEP to the African Development Bank (AfDB).
- The Report of the Chairperson of the Committee on African Heads of State and Government on Climate Change (CAHOSCC) on the WPCCAA presented to the 23rd Ordinary Session of the AU Summit held from 26th-27th June 2014 in Malabo, Equatorial Guinea indicates:

- that the level of financing required for climate resilience and low carbon development pathway cannot be available from Africa's domestic resources;
- notes with concern the lack of institutional arrangements to access climate finance.

- CAHOSCC urged Member States to put in place systems and structures for Africa to take full advantage of global mechanisms for climate adaptation and mitigation. These include National Designated Authorities, National Implementing Entities, and Regional Implementing Entities to facilitate access and utilization of financial resources.

EAC Climate Change Fund

- EAC Climate Change Fund (2010): established by 20th CoM (EAC/CM 20/Decision 30)
- Operational Modalities for the EAC Climate Change Fund *(EAC/CM 27/Decision 28)*
- Aim: to address the inadequate, unsustainable, unpredictable and inaccessibility of climate change funding to support regional climate change priorities as identified and elaborated in the EAC Climate Change Policy, Strategy and Master Plan (Adaptation, Mitigation, Capacity Building and other Cross-Cutting Issues).
- The Fund is considered as one of the means to implement chapter four of the EAC Climate Change Policy - institutional and financing framework, and the EALA Report and Resolution on Climate Change.
- The Fund is further expected to complement existing EAC financing instruments through ensuring that adequate, reliable, predictable and sustainable financial climate change finances are secured to cushion the region from the adverse impacts of climate change and take advantage of opportunities emerging from Carbon Trading.

Fund Objectives

- Identify, develop and operationalize strategies for mobilizing financial resources for regional climate change activities;
- Enhance EAC's technical and institutional capacities to effectively coordinate climate change projects and programmes;
- Enhance and strengthen the regional and national capacities to access direct funding from existing and emerging regional and international climate change finance mechanism through:
    - Regional Implementing Entity (RIE)
    - National Implementing Entities (NIE).

Establishment – Governance and Institutional Arrangement

- The Fund shall initially be established under the Directorate of Productive and Social Sectors at the EAC Secretariat to coordinate the urgent need to mobilize financial resources to implement the EAC Climate Change Strategy and Master Plan.
- The Fund may evolve into an autonomous entity as an institution of the EAC depending on its growth and turnover, and as may be determined by the Council of Ministers.
- Appropriate governance structures shall be established to ensure high level accountability and transparency for the efficient operations and reporting of the Fund's activities.
- The Fund shall be governed by EAC Financial Rules and Regulations.
- The governance, management and reporting structures of the Fund will be subjected to an annual reviews including financial audit, in accordance with the EAC Financial Rules and Regulations.
- Establishment shall be in conformity with the EAC Finance Rules and Regulations to ensure fiduciary standards relating to financial management, audit and procurement systems of Fund are adhered to.

- Operational and legal documents such as a Financial Manual for the Fund, Work Plan and Budget will be developed.
- Operational Modalities for the Fund are already in place.

Governance Structures

- Council of Ministers
- Steering Committee
- Technical Committees (Productive, Social and Infrastructural)
- Fund Administrator
- Secretarial Support shall be provided by the EAC Secretariat - Department of Environment and Natural Resources - CCC Unit and Resource Mobilization Unit

Project Eligibility Criteria

- Demonstrate trans boundary or regional impact;
- Sustainability;
- Environmental and Social Impact Assessments as appropriate;
- Demonstrate tangible benefits to the local communities;
- Promote the development of institutional capacities for implementation of national climate change adaptation and mitigation plans and strategies, Clean Development Mechanisms (CDM) projects, preparation and implementation of National Appropriate Mitigation Actions (NAMAs), Renewable energy projects, as well as other relevant adaptation and mitigation projects
- Promote the development and transfer of technology that maximizes environmental benefit while complementing the social, economic and technological aspects of EAC Partner States;
- Be consistent with the requirements of other international environmental agreements and acceptable international human rights norms;

- Gender mainstreaming;
- The principle of equity shall be applied in project approval among the Partner States.

Potential Sources of Funding

- International Funds: Multi-lateral and bilateral
- Public Funds: Partner States Contributions
- Other innovative sources of funding: private sector financing – including Public Private Partnerships (PPPs) and Corporate Social Responsibility investments; donations by non-government actors. A specific study on other feasible and innovative sources beyond the conventional sources may be necessary in this regard.

Ongoing Regional Efforts

- Support EAC's accreditation as an RIE was approved by the 3rd Meeting of the Sectoral Council on Environment and Natural Resources held in Bujumbura on 31st January 2014;
- A road map/work plan for undertaking the process and a Concept Paper for EAC Climate Finance Readiness Activities developed;
- The Climate Finance Programme commissioned by German's Federal Ministry of Economic Cooperation and Development (BMZ). The programme is being implemented bilaterally between GIZ and KfW Development Bank;
- The Africa Climate Change Fund (ACCF): launched on 16th April 2014 under AfDB -Energy, Environment and Climate Change (minimum of US$ 250,000) - Climate Finance Readiness Activities;
- €4.725 million contribution from the Federal Government of Germany for an initial three-year period. The aim of the Fund is to scale-up a multi-donor trust fund as at least one new donor commits to join.

Accreditation Requirements

- Sound financial management principles for the Adaptation Fund established (Decision 5/CMP.2) - use of international fiduciary standards - governing the use, disbursement and reporting on funds issued by the AF covering three broad areas
  - o *Financial Integrity and Management*
  - o *Institutional Capacity*
  - o *Project/ Program Management Capacity*
  - o *Transparency and Self-investigative Powers*
- Green Climate Fund
  - o *Fiduciary Standards- Basic and Specialized*
  - o *Environmental and Social Safeguards (ESS)*

Status of NIE, RIEs and MIEs

National Implementing Entities (NIEs) – 17	Regional Implementing Entities (RIEs) - 4	Multi-lateral Implementing Entities (MIEs)- 11
• Centre de Suivi Ecologique, Senegal	• West African Development Bank (BOAD), Togo	• Inter-American Development Bank (IDB), USA
• South African National Biodiversity, Institute, South Africa	• Observatoire du Sahara et du Sahel Sahara and Sahel Observatory (OSS), Tunisia	• Asian Development Bank (ADB), Philippines
• Agency for Agricultural Development, Morocco	• Secretariat of the Pacific Regional Environment Programme (SPREP), Samoa	• United Nations Environment Programme (UNEP), Kenya

• Ministry of Planning and International Cooperation, Jordan	• The Corporacion Andina de Fomento (CAF), Venezuela	• United Nations Development Bank (UNDP), USA
• Protected Areas Conservation Trust (PACT); Belize		• International Fund for Agricultural Development (IFAD), Italy
• National Environment Fund, Benin;		• United Nations World Food Programme (WFP), Italy
• Planning Institute of Jamaica, Jamaica		• World Bank (International Bank for Reconstruction and Development), USA
• Agencia Nacional de Investigacion e Innovacion, Uruguay		• World Meteorological Organization (WMO), Switzerland
• Mexican Institute of Water Technology (IMTA), Mexico		• African Development Bank (AfDB), Tunisia
• Ministry of Natural Resources (MINIRENA), Rwanda		• United Nations Educational, Scientific, and Cultural Organization (UNESCO), France

• National Environmental Management Authority (NEMA), Kenya		• The European Bank for Reconstruction and Development (EBRD), London
• Unit for Rural Change – (UCAR), Argentina		
• National Bank for Agriculture and Rural Development		
• National Bank for Agriculture and Rural Development, India		
• Agencia de Cooperación Internacional de Chile, Chile		
• Fundecooperacion Para el Desarollo Sostenible, Costa Rica		
• Peruvian Trust Fund for National Parks and Protected Areas (PROFO-NANPE), Peru - NIE		

Conclusions

- Operationalization of the EAC Climate Change Fund (EAC-CCF);
- Accreditation of the EAC as Regional Implementing Entity (RIE): facilitate direct access modalities for climate change and strengthening National Implementing Entity (NIE);
- Development of a concrete adaptation and mitigation projects; and
- Formulation and enactment of an EAC Climate Change Bill.

4.3 Climate Finance and the Use of Natural Resources and Renewable Energies in the EAC: National Perspectives

4.3.1 The Rwandan Perspective

[Jules Kazungu, Senior Program Officer in charge of Energy, Climate Change and Chemical Management, Rwanda Bamboo Organisation]

Brief Country Profile

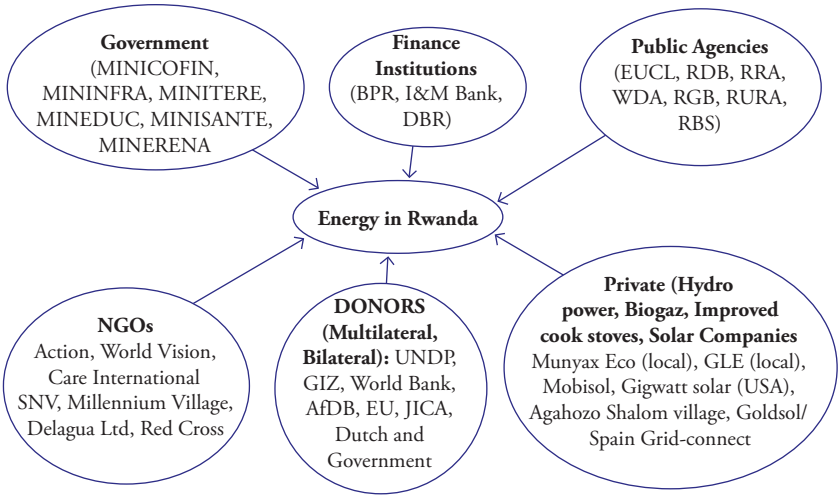
- Geographical coverage of 26,338 km2 and a population of about 10.5 million people - implying the highest density in Africa (416 people/Km^2)
- Rwanda is bordered in the North by Uganda, East by Tanzania, South by Burundi and DRC in the West.
- The country was almost destroyed in all aspects by the 1994 genocide against the Tutsi, but is on an upward rise in every area thanks to the direction provided by the leadership of Rwanda.
- Rwanda's economy depends mostly on agriculture which employs over 70% of the population.
- EDPRS 2 as a medium-term strategy (2013-2018) aims for better quality of life for all Rwandans by driving the country to middle

income status and putting Rwanda on the path to meeting the MDGs and the Vision 2020 targets.

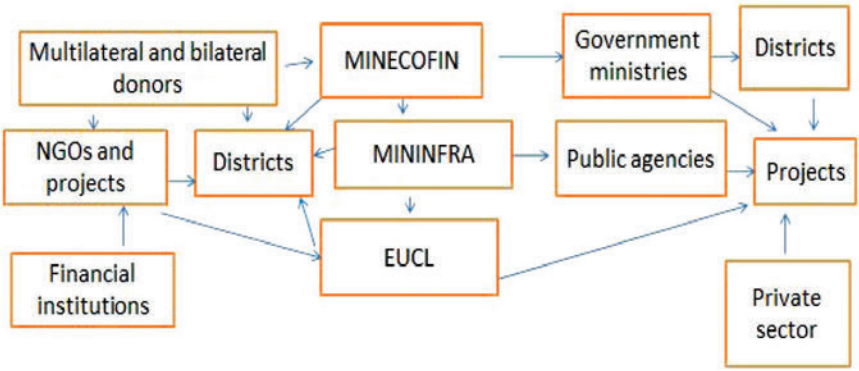
Overview of natural resources and renewable energy in Rwanda

- The NR are available and the energy sector is pivotal to the Rwandan economy.
- The main consumers are households (91%), which mainly use energy in the form of traditional fuels such as wood, followed by the transport sector (4%), industry (3%), and public services (2%).
- Some of the largest source of Energy resources in Rwanda: hydropower, solar, methane gas, peat, geothermal, biomass and waste.
- However, the Government resources alone are inadequate to meet the large investment requirements of scaling up E/RE services.
- Therefore, mobilizing multilateral and bilateral financing institutions is vital for ensuring a sustainable development of RE market in Rwanda and Africa.

Overview of Energy sources of funds that are available in Rwanda



Operationalization of fund for Energy in Rwanda



- Total financing requirement for remaining 4 years (2014-2018) of the energy sector plan is estimated at roughly US$4 bn.
- The total financing requirements are split between: public (US$ 2 bn or 48%), private sector (US$ 1.5bn or 30%), development partners (US$ 771 m or 19%) and district contributions to East African Power Pool (EARP) ($87 m or 2%).

Channel of Climate finance

- The Climate finance in Rwanda is under the National Fund for Environment abbreviated as FONERWA in French under Organic Law No 04/2005 determining the modalities of protection, conservation and promotion of environment in Rwanda.
- The ultimate purpose of the fund is to spearhead resource mobilization from diverse sources so that it grows to meet the growing needs of the country.
- A key point to be emphasized is that the Fund is not a mere bank account but an institutional framework that carries out relevant activities to raise funds.

- In order to achieve this, it has been proposed that its financial structure should allow for diversity of potential funding modalities, particularly the sinking funds, revolving funds and endowment funds.
- Equally, flexibility of channel of climate finance should be given to allow the Fund to receive earmarked funds from donors, international NGOs and the private sector.
- These funds will support NGOs and private sector including Rwanda Bamboo Organization (RBO) to address climate change and active participation opportunities.

Examples of energy projects funded in Rwanda

Key Drivers and Lessons Learned

- Rwanda has holistic environmental planning under which the environment is highlighted as a cross-cutting concern in leading strategic and policy documents, including Vision 2020, EDPRS and various high-profile government programs to achieve MDGs.

- Strong legal, programs, projects, and institutional frameworks on RE, adaptation to climate change such as:Banning of non-biodegradable plastic bags, protection of river banks and lake, use and management of land preserving wetlands and forests ,tree plantation programs and Rainwater harvesting in public and private institutions) to ensure environmental sustainability.

Challenges

- A significant number of people in Rwanda live without access to electricity and ensuring financial sustainability of network investments
- Increases pressure of population on resources (such as forests, land, water and ecosystems resulting in increased deforestation, loss of biodiversity, land degradation through erosion and loss of soil fertility).
- Increased population also very much relates to accelerating urbanization which causes greater amounts of waste and carbon emission and thus increased levels of pollution.
- Capacity to deliver the electricity infrastructure (Project development, M&E) require skilled and experienced managers and efficient coordination).

Future perspectives of energy sector in Rwanda

- Minimising the environmental impacts of energy provision system including biomass, peat, hydro, methane and fossil fuels.
- Increase household access to grid electricity to 48% and access to off-grid electricity to 22%.
- Reduce the carbon intensity of the grid by 10% by 2018, and 25% by 2025.
- Ensure 80% of all households employ Renewable energy (clean cooking energy technologies).

- Ensure the necessary infrastructure is in place to meet current petroleum strategic reserve requirements.
- Therefore, mobilizing multilateral and bilateral financing institutions is vital for ensuring a sustainable development of RE market in Africa.

Conclusions

- Increasing rural access to clean electricity in order to support the increase of employment levels;
- Increasing investment in renewable energy production and distribution;
- Increasing investment in RE aimed at proliferating technology, techniques and capacity for energy efficiency;
- Providing technical assistance and preparation costs (feasibility studies) to bring sustainable environment/renewable.

4.3.2 The Burundian Perspective

[Aime Claude Ntahorwamiye, Technical Adviser, Ministry of Finances and Economic Development Planning, Burundi]

At the level of Burundi, the concepts of green economy and green development refers to current trends in production and consumption, in order to secure sustainable development in the medium and long term, while preserving natural resources.

The green economy covers all socio-economic activities directly or indirectly related to environmental protection. It takes into consideration the management of natural resources, development and utilization of new and renewable energy, adaptation and mitigation of climate change, risk prevention and management of non-biodegradable waste.

The main development partners working in the field of natural resources and renewable energy are:

- The Government of Burundi
- World Bank
- UNDP
- NGOs
- AFDB
- Japan (JICA)
- KFW

The Burundi government and development partners finance the natural resource sectors and renewable energy through programs and projects. The total amount estimated at the two sectors is $ 105,652,320 for three years.

For the program of the Conservation and Protection of Soil, projects that are financed are:

- Watershed Protection
- Promotion of agro forestry
- Degraded Environments Rehabilitation Project in the Congo Basin
- Lake Victoria Environment Management Project

For the program of the Protection of Forests, Afforestation and Biodiversity main projects funded are:

- Environmental Education Program
- Reforestation of degraded land by encouraging the planting of indigenous tree species, xerophytes and pyrophytes

Concerning the Promotion of new and renewable energy projects planned to be implemented are:

- Electrification by photovoltaic solar energy in the city of Bujumbura

- Rehabilitation and expansion of biogas installations to public authorities
- Construction of a peat carbonization plant

Does climate finance help boost a sustainable use of natural resources and renewable energy in Burundi?

- The National Action Plan for Climate Change Adaptation (NAPA) highlights priority adaptation measures in the short term to address climate change and rational use of natural resources and promotion of new and renewable energy but NAPA funding remains problematic.
- With this situation, Burundi has already submitted projects to the Green Climate Fund concerning the rational use of natural resources and renewable energy financing and waits for the response of the green climate fund.
- It also intends to approach other development partners to implement the NAPA document and other strategies for the rational use of natural resources and new and renewable energy.

As Member of the East African Community, Burundi adheres to the Climate Change Policy of the East African Community and the respective action plan and the EAC Protocol on Environment and Natural Resources Management.

It contributes to participate in the realization of regional projects and programs to reduce emissions of greenhouse gases, increase the hydro potential in EAC and participate in programs and projects fighting against the irrational use of natural resources and supporting the promotion of new renewable energies.

As perspective for promoting a green economy in the energy sector, Burundi is committed to:

- Improve the wood energy sector while safeguarding the environment, by:
  - o The promotion and training with regard to improved carbonization techniques and improved stoves (wood/charcoal);
  - o Encouraging alternatives to charcoal as a source of energy for households, such as peat briquettes, the briquettes made from household waste, agricultural waste, artisanal solar homes, etc;
- Adopt and implement a systematic policy of reforestation to offset logging for energy purposes (one tree cut, two trees planted);
- Promote research and development in the field of renewable energy (solar, ethanol and wind power);
- Promote the electrification of rural health centers and schools for solar photovoltaic;
- Exempting solar equipment from import duties;
- Emphasize the value of hydropower potential development by building micro hydro and investment in renewable energy to meet the needs of modern energy.

4.3.3 The Ugandan Perspective

[Andrew Masaba, Senior Economist/Climate Finance Desk, Ministry of Finance, Planning and Economic Development, Uganda]

Overview of the Natural Resources and Renewable Energies

- For Uganda, Environmental endowment: water resources and wetlands, biodiversity and ecosystem health, land resources, fisheries resources, forests and oil and gas resources.
- Increasing challenges
- Renewable energy resources: include plentiful woody and non-

woody biomass, solar, wind, geothermal and hydrological resources (MEMD, 2007). The hydro resources range from large-scale to mini-, micro- and pico-scale.

- With the exception of biomass, RE potential is underexploited. RE sources of energy, excluding large hydropower contribute 2 per cent of Uganda's total energy consumption.
- Biomass: over 93 % of the energy consumed (NEMA); very low energy efficiency.
- Firewood, charcoal and crop residues provide almost all the energy used. However, fuelwood requirements have contributed to the degradation of forests, as wood reserves are depleted rapidly.
- Bagasse (fibrous residue) is burnt in Uganda to produce electricity and steam (cogeneration).
- Biomass-based power generation in Uganda is increasingly becoming economical and cheaper than thermal power based on fossil fuels.
- Solar power: Plenty of sunshine throughout the year (insolation) of 4–5kWh per square metre per day.
- Wind energy: wind speed in most areas of Uganda is moderate, with average wind speeds in low heights (less than 10m) ranging from 1.8 metres per second (m/s) to about 4m/s. Average wind speed is about 3m/s.
- Geothermal energy: possible renewable energy source in Uganda
- Peat: volume of about 250 million oil-equivalent tonnes exists in Uganda mainly in the west and southwest.

Entry Point of MoFPED as NDA

- Ministry of Finance, Planning and Economic Development (MoFPED) to mobilise Development Support is stipulated in Public Finance Management Act (PFMA) 2015. All financial arrangements need to be concluded with MoPFED.

- Coordinate all stakeholders both Govt. and non-state actors, Communicate directly to GCF Secretariat matters relating to accreditation of Implementing Entities and provides No objection. Ensure accreditation of Implementing Entities, Ensure Prog/ Projects adherence to both the national and funding agency (GCF) investment selection criteria.

Climate Finance/Existing opportunities

- The global climate finances flow through multilateral channels both within and outside the UNFCCC financing mechanisms and bilateral channels.
- Examples of Non-UNFCCC Financial mechanism include World Bank, UNDP, UNEP, FAO.
- Examples of bilateral channels are European Union, Australia, Germany, Norway, United Kingdom, Japan and United States of America.
- Just like other Developing countries: prefer public source (reliable/ predictable).
- GEF: Global Environment Facility

Climate Financing Windows in Uganda

- The Green Climate Fund (GCF) primary channel through which international climate finance (public & private sources) will flow - Hope?
- Country-driven approach, to balance adaptation and mitigation finance, allow direct access and have a private sector facility.
- Adaptation Fund (AF): continuing the accreditation process for the National Implementing Entity (Ministry of Water & Environment) and UNEP.
- Green Climate Fund (GCF): GIZ consultants - Preparation of Climate Finance Readiness activities to support both the National

Designated Authority (NDA) and the National Implementing Entity (NIE).

The Uganda Situation

- Low levels of Multilateral Climate financing to Uganda; received only $49m in multilateral climate finance since 2002.
- Funding through the Global Environmental Facility (GEF), and its sub-funds, for the development of National Adaptation Programmes of Action (UNEP), an early warning system for the Uganda National Meteorological Authority (UNDP), a water and sanitation project (AfDB), and a food security project (UNIDO). The FAO has an application pending for a food security and water catchment project. Total flows through GEF have amounted to $34m between 2002 and 2015, at an average of $2.85m per year.
- Ministry of Water and Environment has submitted an application for water catchment areas.
- Obtained approvals from the Least Developed Country Fund (LDCF) through ADB, UNEP, UNIDO and UNDP.
- SAHEL, a regional organisation accredited to access funds directly from the Adaptation Fund, without going through GEF.
- Funding from the Global Climate Change Alliance (GCCA) is administered by the EC and has been accessed by the FAO for a livestock programme. In 2011 Uganda accessed $14.67m in disbursements from the GCCA.
- The UK International Climate Fund (ICF): GETFiT programme (£49.5m), the Resilience in Karamoja programme (£38.5million) and the NuTech climate-smart agriculture programme in the north (£58m). Amongst other bilaterals, Norway and Japan are also providers of bilateral climate finance though on a smaller scale.
- Norway noted it has limited funding for very small projects and limited involvement; JICA provides support for a wetlands programme in Eastern Uganda.

- The GCCA has disbursed $14.67m of approvals of $20.67 for adaptation to climate change; the Forest Carbon Partnership Facility (FCPF) has disbursed $0.47m of $3.8m approved for readiness preparation which is accessed through the FAO Redd Plus programme.
- The Adaptation for Smallholder Agriculture Programme (ASAP) has approved $10m for the Programme for the Restoration of Livelihoods in the Northern Region (PRELNOR) managed by FAO (although DFID noted IFAD and CGIAR as implementers) but has yet to disburse; and the UK's International Climate Fund has made approvals of $1.9m but no disbursements.
- In 2012, GoU started taking steps to access multilateral Climate Finance directly. UNDP support from to attain accreditation to access both GEF and the Adaptation Fund directly.
- GoU has experienced problems in accessing the Adaptation Fund. In 2013 a large water project submission by GoU to the Adaptation Fund was rejected. New application through SAHEL in 2015.
- GoU is also receiving support from GIZ and KfW to be accredited to the Green Climate Funds. Accreditation steps include the development of a climate change strategy, the establishment of a designated national authority (NDA), and a national implementing agency (NIE).

Lessons learned

- At country level, set up NDA Climate Finance Inter-Ministerial Standing Committee.
- Both NIE and NDA will collaborate with both KfW and UNDP to develop concept notes/prepare Projects/Programme proposal for pipeline projects for submission to both the Green Climate Fund and the Adaptation Fund.
- Uganda has submitted its NIE Application for the Adaptation Fund.

- Still need for Readiness programmes (Time consuming, unclear processes).

Lessons learned/Action Points (NDA)

- Regional and International discussions are therefore important to ensure jointed efforts (EAC Climate Change Fund).
- EAC heads of state discussions
- National Ownership is obtained through consultations.
- Regional and International buy in is got by forming cross border Partnerships for Development.
- EAC Energy Regional Centre of Excellence, Sustainable energy for Africa

Conclusion

The effectiveness of Development Assistance towards Climate Change requires strengthened effort by both the development partners and partner countries.

Our approach was to mainstream CC issues into Budgeting process, the Vision 2040, NDP II, and now with the SDGs domesticated into the NDP II, and an enabling Legal Framework, we should seek partnerships to be able to easily attract and effectively use Development Assistance for Climate Change activities, including natural resources and RE.

4.4 Challenges of Climate Finance in the Light of Renewable Energies and Sustainable Use of Natural Resources: The Role of East African Civil Society and the Private Sector

4.4.1 The Role of East African Civil Society Organisations

[Edward Paul Munaaba, Executive Director, African Partnership on Climate Change Coalition]

Background of APCCC

- APCCC is a trans-boundary Non-governmental Organization operating in Tanzania, Uganda and Malawi. The organization was formed as a response to low public awareness on climate change and poor adaptive capacities of communities.
- Our mission is "To create awareness on climate change, mitigate factors that contribute to climate change and build the adaptive capacity of communities and institutions in Africa".
- Objectives:
    - Increase local awareness and knowledge of Climate Change.
    - Contribute to local and national efforts on measures to mitigate CC (i.e. usage of renewable energy, conservation of carbon sinks, promotion of CSA etc.).
    - Strengthening adaptive capacities of communities and institutions to climate change.

APCCC Experience in Climate Financing

- CC DARE Climate change capacity – Kagera (UNEP)
- Solar cooker projects in Temeke, Muleba Missenyi and Bukoba (EG Solar Germany)
- Forestation of Kagera river Banks, Establishment of school orchards (ARCOS)

- Green House Fruit Trees Multiplication (FTPF)
- Awareness and Publications (KAS-Tanzania)
- Community Solar lights installation (UNDP)

SMART project

The SMART project (Sustainable Measures and Restoration Techniques); whose aim is to conserve major carbon sink and to strengthen resilience of the buffer communities along the Kagera river.

APCCC Seedlings Multiplication Centre and distribution is a key component of SMART

APCCC/UNDP CADESE PROJECT

(Capacity Development in the Energy sector and Extractive Industries)

- Tanzania is experiencing an increasing scarcity of affordable, reliable, sustainable and efficient;
- Energy services particularly at household and institutional levels, which is a pre-requisite for ensuring sustainable livelihood and enhancing socio-economic development. Scarcity is mentioned to hinder development and significant realization of the MKUKUTA implementation goals;
- Aim: To improve the social and economic development of people living in off grid areas;
- Extending study hours for school children in the evenings;
- Providing security lighting in the night;
- Enhancing rural healthcare programs – increasing mortality rates;
- Enabling community productivity in the evenings thus creating a vibrant mini economy Improving social development by enabling youth sporting activities in the evenings.

Measures

i. Improving Lighting Solutions/products for educational facilities
ii. Improving Lighting Solutions for Health Facilities in off grid areas

Recruitment of local technicians

- Technical training of technicians
- Business model training and selection
- Training, troubleshooting, launching and handing over
- Signing of MoUs with the district council
- Monitoring and evaluation of project sites

Various Socio-economic Activities Powered by Community Light project

Challenges Climate financing

- Donor interest;
- Limited financial resources;
- Co-financing conditionality's;
- Peoples' reluctance –at the local level;
- High transaction costs (investment costs);

- Limitation to access of climate funds for project implementation (just piloted);
- Inadequate capacity to track climate finance opportunities.

Way Forward

It is worth to note that businesses, politicians, and average citizens depend on the planet for resources and comfort. Protecting our environment is of paramount importance to humanity's continued progress thereby prompting us to:

- Sensitize the communities to take on Renewable energy as a business not as service/commodity.
- Support institutions and communities to adopt solar energy.
- Build a capacity of local technicians, businesses CBOs and CSOs at grassroots level to take RETs as an employment.

Conclusion

While it is not possible in the immediate-to-near-future for every household in rural Tanzania to have a light bulb, it is very possible for each community to have a 'Community Light Center' where community members can meet their needs provided by sustainable modern energy services powered by the sun.

4.4.2 The Role of the Private Sector

[Lilian Awinja, Acting Executive Director, East Africa Business Council]

EAC Climate Change Policy

- EAC has a policy on Climate Change.
- However EABC has NOT had targeted work-plan to be able to take on this subject to engage the business community on the subject.

- EABC is a small organization with a big mandate.
- We are open to new ideas and partnerships to be able to play a role in these initiatives on climate change.
- EAC is yet to operationalize its climate change fund which we hope to leverage on.

RE Forum

- EABC holds a Renewable energy forum every two years which is aimed to encourage more investments into this area.
- The last forum was in 2014 - bringing together all renewable energy associations, the private sector and the public sector to find ways of improving uptake by the private sector to invest more in renewable energy.
- Forum is a platform to share best practices, attract more investment into the region, an exhibition to show-case what is available in the region.

EABC – EAC Media Awards

- Annual event that recognized journalists who consciously and consistently feature the East African Integration.
- One of the categories we focus on is environmental reporting – which basically highlights issues of environmental degradation include climate change effects across the region.

Differences in perception between the developed and the developing countries

- Strong perception that the developed countries are responsible for the bulk of GHG emissions leading to serious detrimental effects to the environment in the world.
- The view is that developing countries are suffering from past actions of developed nations which are responsible for greenhouse gas emissions.

- This leads to a strong leaning towards Development aid towards climate change adaptation.
- The developed nations feel that we need a joint financing effort for the common public good to reduce the impact to ensure long-term sustainable development for the entire global community in both developed and developing countries. There is a strong preference for climate change mitigation.

Private sector involvement

- UN Summit 2014 called for more involvement of private sector which resulted in pledges from various investors- mostly banking sector and financing institutions.
- Again, these are mostly investors from the developed world like Bank of America.
- The current financing commitment by developed countries to support developing economies to deal with climate change mitigation only stand at 5% of the total required funds.

Decarbonization efforts

- Despite the available initiatives on carbon credits most private sector companies have no clue what this is about; simply lack of information.
    - Efforts should be made to sensitize the business community on the value of decarbonization.
    - There is a new drive to developing a low carbon economy; however – this is mostly in the west, and less in Sub-Saharan Africa.

Shift towards renewable energies

- Many economies are shifting towards renewable energies, mostly in the west.

- In Sub-Saharan Africa only South Africa has made a strong shift towards renewable Energy with the "Renewable Energy Independent Power Procurement Program" which uses an auction system. This program has reduced the national security supply constraint and is driven by the private sector.

EAC Countries

- The EAC countries have a policy on renewable energy which encourages investment in this area.
- The 5 countries are at varied stages of implementation but a lot still needs to be done to encourage more investment in these areas.
- A lot of natural resources exist in the 5 countries including minerals, natural gases, water resources, natural forests, wildlife, etc.

Challenges in EAC

- Within the region each country has a renewable energy policy as well as the EAC. But the private sector claims there is still a deficit of enabling policies and programs that will boost investment in Renewable energy.
- Closing the Information gap; We need more effective and targeted communication of climate change issues and opportunities to corporates across the region.
- Small and Medium enterprises that have small budgets.
- Most businesses are dis-engaged from the war against climate change- still see climate change as an irrelevant topic or part of corporate social responsibility which is done mainly by big corporates- multinationals.
- Environmental impact assessments are done at national level but are either limited in scope – they or not comprehensive enough for long-term sustainable initiatives. We still have factories that

release their industrial wastes into neighbouring environments in countries where NEMA exist.

What can be done for private sector?

- Make climate change mitigation an opportunity for investment- Call for new investments in this area and provide the enabling environment.
- Improve capacity of NEMAs.
- Integrate Climate Change management into major national programs like water management, education, agriculture – (ensure use of resistant crop varieties), land use planning etc.
- Provide incentives to businesses that go the extra mile.
- Make climate change a priority in all regional and national plans.
- Support to SMEs selling improved stoves and producers of alternative heating options like Bricketti. Incentives should be set aside to promote these moves and encourage the shift.

5 CONCLUSION

In order to support the sustainable use of natural resources and renewable energy in the East African region the mobilisation of climate funds requires that potential applicants and beneficiaries are effectively aware of the opportunities provided by climate finance mechanisms. Additionally, capacities to get the right funds in the right place need to be established. These include capacities pertaining to financial planning; capacities to access different types of finance; capacities to deliver finance and implement activities; and capacities to monitor, report and verify financial expenditures and associated impacts.

As part of the financial planning process and respective application for climate finance, priority areas for action need to be identified. Based on climate change scenarios as well as development objectives in the East African Community these need to include the sustainable use of natural resources and the promotion of renewable energy in the region. Different stakeholders shall be involved in the process. It is suggested that, next to the engagement of experts at the EAC and national level, the local involvement has to be ensured and a sense of ownership has to be created. This two-way-exchange is crucial for the sustainable development of the East African Community.

Furthermore, to support the sustainable use of natural resources and renewable energy in the region, the predictability and reliability of climate funds needs to improve. To scale up or maintain existing efforts a sustained flow of climate finance is vital. This includes the opportunity that climate funds are available for a comprehensive project implementation and not for the pilot experiment only. In order to augment the effectiveness of climate finance mechanisms, involved entities have to administer the funds in a way that is transparent and accountable. This requires an accurate and publicly available documentation of related information. Responsible management of

climate funds should be promoted at all levels. This is supposed to foster proper resource allocation and appropriate use. The awarding of climate funds, e. g. the selection of implementing entities, shall take into account values such as transparency of the applying organisation. Furthermore, it needs to be ensured that the climate finance accessed serves the country's priorities and not only few institutions and/or individuals.

In order to improve the sustainable use of natural resources and energy it is furthermore recommended to have a flexible direct access mechanism to enhance access to climate finance. Innovative inward solutions, e. g. including the private sector, shall be promoted to improve the effectiveness and efficiency of climate finance mechanisms as well as reduce foreign dependency.

To coordinate national perspectives and to strengthen regional efforts within the EAC regarding the use of climate finance mechanisms in order to foster sustainable development in East Africa, participants proposed an intensified exchange of knowledge among the diverse stakeholders. This will guide member partners and other stakeholders and allows creating improved strategies to learn from best practices among and beyond the EAC member states.

To improve the cooperation of the EAC member states on the international level, e. g. with regard to future COPs where climate finance issues are negotiated and decided among the world's nations, it is suggested that consultations at national levels for the development of positions towards COPs should be organized timely. Then national positions should be well consolidated at the East African level for submission to the African level which will be used during the negotiations. To make sure to come up with a strong position capacities and knowledge of member states shall be strengthened.

To link the expertise of civil society best with political decision-makers a formal forum where both, civil society representatives and decision-makers, meet shall take place on a regular basis. Building

on the findings of the first joint EAC-KAS conference of this kind in December 2013, the organisers and participants reasserted that they welcome the establishment of a periodic forum for CSOs within the EAC annual calendar in order to strengthen the vital two-way-exchange that allows transmitting EAC policies and developments on the one side and obtaining CSOs feedback and accessing their expertise on the other side.

Rev. Prof. Dr. Aidan G. Msafri noted "If you want to walk fast, walk alone. If you want to move further, go with others!". In this sense, the joint conference and respective publication are seen as a crucial step to augment and move further joint efforts with regard to climate finance and the sustainable use of natural resources and renewable energies in particular as well as the sustainable development in East Africa at large.


Konrad
Adenauer
Stiftung
FREEDOM
DEMOCRACY
SOLIDARITY
Konrad-Adenauer-Stiftung
Tanzania Office
Izimani Street / Upanga, P.O. Box 6992, Dar es Sala
Phone: +255 22 2153174
Internet: www.kas.de/tansania

Group Photo

APPENDICES

Appendix 1: Speech by Hon. Judge President, Hon. Justice Dr. Emmanuel Ugirashebuja - East African Court of Justice (EACJ)

22nd November 2015,
Mount Meru Hotel, Arusha, Tanzania

Richard Shaba, Programme Coordinator, Konrad-Adenauer-Stiftung Tanzania;

Jackson Muro, Director, ForumCC;

Distinguished Delegates;

Colleagues from the EAC Secretariat;

Ladies and Gentlemen.

Thank you for inviting me to address you tonight as a precursor to tomorrow's Conference on Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa - the Role of Climate Finance. In the quest to turn my thoughts to what I will speak on today with which I will usefully engage your attention for the next minutes, the question not unnaturally presented itself, what is the purpose of such conferences? Why have you put aside your customary employment and recreation? A close scrutiny of this Conference theme reveals that you do not come together, because of the mere intellectual pleasure of listening to speeches such as the present one. Still less would the sensual pleasure of the dinner awaiting us this evening be a sufficient inducement to draw us together. Indeed, it is gratifying that the purpose of such a conference is a quest to search for innovative solutions to the problem of climate change that is threatening human kind.

According to a study by Robert J. Nicholls, a Professor of Coastal Engineering, and PhD Researcher Abiy S. Kebede, both from the University of Southampton, less than five decades, is the time it will take for the coastal floods to wipe Dar es Salaam off the Map, especially Temeke and Kinondoni, due to climate change.

"My harvest this year will be half that of the last two years, it is no longer viable to cultivate". These were the words of a farmer, interviewed on the Citizen Television about two weeks ago. Any farmer would relate to this statement.

According to Ban Ki Moon, the Secretary General of the UN: "Climate change, in some regions, has aggravated conflict over scarce land, and could well trigger large-scale migration in the decades ahead. And rising sea levels put at risk the very survival of all small island states."

If we do not do anything about the climate change problem, we can count on worldwide disruptions in food production, resulting in mass migration, refugee crises and increased conflicts over scarce natural resources like water and farm land.

If you just sample the climate and biodiversity research in 2008 and 2009, what is striking is how insistently some of the world's best scientists have been warning that climate change and biodiversity loss are happening faster with bigger impacts than they were anticipated just a few years ago.

Consider MIT's Joint Program on the Science and Policy of Global Change. In 2009 the program quietly updated its Integrated Global System Model, which tracks and predicts climate change from 1861 to 2100. Its revised projection indicates that if we stick with business as usual, in terms of carbon dioxide emissions, average surface temperatures on earth by 2100 will hit levels far beyond anything humans have ever experienced.

The issue of adverse impacts of climate change is no longer about "our children's children". You remember that the rationale for the

protection of the environment was to bequeath the future generations with a liveable environment. The kind of rationale, though noble, did not create a sense of urgency. The catchphrases such as "IBG" or "YBG", "I will be gone" or "you will be gone" when the bill is due are no longer applicable. This is about us. This is about the world we and our children will inhabit for the rest of our lives.

Borrowing from the famous phrase in the vastly watched musical Sounds of music, "how do you solve a problem like Maria?", let me also ask "How do you solve a problem like climate change?"

The difference between the two situations: that of Maria and that of climate change is that while a perfect solution was found to the problem of Maria, we have not quite as a generation been able to fully discover a perfect solution to the complex problem of climate change.

Konrad Adenauer, after whose name the foundation is named, once quipped that "An infallible method of conciliating a tiger is to allow oneself to be devoured". If I may rephrase the quip in relation to climate change, it would be that "an infallible method to conciliate with challenges of climate change is to do nothing and allow ourselves to be devoured by its effects". However, Konrad pointed that as one infallible method and did not rule out the possibility of conciliating with the tiger using other methods such as taming the tiger in the same way that there are other ways of dealing with the predicament of climate change in numerous other ways other than folding our hands and be devoured by its effects. I believe that one of the reasons that we congregate today is to search for those other solutions other than folding our arms and doing nothing.

I have perused through the program and gladly note its rich contents on topical issues concerning climate change, renewable energies and sustainable use of natural resources in East Africa and the Role of Climate Finance. The delivery of topics by distinguished speakers makes me conclude that the discussion will be exhilarating and invaluable. The cross-pollination of ideas in this conference can

produce progression towards achieving very effective and efficient solutions towards sustainable development. I do understand that a lot more will be required to be done post-the Conference. We should strive to give a significant amount of our time and energy to the subject matter. Such occasions such as this Conference should elicit our real commitment to the issues of climate change. The good news is, we are our best hope.

I wish to commend Konrad Adenauer Stiftung and ForumCC for the invitation to speak to you and stewardship in matters concerning the environment. It is a great endeavour that you undertake and I take this opportunity to wish you well with it. With these few remarks I wish you all fruitful deliberations during the conference.

Appendix II: List of Participants

S/No	Name	Organisation
1	Celline Achieng Oduor	East African Wild Life Society (EAWLS)
2	Lilian Awinja	East African Business Council (EABC)
3	Mussa Billegeya	Rosa-Luxemburg-Stfitung (RLS)
4	Stefanie Brinkel	Konrad-Adenauer-Stiftung (KAS)
5	Jean Baptiste Havugimana	East African Community (EAC)
6	Gerard Hendriksen	Freelance
7	Fazal Issa	Forum CC
8	Jules Kazungu	Rwanda Bamboos Organization (RBO)
9	Hon. Anthony Komu	MP
10	Alice Maro	East African Community (EAC)
11	Andrew Masaba	Ministry of Finance, Planning and Economic Development Uganda
12	Fr. Prof. Dr. Aidan Msafiri	Mwenge Catholic University (MWECAU)
13	Nathaniel Mtunji	East African Community (EAC)
14	Edward P. Munaaba	African Partnership on Climate Change Coalition (APCCC)
15	Jackson Muro	Forum CC
16	Alain Nsengiyumva	East African Court of Justice (EACJ)
17	Amie Claude Ntahorwamiye	Ministry of Finance and Economic Development Planning Burundi
18	Brian Otiende	East African Community (EAC)
19	Richard Shaba	Konrad-Adenauer-Stiftung (KAS)
20	Hon. Judge, President, Hon. Justice Dr. Emmanuel Ugirashebuja	East African Court of Justice (EACJ)
21	Dr. Thomas Walter	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)

Appendix III: Newspaper Coverage

EAST AFRICAN BUSINESS WEEK

Sunday, November 29, 2015

EAC to focus on climate change

DRY: Droughts have become both frequent in occurrence and last longer compared to a few years back causing people in some regions to trek long distances for firewood and water.

ARUSHA, Tanzania - Representatives from the East African Community (EAC) Partner States, government officials, international development agencies and civil society organizations unanimously agreed to spearhead the advocacy of climate adaptation in the region.

According to a press statement, the EAC Director for Productive Sectors, Jean Baptiste Havugimana delivering a keynote message reiterated the effects of climate change on agriculture, tourism, infrastructure, fishing, wildlife and the health sector.

"The acceleration of human-induced changes in the climate system, including sea level rise, with negative implications and projections for the African continent," Havugimana said.

He was speaking at the Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa - The Role of Climate Finance workshop, which was organized by the EAC, Konrad-Adenauer-Stiftung (KAS) and Tanzania Civil Society Forum on Climate Change (Forum CC). It was held in Arusha, last week.

Putting a spotlight on the current climate finance, architecture and its opportunities for use in East Africa, the delegates looked at ways in which climate finance mechanisms can help boost the sustainable use of natural resources and renewable energy in the region, with an emphasis on the perspectives of the civil society.

Havugimana said the EAC has initiated regional climate finance readiness activities that aim at having the EAC Secretariat and the East African Development Bank accredited as Regional Implementing Entities to the Adaptation Fund and the Green Climate Fund so as to directly access international climate change financing for the mitigation of climate change.

He said the adverse impacts of climate change were a major challenge to socio-economic development in East Africa due to the region's heavy dependence on natural resources which are highly vulnerable to the effects of climate change.

"The impacts affect key economic drivers such as water resources, agriculture, energy, transport, health, forestry, wildlife, land and infrastructure, and disaster risk management, among other things," he said. Speaking at the forum, Jackson Muro, the Director of the Tanzania Civil Society Forum for Climate Change, cited the drastic change in weather patterns in East Africa as one negative effect of climate change.

"In Tanzania, for example, rainfall has become less predictable and droughts have become both frequent in occurrence and last longer compared to a few years back. Sea levels are rising at an alarming pace and several parts of the coastal region are at risk of being submerged like Pangani town in Tanga. There are already some parts that are now completely under the sea as is the case of Mazwe Island near Pangani," Muro said.

"In many parts of Tanzania, temperature has increased by about 0.2 to 0.6 degrees Centigrade for the past 30 years. The impact of increased temperatures is evidenced by the fast decline of snow on Mount Kilimanjaro and other mountains in the region," he said.

The EAC Secretariat was officially accredited as an observer to the United Nations Framework Convention on Climate Change by the 18th Conference of Parties (COP18) in Doha, Qatar. Since then, the EAC has been playing a key role in the international climate change policy discourse through providing leadership on regional climate change policy setting and mainstreaming of climate change adaptation and mitigation in regional integration programmes, projects and other initiatives in accordance with the EAC Climate Change Policy adopted by the EAC Heads of State in April 2011.

By Elisha Mayallah, Sunday, November 29th, 2015

Twenty Climate Change experts to meet in Arusha

By SUNDAY NEWS Reporter

MORE than 20 experts in Climate Change from the East African Community (EAC) are scheduled to meet tomorrow in Arusha ahead of international conference on climate in France.

According to Konrad-Adenauer-Stiftung (KAS) Climate Change Programme Manager, Stephanie Brinkel, this event is set to take place tomorrow at the Mount Meru Hotel.

The Paris Climate Change Conference will take place from 30 November to 11 December, this year. The Arusha summit has been convened to giver experts the opportunity to share experience on related subjects.

The main theme in Arusha will be "Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa - The Role of Climate Finance"

The one-day conference has been convened by the East African Community (EAC); in collaboration with the KAS Tanzania and the ForumCC the last being an umbrella body on NGOs dealing with the Climate Change matter in Tanzania.

The event is jointly hosted and the discussion will centre on "Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa - The Role of Climate Finance".

KAS as one of the organising bodies is one of the six German Political Foundations and has been operating in Tanzania since 1964. The key thrust of her work is to promote democracy, good governance, international cooperation, and regional integration.

ForumCC is the umbrella organisation for CSOs that are involved in climate change issues in Tanzania. The conference intends to conduct a joint analysis and evaluation of the climate finance architecture and its opportunities for use in East Africa.

In particular, the event focuses on the question how climate finance mechanisms can help boost the sustainable use of natural resources and renewable energy in the region.

It aims at drawing conclusions, providing expertise and elaborating recommendations for representatives of the decision making institutions within the East African Community and its member states.

In line with the EAC Climate Change Policy, and the respective action plan and the EAC Protocol on Environment and Natural Resources Management the conference also intends to engage Civil Society as a crucial stakeholder.

The conference builds on the first joint meeting in December 2013 which was organised by the EAC and KAS and served as a kick-off meeting to discuss how collective action under the umbrella of the EAC can be strengthened in the future.

The conference will be attended by selected experts from the East African civil society, academia, media, and private sector and government representatives from EAC member states. Likewise, the office of the Secretary General to the EAC will be represented.

Presentations, discussion results and recommendations of the meeting will be documented and published. The participation in the event requires a personal invitation.

Extract from Sunday News newpaper, November 22nd, 2015

EAC experts address climate change in Arusha

By Elias Mhegera, The Guardian on Sunday Correspondent

More than 20 environmentalists from the East African Community (EAC) are expected to meet Mount Meru Hotel in Arusha tomorrow in preparations for the 12-day Climate Change international conference scheduled for November 30 in France.

Konrad-Adenauer-Stiftung (KAS) Climate Change Programme Manager Stephanie Brinkel said the Arusha summit was set the Climate change experts to share experiences before departing to France that they could act from a common platform in the conference.

The one-day conference on "Climate Change, Renewable Energies and Sustainable Use of Natural Resources in East Africa - The Role of Climate Finance," is held by EAC in collaboration with the KAS Tanzania and a climate change umbrella organization in Tanzania, the ForumCC.

KAS is one of the six German political foundations and has been operating in Tanzania since 1964. The key thrust of her work is to promote democracy, good governance, international cooperation, and regional integration.

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It will also focus on the question how climate finance mechanisms can help boost the sustainable use of natural resources and renewable energy in the region.

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Extract from The Guardian Newspaper, November 22nd, 2015

Wadau kujadili mabadiliko ya tabia nchi

NA ELIAS MHEGERA, ARUSHA

WATAALAMU zaidi ya 20 kutoka Jumuiya ya Afrika Mashariki (EA) wanakutana kesho jijini hapa kujadiliana changamoto za tabia nchi.

Akizungumza jana, Meneja wa mradi wa Taasisi ya Konrad-Adenauer-Stiftung (KAS), Stephanie Brinkel, alisema mkutano huo utajadili mabadiliko ya tabia nchi, nishati mbadala na uhifadhi wa maliasili.

Alisema pia utajadili umuhimu wa rasilimali fedha katika uangalizi wa mabadiliko ya tabia nchi.

Brinkel alisema mkutano huo umelenga kuangalia njia gani zitakazosaidia kutunza rasilimali na nishati mbadala katika ukanda wa Afrika ya Mashariki.

Mjadala huo utawasaidia wataalamu kufikia maamuzi sahihi katika kutafuta ufumbuzi wa masuala yanayoikabili sekta hiyo ya mazingira na mabadiliko ya tabia nchi.

Extract from Tanzania Daima Newspaper, November 22nd, 2015

There is a critical and intrinsic nexus between climate change and the future of sustainable energies in East Africa. From a negative viewpoint, climate change in the EAC puts resources that provide energy at higher risks. On the other hand, a smart approach in using East African resources of sustainable energy could substantially and remarkably reduce natural resource overuse. Hence the shift to environmentally sound and sustainable energies such as wind, solar, biomass, geothermal and hydro is a welcome approach.

Rev. Prof. Dr. Aidan G. Msafiri

In this context, the role of climate finance is discussed in the book. Climate finance is fundamental to address climate change and vital for a broad implementation of mitigation as well as adaptation measures, including measures pertaining to natural resources and renewable energies in particular.

Konrad-Adenauer-Stiftung
P. O. Box 6992
Isimani Street, Upanga
Dar es Salaam
Telephone: +255 22 2153 174
www.kas.de/tanzania