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Climate Change Mitigation and Adaptation in ECA/SADC/COMESA region: Opportunities and Challenges

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*Draft background paper on climate change mitigation and Adaptation strategies in
ECA/SADC/COMESA regions*

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Abstract

Africa is one of the continents highly vulnerable to climate change due to several reasons: high poverty level, high dependence on rain-fed agriculture, poor management of natural resources, capacity/technology limitations, weak infrastructure, and less efficient governance/institutional set-up. To address climate change, design of appropriate mitigation and adaptation strategy is necessary. This paper assesses the status of climate change mitigation (reducing emissions from deforestation and forest degradation (REDD)) that are in place by the different countries in the ECA/SADC/COMESA regions and the opportunities and challenges for climate mitigation. Results of this study show that although the different countries in the region have designed strategies and tried to implement climate mitigation, climate change remains one of the main problems; it causes a major threat to the region than to any other part of the world. There is, therefore, a need to undertake the following: design of more robust climate change mitigation strategy, capacity building, establishment of climate mitigation platforms, design of efficient climate financing mechanisms, support of research and innovations on climate change mitigation, streamline climate change mitigation in the academia in the region.

1. Introduction

Climate change and variability are major challenges to Africa's major economic sectors. This vulnerability is exacerbated by existing development challenges such as: (a) endemic poverty and high dependence on rain-fed agriculture, (b) complex governance and institutional dimensions, (c) limited access to capital including markets/technology, and weak infrastructure, (d) ecosystem degradation and poor management of natural resources, and (e) disasters (natural and man-made) and conflicts. Countries within the COMESA/ECA/SADC region (hereafter referred to as the region) have made significant investments in climate change response programmes, especially in energy, agriculture, natural resources, and environment sectors. This is borne out of the realization that key economic drivers in the region such as water resources; agriculture; energy; forestry and wildlife are vulnerable to climate change and variability. Both mitigation and adaptation strategies are recognized as the viable options for responding to climate change in the region.

Climate Change Mitigation refers to efforts to reduce or prevent emission of greenhouse gases into the atmosphere. Mitigation could involve employing new technologies, improving industrial and energy efficiency, or changing management practices in agriculture, forestry or other sectors. Protecting natural carbon sinks like natural forests, or creating new sinks through afforestation, reforestation or green agriculture are also elements of mitigation.

Climate change adaptation seeks to prevent or minimize the damage likely to be caused by climate change. It involves anticipating the adverse effects of climate change, and introducing measures that enhance resilience or reduce vulnerability to climate change and variability. Examples of adaptation measures include: more efficient utilization of scarce water resources, building flood defences, developing drought/flood-tolerant crops, choosing climate resilient tree species and forestry, and soil and water conservation.

Global principles on climate change mitigation and adaptation are set out in declarations through the United Nations Framework Convention on Climate Change (UNFCCC). The Convention was established with the ultimate objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (UNFCCC, Article 2). While most of these principles are not legally binding, they are internationally recognized and place a moral obligation for

states to create a legal framework within which climate change responses (including adaptation and mitigation) are developed. All signatories to the Convention have an obligation to formulate and implement adaptation measures. The Convention also provides for a variety of support mechanisms for adaptation in developing countries including funding, insurance, technology transfers and scientific and technical assistance.

The principle of common but differentiated responsibility and respective capabilities informs most of the discussions at the UNFCCC. The principle places greater responsibility for climate change mitigation on developed country parties. Developing country parties' mitigation efforts are supposed to be incentivized by finance, technical expertise and technologies. To strengthen engagement at the UNFCCC, African countries normally develop common positions. COMESA has also started a process of developing a common regional position for its member states and which is communicated to the UNFCCC through the African Group of Nations.

At the global level, the energy, transport, forestry, agriculture and industry sectors have been identified as the major sources of greenhouse gases. With agriculture contributing 14 percent of annual GHG emissions and land use change, including forest loss contributes another 19 percent. These and other land use present a huge potential to cost effectively mitigate GHGs through changes in agricultural technologies, reducing deforestation and forest degradation and improved management practices. Reducing emissions from deforestation and forest degradation (REDD) is a mechanism that has been under negotiation by the United Nations Framework Convention on Climate Change (UNFCCC) since 2005, with the objective of mitigating climate change through reducing net emissions of greenhouse gases through enhanced forest management, mostly in the developing countries.

The region's contribution to overall global GHG emissions is small. Investments in incentivized mitigation programmes, especially in agriculture and forestry, have been found to offer mitigation benefits, increased productivity, improved livelihoods, biodiversity conservation and increased resilience to climate change. Within the region, agriculture and forestry are significant resources because of strong dependence on agriculture and forestry resources for livelihood, energy and construction materials. GHG emissions from the region

are expected to increase in the future given the increasing demand for agricultural products for the increasing population and changing food preferences.

Any investments in climate change mitigation in the region will have to exploit opportunities that the forestry and agriculture sectors are given due considerations. These opportunities present in design and application of policies and technologies that support low-carbon agricultural and forestry development pathways. REDD+ process and Climate Smart Agriculture (CSA) present attractive opportunities for these efforts. International policy discussions and incentives for REDD+ implementation are currently being discussed at the UNFCCC but several countries in the region, including Kenya, Uganda, Tanzania, Malawi, Sudan, Zambia and Ethiopia have already embarked on a process of readiness. The readiness process will ensure each of the countries to have a strategy and implementation framework, a reference emission level, forest reference level and a national forest monitoring system to support REDD+ implementation. The three Regional Economic Communities (RECs) (namely SADC, ECA and COMESA) have identified primary interdependent actions with regard to “forest systems” in the region in order to: maximize carbon benefits to mitigate climate change, reduce the region’s vulnerability to climate change, safeguard agricultural and economic productivity, and improve livelihoods and reduce poverty. This indicates that there exist direct linkages among agriculture, forest, and land use (AFOLU), REDD+ and CSA.

As earlier alluded to, the countries in the region are highly vulnerable to effects of climate change and variability. This observation derives from the strong dependence of their economies on climate sensitive natural resources, and that most of the countries are already experiencing effects of climate change (like water stresses in some countries and flooding in others). The frequency and intensity of long drought periods, floods and extreme temperatures has already been witnessed in the region. Future scenarios for the period 2010-2070 indicate that effects of climate change will continue to be witnessed more often (CIFOR, 2010), with potentially significant social, economic and political impacts, including effects on food production, water availability, health and security. In order to mitigate or reduce these events, countries will need to invest heavily to safeguard infrastructure, secure livelihoods and fight poverty.

Modeling of future climate scenarios for the region has indicated the following projected impacts of climate change:

- i. Temperatures throughout the region will be higher than the global average, with temperatures in southern Africa projected to rise between 0.3 and 3.6⁰c by 2060.
- ii. Rainfall (annual and seasonal) will change: there will be a decrease in rainfall in southern Africa and an increase in East Africa.
- iii. Increase of between 5% and 8% in arid and semi-arid areas by 2080; between 25 and 40% of mammal species in national parks in sub-Saharan Africa will become endangered. There is evidence that climate is modifying natural mountain ecosystems via complex interactions and feedbacks.
- iv. By 2020, in some countries, yields from rain-fed agriculture is projected to be reduced by up to 50%, and crop net revenues could fall by as much as 90% by 2100, with small-scale farmers being the most affected. This would adversely affect food security in the continent and exacerbate malnutrition.
- v. By 2080, an increase of 5 to 8% of arid and semi-arid land in Africa is projected.
- vi. Water stress is projected to affect a population of 75-250 million by 2020, and 350-600 million by 2050. Climate change and variability are likely to impose additional pressures on water availability, water accessibility and water demand in Africa.
- vii. Decrease in fish stocks due to projected higher temperatures in lakes Edward, Albert, Kivu, Victoria Tanganyika and Nyasa. Temperatures in these lakes have risen between 0.2 and 0.7 since 1900.
- viii. Salt water intrusion and contamination of fresh water wells by salt water in the east coast of Tanzania and Kenya.
- ix. BECAh erosion in Kenya and destruction of mangroves.

In view of the efforts spearhead by regional organisations like COMESA/ECA/SADC, a number of issues need to be looked at including: (a) how much is known about policy statement and strategies on REDD+ and climate change mitigation in the region? and (b) what are the opportunities and challenges with climate change mitigation in the region? This paper tries to: (i) assess the current regional and national policies, strategies and frameworks on climate change adaptation and mitigation, (ii) evaluate the readiness, opportunities and challenges to mitigate climate change, and (ii) recommend how the region could move to mitigate climate change.

2. Regional and national policies and frameworks

The climate change potential impacts to Africa have been recognised by the three Regional Economic Communities (RECs) i.e. the Common Market for Eastern and Southern Africa (COMESA), the East African Community (ECA), and the Southern Africa Development Community (SADC). This recognition is anchored under the *COMESA-ECA-SADC Tripartite Arrangement* popularly known as “*Tripartite Climate Change Programme*” in which the Programme on Climate Change Adaptation and Mitigation in the Eastern and Southern African region was initiated in 2010 (COMESA-ECA-SADC Climate Change Programme, 2011). The programme is a five-year initiative agenda that aims to address climate change in the region while building economic and social resilience. This initiative was brought up to add value and avoid duplication of actions already occurring in the region. The specific objectives of the programme among others were: (a) to enhance adoption of Climate-Smart Conservation Agriculture, (b) to strengthen capacity for national research and training institutions and implementation of research programmes, (c) to develop climate change mitigation technologies and strategies and make them available to member states, and (d) to apply climate mitigation solutions in the region.

The member states of region are currently at various stages of implementation or development of climate change legal frameworks and mitigation interventions. The ECA has committed to responding to the effects of climate change through mitigation, adaptation, research and developing policies, strategies and organisation bodies. These policy frameworks recognise the problem of climate change and commit to address the problem through specific mitigation actions as discussed in the following sections.

2.1 Climate Change Mitigation and Adaptation in ECA

The ECA prepared a protocol on Environment and Natural Resource Management, The East Africa Community Climate Change Policy (ECACCP), East Africa Community Climate Change Strategy (ECACCS), East Africa Community Climate Change Master Plan (ECACCOMP) and East Africa Community Disaster Risk Reduction and Management Strategy. A summary of the policy, strategy and master plan on climate change in ECA is given in Table 1.

Table 1. A summary of the Policy, Strategy and Master plan on Climate change in ECA.

<i>The ECA climate change policy</i>	<i>The ECA climate change strategy</i>	<i>ECA Climate Change Master Plan</i>
Increase the availability, accessibility, reliability and affordability of renewable energy sources	Improve water conservation efficiency and sustainable use	Focuses on climate change mitigation interventions
Decrease Greenhouse Gases (GHGs) associated with transport sector through promoting public transport systems	Improve sustainable land use	Technology development and transfer
Support the sustainable development needs of member states in the forest sector	Reduce GHGs from the transport sector	Capacity building
Promote sustainable agriculture practices e.g. Climate Smart Agriculture (CSA)	Production of sustainable agricultural practices with agriculture-based emission reduction	Education, training and public awareness
Promote waste management for improved air and water quality	Strengthening early warning systems for extreme weather and climate events	Gender, youth and marginalised groups
-	Enhance information and knowledge management systems	Climate risk management and disaster risk reduction
-	Integrated climate change considerations into existing policies and strategies	Climate financing
-	Building adaptive capacity	-

2.2 Climate Change Mitigation and Adaptation in COMESA

2.2.1 COMESA climate change initiative

The goal of COMESA's Climate Change Initiative is "*Achieving economic prosperity and climate change protection*". It tries to address climate change and its impacts in a manner that builds economic and social resilience for present and future generations. The COMESA

climate change initiative focus on supporting Africa to adapt to climate change and safeguarding natural ecosystems that play an important role in the reduction of GHGs. COMESA is spearheading the inclusion of agriculture, forestry and other land uses in the international climate change focus. COMESA has also developed a model for coordination in climate change initiatives. The model shows the interaction among international (EnviroCare, Oxfam, Action Aid, CGIAR, Universities, WWF, ICRAF, IFPRI) and sub-regional organisations (ASARECA, RUFORUM), governments (COMESA member states), non-governmental organisations (like CBOs, FBOs, Farmers Organisations) and the private sectors in member states. Moreover, the COMESA initiative promotes trade and markets for effectively addressing the mitigation of climate change impacts.

The COMESA climate change initiative focuses on the following thematic areas:

- i. Post-Kyoto climate change regime and beyond
- ii. Enabling policy and institutional framework
- iii. African bio-carbon facility
- iv. Research, information management and communication
- v. Technology development and transfer
- vi. Capacity building
- vii. Enhancing partnerships
- viii. Early action flagship programmes

The main aim of the COMESA climate change initiative includes the following:

- a. Consolidate a shared vision for Africa on climate change and a common and informed voice for the continent in the Post Kyoto Climate Change negotiations and beyond.
- b. Foster regional and national cooperation to address climate change and its impacts.
- c. Promote integration of climate change considerations into regional and national policies, sectoral planning and development and budgeting.
- d. Enhance human and institutional capacities of COMESA Secretariat, specialized institutions and Member States to effectively address the challenges of climate change.
- e. Mobilize African and international scientific and technical communities to increase knowledge base and its management to support informed decision making processes.

- f. Promote and enhance collaboration, synergy, partnerships and effective participation of Governments, business community, civil society and other stakeholders in climate change matters.
- g. Provide a framework for the establishment of an African BioCarbon Facility that combines market-based offsets, public and private funds.

2.2.2 Mitigation and Adaptation interventions in the COMESA member states

Mitigation and adaptation have been factored into a variety of COMESA development plans: how to manage the increasingly extreme disasters we are seeing and their associated risks, how to protect coastlines and deal with sea-level encroachment, how to best manage land and forests, how to deal with and plan for reduced water availability, how to develop resilient crop varieties and how to protect energy and public infrastructure. Highlights of interventions in the COMESA member states, which are not members of ECA and SADC are given in Table 2.

Table 2. Climate change mitigation interventions in the COMESA member states which are not members of ECA and SADC.

Country	Priority areas identified in the NAPAs
Ethiopia	<p>Improving crop and livestock production practices for higher food security and farmer income while reducing emissions.</p> <p>Protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks.</p> <p>Expanding electricity generation from renewable sources of energy for domestic and regional markets.</p> <p>Leapfrogging to modern and energy-efficient technologies in transport, industrial sectors, and buildings.</p> <p>Promoting drought/crop insurance programme.</p> <p>Enhancing drought and flood early warning systems.</p> <p>Developing small-scale irrigation and water harvesting schemes.</p> <p>Improving rangeland resource management practices in the pastoral areas.</p> <p>Implementing community based sustainable utilisation and management of wetlands.</p> <p>Developing capacity building for adaptation.</p>

	Promoting the community based carbon sequestration project in the rift valley.
	Instituting a national research and development centre for climate change
	Promoting farm and homestead forestry and agroforestry.
Eritrea	Introducing community based pilot projects to intensify existing production models, areas and species specific to eastern lowlands, selecting suitable sheep and goat breeds.
	Encourage afforestation and agroforestry through the community forestry initiative.
	Promoting groundwater recharging for irrigation wells.
	Introducing and expanding irrigated agriculture, especially spate irrigated agriculture.
Comoros	Promoting varieties that are more adapted to drought.
	Defending and restoring degraded soils.
	Reconstituting basin slopes.
	Increasing water supply.
	Improving water quality.
	Promoting early warning.
Sudan	Enhancing resilience to increasing rainfall variability through rangeland rehabilitation and water harvesting in the Butana area.
	Reducing the vulnerability of the communities in drought prone areas of southern Dafur through improved water harvesting.
	Improving sustainable agricultural practices under increasing heat stress in the River Nile.
	Promoting environmental conservation and biodiversity restoration in northern Kordofan.
	Improving strategies to adapt to drought induced water shortages in highly vulnerable areas in central Sudan.

Source: (UNFCCC, 2013) and Ethiopian Green Economy Strategy.

2.3 Climate Change Mitigation and Adaptation in SADC

2.3.1 Climate change adaptation strategy for water sector in SADC

The SADC climate change adaptation strategy for water sectors is based on three areas of intervention including water governance (political, social, economic and administrative systems for development and management of water resources), water management (incorporate planning, management and distribution of water resources for different uses according to water policies and regulations) and infrastructure development (process of developing, financing, implementing and operating structures for irrigation, drainage, water supply and sanitation, hydro-power and flood management). SADC Secretariat coordinates the various objectives and actions under this strategy.

2.3.2 *SADC Protocol on Forestry*

The priority area of the protocol focuses on the protection of the environment by harmonising sustainable forest management approaches, forest policy, legislation and enforcement. Under the protocol the developed programme named “*SADC support Programme on Reducing Emissions from Deforestation and Forest Degradation (REDD)*”. The programme was aimed at contributing to the reduction of GHGs and the sustainable management of SADC forests, reducing poverty and fostering sustainable development. The priority areas include:

- i. Inter-sector and intra-sector coordination and policy harmonisation for national REDD programmes.
- ii. International engagement on REDD and climate change processes.
- iii. Capacity development to manage regional and national REDD programmes.
- iv. Development of systems to monitor forests and carbon.
- v. Establishment of reference emission and reference levels for REDD.
- vi. Knowledge management for REDD.
- vii. Implementing sustainable funding mechanisms for REDD.

2.4 *REDD+ in COMESA/ECA/SADC region*

2.4.1 REDD+ initiatives in the region

The role of forests in climate change mitigation has gained significance since the ratification of UNFCCC in 1993 when parties committed themselves to sustainably manage and conserve available carbon reservoirs, including forests. The special position of the sector in climate change response is premised on the following considerations:

- i. Forestry sector is a source of GHG emission: Preventing this stored carbon from escaping is important for the carbon balance and therefore climate change mitigation.
- ii. Forests are important storehouses of carbon and provide sinks. Parties to UNFCCC have an obligation to conserve and sustainably manage their forests as carbon storehouses.
- iii. Forests can be a key adaptation strategy: Forests and trees contribute to soil and water conservation, diversify farm incomes and increase farm productivity in addition to providing alternative livelihood means.

Reducing Emissions from Deforestation and forest Degradation (REDD+), and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks as an innovative climate change mitigation mechanism seeks to provide incentives to governments, communities, companies or individuals in developing countries for actions taken to reduce GHG emissions from the forest sector. REDD+ seeks to create value for the carbon stored in forests. The process seeks to support sustainable forest management and conservation through policy initiatives and countrywide actions that among others:

- i. Prevent further conversion of forest lands to agriculture, settlements and other developments;
- ii. Protect important forest ecosystems and enhancing their sustainable management;
- iii. Promote energy conservation and energy efficient technologies;
- iv. Building the capacities of local communities to enhance their participation in forest management and conservation activities;
- v. Strengthen and empower institutions through capacity enhancement;
- vi. The international policy framework and positive incentives to support REDD+ implementation are currently being decided at the UNFCCC. The UNFCCC encourages developing countries, however, to start preparing themselves for its implementation by undertaking the following set of mandatory activities;
 - a. Development of the strategy and implementation framework to address the drivers of deforestation and forest degradation;
 - b. Establishment of a Reference Emission Level and/or a Forest Reference Level;
 - c. Establish a National Forest monitoring system;
 - d. Establish a REDD+ safeguards Information System.

2.4.2 REDD+ Relevance in COMESA/ECA/SADC

The forest sector is recognized for its contribution to sustainable development, climate change mitigation and adaptation. Forests are also key pillars to the success of the agricultural, energy, manufacturing and urban development sectors (provide products and environmental services). In spite of these critical roles, the forest sector in the region continues to suffer from deforestation and forest degradation driven by among others increasing demand for land for agriculture, settlement and other developments, unsustainable utilization of forest products, fires, unresponsive policy and poor governance. REDD+ presents an opportunity to reverse the negative trend by providing incentives that support implementation of a comprehensive strategy that effectively supports sustainable management and conservation of existing forested areas.

Based on preliminary discussions in the region it is found that sustainable forest conservation and management programmes can only be assured if complemented with incentives that improve production and utilization efficiencies, increase agricultural productivity, diversify livelihoods, provide alternative energy sources and improve farm-holding incomes. Improved agricultural productivity has variously been mentioned as a key pillar for successful forest conservation efforts as it reduces pressure on available forest resources.

Most of the countries in the region have already embarked on the process of developing their REDD+ strategies and implementation frameworks, informed by country specific forest sector needs, drivers of deforestation and forest degradation and strategy options for addressing and reversing them. The regional integration process provides a strong and viable opportunity for REDD+ as one of the sectors for collective action on climate change. There is a strong opportunity to build regional capacity of technical personnel especially in monitoring, assessment, reporting and verification of REDD+ activities. This capacity will build physical infrastructure, skills and knowledge to enable collection and updating of data and information on biomass production, agriculture, water resources etc (Kimbowa et al., 2011).

3. National Appropriate Mitigation Actions (NAMAs)

In general, the vision of each country is to become a climate resilient economy, with strategic objectives to achieve Energy Security and a Low Carbon Energy Supply that supports the development of Green Industry and Services; Sustainable Land Use and Water Resource Management that result in Food Security, appropriate Urban Development and preservation of Biodiversity and Ecosystem Services, as well as to ensure Social Protection, Improved Health and Disaster Risk Reduction that reduces vulnerability to climate change impacts.

All the regional countries have submitted NAPAs and NAMAs but they are still some gaps that need enforcement. The full implementation of those strategies and actions rests upon five enabling pillars:

- Institutional Arrangements;
- Finance;
- Capacity Building and Knowledge Management;
- Technology, Innovation and Infrastructure; and
- Integrated Planning and Data Management.

Nationally Appropriate Mitigation Actions (NAMAs) are climate change mitigation measures proposed by developing country governments as part of their voluntary contributions to reduce emissions below 2020 business-as-usual levels within the context of domestic sustainable development goals and priorities towards economic and social development and poverty eradication. In accordance with the 18th Conference of Parties to UNFCCC, developing country parties are required to develop and implement NAMAs (UNFCCC). NAMAs can be policies directed at transformational change within an economic sector, or actions across sectors for a broader national focus. NAMAs are supported and enabled by technology, financing, and capacity building. They can take the form of regulations, standards, programs, policies or financial incentives. NAMAs essentially need to be supported and enabled by policies, technologies, financing and capacity building. The term recognizes that different countries may take different nationally appropriate action on the basis of equity and in accordance with common but differentiated responsibilities and respective capabilities. It also emphasizes financial assistance from developed countries to developing countries for effectively implementing national action to reduce emission.

4. Nationally Adaptation Plans of Actions (NAPAs)

The different countries in the region have demonstrated their commitment to addressing the effects of climate change through developing NAPAs. The status of the NAPAs in the

different countries, with some representative countries, mainly Kenya, Tanzania, Sudan, Zambia, Uganda and Madagascar as case studies, is discussed below.

4.1 Kenya

Past attempts to increase forest cover and address the problem of deforestation and forest degradation in the country have not been very successful due to a number of reasons: increasing demand for land for agriculture, settlement and other developments, high energy demand and inadequate funding to support investments in the forestry sector. Unresponsive policy and poor governance in the forestry sector have often in the past compounded these problems. In Kenya, REDD+ is evolving as an attractive means to reduce forest sector carbon emissions. Kenya's participation in REDD+ is premised on the conviction that the process holds great potential in supporting:

- i. Realization of vision 2030 objectives of increasing forest cover to a minimum of 10%;
- ii. Access to international climate finance to support investments in the forestry sector;
- iii. Government efforts in designing policies and measures to protect and improve its remaining forest resources in ways that improve local livelihoods and conserve biodiversity;
- iv. Realization of the National Climate Change Response Strategy (NCCRS) goals.
- v. Contribution to global climate change mitigation and adaptation efforts.

Priority areas of focus in REDD+ in Kenya include the following:

- i. Reducing pressure to clear forests for agriculture, settlements and other land uses;
- ii. Promoting sustainable utilization of forests by promoting efficiency, energy conservation;
- iii. Improving governance in the forest sector by strengthening national capacity for FLEG, advocacy and awareness;
- iv. Enhancement of carbon stocks through afforestation/reforestation, and fire control.

Several international initiatives are currently supporting Kenya efforts in undertaking Readiness activities that have been identified at UNFCCC as mandatory before a country can enter into implementation. The Forest Carbon Partnership Facility (FCPF), an innovative partnership of developing and developed countries, with the World Bank as the Trustee, and

the United Nations Forum on REDD+ (UN-REDD) are the major initiatives. Kenya is a member of the Forest Carbon Partnership Facility and a partner country to the UN-REDD Programme and is receiving financial and technical support from both initiatives towards developing its Readiness activities.

Readiness Achievements

Kenya has accomplished a number of achievements with regard to readiness to mitigate climate change and variability, which include the following:

- a) Analytical studies to support formulation of the REDD+ strategy and implementation framework:
 - i. Detailed analysis of drivers of deforestation and forest degradation in the country. This analysis has already identified agriculture as the major driver of deforestation and forest degradation in the country.
 - ii. Demand and supply analysis of forest products in the country.
 - iii. Charcoal value chain analysis and barriers to investment.
 - iv. Opportunities and challenges for REDD+ law reform and implementation in Kenya.
 - v. Carbon rights, Benefit sharing and corruption risks assessment studies completed.
 - vi. Stakeholder sensitization and information sharing to support inclusive participation ongoing.
- b) Preparatory activities for Strategic Environmental and Social Assessment (SESA) for REDD+ strategy options commenced.
- c) Road map for establishing the Reference Emission Levels /Forest Reference Levels and National Forest Monitoring System developed.
- d) National Forest Cover Map developed and cover change detection done at three epochs (1990, 2000, 2005, 2010) to support the establishment of a National Forest Monitoring System.
- e) National Forest Inventory planning activities commenced.

A phased multi-stakeholder driven approach to the REDD+ strategy formulation process has already commenced in Kenya.

3.2 Tanzania

Tanzania prepared and submitted a National Adaptation Programme of Action (NAPA) that prioritizes adaptation options in the country to reduce climate change (CC) impacts. The NAPA document was supposed to be a strategic fundraising document to access UNFCCC funding mechanisms on adaptation. However, there are some gaps in the implementation of NAPA due to the fact that the document is not comprehensive enough. For example it does not include aspects of Disaster Risk Reduction and Vulnerability. The new emerging issues i.e. those embedded in the CSA like adapting and building resilience to climate change including building adaptive capacity in the short (more uncertainty over climate extremes) and in the medium to long term (permanent changes in climate patterns) are less apparent (Cooper et al., 2013). Also issues of reducing and/or removing GHG emissions need to be emphasised.

Climate change has not so far been adequately mainstreamed or integrated in sector specific plans and strategies. Where efforts have been initiated as in the water, agriculture and livestock sectors, there are still remaining implementation gaps of the identified strategies/processes. For instance, in the forest sector, the Monitoring and Evaluation (M&E) Unit in the Ministry, only monitors and evaluates projects implemented by the Ministry of natural Resources while there are numerous forest related projects implemented by other sectors including NGOs and the private sector. Therefore, coordinated Monitoring and Evaluation Framework for CC related strategies in Tanzania are lacking or inadequate.

The Tanzania Agricultural policy is currently under review. In the draft Agriculture Policy of 2012, climate change adaptation and mitigation is presented only in general terms. The policy identifies existing land tenure as unfavourable for long-term investment. This has implication on investment in climate smart agriculture (CSA). Though the policy emphasise promotion of sustainable agricultural land use plans and management but such objectives are not targeting to respond to any specific identified CSA problem. Aspects of REDD+ and in particular to small scale farmers are scantily covered by the draft policy although the opportunities of agriculture as potential carbon sink and possible mechanism to benefit from carbon market is provided.

In 2012 a National Climate Change Strategy was put in place (URT, 2012). The main objective of the strategy is to enhance the technical, institutional and individual capacity of the country to address the impacts of climate change. The Strategy covers adaptation, mitigation and crosscutting interventions that will enable Tanzania benefit from the opportunities available to developing countries in their efforts to tackle climate change. The Strategy focuses on critical natural resource based sectors and outlines potential measures for adaptation to the adverse effects of climate change impacts.

Though the strategy provides focus on natural resource based sectors, it (strategy) is silent on how REDD+ and climate change mitigation will be integrated in the sectoral policies, legislations and programmes in Tanzania. Suggestions and guidelines to review the sectoral policies i.e. agriculture, forest, livestock, land use and their associated legislations is fairly less mentioned in the strategy or missing all together. Moreover, the strategy was released before the REDD+ strategy, which is still under discussion. It should also be noted that the REDD+ strategy is not yet specifically recognized in any government policy, although the key strategies of REDD+ are consistent with Tanzanian policies related to natural resource, agriculture and energy.

It should also be noted that the aims of the National REDD+ are in conformity with the National Climate Change Strategy due to the fact that the REDD+ is also specifically mentioned in the strategy. Despite the relevance of the REDD+ and the National Climate Change strategies in Tanzanian polices, the implementation of these strategies might also conflict with other development strategies like significant land clearance for agriculture for instance under the policies within the agriculture first (*Kilimo Kwanza*) strategy, and Southern Agricultural Growth Corridor of Tanzania (SAGCOT).

Tanzania has a total of 35.3 million hectares of forestland out of which 16 million ha comprise of reserved forests, 2 million ha are forests in national parks and the rest, 17.3 million ha are unprotected forests in general land. This forest area is under extreme pressure from deforestation and forest degradation. The Forestry and Beekeeping Division of Tanzania estimates an annual forest reduction between 130,000 to 500,000 ha, against only 25,000 ha planted annually (MNRT, 2009). Forests are declining by 11.5 percent annually, 99 percent of which is for fuel wood and charcoal (Kilahama, 2005). To address the impact of

deforestation and forest degradation, Tanzania has developed a National REDD+ Strategy to guide the implementation and coordination of REDD+. The Tanzanian national REDD+ Strategy was approved and launched in March 2013. The strategy among other key issues identifies the drivers of uncontrolled deforestation and degradation in the forests of Tanzania and proposes a number of innovative strategy options for addressing them.

Tanzania has identified the Drivers of Deforestation and Forest Degradation (D&D) which include the following:

- a) Agricultural expansion, human settlements and population increase: shifting cultivation and permanent agriculture, development of human settlements, wood for curing tobacco, wood for fish smoking and making burned bricks.
- b) Overgrazing: mainly due to large herds of cattle arising from unwillingness among livestock owners to de-stock and the fact that most of the forests/woodlands are open access (not reserved).
- c) Firewood and charcoal production: rapid population increase and fast rate of urbanisation have increased the demand for these products while poverty has prevented transition to other sources of energy. About 85% of the total urban population depends on charcoal for household cooking and energy for small and medium enterprises.
- d) Uncontrolled fires: fires during land preparation for shifting cultivation, collecting honey, charcoal making, hunting or livestock owners burning to prepare areas to provide green flush for livestock and to control pests such as ticks.
- e) Timber extraction: one of the major causes of loss of forests. It can also damage the remaining smaller trees, destroy much of the original forest and disturb the topsoil. Other effects include: suppression of regeneration by weeds or failure to regenerate and damage to the watershed functions of the forests.
- f) Development of infrastructure/industry: Investments in road and railway construction, industries, hydroelectric projects and mineral and oil extraction, necessary to meet development objectives, often entail environmental trade-offs.
- g) Refugees: land clearing for refugee campsites, construction material, fuel wood and agricultural crop production constitute a major threat to forest resources in refugee-populated areas. The influx of refugees into the country especially in Kigoma and Kagera regions has had severe environmental consequences; inter alia, rapid depletion

of forests and wildlife, destruction of water resources and damages to croplands. An average of 17 000 to 20 000 ha were estimated to have been depleted during 1994-1996 (MNRT (2001)).

- h) Bio-fuel production: Large areas of natural forests habitats (e.g. the Coastal forests) with high biodiversity are been cleared to give way to biofuel crop farming. It is estimated that Tanzania has 30 million ha suitable for bio-fuel plantations. By 2008 the total area allocated for biofuel plantations was 650,000 ha out of the 4 million ha requested. Due to weak Environmental Impact Assessment (EIA) it is estimated that over half of the biofuel investors did not carry EIA (Mutch, 2009). Consequently, large areas of natural forests habitats (e.g. the Coastal forests) with high biodiversity are been cleared to give way to biofuel crop farming.
- i) Inadequate governance of forest resources: Forest resource management has largely been undermined by the institutions that control what happens to a given resource through the allocation and enforcement of rights of use, access, tenure and transfer. The inadequate functioning of key forest management institutions, laws and policies linked to rural livelihoods and other natural resource use has contributed significantly to deforestation and forest degradation and to poor economic growth and rural poverty. Efforts to improve forest management should therefore address fundamental issues such as: accountability and transparent, institutions and institutional arrangements including better functioning of policy and legal environments that fully supports communities rights and rural livelihoods

The strategy highlights a number of options for addressing drives of D&D through a number of options: (a) promote better farming systems, (b) promote sustainable utilization of forest products, (c) strengthen forest sector governance, and (d) forest fire management.

The REDD+ Strategy for Tanzania represents an important milestone, providing a framework for moving forward towards REDD+ readiness. It does not, however, clarify many of the longstanding and unresolved issues that will need to be addressed for REDD+ to become effectively operational. This includes questions of carbon/tree tenure, legal and policy gaps (or overlaps) in sectoral legislation, benefit sharing mechanisms and financing modalities. Options such as large scale, on farm afforestation and reforestation programme beside demand

side energy conservation are of paramount importance. The strategy should be seen as a living document that may require revision with regard to emerging new issues.

3.3 Sudan

The Government of Sudan, with support from GEF/LDCF and UNDP, prepared its National Adaptation plan of Action (NAPA, 2007). The action identified key agro- ecological zones affected by climate change, vulnerable states and sites, and critical sectors and sub-sectors. The NAPA was completed in a participatory manner in March 2007 and was approved and commended by the Council of Ministers. During preparation of NAPA, several policy issues related to climate change mitigation and adaptation and CSA were identified and which included the following broad areas:

- i. Mainstreaming of climate change adaptation in the development plans.
- ii. Extending political support for adoption processes at state and national levels.
- iii. Urgent need to develop policies for water resources management to emphasize water harvesting, efficient sustainable utilization of water resources to emphasize provision of safe potable water for rural, urban and nomadic populations.
- iv. Developing strategies and policies to support food security.
- v. Adoption national land use plan.
- vi. Inclusion poverty reduction in the adopted plans.
- vii. Encouraging national sustainable use of natural resources.
- viii. Microfinance institutions should address the needs of small farmers and pastoralists.
- ix. Strengthening the role of research and extension in planning and implementation of climate change adaptation.
- x. Ensuring active participation of all communities.
- xi. Strengthening the role of Higher Council for Environment and Natural Resources (HCENR) in effective horizontal and vertical coordination between all stakeholders.
- xii. Empowering women through their active participation.
- xiii. Establishing a national early warning system, and assist in establishing community bases early warning systems.

We need to add analysis of comprehensiveness, just like for Tanzania

3.4. Zambia

The National Adaptation Programme of Action on Climate Change (NAPA) for Zambia was formulated to enable the effective identification of national climate change vulnerabilities and

adaptation needs, as part of the process of UNFCCC for Least Developed Countries (LDCs). The NAPAs identified 10 priority areas for action within the sectors of agriculture and food security (livestock, fisheries and crops), energy and water, human health, natural resources and wildlife. NAPA for Zambia does not include specific recommendations for REDD+ or identify climatic hazards and adaptation measures for the forestry sector.

The Zambian national climate change response strategy is focused to mainstream climate change into the most economically and vulnerable sectors of the economy in order to ensure sustainable economic development towards the attainment of Zambia's Vision 2030. By 2010/13, Zambia had made substantial progress on its policy, strategic and institutional framework for climate change. These include undertaking revision and mainstreaming climate change issues in sixth National Development Plans, reaching agreement on the Interim Institutional Arrangements for Climate Change, creating awareness amongst high-level decision Makers, launching the National Climate Change Response Strategy and adoption of the Disaster Management Act.

Zambia has a forest cover of 49.9 million ha or about 66% of the total land area of the country. These forests are major sources of livelihoods especially for the rural communities, providing food, grazing areas, water, timber and timber products and numerous environmental benefits. The forested areas have over the years come under extreme pressure with reported deforestation of 250,000 to 300,000 ha per year. This is in addition to other areas that have been degraded. These forest losses are reported to be seriously impacting on the livelihoods of communities, particularly the forest dependent poor rural communities in terms of water, food and energy security. Zambia has embarked on the REDD+ strategy formulation process, supported by the UN-REDD program. The process has identified the following direct drivers of deforestation and forest degradation:

- i. Agriculture expansion and shifting cultivation
- ii. Infrastructure development, especially settlements and urban centres expansion
- iii. Unsustainable wood utilization, especially charcoal, timber and fuel wood.
- iv. Fires, usually done as a grazing area management tool and burning agricultural residues.

In addition, the Zambia process has identified a number of indirect drivers of deforestation and forest degradation, including:

- i. Population growth that drives demand of forest products
- ii. High rural poverty
- iii. High unemployment rates in the rural areas
- iv. Poor governance of forest resources;
- v. Inadequate funding of the forest sector

Zambia has underscored four major priorities and factors for success for its process:

- I. Defining the problem to be addressed by the strategy, informed by critical evaluation of the drivers of deforestation and forest degradation
- II. Defining a strong national vision to guide strategy: aligning REDD+ with national vision, ensuring single coordination and leadership while building on existing institutions, and anchoring the readiness process into the strategy design while harmonizing the various components.
- III. Detailed analytical work and bringing the analytics together: Zambia has published an “Issues and Options Report” to draw key elements from its analytical work and to:
 - a. Provide the foundation for the national REDD+ Strategy and the iterative nature of the formulation process. It emphasizes the need for sequencing and harmonizing activities and ensuring "forward and backward linkages".
 - b. Mainstream REDD+ into broader national development processes: supporting national policy and legal processes, mainstreaming into national climate change, agriculture and national development as well as decentralization processes, facilitating dialogue and addressing drivers such as charcoal production.
 - c. Build partnerships and coordination, notably by strengthening inter-agency, financing, and research, programmatic and learning partnerships.
- IV. An inclusive and participatory stakeholder consultation process and strong high-level policy dialogue

Recognizing that success of REDD + will require strong policy and institutional support, the Zambia process has recommended the following broad interventions:

- i. Strengthening national policy and legal processes such as the 2014 Forests Bill.

- ii. Mainstreaming REDD+ into national Climate Change policy, Agriculture policy, National Agriculture Investment Programme and donor co-operation frameworks with government.
- iii. National dialogue on key issues of importance to REDD+ to galvanise political support in addressing key drivers of deforestation (e.g. charcoal).
- iv. Integrating REDD+ into Provincial and District Development Coordinating Committees and decentralized processes.
- v. Strengthening institutions currently tasked with forest law enforcement and promoting participatory management of forest resources.

A multi-stakeholder arrangement has been established within the Government to support the strategy formulation process.

3.5 Uganda

REDD+ Readiness processes in Uganda started in 2013, coordinated by the Ministry of Water and Environment. The Readiness process is supported by both the UN-REDD program and the Forest Carbon Partnership Facility. The process has identified the following outputs:

- a. Institutional arrangements and modalities for implementing the Strategy.
- b. Policy, Legal and Operational procedures for implementing the REDD+ Strategy.
- c. National capacity and preparedness for implementing REDD-Plus Strategy.
- d. Strategies and actions for addressing deforestation and forest degradation.
- e. National forest reference emissions level and future scenario.
- f. National Monitoring system for measuring performance.
- g. Framework for assessing key social and environment effects of proposed strategy options.
- h. Information/database on deforestation, forest degradation and forest governance.
- i. Potential emissions reduction activities and sites.

Uganda's forest cover has declined at an estimated annual loss of approximately 88,000 ha/year since 1990. These changes in forestry resources have taken place in both protected areas and non-protected areas but with more changes occurring in non-protected areas. By 2002 about 50% of the tropical high forests (THF) on private lands were degraded and while 17% of degraded forest were in protected areas. Deforestation occurs mostly in woodlands especially outside protected areas.

The major causes of deforestation and forest degradation relate to the increasing agrarian human population and resultant pressures on forest resources and forestlands as well as policy and institutional weaknesses in forestry governance. The key drivers of deforestation and forest degradation consist of:

- i. Agricultural expansion in forested land caused by increased population, increased commercialization of agriculture especially for non-traditional agricultural exports, poor agricultural practices and resultant land degradation, and problems of animal control (Kamanyire, 2000).
- ii. Unsustainable utilization of forest products including charcoal, fuelwood and timber, arising from increased demand and commercialization of charcoal and lack of alternatives.
- iii. Human settlement and urbanization.
- iv. Weak forest sector governance resulting from weak regulations, weak institutions and weak participation of stakeholders.
- v. The resultant effects of these drivers are decline in forest vegetation cover, decline in quality and quantity of forest goods and services and conflicts regarding access, use and control over forest resources

A number of potential interventions have been proposed to address the drivers and which will be further clarified during the strategy formulation process. Some of the interventions include:

- i. Agricultural intensification, land-use planning and clarification of land-use rights to address agriculture-driven deforestation and forest degradation
- ii. Improved timber and charcoal production efficiency, charcoal trade regulation, strengthened enforcement and compliance and land tenure reforms to address the problem of unsustainable wood utilization
- iii. Development and implementation of strategies for managing livestock in woodlands
- iv. Strengthened Law enforcement capacities and measures, Law reviews to identify reforms for strengthening policy, legal and institutional framework for REDD+ implementation.

The trends and drivers of deforestation and forest degradation, coupled with unfavourable land tenure, and policy and legal framework favour the development and implementation of REDD+ Strategy in Uganda. The process recognizes the strong need to develop national

capacity for REDD+ particularly in policy and legal reforms, and systems for REDD+ implementation including institutional and human resources capacity buildings.

3.6 Madagascar

Madagascar is well known as a *Biodiversity Hotspot*, or global priority for conservation, due to its high levels of endemic species and the significant levels of habitat conversion caused by man. It is also well known as one of the world poorest nations, with poverty being one of the drivers of deforestation.

Madagascar has been something of a testing ground for various models of conservation intervention: Integrated Conservation and Development Projects (ICDPs), Community Forest Management (CFM) and Payments for Ecological Services (PES) are among these new policies which have been tested and implemented across the country.

Most recently, following a Presidential Declaration in Durban in 2003, Madagascar started a significant expansion of its protected area system, moving from a protected area network based principally on strict conservation areas, to a system which, in 2009, includes new categories of protected area which have many more residents, and tolerate many more human uses of natural resources than the older style reserves. Many of these new protected areas are based on community forest management agreements where certain rights and responsibilities are transferred to local community associations through time-bound contracts. Since the declaration in 2003, the protected areas network has more than tripled in size.

The emergence of "REDD" has been seen by the conservation movement in Madagascar as a prime opportunity for providing much needed resources to simultaneously improve the impacts of conservation projects and to enhance local livelihoods. At present, Madagascar is seriously engaged with the REDD+ process, both in country through a national working group and five pilot REDD+ projects, as well as internationally supported by participation in projects such as the Forest Carbon Partnership Facility (FCPF) and USAID's Translinks Project.

Madagascar is considered to have a high potential for both REDD+ and Clean Development Mechanism funded activities, due to its high rates of deforestation (0.53% pa for the period 2000-2005) and relatively low forest cover (15.88% of land area). The current state of knowledge on deforestation trends and capacity to monitor it is excellent, although most of this work has been donor and NGO led, and done on an *ad hoc* basis. The Malagasy state has a great need for improved capacity and additional resources to be allocated in order to take responsibility for its own forest cover monitoring. The country identified the following sectors to be given due considerations in climate mitigation (Table 3):

Table 3. Key sectors and priority areas of interventions in Madagascar.

<i>Agriculture</i>	<i>Forestry</i>	<i>Energy</i>	<i>Waste management</i>
Forage seed multiplication and extension in pastoral areas	Reforestation in 22 regions in Madagascar	Promotion of renewable energy technologies (Switching from paraffin (kerosene) lamps to photo-voltaic (PV) lamps)	Processing of solid and liquid municipal and agricultural waste into energy and organic fertilizer
Improved varieties	Restoration of torotoro forestry wet area (9,000ha)	Increase of the electric supply in major cities	
Making compost	Improve the management of protected areas	Efficient firewood cooking stoves	
	REDD+(Build capacity to develop, implement and monitor agricultural funding mechanism to implement REDD+ and development of policy and strategy for REDD+	Popularize energy-saving lamps	

5. National Measuring, Reporting and Verification (MRVs) System

Among the key preparatory activities to participate in REDD+ is the development of systems to measure, report and verify changes in forest cover and related carbon emissions, so called MRV Systems. These systems can include monitoring of Sustainable Forest Management (SFM), Conservation of Forest Carbon Stocks, and Carbon Stock Enhancement and Safeguards (social and biodiversity impacts). A regional approach towards REDD+ MRV (specifically changes in forest cover and related carbon emissions) and the implementation of a component of the COMESA/ECA/SADC REDD+ Support Programme is needed. The main objective is that COMESA/ECA/SADC as a region has a standard MRV system that is compliant with the recommendations of the Intergovernmental Panel on Climate Change (IPCC) as well as enhanced capacities to measure changes to forest areas, and loss of carbon stocks from deforestation and forest degradation.

Key Thematic Areas/Programme Priorities

Component 1: Develop, implement and evaluate the regional MRV system for deforestation and forest degradation in selected test sites in pilot countries, with the following outputs:

- Approval of IPCC compliant MRV design.
- Enhanced capacities of COMESA/ECA/SADC Member States to implement the system, and
- MRV system registers at sub-national level emissions in 3 of 10 forest ecosystems relevant to COMESA/ECA/SADC.

Component 2: Adopt a regional MRV system for monitoring change of forest cover and carbon stocks from deforestation and forest degradation, with the following outputs:

- Established institutional arrangements to develop regional MRV system,
- Regional MRV system is approved by the Technical Committee on Forestry (TCF), and
- Regional Knowledge Information Platform for REDD+ MRV is functional.

6. Opportunities and Challenges for Climate Mitigation and Adaptation

6.1 Opportunities/future actions

There exists a number of opportunities for climate change mitigation in COMESA/ECA/SADC region. Potential areas exist for engagement in public private

partnership (PPP) in climate change mitigation priority areas in NAPAs, NAMAs, REDD+ which include the following:

- Carry out capacity needs assessment for various actors (institutional arrangement, Knowledge, Leadership, Accountability, Dialogues, public and private engagement).
- Facilitate technical back stopping.
- Train in various areas, e.g. REDD+, carbon assessment and marketing, payment for environmental services (PES), institutional arrangement, group dynamics, development of business plans).
- Facilitate linkages between CBOs/NGOs and the private sector.
- Facilitate formulation of PPP Policy in the region.
- Partner identification, matchmaking and examine factors which are likely to influence partnerships in the implementation of climate change mitigation actions (REDD+ activities).
- Cost effective land use planning and set aside specific areas for village/ community forest reserves that facilitate REDD+ activities.
- Promotion alternative use of energy and wise use of energy sources.
- Establishment of institutional frameworks that will foresee equitable benefit sharing within various levels in the region.
- Promotion of various income generating activities (IGAs) from non-wood forest products with particular regard to women e.g., beekeeping.
- Review performance of participatory forest management (PFM) and its benefit sharing mechanism models.
- Promoting community-level ecotourism investments in the region.
- Establish market linkages for harvested certified timber and honey value chains.
- Facilitate establishment of PPP Trust Fund at different levels in the region.
- Facilitate cooperation and linkage between private sector and government bodies for promoting PPP (establishment of dialogue platforms for PPP in climate change at different planning levels).
- Promote climate smart agriculture.
- Financing Opportunities (existing International Funds that are financing climate change include the Global Environmental Facility (GEF), Multilateral Agreements Funds, bilateral Funds and Banks).

5.2 Challenges/constraints

Despite the opportunities, a number of challenges/constraints exist to mitigate climate change in the region, among which are the following: (a) lack of sustainable funding, (b) capacity limitations, (c) weak private sector involvement, (d) poor involvement of local communities on conservation related income generating activities, (e) absence of clear modalities on benefit sharing mechanisms among national and local stakeholders and between public and private sectors, and (f) weak partnership between communities and private sectors. To address the above challenges/constraints there is a need to undertake the following:

- Establishing sustainable funding mechanisms.
- Building local human capacity to manage climate change mitigation issues.
- Fostering private sector involvement in climate change mitigation.
- Establishing/assisting commercially viable conservation related income-generating activities (IGAs).
- Sharing benefits between national and local stakeholders or between public and private actors through establishment of proper modalities.
- Strengthen partnership between communities and private sector to mitigate climate change.

7. Conclusions and Recommendation

From this review, the following conclusions and recommendations are made:

- Climate change is a major challenge to the region as the major economic sectors are vulnerable to climate variability; this means the region needs to design robust climate mitigation more than any other region in the world.
- There is a need to address the role of key sectors in contributing to climate mitigation for CC (Inter-sectoral cooperation); this plays a crucial element on the way forward as it helps to ensure that policies and implementation capacity are utilised in an optimal way through policy coherence, coordination and effective resource management.
- In order to mitigate climate change, there is a need to implement capacity building on CC mitigation: there are serious needs to develop and broaden regional capacity of key agencies working with the CC mitigation agenda in the region and strengthen existing regional research institutions.
- There is a need to create a platform for climate change mitigation agenda in the region. Previous studies have shown that development partner's support to climate is

fragmented. Small projects have appeared across sectors and regions, but a holistic view is lacking. We propose that a regional framework be established to define a road map to be used to highlight where support is needed over the short, medium and long term to ensure that the key CC mitigation activities are carried out in a regionally coordinated way.

- Financing CC mitigation agenda requires significant resource mobilization, both national and international level. Pledges have been made internationally to have financing available for CC mitigation activities, but since they are filtered through a global competition for the resources, national resource mobilization is equally important. Allocations to environmental and CC mitigation related activities need to match the ambition level of the member states governments to drive the agenda forward. Regional coordination on financing according to priority areas is vital.
- Detailed, regional-scale research on the impact of, and vulnerability to, climate change and variability with reference to agriculture, forest, water and other climate sensitive resources is needed.
- Streamlining climate change mitigation in the academia: courses on climate change mitigation/adaptation are in many cases not comprehensive. There is a need to mainstream programs on climate adaptation/mitigation with more focus to interests of each country.

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