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DRAFT AFRICAN UNION STRATEGY ON CLIMATE CHANGE

AFRICAN STRATEGY ON CLIMATE CHANGE

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ACRONYMS

AAS	-	African Academy of Sciences
ACCNNR	-	African Convention on the Conservation of Nature and Natural Resources
ACMAD	-	African Centre for Meteorological Applications for Development
ACP	-	African Common Position
ACPC	-	African Climate Policy Centre
AEC	-	African Economic Community
AfDB	-	African Development Bank
AFOLU	-	Agriculture Forestry and Other Land Uses
AGF	-	Advisory Group on Climate Change financing
AGN	-	African Group of Negotiators
AGRHYMET	-	Agro-meteorology and Hydrology Regional Centre
AHSG	-	African Heads of State and Government
AIDA	-	Accelerated Industrial Development of Africa
AMCEN	-	The African Ministerial Conference on the Environment
AMCHUD	-	African Ministerial Conference on Housing and Urban development
AMCOMET	-	African Ministers conferences on Meteorology
AMCOST	-	African Ministerial Council on Science and Technology
AMCOW	-	African Ministerial Conference on Water
AMESD	-	African Monitoring of the Environment for Sustainable Development
ANG	-	African Negotiating Group
ARC	-	African Risk Capacity
AR4	-	IPCC Fourth Assessment Report
AU	-	African Union
AUC	-	The African Union Commission
BAP	-	Bali Action Plan
AERSG	-	Agricultural and Environmental Resource SADC, Gaborone;
C02	-	Carbondioxide
CAADP	-	Comprehensive Africa Agriculture Development Programme
CAHOSCC	-	Conference of African Heads of State and Government on Climate Change
CAMA	-	Conference of African Ministers of Agriculture
CBD	-	Convention on Biological Diversity
CBOs	-	Community Based Organizations
CCA	-	Climate change adaptation
CCAP	-	Climate Change Action Plan
CCDU	-	Climate Change and Desertification Unit
CDSF	-	Climate and Development Special Fund
CDM	-	Clean Development Mechanism
CEIF	-	Clean Energy Investment Framework
CEMAC	-	Economic and Monetary Community of Central Africa
CEN-SAD	-	Community of Sahel-Saharan States
CICOS	-	Commission Internationale du Bassin. Congo-Oubangui-Sangha
CIF	-	Climate Investment Fund
CIS	-	Climate Information Services

CLIMDEV	-	Climate for Development
COI	-	Indian Ocean Commission
COMESA	-	Common Market for Eastern and Southern Africa
COMIFAC	-	Central African Forest Commission -Commission des Forêts d'Afrique Centrale,
COP	-	Conference of Parties
CRA	-	Climate Resilient Agriculture
CRMA	-	Climate Resiliency and Adaptation Management
CSC	-	Climate Services Centre
CTCN	-	Climate Technology Centre Network
CTF	-	Climate Trust Fund
DLDD	-	Desertification, Land Degradation and Drought
DMC	-	Drought Monitoring Centre
DREA	-	Department of Rural Economy and Agriculture
DRM	-	Disaster Risk Management
DRR	-	Disaster Risk Reduction
EAC	-	East African Community
EACCCP	-	East African Community Climate Change Policy
ECCAS	-	Economic Community of Central African States
ECOWAS	-	Economic Community of West African States
EDF	-	European Development Fund
ENSO	-	El Niño-Southern Oscillation
EO	-	Earth Observation
EOT	-	Earth Observation Technologies
EWS	-	Early warning Systems
FAO	-	Food and Agriculture Organization
FDI	-	Foreign Direct Investments
FEMA	-	Federal Emergency Management Agency
FSNACCP	-	Framework of Southern and Northern Africa Climate Change Programmes
GCF	-	Green Climate Fund
GCM	-	General Circulation Models
GCOS	-	Global Climate Observation System
GDP	-	Gross Domestic Products
GFCS	-	Global Framework for Climate Services
GFDRR	-	World Bank Global Fund for Disaster Risk Reduction
GGWSSI	-	Great Green Wall for Sahara and Sahel Initiative
GHG	-	Greenhouse Gases
GPCs	-	Global Producing Centers
HFA	-	Hyogo Framework for Action
ICE	-	Internal Combustion Engine
ICPAC	-	IGAD Climate Prediction and Application Centre
ICRISE	-	Integrated Collaborative Regional and International Sustainable Energy
ICSU	-	International Council for Science
ICT	-	Information and Communication Technologies
ICZM	-	Integrated Coastal and Marine Management

IFIs	-	International Financial Institutions
IGAD	-	Intergovernmental Authority on Development
IMF	-	International Monetary Fund
IOC	-	Intergovernmental Oceanographic Commission
IOD	-	Indian Ocean Dipole
IPCC	-	The Intergovernmental Panel on Climate Change
ISACIP	-	Institutional Support to African Climate Institutions Project
ITCZ	-	Inter-Tropical Convergence Zone
IWRM	-	Integrated Water Resource Management
KP	-	Kyoto Protocol
LCA	-	Long-term Cooperative Action
LDCs	-	Least Developed Countries
LPA	-	Lagos Plan of Action
M&E	-	Monitoring and Evaluation
MDGs	-	Millennium Development Goals
MESA	-	Monitoring of Environment for Security in Africa
MOI	-	Mauritius Oceanography Institute
MOP	-	Meeting of Parties
MoUs	-	Memorandum of Understanding
MS	-	Member States
NAS	-	National Academy of Sciences
NAMAs	-	Nationally Appropriate Mitigation Actions
NAO	-	North Atlantic Oscillation
NAPA	-	National Adaptation Programme of Action
NEAPs	-	National Environmental Action Plans
NEPAD	-	New Partnership for Africa's Development
NGOs	-	Non-Governmental Organizations
NIDB	-	National Industrial Development Banks
NMHSs	-	National Meteorological and Hydrological Services
NWP	-	Nairobi Work Programme
OAU	-	Organization of African Union
OSS	-	Observatoire du Sahara et du Sahel - Sahara and Sahel Observatory
PDNA	-	Post Disaster Needs Assessment
PoA	-	Programme of Action
PPP	-	Public Private Partnership
R&D	-	Research and development
RBOs	-	River Basin Organizations
RCCs	-	Regional Climate Centres
RCM	-	Regional Circulation Models
RCP	-	Representative Concentration Pathways
RE	-	Renewable Energy
RECs	-	Regional Economic Communities
RECTAS	-	Regional Centre for Training in Aerospace Surveys
REDD+	-	Reducing emissions from deforestation and forest degradation (plus)
RICs	-	Regional Implementation Centres
SADC	-	Southern Africa Development Community

SADC-CSC	-	Southern Africa Development Community Climate Services Centre
SDPAMs	-	Sustainable development policies and measures
SFM	-	Sustainable Forestry Management
SIDs	-	Small Island Developing States
SLM	-	Sustainable Land Management
SREX	-	Special Report on Managing the Risks of Extreme Events and Disasters
SSA	-	Sub-Saharan African
STCs	-	Specialized Technical Committees
THEMA	-	Regional Thematic Actions
UIP	-	User Interface Platform
UMA	-	Arab Maghreb Union
UNCB	-	United Nations Convection on Biodiversity
UNCCD	-	United Nations Convection on Desertification
UNCED	-	United Nations Conference on Environment and Development
UNCTAD	-	UN Conference on Trade and Development
UNECA	-	United Nations Economic Commission for Africa
UNEP	-	United Nations Environment Programme
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
UNFCCC	-	United Nations Framework Convention on Climate Change
UN-HABITAT	-	United Nations Human Settlements Programme
UNISDR	-	United Nations International Strategy for Disaster Reduction
USD	-	United States Dollar
WCC-3	-	World Climate Conference-3
WMO	-	World Meteorological Organization,
WSSD	-	World Summit on Sustainable Development

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EXECUTIVE SUMMARY

The fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) explicitly shows the world is warming faster than estimated before and that humans caused most of that change over the last decades. It is also clear that climate change will continue, at a pace determined by past, present and future emissions of heat-trapping gases. The effects of climate change that have already occurred are widespread and significant, affecting agriculture, energy, human health, terrestrial and marine ecosystems, water resources, and some industries across the world and especially the African continent.

Future climate change will continue to affect people, economies, and the environment differently in different places on the continent. Some African countries have and will confront risks from sea level rise, extreme weather, including stifling heat, intense rains, and powerful storm surges. Others have and will continue to face risks of more challenging conditions for food and agriculture, water, health, fisheries, infrastructure, transportation, and other livelihoods. We know climate change acts as a threat multiplier, tipping difficult situations over the edge or narrowing options for solving problems.

In order to counteract the numerous risks associated with climate change, there are many on-going initiatives at global, regional, sub-regional and national levels to develop strategies to address the challenges of climate change. At the global level, such initiatives include the Intergovernmental Panel on Climate Change (IPCC), United Nations framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, the Nairobi Work Programme, and the Bali Action Plan, among others. At the regional level, such initiatives include African Ministerial Conference on Environment (AMCEN), the Framework of Southern and Northern Africa Climate Change Programmes, and the East African Community Climate Change Policy. A few countries in Africa have also developed frameworks and strategies to address national climate change challenges. At the same time, there are four main climate related centers in Africa are the African Centre for Meteorological Applications for Development (ACMAD), the Agro-serving as WMO Regional Climate Centres (RCCs) for Africa for down scaling of products from WMO Global Producing Centers (GPCs) in the developing regional specific areas.

Africa is the most vulnerable continent to climate variability and change, a situation that is aggravated by the interaction of 'multiple stresses', including high dependence on rain-fed agriculture, widespread poverty and weak adaptive capacity.

Under a changing climate, the significant increases in temperatures, sea level rise, shifts in weather patterns, and other extremes would have adverse effects on human health, natural ecosystems, and other environmental, social and economic impacts. These pose a formidable challenge to Africa's socio-economic development prospects which would include among other things, the realization of the targets of the World Summit on Sustainable Development (WSSD), Millennium Development Goals (MDGs), and achievement of economic prosperity and improvement in social wellbeing of citizens. These also has heightened the need for Member States to design robust approaches that would give direction, coherence, focus and collective efforts in confronting climate change challenges.

In the 1990s, especially after the Earth Summit in Brazil in 1992, many Member States had devised environmental related policies, often articulated in National Environmental Action Plans (NEAPs), but these were neither accompanied by heuristic frameworks of implementation, nor by attempts to mainstream climate change into development policy in an integrated and holistic manner.

The development of this strategy has been guided by a broad policy underpinning which, in a nutshell, embodies and specifies the overall expectation in confronting the climate change challenge. For our purposes, Africa's climate policy refers to an overarching directive that seeks to enhance the adaptive capacities and resilience of Member States and RECs with a view to minimizing their vulnerability, pursue a low carbon growth path dictated by principles of the Green Economy, sustainable development, and poverty reduction; and orient governance, knowledge systems, planning, and national regional/international structures to treat climate change as a development imperative.

There is an urgent need for the Member States to design robust approaches that would help to effectively address the challenges associated with climate change risks, disasters and sustainable development. Members of the African Union have endorsed many efforts to support the improvement of climate data, information, and services, including the endorsement of the climate strategy of the New Partnership for Africa's Development (NEPAD), and the convening of a historic meeting on "Climate Information for Development Needs: An Action Plan for Africa" in Addis Ababa, Ethiopia 2006, among others.

The African Union has played a key role in ensuring that Africa takes a united stand in global negotiations and evolving mechanisms. The African Group of Negotiators in the UNFCCC processes, inputs from relevant STCs, the work of the CAHOSCC and AMCEN have all been brought into a coherent AU framework. The African Heads of State and Government, having appreciated the gravity of the climate change challenge unfolding in the continent, made a number of seminal decisions to help Member States deal effectively, efficiently and equitably with the risks posed by climate change.

In July 2009, the African Union Summit adopted a decision on the African Common Position on Climate Change, which was to be based on the Algiers Platform and its continued refinement by the African Group of Negotiators. The Assembly further took note of the Commission's efforts to develop a comprehensive African Strategy on Climate Change, and requested the Commission, in collaboration with partners, to elaborate a comprehensive African Strategy on Climate Change, including development of sector technical backup data on the impacts of climate change, its cost to the economy and amount of carbon sequestered in various African ecosystems. This is the premise upon which the elaboration of the Strategy is based on.

The July 2009 Summit in Sirte, Libya adopted a decision which requested the Commission of the African Union, in collaboration with partners, to develop a comprehensive African Strategy on Climate Change, including development of sector technical backup data on the impacts of climate change its' cost to the economies of Africa and the amount of carbon sequestered in various African ecosystems. Accordingly, the Commission embarked on the elaboration of the draft Strategy through a technically supported participatory process with our key stakeholders including Member States, Regional Economic Communities, UN agencies and other partners. The text of the Draft Strategy was developed and refined through small, specialized expert working groups.

The draft Strategy was submitted to the 4th extraordinary session of the African Ministerial Conference on Environment in Bamako, Mali in September 2011. The African ministers of environment welcomed the report of the African Union Commission on the development of the African strategy on climate change and called upon the Commission to continue this work and reflect the inputs made at the fourth special session of African Ministerial Conference on the Environment in the strategy; especially, issues related to African common position on climate change, science of climate change and technology development and transfer.

The Vision of the African strategy is to provide the AU as a whole, the RECs, Member States and other stakeholders with a reliable source of strategic guidance to enable them effectively address climate change challenges. The strategy also proposes to carry out other interventions to address some specific priority areas including adaptation and risk management, Nationally Appropriate Mitigation Actions (NAMAs) and as well as some specific cross-cutting issues. The strategy also identifies specific goals for each thematic area, For each of the goals, several actions are identified. These are used in defining an implementation matrix.

The guiding principles take cognizance of the multidisciplinary and cross cutting nature of climate change, both in terms of disciplines and sectors. It also recognizes that most aspects of this strategy will only be realized through partnerships and close collaboration among various sectors, institutions and stakeholders at global, regional and national levels.

The African Climate Change Strategy is organized around four thematic pillars:

- Climate Change Governance;
- Promotion of research, education, awareness raising and advocacy;
- Mainstreaming and integrating climate change imperatives in planning, budgeting, and development processes; and
- Promotion of national, regional, and international cooperation.

The draft African climate change strategy is also divided in six parts with various chapters: and sub-chapters followed by three annexes:

For each thematic area:

- A goal or a series of goals are devised; and
- Corresponding actions are outlined.

A whole section on the means of implementation is developed and comprises:

- Capacity development;
- Technology Development and Transfer;
- Finance and Resources Mobilization;
- Communication Framework;
- Implementation, Roles, Responsibilities,
- Monitoring, Evaluation, and Reporting; and
- Matrix of Implementation.

Annex A:: Matrix of Implementation of the Strategy;
Annex B: A Technical Background Document; and
Annex C: A Series of Policy Briefs.

For each strategic areas of intervention, a matrix of implementation is devised:

STRATEGIC AREAS OF INTERVENTION	MAJOR AREAS OF ACTIVITY	EXPECTED RESULTS	MEASURABLEINDICATORS	INSTITUTIONS INVOLVED

PART I INTRODUCTION

Africa regards the global climate change crisis as the defining development challenge of our time. From the evidence of science and the scenarios projected by the world climate experts and the community of scientists, it is acknowledged that Africa as a region will bear the greatest brunt and suffer the worst devastating effects from the virulent excesses caused by the world's most gigantic externality. African countries have been the aggrieved party all along considering that they virtually played no part in precipitating the menacing global threat. This has been all the more excruciating because the historic emitters have shown no factual interest in assisting Africa evolve resilient economics. Moreover, many of the historic emitters are expected by Africa to demonstrate greater sensitivity towards the principle of common but differentiated responsibilities, because their acceptance would mean subscribing to the canon of equity.

But Africa's deep commitment to global scientific evidence in appreciating the global gravity of the climate bogey is also demonstrated in the manner in which it has sought solutions to confront the climate externality. Africa thus regards science as the basis for decision–making whenever the challenge of climate change is to be comprehended or when solutions are to be developed.

Due to these adverse trends, climate models anticipate that Africa will experience a median temperature rise of up to 4^{o}C in the 21st century. As noted above, Africa's adaptive capacity is extremely low. The region is bearing the brunt of climate excesses precipitated by forces of production outside our shores. In this respect, the interests of justice would best be served if the industrialized countries provide new and additional resources to Africa for the victimized status it is being forced to endure. The dedicated funds should help countries reduce their vulnerability to climate change impacts through measures that enhance their adaptive capacities.

Box 1 : Africa's Founding Contribution to Climate Change Processes

When the time comes for the history of the evolution of the climate change process to be written, the names of two distinguished sons of Africa will forever be cast in an indelible inck for their enormous contribution to the international response to what has been described by the Intergovernmental Panel on Climate Change (IPCC) as the "creeping catastrophe". In 1988, the Executive Director of the United Nations Environment Programme (UNEP), Dr. Mustafa Tolba, and Prof. G.O.P Obasi, Secretary General of the World Meteorological Organization (WMO), decided to bring together a team of climate scientists, academics, researchers and meteorologists to investigate the causes of climate change and the unprecedented warming of the planet. The initiative taken by the two distinguished scientists of Africa led to the establishment of IPCC, the leading international scientific body on the causes of climate change, its socio-economic impacts, and the challenges facing countries on mitigation and adaptation. The Assessment Report issued from time to time by the IPCC is the most authoritative source of information on climate change.

Source: Mr. Seth Osafo, Legal Advisor, African Group of Negotiators, 2014.

PART II AFRICA AND THE CHALLENGE OF CLIMATE CHANGE

Since the Earth Summit in Brazil in 1992, the issue of climate change and the grave risks it poses to life on earth have driven governments around the world, in varying degrees, to devise ways and means of combating the menace. Policies have been forged, institutions have been erected, and programmes have been designed in this regard. Yet, a cursory glance of the international scene shows that, compared to the enormity and gravity of the challenge, the strides made by governments have been few and far between and generally limited and disappointing. Historic emitters have failed to deliver on past commitments and funding pledges in the context of common but differentiated responsibilities. Developing countries in general and African countries in particular (considering that the region faces the greatest risk) have engaged the biggest polluters in international negotiations, but progress has been frustratingly slow. As such, international climate governance has resulted in sparse actions that have had a direct constraining effect on African countries' capacity and ability to cope with climate change.

I. CLIMATE CHANGE, THE AFRICAN RENAISSANCE, AND PAN-AFRICANISM

The growing menace of the climate crisis poses considerable risks to Africa's ambition to sustainably renew itself in a profoundly dynamic manner, thereby endangering the efforts of Member States to optimally achieve an African renaissance. The vast resources needed to accelerate economic regeneration would be subject to diversion as the disruptive fangs of climate change sink deeper into Africa's fabric of developmentally-oriented investments. As preciously scarce funds are switched by governments to blunt the effects of extreme weather events and disasters, far less amounts would be available to propel the continent on a path of prosperous rejuvenation. In short, the challenge of climate change is already burdensome to Members States, and would become inordinately costly in the not too distant a future. For this reason, nothing less than the dream of an African Renaissance is at stake.

Africa has found itself in the middle of this fateful predicament mainly due to the climate excesses of the historic emitters. Given the destructive vagaries wrought by the horrendous evils of the slave trade, imperialism, colonialism, the cold war, and neocolonial vicissitudes, no moment is more compelling and exigent to Africa than the one afforded by the present historic juncture where her unity of purpose and regional significance are being felt at the global level. Indeed, since the dawn of this century, Africa has enhanced its organizational effectiveness at various world fora, speaking with one voice in international conventions and conferences, forging instrumental alliances with developing countries of the Third World bloc, and building strategic economic partnerships with the powerful emerging states of China, India, Brazil, to name but a few. And together with Russia and the leadership of South Africa, African countries have increasingly identified themselves with the multi-polar reality occasioned by the BRICS.

Africa has, in several recent conferences and preparatory meetings on international climate change negotiations, articulated a common, unified position under the coordinating auspices of the Committee of African Heads of State and Government on Climate Change (CAHOSCC). Similarly, a substantive show of African solidarity on environmental affairs was demonstrated in June 2012 in Rio de Janeiro, Brazil, when the celebrative anniversary of the Earth Summit eminently dubbed the RIO+20 conference, witnessed the formal submission of the Africa Consensus Statement hitherto endorsed, in unison, by the Summit of the Heads of State in January, 2012 in Addis Ababa. It is through the unity drive of this collective belief that the issues concerning the evolution of a Green Economy and the forging of institutional framework for sustainable development came to bear the imprint of Africa's participative solidarity.

The above notable experiences, where Africa devised mechanisms to speak with one, unified voice in international fora, tend to represent pre-eminent examples of Pan African unity, and hence the vibrant operational concretization of the concept of Pan Africanism. This expression of cohesive togetherness would need to be invoked with a greater sense of urgency as Africa grapples with the accentuating challenges posed by the deepening climate crisis.

Box 2: Emissions Gap

Global climate negotiations have focussed on finding appropriate levels by which emissions can be reduced in order to reach the 2°C climate target by 2020. The gap between agreed upon emission target of 2°C and emission levels that would be achieved if countries committed to their pledges by 2020 is an important indicator to gauge progress in emissions reductions. Studies conducted by UNEP show that though resolute and swift actions would likely make it technically possible to close the gap by 2020, the likelihood of missing the 2°C equally remains a reality.

In order to meet the 2°C target of in 2020, the median estimate of global emissions in 2020 will need to be 44 $GtCO_2e$. However, current emissions, based on the 2010 emissions inventory studies, are estimated at a median of 50.1 $GtCO_2e$. This figure is not only 14% higher than what the world needs to achieve the 2020 target, but also 20% higher than what the world emitted in 2000. These statistics show that the globe is currently emitting higher levels of greenhouse gases than what would be appreciated to reach the 2°C target in 2020. Moreover, these statistics suggest that emission levels keep on growing. It is clear from the assessments that even if countries fully honoured their pledges to reduce emissions to the agreed upon target by 2020, reductions will only be possible to levels below the Business-as-Usual scenario and not the 2°C target.

However, the world can still meet the 2°C target in 2020. To do so, it must register net negative emissions – implying taking deliberate actions to remove substantial amounts of greenhouse gases from the atmosphere. Though seemingly ambitious and hard to realise, a number of options exist to make it a dream come true. Some actions that may be taken to achieve this include putting in concerted effort towards reduction of global energy demand, promoting carbon capture and storage, enhancing afforestation efforts, adoption and application of sound technologies, countries making more ambitious emissions reduction pledges, adopting effective accounting rules, etc. Individual countries will have to make more ambitious pledges for reducing greenhouse gas emissions. All these should be implemented besides putting in place effective policies. Policies that reward energy efficiency, green technological developments, and reductions in emissions will need to be developed and implemented. This will have to be done sooner than later.

There is compelling evidence that if appropriate policy actions are taken at all levels, including national and local levels, realisation of significant reductions in greenhouse gas emissions becomes possible. Among the many policies that have been tested worldwide, a few of such sectoral policies have shown the promise to significant contribute towards emissions reduction efforts at both national and international scales. Such sectors include the **building sector** which has shown great potential to reduce emissions, specifically if emphasis is put on ensuring safety of lives and property, and reducing energy costs and usage. The **transport sector** is another sector that would contribute to emissions reduction. With regards to this sector, policies should target efficiency, proper land use for transport, and vehicle performance. The third sector that has also demonstrated that it can contribute significantly towards reaching the 2°C target in 2020 is the **forestry sector**. This is particularly so if policies deliberately emphasise biodiversity conservation, culture and natural habitat conservation, watershed management and protection of endangered species.

It is worth remembering that In order for these policies to be effective, there will be need of finding appropriate and effective ways of reproducing such policies and even extending their scope and coverage. Above all, all efforts will need to be properly supported and coordinated at national, regional, and even global levels.

Source: AMCEN, 2013

Therefore, Africa is obliged to contextualize the militating gravity of the climate change emergency against the backdrop of her overarching desire to realize an African Renaissance on the one hand, and the strategic value of enlisting the imperative of Pan Africanism in the staking of claims in international climate negotiations on the other.

During the January 2013 AU Summit in Addis Ababa, the Heads of State agreed on a new coordination mechanism for CAHOSCC that enhanced the prospects of Members States to more readily and robustly express their collective solidarity on environmental issues in general and climate change concerns in particular. By temporally fusing the rotating Presidency of the AMCEN body, (a conference structure that regularly brings together African Ministers of Environment) with the coordinating power of CAHOSCC, the articulation of Africa's interests continentally and globally has been rendered more opportune and synergistic. For sure, the rationalization has improved prospects for promoting consensus-building and facilitating unity among Member States, especially on cross-cutting linkages characterizing climate change impacts and the diverse sectoral domains. Again, since the coordination mechanism has engendered a platform that potentially catalyzes Pan African solidarity, the instrumental efficacy of Pan Africanism looms into relevance to advance Africa's environmental and climate change causes.

The formulation of this strategy has stemmed from the realization that the climate change agenda as generally framed by powerful international players who, incidentally, have been responsible for the onset of the ongoing climate crisis, is guided by a mechanistic worldview whose conceptual underpinnings tend to condition Africa's prospect to evolve dynamic programmatic possibilities. As such, the specter of the crisis intensifying to relatively graver levels in the coming decades is all the more disconcerting. Only through a decisive paradigmatic shift in the conceptualization of the unfolding climate phenomenon nationally, continentally, and globally will the prospects for profoundly containing this most menacing challenge of our time be enhanced. The massive accumulated stock and growing concentration of greenhouse gases threatens our very survival and continued habitability in the planet. A holistic approach in the derivation of viable and effective solutions remains our only hope. The historic emitters need to drastically cut back on the gaseous discharges; at the same time, robust programmes to control emissions in Africa and other developing regions should involve requisite, concessionary flows of climate friendly technological innovations. On this score, mitigation actions cannot be seen in isolation.

Moreover, lack of progress by major historic emitters to fulfill their reduction commitments has most certainly aggravated the risks for the potential intensification, increased frequency, and growing severity of climate-induced catastrophes. Clearly, the tendency of powerful states to treat the mitigative issue in such a mechanistic fashion fosters the impression that the science of climate change, particularly the life and death portends laid bare by its evidence, has not sufficiently shaken the conscience of their leaders to act with a sense of immediacy.

If the mitigative urgency is treated in such a manner, then it is not surprising that the adaptation demands put forth by Africa (as drawn from scientific evidence) have not been accorded the overriding significance they deserve. Failure by the powerful states to mitigate according to the dictates of science would only mean more severe and frequent disasters for Africa and the wider world generally. This would automatically translate into far costly adaptation requirements for Africa in particular. Clearly, mitigation considerations for the historic emitters and adaptation demands for Africa cannot be viewed in isolation; only a holistic sensibility is needed to confront the climate crises.

Literature on climate has noted, in abundance, that the climate crisis has vast developmental implications. Not a sector of any economy whether agriculture, water, health, energy, infrastructure, and so on, will be spared the damaging ramifications of climate change. Therefore, since governments the world over are vested with the power and responsibility to ensure development of their respective states, it is only natural to expect them take the lead in confronting the climate challenge. The vast developmental implication of the climate crisis

behooves governments, as the legal entities ontologically responsible for development, to provide leadership through proactive strategization. But while governments need to live up to this billing, they would not individually make much headway unless the whole world acts in concert. The global nature of the climate crisis demands the fostering of a vibrant international cooperation. It would be foolhardy to assume that countries can go it alone. Only a holistic approach offers realistic prospects for realizing the desired change.

There is widespread concern that climate change is impacting adversely on natural resources and the ability of ecosystems to continue delivering the flow of essential services such as the life-support, source, and waste functions. The quality of life would continue to experience notable declines as the intensity, frequency, and breadth of extreme weather events such as droughts, floods, desertification, etc become all the more devastating.

From a cursory glance of the data on greenhouse gases, it is evident that Africa is virtually at the receiving end considering its relatively infinitesimal contribution to the world's greatest externality. The people of the continent are therefore veritable victims of the anthropogenic excesses of the historic emitters who, in temporal and spatial terms, are largely historically responsible for precipitating such an ominous state of affairs globally. As such, given the comparative and historical dimensions of regional and country variations in gaseous pollution, it is only rational, on the basis of just and equity consideration, for the worldwide challenge of climate change to be confronted and resolved on grounds and principle of historical and differentiated responsibilities. This is in conformity with the Polluter Pays Principle which historic emitters have legislated and integrated it as a core imperative of their environmental policy frameworks. While African countries are principally guided by the precautionary principle than they are by the polluter pay principle, they readily subscribe to the latter in their demands to have historic emitters clean up the climate change mess for which they are directly and expressly responsible for.

Developed countries have made it abundantly clear that their prevailing production and consumption patterns, intensive and unsustainable though they are, represent a way of life that they cannot jettison anytime soon, hence raising the certain prospect of their gaseous emissions foreseeably continuing to rise for several decades. As a result, the risk of global temperature rising beyond the $2^{o}C$ in the coming years is guaranteed to occur with predictions from science firmly projecting that Africa will bear the greatest brunt of the expected adversities.

Box 3: Drought Impacts in Africa and Their Contribution to International Action on Global Climate Change

The African Region has been plagued by climate variability, and with the persistent droughts occasionally alternated by flooding. Global research on climate issues and rainfall distribution have revealed that the Sahel in West Africa experienced unusually wet period from 1950 until 1970. Thereafter, it was followed by extremely dry years from 1970-1990. Many countries in Sub Saharan Africa have during this latter period, subjected to frequent droughts, severely impacting food production in a wide swathe of the sub-region. The suffering in Africa alerted the scientific community under the leadership of UNEP and WMO, and debate at the UN General Assembly resulted in calls to the global scientific community to help find solutions. The World Meteorological Organisation (WMO) responded by creating a series of Drought Monitoring Centres in Western , Central, and Southern Africa to work on solutions. It was fortuitous that both UNEP and WMO at the time were headed by two dedicated African scientists, and they worked closely with the global scientific community. The experiences with drought and similar climatic uncertainty eventually led to the emergence in 1988, of the UN Intergovernmental Panel on Climate Change (IPCC) sponsored by UNEP and WMO, and the United Nations Framework Convention on Climate Change (UNFCCC) 1n 1992. It was no surprise that the first IPCC Assessment Report underlined Africa's vulnerability to climate change.

Source: UNFCCC, 2001

Table 1: Global and Regional CO2 Emissions from the Consumption of Energy in 2011

Regions/Countries	Total CO2 Emissions (Million Metric tonnes)	Share of global total (%)
North America	**6507**	**19.97**
Mexico	462	1.42
Canada	553	1.70
United States	5491	16.85
Rest of North America	1	0.00
Central & South America	**1339**	**4.11**
Argentina	191	0.59
Brazil	475	1.46
Rest of Central & South America	673	2.07
Europe	**4305**	**13.21**
Germany	748	2.30
Italy	401	1.23
United Kingdom	497	1.52
Rest of Europe	2659	8.16
Eurasia	**2639**	**8.10**
Russia	1788	5.49
Rest of Eurasia	850	2.61
Middle East	**1952**	**5.99**
Africa	**1152**	**3.54**
Asia & Oceania	**14684**	**45.07**
Australia	392	1.20
China	8715	26.75
India	1726	5.30
Rest of Asia & Oceania	3851	11.82
World	**32579**	**100.00**

Source: EIA (2013)

On account of the disturbing scenarios painted by science and informed by the behavioral challenges of historic emitters, the risks of climate change aggravation tending to accentuate have become all the more worrying since the more recent large emitters such as China, India, etc are not being facilitated, at concessionary terms, climate-friendly mitigation technologies capable of fuelling high growth rates.

Africa, to cushion itself against climate-induced devastation projected to worsen as a result of the large-scale perennial persistence and prospected growth of GHG concentrations, the urgency to build climate resilience and therefore focus inordinately on adaptation, through viable cross-sectoral investments, has assumed strategic policy significance. This conscious policy emphasis has become the foremost pillar in guiding Africa's stance in international climate change negotiations. Indeed, the overriding centrality of adaptation, relative to mitigation, in the policy calculations of Member States is prominently articulated in the African Common Position on Climate Change.

II. WEATHER, CLIMATE VARIABILITY, AND VULNERABILITY OF AFRICAN COUNTRIES TO CLIMATE CHANGE

According to the African Development Bank, Africa's robust economic growth has placed the continent among the fastest growing regions in the world. During the past decade, poverty rates

on the continent have declined and the attainment of other MDG targets is within sight. However, climate change and related disasters are still major impediments to the sustainable development across the continent.

Moreover, economic growth for most of African countries has been pushed mainly by commodity prices and limited to resource rich countries. Although headcount poverty rates have decreased, Africa is still a poor continent and rapid economic growth has not reduced inequality. Hunger remains widespread on the continent, especially in sub-Saharan Africa, while access to energy is inadequate.

II.1. SITUATION ANALYSIS

II.1.1. Past and Present Weather and Climate Patterns

UN coordinated Intergovernmental Panel on Climate Change (IPCC) assessments have shown clear evidences of climate change at global, regional and local levels from changes in various climate records including temperature (Figure 1 and table 1a), precipitation patterns, sea level rise, storm surges, as well as changes in the patterns of extreme weather and climate events such as drought, floods, among other hazards. The global average temperature is expected to increase by 2^{o}C over the next two decades. Africa is very likely to warm during this century and the warming is likely to be larger than global annual mean warming throughout the continent and in all seasons, with drier subtropical regions warming more than moist tropics. World Meteorological Organization (WMO) 2013 assessment report on the state of the global climate noted that the years 2001–2012 were all among the top thirteen warmest years on record (IPCC, 2007; WMO, 2013).
IPCC Assessment Report (AR4) has noted that Africa is the most vulnerable continent to climate variability and change, a situation that is aggravated by the interaction of 'multiple stresses', occurring at various levels coupled with low adaptive capacity, yet Africa is the continent which contributes least to global emissions of greenhouse gases (GHG). The vulnerability factors in Africa include its high dependence on rain-fed agriculture, widespread poverty and weak capacity. The climate extremes often wipe out years of national development investments, and infrastructures and often force many African nations to redirect most of their scarce resources planned for other national development activities to disaster response and recovery including relief programmes.

II.1.2. Projected Climate Change in Africa

Estimates of future climate change are commonly referred to as projections and are expressed as a range of possible outcomes, generally referred to as scenarios. Current projections of future climate change use models driven by a range of socio-economic scenarios partly determined by among others Population, Socio- Economic development, Energy production and consumption, Science and Technology, Levels of, and concentrations of greenhouse gases in the atmosphere, Land use among others. IPCC projections indicate that globally, warming is evident and the increased temperatures will lead to rising sea levels, displacement of people living in low-lying areas, threats to low lying island states and coastal zones, shifts and reductions in agricultural production, etc.

IPCC projections also show that climate change is real in all parts of Africa although there are differences both in space and time. The IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX) show that the temperature projections of the hottest day experienced in the last 20 years at the end of the

20th century will occur at least biannually by 2046-65 across the continent. The precipitation projection show that wettest day in the last 20 years of the 20th century will be experienced by the middle and end of the 21st century. For example in East Africa the wettest day will become more frequent under any scenario and time period, whereas for Southern Africa, and particularly the Sahara, this will become a rarer occurrence, with increasing dryness.

Box 4: Summary for Policymakers (CLIMATE CHANGE, 2013: The Physical Science Basis)

- Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased
- Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850.
- The rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two. Over the period 1901–2010, global mean sea level rose by 0.19 [0.17 to 0.21] m.
- Global mean sea level will continue to rise during the 21st century. Under all RCP scenarios the rate of sea level rise will very likely exceed that observed during 1971–2010 due to increased ocean warming and increased loss of mass from glaciers and ice sheets
- The atmospheric concentrations of carbon dioxide (CO2), methane, and nitrous oxide have increased to levels unprecedented in at least the last 800,000 years
- Human influence has been detected in warming of the atmosphere and the ocean, in changes in the global water cycle, in reductions in snow and ice, in global mean sea level rise, and in changes in some climate extremes
- Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system
- Global surface temperature change for the end of the 21st century is likely to exceed 1.5°C relative to 1850 to 1900 for all RCP scenarios except RCP2.6. It is likely to exceed 2°C for RCP6.0 and RCP8.5, and more likely than not to exceed 2°C for RCP4.5. Warming will continue beyond 2100 under all RCP scenarios except RCP2.6. Warming will continue to exhibit interannual-to-decadal variability and will not be regionally uniform
- Climate change will affect carbon cycle processes in a way that will exacerbate the increase of CO_2 in the atmosphere (high confidence). Further uptake of carbon by the ocean will increase ocean acidification
- Cumulative emissions of CO_2 largely determine global mean surface warming by the late 21st century and beyond. Most aspects of climate change will persist for many centuries even if emissions of CO_2 are stopped. This represents a substantial multi-century climate change commitment created by past, present and future emissions of CO_2

Source: IPCC, SPM, 2013.

Accelerated climatic changes are expected to lead to potentially large impacts across Africa in the future. Good knowledge of African climate based on long period and spatially coherent climate records to derive accurate and realistic climate change scenarios for Africa is critical.
Environmental and socioeconomic changes present further challenges for Africa. Notably, climate change, global population growth and shifting consumption patterns are putting additional pressure on Africa's natural resources (AfDB 2012).

Box 5: Observed Changes in the Climate System

Climate observations through direct measurements and remote sensing from satellites and other platforms including paleoclimate reconstructions provide a comprehensive view of variability and long-term changes in the atmosphere, the ocean, the cryosphere, and the land surface. It is clear that the climate system is warming and the observed changes over time are unprecedented. For example, both the atmosphere and the ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases (GHGs) have increased. It is clear that the main drivers of climate change are the natural and anthropogenic substances and processes that alter the earth's energy budget.

There have been records of the warming of the atmosphere. The past three decades have recorded successive warmer temperatures at the earth's surface than any preceding decade since 1850. Scientists argue, with medium confidence, that the period 1983–2012 in the Northern Hemisphere was likely the warmest 30-year period of the last 1400 years. With regards the oceans, scientists are virtually certain that from 1971 to 2010, the upper ocean (0−700 m) warmed. They further argue that the upper ocean is also likely to have warmed between the 1870s and 1971. Similar observations are recorded in the cryosphere. Over the last two decades, the Greenland and Antarctic ice sheets have been losing mass, glaciers have continued to shrink almost worldwide, and the extent of the Arctic sea ice and Northern Hemisphere spring snow cover have continued to decrease.

Since the mid-19thcentury, the globe has recorded larger rates of sea level rise than the mean rate during the previous two millennia. From 1901 to 2010, the global mean sea level rose by 0.19 (0.17 to 0.21)m. The effects of climate change have also been felt on the carbon and other biogeochemical cycles. Over the last 800,000 years, the rise in atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have been unprecedented. Carbon dioxide concentrations alone have increased by 40% since pre-industrial times. Of the anthropogenic carbon dioxide, the ocean has absorbed about 30%, resulting in ocean acidification.

Projections using climate models show that there will be further warming and changes in all components of the climate system due to continued emissions of GHGs. As such, in order to limit climate change, the world will have to substantially reduce its GHG emissions in a sustained manner. It is projected that changes in the global surface temperature for the end of the 21st century will likely exceed 1.5°C relative to 1850 to 1900 for most scenarios. Warming will continue beyond 2100 and will not be regionally uniform. Similarly, warming will result in irregular changes to the global water cycle. Huge and increasing contrasts between dry and wet seasons will be witnessed. Some changes will include:

continued warming of the global ocean during the 21st century. This will result in heat penetrating from the surface to the deep ocean thereby affecting ocean circulation;

there is high likelihood of changes in the cryosphere during the 21st century. The Arctic sea ice cover will continue to shrink and thin and the Northern Hemisphere spring snow cover will decrease due to rising of global mean surface temperature. The consequence on the global glacier volume will be further decreases;

global mean sea level will continue to rise during the 21st century. There is high likelihood that the rate of sea level rise will exceed that observed during 1971 to 2010 due to increased ocean warming and increased loss of mass from glaciers and ice sheets; and

the processes of carbon cycle will be greatly affected by climate change thereby exacerbating the release of carbon dioxide into the atmosphere. The uptake of carbon by the ocean will also increase leading to ocean acidification. The will be direct results of effects of climate change on carbon and other biogeochemical cycles.

By and beyond the late 21st century, the global mean surface warming will largely be determined by cumulative emissions of carbon dioxide. Consequently, aspects of climate change will persist for many centuries even if emissions of carbon dioxide are stopped.

Source: IPCC, 2013

II.2. AFRICA'S VULNERABILITY TO IMPACTS OF CLIMATE CHANGE

The magnitude and pattern of economic growth in any country is the outcome of the interaction of the country's initial conditions, institutions, policy choices, and the external shocks or stimuli they receive. Climate variability and change add to this complex picture through their impact on

key sectors of the economy, or important drivers of growth. The natural resource based sectors that most of the economies of the countries in Africa depend on are highly vulnerable to the impacts of past and current climate extremes, making climate change key threat to future economies. Agriculture, for example, is largely rain-fed in most of the continent. Changes in weather conditions that damage the agricultural sector will thus have a major impact on their economies. These countries also largely depend on hydro-electric power for their industrial and lighting energy requirements. The impacts of climate, especially droughts, lead to the deployment of expensive alternatives such as thermal generators. The additional expense increases the cost of production in the economy, hence reducing the competitiveness of industry and retarding FDI (investment). On the other hand, these alternative sources of energy increase greenhouse gas emissions.

Factors contributing to African's high level and vulnerability, high levels of poverty and weak formal social safety net programs expose and increase vulnerability of the local communities. In Africa, even though timely early warning information may be available, there is no capacity to turn them into early actions. The weak institutions and governance coupled with weak legal and regulatory frameworks deter investment in mitigation and building resilience systems, such as developing solar, wind and biogas energy generation plants. These often leave the poor members of communities to cope on their own.

PART III THE AFRICAN STRATEGY ON CLIMATE CHANGE

The development of this strategy has been guided by a broad policy underpinning which, in a nutshell, embodies and specifies the overall expectation in confronting the climate change challenge. For our purposes, Africa's climate policy refers to an overarching directive that seeks to enhance the adaptive capacities and resilience of Members States and RECs with a view to minimizing their vulnerability, pursue a low carbon growth path dictated by principles of the Green Economy, sustainable development, and poverty reduction; and orient governance, knowledge systems, planning, and national regional/international structures to treat climate change as a development imperative.

III. PROBLEM STATEMENT

A landmark AU Summit Decision adopted in January 2009 mandated the AUC among other things to facilitate the building of a common Africa Position in preparations for the Fifteenth Conference of Parties (COP15) in Denmark, Copenhagen in December 2009. The July 2009 Summit in Sirte, Libya adopted the recommendation of the Executive Council in their decision on climate change (EX.CL/Dec.500 (XV) Rev. 1):

i. Approved the establishment of the Climate Change and Desertification Unit (CCDU) in the Department of Rural Economy and Agriculture (DREA); and

ii. Requested the Commission, in collaboration with partners, to elaborate a comprehensive African strategy on climate change, including development of sector technical back-up data on the impacts of climate change, its cost to the economy and the amount of carbon sequestered in various African ecosystems.

The rationale for elaborating an African strategy on climate change therefore is to provide the RECs, Member States and other stake holders with a single source of strategic guidance that would enable them to effectively address climate change challenges.

IV. SIGNIFICANCE OF THE CLIMATE CHANGE STRATEGY

The climate of most parts of the African continent may be classified as arid and semi-arid with high drought risks. Parts of Africa are also endowed with humid tropical climate that receive substantial amount of rain throughout the year. The continent is further surrounded by maritime environment that include Mediterranean Sea together with Indian and Atlantic Ocean. At the top of some of the high mountains like Mt Kilimanjaro there are permanent glaciers. Several trans-boundary rivers from the glacial mountains and humid climate zones are the only sources of water in some arid and semi-arid lands. Drought, flood, lightning and thunderstorms, landslides, dust storms, hot/cold waves, strong winds, among others are common hazards in the continent. The space and time distributions of the hazards vary significantly not only from one region to another, but also at local levels. Disasters associated with some of these hazards often inflict socio-economic miseries and economic losses in many countries. Most of the African countries are classified as Least Developed Countries (LDCs) and hence the impacts of disasters often retard their socio-economic development. This is evident from Box 6 that shows post disaster damage, loss and needs assessments that have been undertaken by some African governments.

IPCC recent reports have shown that climate change is real and Africa is the most vulnerable continent (IPCC 2007, 2011 and 2012). Climate change will lead to changes in extreme weather and climate events such as drought, floods, sea level rise, storm surges, among many other hazards. Future risks associated with demographic trends, environment degradation, among others further increase climate change related risks.

Box 6: Post Disaster Damage, Loss and Needs Assessments (PDNA) for Djibouti, Kenya and Uganda

- The estimated drought economic losses in Djibouti over the period 2008-2011 were equivalent to average 3.9% per year of GDP and the total identified need for drought and other hazard mitigation interventions for the next 5 years amounts to US$ 318 million. Over the same period the largest damage and losses were found in the agriculture, livestock, water, and sanitation sectors amounting to US$ 96 million. During the 4 years of drought 100% of the traditional wells and 80% of the community wells in Djibouti were temporarily or permanently out of order due to water shortage or poor water quality resulting in increased salinity and other types of contaminations of the aquifers.
- The overall effects of the 2008-2011 drought in Kenya was estimated at Ksh. 968.6 billion (US$12.1 billion) which includes Ksh. 64.4 billion (US$805.6 million) for the destruction of physical and durable assets, and Ksh. 904.1 billion (US$11.3 billion) for losses in the flows of the economy across all sectors.
- The value of damage and losses caused by rainfall deficit conditions in Uganda in 2010 and 2011 is estimated at 2.8 trillion Shillings or US$ 1.2 billion. This amount is equivalent to 7.5 percent of the country's gross domestic product (GDP) in 2010.
- The damage, losses, and needs arising from the 2008-2011 droughts for Kenya and Uganda are summarized below.

Kenya's overall summary of damages, losses, and needs by sector in (Ksh. Million)

Sectors	*Impact*			*Needs*			Indicative DRR Needs
	Damage	Losses	Total	Recovery	Reconstruction	Total	
Agriculture		121,104.1	121,104.1	5,048.8		5,048.8	13,736.8
Livestock	56,141.7	643,194.5	699,336.2	50,237	56,142	106,379	85,103.0
Fisheries	502.6	3,661	4,163.6	406.4	753.9	1160.3	2,991.2
Agro-industry		7,159.6	7,159.6			-	
Health		4,745.7	4,745.7	5,099		5099	
Nutrition		6,699.4	6,699.4	225.1		225.1	130.9
Education	41.9	3,937.8	3,979.7	590.1	55.7	645.8	3,592.1
Energy		32,392.3	32,392.3	13,000		13000	
Water & sanitation	7,736.1	80,466.9	88,203	4,964.2	12,304.1	17,268.3	78,627.3
Environment, Tourism, Forestry, Wildlife	22.2	762.4	784.6	7,387.9		7387.9	647.5
Total	**64,444.5**	**904,123.7**	**968,568.2**	**86,958.5**	**69,255.7**	**156,214.2**	**184,828.8**

Uganda's overall summary of damages, losses, and needs by sector in (Uganda Sh.Million)

	Damages and losses			Needs		
Sector	**Damages**	**Losses**	**Total**	**Reconstruction**	**Recovery**	**Total**
Crops		1,034.7	1,034.7		137.2	137.2
Livestock	106.2	1,020.3	1,126.5	123.8	56.8	180.7
Agro Industry		278	278		77.3	77.3
Commerce		169.9	169.9			
Electricity		106.3	106.3			
Water		1.9	1.9		1.1	1.1
Health		14.9	14.9		13.2	13.2
Education		48.6	48.6			
Food Aid		16.9	16.9		14.4	14.4
TOTAL (billion Shs.)	**106.2**	**2,691.4**	**2,797.6**	**123.8**	**300.1**	**423.9**
		US$ Millions				
Crops		434.3	434.3		56.0	56.0
Livestock	44.6	428.2	472.8	50.5	23.2	73.7
Agro Industry	-	116.7	116.7		31.5	31.5
Commerce	-	71.3	71.3			
Electricity	-	44.6	44.6			
Water	-	0.8	0.8		0.5	0.5
Health	-	6.3	6.3		5.4	5.4
Education	-	20.4	20.4			
Food Aid	-	7.1	7.1		5.9	5.9
TOTAL	**44.6**	**1,129.5**	**1,174.1**	**50.5**	**122.5**	**173.0**

Source: https://www.gfdrr.org/gfdrr/PDNA

V. GUIDING PRINCIPLES OF THE STRATEGY

This takes cognizance of the multidisciplinary and cross cutting nature of climate change, both in terms of disciplines and sectors. It also recognizes that most aspects of this strategy will only be realized through partnerships and close collaboration among various sectors, institutions and stakeholders at global, regional and national levels.

VI. THE GOAL

The purpose of this strategy is to provide a framework for integrated and coordinated mechanisms designed to give strategic direction to member states and other stakeholders in addressing the challenges and opportunities associated with climate change in the continent, with the view of improving the livelihoods of the African people and environment they live in. Africa's priorities are to implement climate change programmes in such a way as to achieve sustainable development, alleviate poverty and attain the Millennium Development Goals, with emphasis on the most vulnerable groups, especially women and children.

VII. THE OBJECTIVE

The overall objective of this strategy is to enable the continent achieve "climate-smart" socio-economic development.

VIII. THE SCOPE

This is a 20 year strategy, expected to span the years 2015-2035. It will be reviewed every five years based on the AU planning cycles. The strategy is intended to be a comprehensive framework for dealing with climate change in the continent, allowing revision based on emerging issues and areas, while intersecting with other complimentary strategies, at continental, regional and member state levels. It envisages that the AU, and its structures and member states, would implement the strategy according to their various mandates and competencies. The strategy is meant to complement those of the Regional Economic Communities and Member States. The AU and its structures will mainly play a coordinating role.

PART IV AFRICA'S STRATEGIC AND INSTITUTIONAL DEVELOPMENTS: UNITING ON CLIMATE

One of the major developments was the establishment of the Climate Change and Desertification Unit (CCDU) at the African Union, this having stemmed from several decisions by Heads of State and Government to address the challenge of climate change by means that would define and implement measures to combat its multifarious effects on Africa and its peoples.

Climate Change was the sub-theme of the 10th Ordinary Session of the AU Assembly in 2007 calling on Africa's partners to support Member States and Regional Economic Communities to effectively integrate adaptation and mitigation measures into their development plans and devise mechanisms for their implementation. Furthermore, the 2007 Assembly requested the commission, UNECA and AfDB to develop and implement the Plan on climate Change and Development in Africa and report on progress bi-annually.

The 40th Session of the Conference of African Ministers of Finance. Planning and Economic Development convened in Addis Ababa from 2-3 April 2007 and adopted a resolution on climate change which amongst other things called for providing full support to the implementation of climate Information for Development (ClimDev) Africa Programme and integrate climate change into economic planning and management at Member States' level.

On 31 March - 2 April 2008, the 1st Joint annual Meetings of AU Conference Ministers of Finance and Economy endorsed the establishment of the African Climate Policy Centre with the objective of providing policy guidance to Member States.

The 12th Session of the African Ministerial Conference on the Environment (AMCEN) held in Johannesburg 10-12 June 2008 requested AUC, UNECA and AfDB to accelerate the implementation of the ClimDev Africa Programme.

The 12th Session of the Assembly of Heads of State and Government of the African Union held on 1-4 February 2009 adopted other key decisions on climate change. directing the African Union Commission to spearhead preparations for the African Common Position on Climate Change and particularly the formulation of Africa's common position for the negotiations of the post-Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC), December 2009, in Copenhagen, Denmark.

The 13th session of the Assembly of Heads of State and Government of the African Union, held on 1 - 3 July 2009, in Sirte, Great Socialist Libyan Arab Jamahiriya, designated a Committee of African Heads of State and Government on Climate Change (CAHOSCC).
Most recently, the July 2010 Summit in Kampala, Uganda adopted a coordinating mechanism for CAHOSCC. The central most important aspect of this is that Africa works as a team, and speaks with one voice through the respective Coordinators at all levels in fronting the African Common Position on climate change. Furthermore, a decision was taken to organize the 3rd CAHOSCC meeting to prepare for the UNFCCC CoP16 Climate Change global negotiations for Cancun, in Mexico.

In recent years, in order to enable the continent have a common position on climate change issues, Africa has swiftly created related institutions and programmmes with the ultimate goal of forging a continent that works as a team and speaks with one voice to confront present and

future challenges and impacts of climate change at all levels. The list of African initiatives tailored to climate change is not exhaustive.

Climate Related Institutions/Initiatives in Africa	Objectives	Momentum	Remarks
African Group of Negotiators to the UNFCCC and the Kyoto Protocol **(AGN)**	Pool resources and power among African states, and seeks to advance common African interests on the issue of climate change	1992	Despite recurrent challenges, the group has increasingly spoken with a single voice, and cooperation is likely to deepen in future negotiations as the group builds upon its recent achievements.
Regional Economic Communities **(RECs)**	Establish African Economic Community (AEC) through the building blocks of the regional economic communities	1994	Regional Economic Communities (RECs) effectively integrate climate change adaptation and mitigation measures into their development plans and devise mechanisms for their implementation at regional levels.
The New Partnership for Africa's Development **(NEPAD)**	Stimulate Africa's development by bridging existing gaps in priority sectors, which include among others environment and climate change	2001	NEPAD Environment Initiative is driven by an action plan aimed at addressing the region's environmental challenges /including climate change, to ensure sustainable development and poverty alleviation.
Nairobi Framework on Climate Change	Address capacity building in developing CDM projects covering regions in Africa, Caribbean, Pacific, and Latin America	2006	As part of the Nairobi Work Programme, technical assistance is to be provided to targeted countries to build capacity in project identification, design and implementation to be able to participate in the carbon market.
Algiers Declaration on Climate Change	Establish a Common African position and the need to speak with one voice in the UNFCCC negotiations towards a new legally binding global climate change regime	2008	In 2008 African Union Assembly adopted the Algiers Declaration on Climate Change for Common African position and the need to speak with one voice in the UNFCCC negotiations towards a new legally binding global climate change regime.
Tunis Declaration and Action Plan	Determine the rationale and modalities for establishing an African panel on climate change.	2008	An AU decision to determine the rationale and modalities for establishing an African panel on climate change, and in particular the Declaration on climate change and development in Africa.

African Monitoring of the Environment for Sustainable Development **(AMESD)**	Enhance monitoring for preparedness and adaptation to environmental change.	2007	AMESD programme was established to equip African countries with the means to better monitor the environment for sustainable development.
The African Ministerial Conference on the Environment (**AMCEN**)	(i) Implement the continent's process to achieve a common negotiations position on a comprehensive international climate change regime beyond 2012; (ii) Provide a platform to deliberate and agree on a shared vision and common position for Africa to combat climate change and achieve sustainable development in the continent; (iii) Engage with the rest of the international community in finding solutions to address challenges posed by climate change ; and (iv) Develop a comprehensive framework of African climate change programmes and its associated sub-regional climate change programmes with the view to, among others, informing the negotiations process.	2009	The African Ministerial Conference on the Environment (AMCEN) is a permanent forum where African ministers of the environment discuss mainly matters of relevance to the environment of the continent. AMCEN was established in 1985 when African ministers met in Egypt and adopted the Cairo Programme for African co-operation. The Conference is convened every second year.
The Conference of African Heads of State and Government on Climate Change (**CAHOSCC)**	Give the highest political attention to climate change issues in the continent, especially to enable the continent have a common position and speak with one voice on climate change issues in the continent.	2009	CAHOSCC comprises Algeria, Democratic Republic of Congo, the Republic of Congo, Equatorial Guinea, Ethiopia, Kenya, Mali, Mauritius, Mozambique, Nigeria, South Africa, Uganda and the Chairperson of the AU Commission. The Prime Minister of Ethiopia.
African Ministerial Conference on Meteorology **(AMCOMET)**	Promote political cooperation and streamline policies at a pan-African level and advocate for sound decision-making based on robust science.	2010	AMCOMET consolidates and builds on previous achievements to further promote the effective use of weather and climate products and services that meet end-user requirements to help achieve the Sustainable Development Goals.

United Nations Economic Commission for Africa **(UN ECA),** African Union Commission **(AUC)** and African Development Bank **(AfDB)**	The three institutions through the Climate for Development in Africa Programme (ClimDev Africa) jointly strive to: (i). Build solid science and observational infrastructure; (ii) Enable strong working partnerships between government institutions, private sector, civil society and vulnerable communities; and (iii). Create and strengthening of knowledge frameworks to support and integrate the actions required.	2011	The three input areas for delivering ClimDev Programme are: • Africa Climate Policy Centre (ACPC) – a Centre of the United Nations Economic Commission for Africa; • Climate Change and Desertification Control Unit (CCDU) – A unit of the African Union Commission; and • ClimDev Special Fund (CDSF) –A fund managed by the African Development Bank.
The African Climate Centers	Serve as WMO Regional Climate Centers (RCCs) for Africa for down scaling of products from WMO Global Producing Centers (GPCs) in the developing regional specific areas.	–	The four main climate related centers in Africa are the African Centre for Meteorological Applications for Development (ACMAD), the Agro-meteorology and Hydrology Regional Centre (AGRHYMET), IGAD Climate Prediction and Application Centre (ICPAC) and SADC Climate Prediction Centre formerly the Drought Monitoring Centre (DMC)
Monitoring of Environment for Security in Africa **(MESA)**	Support IGAD countries improve the management of their natural resources.	2013	MESA programme will provide appropriate information on the environment using state-of-the-art technologies, including Earth Observation (EO) and Information and Communication Technologies (ICT).
The African Risk Capacity **(ARC) -** A Specialized Agency of the African Union Commission	Complement existing national, regional, and continental disaster reduction activities and climate change adaptation initiatives.	2014	It is an extreme weather insurance scheme designed to help AM Member States resist and recover from the ravages of drought.

IX. AFRICA'S COMMON POSITION ON CLIMATE CHANGE

Africa's priorities are to implement climate change programmes and projects to attain development goals, including the Millennium Development Goals, in particular to alleviate poverty with emphasis on achieving food security, especially for the most vulnerable groups. Under the international multilateral process, developed countries and partners are to provide full support for the implementation of adaptation strategies in Africa, in particular the implementation of national adaptation programmes of action prepared by least developed countries in Africa.

IX.1. AFRICA'S POSITION ON ADAPTATION

In preparing a climate change strategy for Africa, it is important to recognize the fact that Adaptation is an overriding priority for the continent, and that there is an urgent need for the implementation of adaptation measures and actions, including through the provision of substantial new and additional public financial resources, environmentally sound technologies and capacity building in a predictable and prompt manner. Key considerations on adaptation include:

- The focus of adaptation must shift from vulnerability assessment to the implementation of adaptation programmes.
- A much-improved assessment of the costs of adaptation for developing countries is needed, particularly in Africa. An analysis of the technology, finance and capacity building implications for different types of adaptation programs needs to be done. This analysis needs to distinguish between short-term and long-term adaptation responses and between adaptation responses that are stand-alone (and therefore additional to development planning) and adaptation responses that are integrated with development planning).
- Funding by developed countries for adaptation must reflect responsibility for economic and social damages resulting from climate change in the context of their historical contributions to greenhouse gases and current climate change.
- Funding for implementation of adaptation must be massively scaled up, in accordance with the need, and must go beyond the mainstreaming of adaptation into the development process, and include stand-alone adaptation projects.
- A package of assistance is needed to support implementation of the NAPAs including financial, technical and institutional support.
- Funding is needed for an Africa regional adaptation implementation initiative, based on Africa's adaptation priorities, and providing a coherent and scaled package of financial, technical and institutional support for adaptation in Africa. This should include the establishment of a network of African Centres of Excellence on climate change, and a regional information system on short, medium and long term climate change risks in Africa.
- Adaptation must be addressed in a coherent manner under the UNFCCC.
- Implementation of effective adaptation strategies must be advanced.

IX.2. AFRICA'S COMMON POSITION ON MITIGATION

Enhanced action on mitigation encompasses consideration of:

- Nationally appropriate mitigation commitments by developed country Parties
- Nationally appropriate mitigation actions by developing country Parties
- Reducing emissions from deforestation and forest degradation;
- Sectoral approaches to implement Article 4.1(c) (UNFCCC)
- Various approaches to enhance the cost-effectiveness, and to promote, mitigation actions; and
- Economic and social consequences of response measures.

Box 7: Developed Countries' Commitments

Developed-country parties to the Kyoto Protocol should honour their commitments under the Protocol, to undertake ambitious mitigation commitments for a second commitment period from 2013 to 2017. All developed countries – including those that are not parties to the Kyoto Protocol – should undertake legally binding commitments that are comparable in magnitude and effort and are measurable, reportable and verifiable with regard to mitigation efforts and the provision of financial and technological resources. In this context, all Annex I Parties to the Convention should, in accordance with their commitments of Article 4.2 of the Convention, undertake ambitious national economy-wide binding targets for scientifically determined quantified emission reduction commitments and adopt policies and actions accordingly to achieve these targets.

Further delay by developed country Parties in implementing their commitments to reduce emissions will increase their climate debt to the developing country Parties significantly constrain opportunities to achieve lower stabilization levels of greenhouse gases and increase the risk of more severe climate change impacts.

All Annex I parties have committed to implement policies and measures that "demonstrate they are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention" (Article 4.2) and to make "equitable and appropriate contributions to the global effort" regarding the objective of the Convention (Article 4.2).The aggregate commitments for developed country Parties for emissions reduction in the second and subsequent commitment periods of the Kyoto Protocol, and commitments for a comparable effort for Annex I parties that are not party to the Kyoto Protocol, will reflect their historical responsibilities and debts, meet the needs of developing country Parties to an equitable share of atmospheric space and be adequate to meet requirements according to the IPCC findings and the latest science. In accordance with the principles and provisions of the Convention, in particular their common but differentiated responsibilities and respective capabilities, equity and historical responsibility, all Parties shall strive towards a global goal, with developed country Parties taking the lead through deep and adequate economy wide emissions reductions in the medium and long terms and taking effective measures to fulfill their commitments relating to the provision of substantial financial resources, capacity building and to provide technology development and transfer of environmentally sound technologies and know how to developing country Parties.

Source: IPCC (AR4 & AR5)

IX.2.1. Nationally Appropriate Mitigation Actions by Developing Country Parties, under the UNFCCC

African countries may, based on their specific national circumstances and in the context of their national economic development, take mitigation actions including, where appropriate, strategies, policies, plans, programs, projects and other activities. However, the following must be noted about African countries mitigation actions:

- Developed countries commit to the mitigation outcome (QERCs), while developing countries commit to taking action, and are not bound to the outcome.
- Support and action go together**.** The scale of finance needed for mitigation in African countries depends on extent of action being undertaken**.**
- Developing country action is conditional on technology, financing and capacity building, in a measurable, reportable and verifiable manner.
- Non Annex I nationally appropriate mitigation actions supported and enabled by developed country Parties in terms of technology, finance, and capacity building, may be subject to measurement, reporting and verification in accordance with relevant rules and procedures established by the Conference of the Parties.

- Developing country action is conditional on technology, financing and capacity-building, in a measurable, reportable and verifiable manner.

IX.2.2. Reducing Emissions from Deforestation and Forest Degradation (REDD)

UNFCCC, COP/MOP decision 1/CP.16 developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances:

- Reducing emissions from deforestation;
- Reducing emissions from forest degradation;
- Conservation of forest carbon stocks and
- Sustainable management of forests.

Parties agreed to implement these activities in phases, beginning with the development of national strategies or action plans, policies and measures, and capacity-building, followed by the implementation of national policies and measures and national strategies or action plans that could involve further capacity-building, technology development and transfer and results-based demonstration activities, and evolving into results-based actions that should be fully measured, reported and verified.

IX.2.3. Mitigation and Climate-Proofing Development

While Africa has attached far-reaching policy importance and premier significance to adaptation and the need to build climate-resilience capabilities in Member States, that does not imply that mitigation is not a concern in its own right. Yes, urgent priority is placed on adaptation, but mitigation is valued crucially in the context of evolving green economies, and therefore avoiding the pitfalls of environmentally-harmful techno-industrial and agricultural change that characterized the unsustainable economic trajectories of Annex 1 countries.

But Africa also recognizes that certain adaptation investments have significant mitigation dynamics as well. For instance, when watersheds and catchment areas are conserved through further investments, they tend to foster resilience and strengthen the adaptive capacities of nearby communities (less floods, improved local climate stability etc.). But the injected conservation investments also tend to enhance the sink function of the watersheds and catchments resources, leading to more carbon dioxide being sequestered.

As a further illustration, consider a mitigation project where renewable energy, such as solar power, is introduced to replace the burning of charcoal. The investment means that carbon dioxide gases are no longer emitted and deforestation is avoided. As a result, the adaptive capacity of a nearby community is enhanced.
There are instances where the pursuit of mitigation actions, while enhancing local resilience, can also strengthen adaptive capacities. As can be seen, the advantages of natural resource systems and communities can be mutually reinforcing.

IX.3. TECHNOLOGY TRANSFER AND THE LOW-CARBON GROWTH PATH

Africa's quest to evolve robust, climate-resilient green economies that trend on a path of low carbon growth would be well anchored if adaptation and mitigation investments are guided by a proactive technology policy depending on the nature and complexity of the technology transformation chain invariably conditioned by sectorial specificities, decisions over which

technological capabilities (whether production, investment and innovation) a Member State or region would need to build would depend on a wide range of considerations. Key factors include how strategic the sector is, the ease with which a technology can be mastered, the number of projects being considered, the time horizons, repair and maintenance requirements, and the potential size of the market (domestic and export).

If investments concern renewables where numerous projects are envisaged over time, then the need to build pre-investment, project execution, and project implementation, technological capabilities would be strategically important. The challenge is that, because some renewable energy technologies are proprietary and owned by established overseas companies found in Annex 1 countries, procuring them has often been beset by a host of restrictions and monopolistic business practices. Proprietors of climate-friendly technologies have not only exploitatively extracted monopoly rents from developing country buyers of technologies, but have also imposed conditions that inherently undermine the potential of procurers to build relevant technological capacities where buyers from utilizing local capabilities, where they exist, often through mechanisms that insist on maximization of the foreign content of technology suppliers and minimization of local content ratios.

If the harsh technology transfer experiences of developing countries in the 1960s, 1970s, etc are anything to go by, then it is evident that Annex 1 countries have often demonstrated reluctance to offer environmentally-friendly technologies, at concessionary rates, however compelling the arguments favoring environmental conservation in these countries. Such restrictive attitudes towards technology transfer have persisted to the present. Despite the emergency nature of the climate change challenge, Annex 1 countries have not found it urgent to transfer low carbon technologies to Africa at concessionary rates.

IX.3.1. Enhanced Action on Technology Development and Transfer

Technology for both mitigation and adaptation is critical to the future of the climate regime. Africa's priorities are: firstly, technology for adaptation, and secondly technology to *avoid* emissions, i.e. to promote African development that is clean.

- On adaptation, Africa's key priorities include water, health and agriculture. Key adaptation technologies including: appropriate technologies for dealing with the impacts of desertification; drought resistant crop varieties; early warning systems.

- On mitigation, Africa needs appropriate environmental sound technologies for low carbon sustainable development. Africa's current emissions are low, and the region's need for economic development is high. So what we need is technology for low carbon economic growth.

Africa stands for enhanced cooperation to promote research, development, demonstration, deployment, transfer and diffusion of environmentally friendly technologies. Further, Africa shall explore means of ensuring development and transfer of technology and removal of barriers to technology development, transfer and use.

IX.3.2. Technology Mechanism

In Cancun, Parties agreed on the establishment of a new Technology Mechanism to accelerate technology development and transfer, guided by a country-driven approach based on national circumstances and priorities. In this context:

- All the activities of the technology development and transfer should be accompanied by capacity building activities; and

- The Mechanism should build on national/regional technology institutions (e.g. excellence centers or innovation agencies; strengthening research in the public domain).

IX.4. AFRICA'S COMMON POSITION ON RESPONSE MEASURES

Africa acknowledges the importance of avoiding and minimizing the negative impacts of climate change response measures on social and economic sectors, promoting a just transition of the workforce, the creation of decent work and quality jobs in accordance with nationally defined development priorities and strategies, and contributing to building new capacities for both production and service-related jobs in all sectors, promoting economic growth and sustainable development. African countries should actively seek assistance from Annex-1 countries in identifying and addressing the impact of response measures taken by developed country Parties, sharing information, promoting and cooperating on issues relating to response strategies and exploring ways to minimize negative consequences.

IX.5. ADAPTATION, MITIGATION, AND THE GREEN ECONOMY

Africa's treatment of adaptation compared to mitigation as a strategic imperative in international climate change negotiations and a pivotal policy shaft in the climate conscience of Member States brings into relevance the necessity to build a green economy as a sustainable development aspiration with vast adaptive potentialities, and the huge financial resources required to enable countries cope effectively with climate change. Evolving a green economy and building adaptive-oriented climate-resilient regimes are invariably mutually-reinforcing and complementary in contextual catalysis. As such, large sustainable development dividends are likely to be reaped when the drive to build a green economy is combined with efforts to invest in adaptation.

A Green Economy is a system of extraction, production, distribution, consumption, and disposal that respects the biophysical foundations of Nature. It is a system that regards human-beings as integral to the environment, and not disembodied from it. It allows for the normal functioning of the life support functions, including the source and waste functions, in a way that reinforces the ecological integrity of biological processes, and, in the main, ensures the continued existence of viable natural assets for the overall improvement of welfare of biodiversity in all its forms.

Box 8: Water Security and the Green Economy for Africa

In the African context, poverty reduction and economic growth form part of the main focus of the Green Economy debate. A large majority of African livelihoods are dependent on natural resources and a number of sectors with green economic potential are particularly important for the poor – such as agriculture, forestry and fisheries. All of these have the quality of a 'public good' and are highly dependent on good water management. Investing in greening these sectors is likely to benefit the poor by improving livelihoods and enhancing ecosystem services.

There are already 'success stories' of initiatives that contribute toward a transformation to a Green Economy in Africa, and both Rwanda and Ethiopia have launched low carbon strategies. However, there still remains much that could be achieved in most countries by focusing on the role better water management could play in 'greening' economies, The case for promoting early investments in water management and infrastructure is therefore strong.

Source: AU-AMCOW, 2012.

Box 9: Rwanda's Green Growth and Climate Resilience Strategy promotes private sector investment

The Government of Rwanda has adopted a Green Growth and Climate Resilience Strategy. This includes a programme for promoting green industry and private sector development, which proposes ways of improving the energy efficiency of industry – and ways of promoting green industries – to bring win–win benefits of cost savings and mitigation. One plan is to establish a green Special Economic Zone (SEZ) in Kigali, as a flagship for foreign investment in green technologies. In addition, a Climate Innovation Centre is proposed, which would be hosted within the SEZ. This centre would provide coordination and advisory services to accelerate the deployment of low carbon and adaptive technologies by companies and industries.

The strategy also proposes additional actions for supporting green growth through private sector involvement, including:

- clearer tax and import duty exemption rules for all energy-efficient technology components;
- a government-supported microfinance scheme (i.e. loan guarantees or grant-per-unit-financed) to help households purchase renewable energy;
- more flexible pricing arrangements for biogas digesters;
- a government-supported low-interest credit line or loan guarantees for renewable energy businesses and installations;
- an increase in the price paid for renewable energy by Rwanda's Energy, Water and Sanitation Authority (EWSA) to approximatelyUS$0.14 per kilowatt hour;
- an engineering capacity building programme;
- government support for recycling and reuse of waste products with economic value, such as plastics and organic waste for fertilizer and fuel, with an eventual transition to mandatory waste management for households and businesses.

Source: AU-AMCOW, 2012

PART V FROM CONCEPTS TO ACTION

This strategy recognizes that Africa can adapt to the impacts of climate change while contributing to mitigation by developing through green economic pathways. Apart from the four pillars, a number of critical sector specific and cross cutting issues for the strategy are addressed in the following sections. The sector specific issue will be addressed through interventions in adaptation and risk management and Nationally Appropriate Mitigation Actions (NAMAs), while the cross-cutting will deal with gender, youth and communities with specific vulnerabilities, peace and security, and Small Island Developing States.

X. THEMATIC PILLARS

In general, the strategy is underpinned by four thematic areas, namely: climate change governance; promoting research, education, awareness and advocacy; mainstreaming and integrating climate change imperatives in planning, budgeting and development processes; and promoting national and regional cooperation. The thematic areas will be supported by several sector specific and cross cutting issues. Under each of these goals are defined and a set of actions are proposed.

The thematic pillars guiding the contents of the strategy have been identified as follows:

1. Improving climate change governance
2. Mainstreaming and integrating climate change imperatives into national and regional policy, planning, and development processes
3. Enhance research, awareness, advocacy and education on climate change
4. Promote national, regional, and international cooperation.

X.1. CLIMATE CHANGE GOVERNANCE

Climate change governance refers to the exercise of power and authority by formal institutions of governments with a view to minimize the impacts of climate change on communities, ecosystems, and the wider environment in general. It entails development of legislation, policies, institutional and management frameworks, at continental, regional and national levels. Further, it is to deal with governance of sectoral, cross sectoral and regional issues; and harmonization across sectors and levels of governance. Climate change governance in the continent should also deal with matters of compliance and mutual accountability on global, regional and national levels.

But governments in Africa have been, in their normal planning and developmental efforts, directing investments, or facilitating the private sector and other actors (through incentives, policies and regulations), to conduct business in projects that are largely climate-sensitive, but very limited efforts have been made to enable them cope with the risks of climate variability and change.

The imperative for African states to improve their climate governance capabilities is strategically critical considering the supreme, broad and overarching mandates that governments uniquely exercise in their quest to realize development. The widespread recognition that climate change has vast developmental implications tends to underscore the belief that governments have a dejure and defacto obligation to improve the policy environment and proactively institutionalize climate change governance in their development processes. An engaged African leadership on climate change issues would, undoubtedly, set an influential tone for the member countries.

Such a congenial policy and institutional environment would facilitate the mainstreaming of climate change imperatives into regional and national development programmes and planning.

Addressing the challenges of climate change require active involvement of multi-disciplinary, multi-national, and stakeholders actions from global to local levels. African Union needs to deal with various issues of governance, including engagements with global climate change governance, mutual accountability on climate change commitments, enforcement and compliance with agreements, mechanisms of monitoring and reporting of climate change programmes; and building capacities of member states to access climate change funds. This thematic area is to ensure that the African Union (AU) continues providing the required leadership in climate change governance in Africa to promote and defend the continent's interest in all areas including issues related to environment, disaster risk reduction and climate change, among other challenges. Such leadership roles should also be undertaken in close partnerships with the International community, Regional Economic Communities (RECs) and African Member States as well as other stakeholders.

X.2. MAINSTREAMING AND INTEGRATING CLIMATE CHANGE IMPERATIVES IN PLANNING, BUDGETING, AND DEVELOPMENT PROCESSES

In Africa, the majority of disasters are climate-related, and these will be exacerbated by the future climate changes. It is therefore imperative that the impacts of climate change variability and change be integrated into development planning, and budgeting processes. This integration should lead to adoption of measures to reduce vulnerability, treating risk reduction as an integral part of the development process. Climate proofing of the current and future African development efforts requires development of "climate smart" systems that integrate disaster risk reduction, environment management, climate change and sustainable development.

This strategy recognizes that the reason Africa is the most impacted continent by climate change is the level of the continent development and its low adaptive and risk management and reduction capacities, making its entire economy vulnerable to climate change, and over reliance on climate sensitive sectors. Reduction of vulnerability is envisaged to occur through enhancement of the continent's adaptive capacities, including climate proofing of the continent development and shifting from short term disaster relief interventions to longer term disaster management. International and continental institutional response adaptation should comprise a mechanism to address the unavoidable loss and damage resulting from the adverse effects of climate change, and associated lost opportunities for development. Institutions such as the African Risk Capacity, which utilize risk management and risk transfer tools to address vulnerability and losses of lives and livelihoods subsequent to climate-related natural disasters may be well positioned to be part of the mechanism to address loss and damage in Africa.

Goal 1: Enhance action on climate change adaptation and integrate disaster risk management and reduction into climate change policies and programmes

Action 1: Develop Africa's climate change adaptation framework and programmes.
Action 2: Promote and support mainstreaming climate resilience and disaster risk management and reduction strategies in the social, economic and environmental sectors.
Action 3: Provide framework for enhancing preparedness and other disaster management cycles including early warning capacity in the continent including such as through enhanced use of Radar and Earth Observation Systems.
Action 4: Integrate elements of disaster risk management and reduction, especially risk assessments and early warning into Climate Outlook Forums.

Goal 2: Integrate climate change knowledge into development planning

Action 1: Develop policy frameworks for climate proofing to cope with climate variability and adapt to climate change in development planning.

Action 2: Disaster loss information and post disaster needs assessment to provide critical risks information for new planning and disaster risk management.

Action 3: Networking and sharing of integrated disaster risk reduction and climate change adaptation lessons and experiences.

Box 10: Zambia-Integrating Water and Climate Resilience in National Development Planning

In early 2010, Zambia embarked on its Sixth National Development Plan (SNDP) process, leading to the adoption and release of the SNDP in January 2011. The process was coordinated by the Ministry of Finance and National Planning working alongside other line ministries. The process was structured to reflect national government strategies sectorally, and as an integrated picture of the national economic and social trajectory.

Each sector strategy was convened by a sector specialist group, with input from other sectors providing cross-linkages, and input to the specific sector strategy. Thus sector strategies and action plans are cognisant of, and integrated with, cross-sectoral issues. A consolidated strategy and action plan was convened by the ministry, drawing together each of the sector strategies. This provided a second layer of integration and consolidation.

Climate change and water featured strongly in the SNDP process, and were well represented in the published SNDP. Strategies that built resilience to climate change were evident in many sectors, including environment, energy, transportation, health, water and sanitation, agriculture, livestock and fisheries, mining, tourism, information and communications technology, natural resources, and local government and decentralisation. A Climate Change Facilitation Unit in the Ministry of Environment was mandated to mainstream the cross-sectoral climate issues into the sector strategies and was part of each of the sector processes, rather than linked to a particular sector.

The effort built on earlier processes in which IWRM was integrated in Zambia's 5th National Development plan.

Source: AU-AMCOW, 2012

X.3. Enhancing Research, Education, Awareness and Advocacy

The thrust to invest in research, education, and awareness is also meant to boost the capacity of African states towards generating reliable climate information, on the one hand and its effective utilization for decision and policy making on the other. The development planning institutions should also be adequately equipped with knowledge on how such information flows can be harnessed to design relevant investment programmes.

Enhancing and strengthening the adaptive capacities of African countries, which are presently weak and limited, is crucially necessary. Later the effectiveness of NAMAs and NAPAs to facilitate Africa's climate resilience should be addressed. Such programmes would succeed if they are designed to achieve the desired impacts, and if reliable, timely, and relevant climate information is generated, harnessed, and applied appropriately. The funding of research activities will also need to be scaled up, including commitment of resources to enhance knowledge management. Relevant technological innovations would need to be diffused to promote national and regional capacities for adaptation and mitigation.

Box 9: Education, Training and Public Awareness

Article 6 - EDUCATION, TRAINING AND PUBLIC AWARENESS

In carrying out their commitments under Article 4, paragraph 1 (i) of the UNFCCC, the Parties shall:

(a) Promote and facilitate at the national and, as appropriate, sub regional and regional levels, and in accordance with national laws and regulations, and within their respective capacities:

(i) to develop and implement educational and public awareness programmes on climate change and its effects;
(ii) provide public access to information on climate change and its effects;
(iii) involve public participation in addressing climate change and its effects, and develop adequate responses; and
(iv) establish training of scientific, technical and managerial personnel;

(b) Cooperate in and promote, at the international level, and, where appropriate, using existing bodies:
(i) the development and exchange of educational and public awareness material on climate change and its effects;.
(ii) the development and implementation of education and training programmes, including the strengthening of national institutions and the exchange or secondment of personnel to train experts in this field.

Source: AMCEN, 2010

Goal 3: **Provide leadership to ensure availability of multi-disciplinary observations, data, modeling capacity, regional climate change scenarios, technology and other tools required for multi-disciplinary research including the understanding of processes, prediction, early warning; climate change detection, attribution and assessment of all risk factors.**

Action 1: Enhance capacity for observation, data availability, generation of baselines, regional and national scale modeling and climate change scenarios, research and knowledge management , information exchange and research publications

Action 2: Enhance Capacity building of African climate and other related issues

Action 3: Enhance networking and provide support to regional climate centers, universities and research institutions to contribute to capacity building and development of new and emerging research, education, awareness raising and advocacy tools

Action 4: Coordinate assessment of the state of the Africa climate variability and change and the associated impacts, vulnerability and other risk factors.

Goal 4: **Provide leadership in support of multi-disciplinary capacity development for climate variability and climate change resilience building.**

Action 1: Develop a framework for advocacy, training, education, awareness in partnerships with the RECs and AU Member States in support of multi-disciplinary capacity development.

Action 2: Develop capacity of scientists, technicians and users of climate risk information.

Action 3: Assess science and technology capacity needs; curriculum guidelines and standards.

Goal 5: **To develop and apply knowledge to address climate change challenges and respond to the opportunities**

Action 1: Integration of climate proofing scientific knowledge and technology, in addressing climate change challenges and responding to opportunities

Action 2: Development of frameworks for integration of research results into development plans and strategies

Action 3: Support regional mechanism for the development of technology transfer, Science and Innovation acquisition.

Action 4: Enhance networking and provide support to regional climate centers, universities and research institutions

Action 5: Support collaboration of the private sector, universities, research institutions, and public and community based institutions for the development of new climate change tools and innovations.

Africa recognizes that acquisition of knowledge on climate change, its development and applications are important means for offering sustainable solutions to climate change challenges and responding to opportunities, in both mitigation and adaptation. The lack of capacity and research are some of the compelling development challenges facing African countries and regional institutions. Climate change will require more specialized capacity and more complex multi-disciplinary research.

Space-time patterns of climate change will not be qualitatively and quantitatively the same in all parts of Africa. Thus different adaptation approaches may be required at some locations. Capacity development and Research will provide the continent with much needed expertise and pool of experts to address climate change challenges of the specific locations of the continent. Knowledge generated through research and existing indigenous systems will go a long way in providing the continent with effective solutions to climate change concerns and offer innovative ways of dealing with continent specific mitigation and adaptation measures. The continent needs not only sector specific knowledge, but also economy wide knowledge to respond effectively to climate change issues. This thematic area focuses on African Union priority capacity development and research areas in close partnerships with Regional Economic Communities (RECs), African Member States and other stakeholders.

X.4. PROMOTING NATIONAL REGIONAL AND INTERNATIONAL COOPERATION

Africa is active in international negotiations on climate change through the UNFCCC. Structures are evolving for negotiations from the level of technical negotiators to the Heads of State and Government. International collaborations are important for development of adaptation and mitigation programmes, financing, capacity building and technology transfer to address climate change issues. This cooperation must be informed by Africa's strategic priorities.

Climate change has implications at local, regional and global levels requiring mandatory collaborations at all these levels in finding solutions. At continental and regional levels, various bodies are involved in climate change issues. Harmony and synergy amongst these bodies will go a long way in solving climate change issues that are difficult to carry out either at international level or national level. This pillar will ensure that African Union takes leadership in collaboration with RECs and Member States in all its climate variability and change needs and priority areas including capacity development, data, technology, agreements, and finance among others.

Goal 6: Coordinate and provide leadership on African common positions and diplomacy in the UNFCCC and other relevant conventions and treaties

Action 1: Facilitate the coordination of technical, scientific, logistical, secretariat and financial support for the negotiators

Action 2: Coordinate and enhance support of science and knowledge for backing the African common position on climate change

Action 3: Strengthen the negotiations at the political levels through briefing of the CAHOSCC, etc

Action 4: Strengthen the role and capacity of Ministers on climate change through AMCEN

Action 5: Promote the development of IT-based continental information system to facilitate access to useful regional and international climate data, information and adaptation lessons and experiences.

Goal 7: Ensure outcomes from international cooperation on climate change protect Africa's long-term peace, security and interests

Action 1: Provide a framework for assessment for ensuring outcomes from international cooperation on climate change that protects Africa's long-term peace, security and interests

Action 2: Develop framework for strategic alliances for international, regional and national cooperation on science and technology.

Action 3: Develop framework for Public Private Partnership (PPP) in implementing climate change programmes within and among AU Member States and the RECs

Action 4: Involve decision and policy makers (parliamentarians and politicians), media, research centres, universities, and civil society in continental, regional and national climate change issues

Action 5: Promote the establishment of capacity building program on UNFCCC and other MEAs at AUC.

XI. FRAMEWORK FOR STRATEGIC GOALS AND ACTIONS

Goal 8: Maintain African common position in support of the UNFCCC, Kyoto Protocol and other relevant conventions and treaties

Action 1: Develop a framework for consultation on all relevant issues of climate change including to promote and mobilize support for ratification and domestication of signed international and regional climate change conventions and treaties, and implement regional agreements and decisions of Specialized Technical Committees (STCs).

Action 2: Coordinate, and provide unified African voice in relevant global forums; as well as provide leadership in the development and implementation of African, regional, and national wide systems for climate change advocacy, capacity building of negotiators and supporting multi-disciplinary experts.

Goal 9: To provide leadership for effective climate change policy, institutional, management and legal frameworks at continental, regional and national levels

Action 1: Strengthen political leadership for climate change intervention at continental, regional and national levels;

Action 2: Coordinate provision for synergies of bilateral and multilateral agreements related to climate change.

Action 3: Ensure the principle of equity is applied at all levels in the climate change processes at continental, regional and national levels;

Action 4: Support leadership for the development and sharing of information for harmonization of climate related polices at regional and national levels

Goal 10: To promote public and stakeholder participation in climate change decision making at all levels (national, regional, continental and global)

Action 1: Ensure that relevant climate related decisions and agreements are implemented by AU Member States and all stakeholders

Action 2: Support multidisciplinary climate change related Education, Training and Awareness

Action 3: Coordinate governance system for the strategy that ensures central roles of the RECs, governments, UN system, international community and other stakeholders are played efficiently, transparently, accountably, and equitably.

Action 4: Promote Private Sector involvement in Green economy, including promoting green productivity.

XI.1. SCIENCE AND CLIMATE CHANGE

From the outset, Africa has been steadfast in acknowledging and appreciating the profound value of the systematic evidence generated by science which, by all credible modeling accounts, strongly underlined the link between the consistent secular growth of anthropogenic emissions and the onset and aggravation of the climate crisis. The first IPCC report of 1990 demonstrate the scientific evidence in sharp relief, noting that the disturbing build-up of the human-induced GHGs since the turn of the 20th century was set to intensify the ominous trends of global warming to catastrophic levels. The rise in GHG concentrations from 270 ppm in the 19th century to over 350 ppm as the 20th century came to a close brought to the fore realization that the planet was heating up to a degree that would threaten life on earth and the human's very existence, if such trends continue.

It is not often remembered that the process to comprehend the climate change phenomena and its wide global ramifications actually started in Africa. This pioneering performance set in motion a turn of events that culminated in the establishment of the United Nations Framework convention on Climate Change (UNFCCC) in 1992.

When the UNFCCC came into force in 1994, competing scientific evidence led the IPCC to urge industrialized countries to reduce their emissions by 5% of the 1990 levels. Therefore, considering the two-fold increase in global GHG emissions by 2013, the models of science have called for a 40% reduction of the climate change gases by 2017 if the mean temperature rise is not to exceed 1.5^{o}C.

Africa has subscribed to this temperature imperative, including the associated scientific evidence which the African Common Position on Climate Change underscores and articulates, with profound conviction. She believes that a global temperature rise above 2^{o}c would precipitate catastrophic and irreversible repercussions.

It is also crucial to emphasize that the evidence of science has all along occupied centre-stage in informing Africa's policy-making processes on climate change. And this has been the position taken by the African Group of Negotiators, the technical arm of CAHOSCC, in all international negotiations.

Goal 11: To have a coordinated network of climate services institutions that share scientific information for policy adjustments and design / implementation of appropriate adaptation and mitigation actions.

Action 1: Strengthen climate research and data generating institutions to deliver policy-relevant evidences to stakeholders.

Action 2: Promote the use of current scientific evidence to design appropriate adaptations and mitigation programmes.

Action 3: Enhance the sharing of evidence-based information to strengthen Early Warning actions.

XI.2. CLIMATE INFORMATION SERVICES (CIS)

Over 90% of the natural disasters in the world are climate related. African countries are facing multi-faceted challenges of climate variability and change that require, among others, decision-making based on scientifically sound data and information by governments and communities in order to develop adaptation strategies and action plans as part of the ongoing development processes and policies at national, sub-regional and continental levels[1]. The High-level Declaration adopted by WMO Third World Climate Conference (WCC-3) also decided to establish a Global Framework for Climate Services (GFCS).

The framework aims to develop the capacity of countries to apply and generate climate information and products relevant to their particular concerns. The components of GFCs include: the User Interface Platform; Climate Services Information System; Observations and Monitoring; Research, Modeling and Prediction; and Capacity building.

Goal 12: Provide support for the development of GFCS system in Africa and strengthen National Meteorological and Climate Services.

Action 1: Provide policy guidance for the development and implementation of the African-wide Climate Services Information System.

Action 2: Support capacity development strategy including research, modeling and prediction to contribute to the implementation of GFCS Framework.

Action 3: Provide continental leadership to develop and operationalize the User Interface Platform required for the users, climate researchers and climate service providers to interact at the global, regional and national levels to ensure effective exchange of climate risk information within GFCS Framework.

Action 4: Provide guidance in developing and improving regional and national frameworks for CIS that can be used in the mainstreaming of climate information into development plans.

Action 5: Invest in state of the art technologies for climate information collection, processing, management and dissemination for enhancing climate observational systems for all

[1]At AU level, two sessions of African Ministers Conference on Meteorology (AMCOMET) have been organized by AUC in partnership with the World Meteorological Organization (WMO). In 2011 the AU Summit approved the establishment of AMCOMET as a high-level mechanism for the development of meteorology and its applications. AMCOMET calls for strengthening and sustaining of the National Meteorological Services by providing them with all necessary resources and adequate institutional frameworks to enable them not only to support GFCs but also to fully perform their roles as a fundamental component of the national development infrastructure of our countries and of the continent and a contributor to security and sustainable development, particularly poverty reduction efforts, coping with climate variability and climate change. In order to address the challenges posed by weather and climate, AMCOMET has prepared the African Integrated Strategy on Meteorology (Weather and Climate Services) which was approved by the AU Summit in January 2013. The AMCOMET Strategy will contribute to the efforts in addressing the issues of climate change in Africa.

components of the planet earth and changes in African resources, including the use of remote sensing systems such as satellite and radars.

Action 6: Provide guidance in enhancing the capacities of the member state National Weather Services in the provision of climate services in partnership with WMO and regional institutions such as ACMAD, ICPAC AGRHYMET, and SADC-CSC.

XI.3. CLIMATE AND TECHNOLOGICAL CHANGE

Africa's capacity to adapt and mitigate against the growing climate menace among other things, would be contingent upon its ability to strategically acquire relevant renewable technologies on terms that are concessionary, including harnessing its potential to innovate and significantly evolve domestic technological capabilities. The large energy demands of Africa's Member States behooves them, in a regionally specialized manner, to build pre-investment, project execution, and project implementation capabilities. The vast renewable energy resources at the continent's disposal tend to suggest that its adaptive and mitigative prospects are considerably more promising in both temporal and spatial terms. Securing proprietary technologies may pose a serious challenge since most Annex 1 countries tend to maximize their commercial advantages through their highly strengthened intellectual property regimes. However, depending on how they design their procurement systems, craft their terms of reference to optimize domestic content and diversify their technological search processes, it would be possible to facilitate a kind of technological change more conducive to value-addition in the prospective future. Moreover, Member States cannot afford to ignore the huge technological prospects led bare by the vast pool of public domain technologies. To benefit from the latter, they need to invest strategically in the search process through concerted efforts to absorb knowledge available in numerous data bases. The establishment of national Climate Change Technology units could help synergize the processes of technological acquisition where relevant. The build-up of knowledge-based competences constituted a pivotal plank in Africa's quest to adapt and mitigate meaningfully.

Goal 13: To have a robust science and innovation policy that would facilitate the generation and / or acquisition of climate change technological innovations.

Action 1: Formulate a proactive and appropriate science, technology, and innovation framework to facilitate the evolution and/or acquisition of climate friendly innovations.

Action 2: Search and harness relevant public sector renewable technologies available in several international databases.

Action 3: Design proactive procurement strategies to maximize the domestic content of Member States.

Action 4: Build viable local capacities to prepare robust terms of reference for procurement and low carbon technologies.

XI.4. MARKET MECHANISMS FOR CLIMATE CHANGE MITIGATION AND ADAPTATION: EMISSIONS TRADING, CLEAN DEVELOPMENT MECHANISM (CDM), AND RELATED MARKET INSTRUMENTS

Market-based mechanisms for addressing climate change challenges have been proposed as tools to achieve better compliance in realizing greater reductions of greenhouse gases (GHGs) worldwide, as well as reduce costs and catalyze technological innovations. Africa can play an effective role in engaging the developed countries to mitigate by using several market-based instruments such as the Clean Development Mechanism (CDM) and emissions trading programs. Through international partnership, many mitigation projects can be promoted, thus enabling the private sector to capitalize on significant opportunities to reduce GHGs.

At the same time, several market-based instruments exist that can be applied to address the challenges of adaptation, even though considerable flow of resources is expected, based on pledges made in earlier Conference of the Parties (CoPs) by the historic emitters to enhance the effectiveness of African countries to adapt to the risks of climate change. The provisions of the Kyoto Protocol specifying emission targets are particularly relevant to bear in mind when formulating mechanisms to mobilize adaptation funds.

Goal 14: Enhance international partnership in meeting GHGs emission targets under the Kyoto Protocol

Action 1: Promote the use of market based mechanisms to realize the objectives of Kyoto Protocol
Action 2: Formulate and strengthen polices on fuel efficiency standards and carbon taxes
Action 3: Establish regulations and performance standards for wastes and industrial processes

Goal 15: Strengthen environmental governance for effective mobilization of adaptation funds

Action 1: Integrate market mechanisms and non-market mechanisms to generate adaptation funds
Action 2: Ensure efficiency in the allocation of funds for projects aimed at avoiding climate change related damages.

XI.5. ADAPTATION AND RISK MANAGEMENT

Africa's priorities in adaptation are meant to achieve sustainable development, alleviate poverty and attain the Millennium Development Goals, with emphasis on the most vulnerable groups. To integrate climate change adaptation measures into national and regional development plans, policies and strategies.

The three broad areas identified under adaptation include (a) Disaster reduction and risk management: including early warning, preparedness, contingency planning, emergency response and post-disaster recovery; (b) Sectoral planning and implementation: adaptation in key sectors including water, agriculture, coastal zones, health, infrastructure, biodiversity and ecosystems, forests, energy, urban management and tourism, taking into account the cross-sectoral implications; (c) Building economic and social resilience through the diversification of economies to reduce dependence on climate-sensitive sectors, including through the use of indigenous knowledge and practices and the strengthening of community organizations.

It would be logically credible to state that Africa's potential capacity to ***adapt*** would be gravely harmed and critically constrained ***unless*** the quest for sustainable development occupies centre-stage in efforts to realize meaningful economic change. The acutely vast quantities and dangerously high levels of greenhouse gases that are currently polluting the plant's atmosphere, and which are therefore threatening humanity's very existence, have accumulated over the

decades predominantly from the manufacturing, agricultural and other actions of many the now industrialized countries. Key requirements for the implementation of the three areas include:

- Understanding climate and climate change processes, vulnerability and risks, including, but not limited to, through monitoring and observation systems;
- Understanding the economics of adaptation;
- Understanding the social and cultural dimensions of adaptation;
- Policy setting and planning, including climate-proofing of future development;
- Piloting and demonstrating climate change scenarios;
- Full-scale implementation of the strategy.

Box 12: Agricultural Adaptation Programme in Northern Ghana

Over the years, local small holder farmers have often relied on local knowledge and skills to enhance productivity, adapt to and mitigate the negative impacts of climate change in rural agricultural systems and livelihoods. Local farmers have, for a long period of time, relied on traditional methods of seed production, preservation and multiplication that have ensured their access to indigenous and highly adaptable varieties of seeds. However, indigenous seed varieties are on the verge of extinction in many rural areas, partly due to the persistent assumptions by policy makers and advocates that indigenous knowledge is retrogressive.

The Canadian Feed The Children (CFTC) launched the Climate-Seed Knowledge project in Zoosali community in Northern Ghana, with the main objective to enhance climate resilience using local seed varieties for adaptation. The project envisaged benefits for the local communities including improvements in food security and livelihoods as well as minimizing dependence on external food supplies by the community.

In the first phase of the project, 40 women farmers were selected to cultivate their farms using indigenous seed varieties, traditional knowledge and farming techniques. Through the Regional Advisory Information and Network Systems (RAINS), local staff worked with community elders in Zoosali to identify indigenous seed varieties that were prone to extinction. The project resulted in promising gains for the Zoosali community in many ways:

- The CSK project helped to raise awareness of the impacts of climate change on rural livelihoods and using traditional seed varieties to adapt to these impacts;
- The project helped to build adaptive capacity in the rural community of Zoosali;
- The project also successfully revived a number of indigenous seed varieties that were on the verge of extinction, including bambara beans, cowpea, sanze, bungu, agusi, neri, late millet and sesame; and
- Food security of the local community was also enhanced through this project.

Source: Canadian Coalition on Climate Change and Development (C4D), 2013.

XI.6. DISASTER RISK REDUCTION

Disasters are the result of the combination of exposure to a hazard, conditions of vulnerability that are present and insufficient capacity or measures to reduce or cope with the potential negative consequences. Most of disasters resulting from natural hazards in Africa, including floods and landslides, vector and waterborne diseases on one hand and droughts on the other, are mainly attributable to unplanned land use that leads to overexploitation of natural resources. These impacts are evidently exacerbated by climate change with the increase of extreme weather events affecting ecosystem services on which the majority of African populations depend. In Africa therefore, ecosystem protection is a key aspect in disaster mitigation. African Disaster Risk Reduction (DRR) mechanisms should involve country risk and vulnerability profiling, early warning systems and emergency response plans. DRR should be mainstreamed into decentralized sectoral development plans in order to incorporate disaster and disease considerations into land use, building and infrastructure regulations.

Africa's population has crossed the 1 billion mark and climate change risks aggravating the limits to nature and therefore pushing communities fortifies to the margins of existence, deprivation, and life-threatening disasters.

Goal 16: Promote and support Disaster Risk Reduction, emergency response and recovery for climate resilience

Action 1: Support the implementation of the Africa Regional DRR Strategy and its Programme of Action in line with the Hyogo Framework for Action (HFA).

Action 2: Support implementation of decisions adopted by the African Ministerial Conferences on Disaster Risk Reduction

Action 3: Promote and support applied research and studies around DRR and climate change integration and mainstreaming.

Action 4: Support capacity development and increase awareness and commitment for DRR and climate change integration and mainstreaming to facilitate climate resilience and risk informed planning processes.

Action 5: Promote and support climate risk, loss and damage associated with climate related hazards

Action 6: Support the generation, provision, and application of climate and weather information for DRR and climate change purposes.

XI.7. SUSTAINABLE LAND MANAGEMENT (SLM)

Land degradation aggravated by climate change leads to a significant reduction of the productive capacity of land for both crop production and rangeland management. This has a significant implication for Africa in terms of the continent's ability to produce enough food for the growing population. A total of 305 million ha of soils ranged between 'strongly degraded' (296 million ha) and 'extremely degraded' (9 million ha, of which more than 5 million ha were in Africa). 'Extremely degraded' soils are beyond restoration (Oldeman, Hakkeling and Sombroek 1990).

Human activities, also intensified by climate change and dwindling resource base also contribute significantly to land degradation include unsustainable agricultural land use, poor soil and water management practices, deforestation, removal of natural vegetation, frequent use of heavy machinery, overgrazing, improper crop rotation and poor irrigation practices. The situation is also affected by natural disasters, including drought, floods and landslides. During heavy rainstorms, land degradation intensifies flooding, as infiltration is reduced and gullies channel water more quickly to rivers, magnifying peak flows. Soil erosion is a major factor in land degradation and has severe effects on soil functions - such as the soil's ability to act as a buffer and filter for pollutants and carbon sequestration, its role in the hydrological and nitrogen cycle, and its ability to provide habitat and support biodiversity. The main types of soil degradation are water erosion, wind erosion, chemical degradation and physical degradation.

There is therefore an urgent need to address the land degradation in the climate change adaptation and mitigation strategies at national and regional levels. Soils play a critical role in the carbon cycle. A great deal of the carbon in dry land soils is found only in the top few centimeters giving emphasis the need to maintain a permanent vegetation cover to ensure healthy soil conditions.

Goal 16: Integrate Climate Change considerations in Sustainable Land Management

Action 1: Promote development of a framework for integrated research and development on the economics and social impacts of land degradation, desertification, drought and sustainable land use, land use change and soil management practices**.**
Action 2: Support and strengthen existing national strategic investment frameworks.
Action 3: Create an enabling environment at regional and national levels for achieving Sustainable Land Management.

XI.8. AGRICULTURE AND FOOD SECURITY

Food security for a growing African population is already a major challenge for agriculture. This is further exacerbated by the negative effects of climate change. The high vulnerability of the African agriculture to climate change requires enhanced and comprehensive adaptation of the agricultural sector to the changing climatic conditions.

The Comprehensive Africa Agriculture Development Programme (CAADP) was endorsed at the African Union Heads of State Summit as a New Partnership for Africa's Development (NEPAD) program in July 2003 with the overall goal of "helping African countries reach a higher path of economic growth through agriculture-led development, which eliminates hunger, reduces poverty and food insecurity, and enables expansion of exports." This is a growth-oriented agricultural development agenda aimed at increasing agriculture growth rates to a minimum of six percent per year to create the wealth needed for rural communities and households in Africa to prosper.

Adaptation actions are needed to address the risks posed by climate variability as well as the effects of longer-term climate change, from community through to national levels. Adaptation strategies and measures (such as diversifying crops, changing varieties, planting dates, irrigation, planting trees, soil conservation, supplementing livestock feeds) increase the range of climate conditions farmers can cope with. Specific types of farmer, herder or fishermen, and other groups such as women, may need particular support to adapt to climate change. Strengthening women's rights and control of assets in household and agricultural production, for example, can improve the effectiveness of their risk management strategies. A number of adaptation measures also contribute to reducing greenhouse gas emissions such as conversion of grasslands and wetlands into agric., Increase storage of carbon in vegetation and soils through soil fertility and increasing organic content.
To buffer the agricultural sector, Climate Resilient Agriculture (CRA) needs to integrate the risks of climate change. With the increase in climate extremes such as droughts, floods effective Emergency responses can be strengthened by integrating risk management into national development initiatives and contingency plans.

Climate Change may induce transformation in the rural labour market occupation portfolio affecting the composition of the rural labour force. The forecasted shifts in rural employment will also be accompanied with increased demand on social protection measures to support the rural farmers and smallholder workers. The AU Social Protection Plan for Informal Economy and Rural Workers (SPIREWORK) provide strategic responses to these risks as they may result from climate change.

Goal 17: Agriculture Development and Adaptation to Climate Change

Action 1: Strengthen climate resilient agriculture within the framework of CAADP.
Action 2: Enhance regional trade in agricultural commodities.
Action 3: Enhance capacity for development and implementation of effective water harvesting, irrigation, and water efficiency management for agriculture and other uses.

Action 4: Enhance capacity for implementation of soil conservation and better integrated soil management

Action 5: Enhance cooperation with Climate Technology Centres and Network (CTCN) for CRA.

Action 6: Integrate risk management into national development initiatives, food security infrastructure, and contingency plans.

Action 7: Promote employment flexibility, green Jobs and social protection for the employed workers to make them more resilient and able to adapt their skills to climate change.

Action 8: Promote involvement of women in decision making processes on DRR including Climate Smart Agriculture (CSA) and build their capacity to increase resilience through adaptation to climate change

Action 9: Support countries mainstreaming CC into the NAIPs Enhancing institutional arrangements (better integration between different departments) Include Adaptation of agriculture with the international negotiations

Box 10: Integrated Management across the Water, Energy and Food Security Nexus

Water, energy and food security are inter-related and often rely on common use of scarce natural resources. Resource limitations in all sectors require a shift towards increased resource use efficiency, demand management and more sustainable consumption patterns. Without such changes, current development trajectories may threaten to drive social– ecological systems at all scales towards critical thresholds.

Africa has developed only 10% of its hydropower potential, much less than other regions. The harnessing of Africa's waters could be used to drive development while contributing to climate change adaptation and mitigation. Those countries that rely on hydropower face outages during low flow periods. Coal-based energy generation places demands on water resources for cooling processes. The cultivation of biofuels puts large demands on water resources (10,000-100,000 litres/GJ energy) 8, which can conflict with other demands such as domestic food security.

There is potential to increase overall resource use efficiency and benefits in production and consumption though an integrated approach across sectors. Better integrated policy-and decision-making that account for external costs across sectors will have to complement conventional approaches aimed at only improving sectoral resource productivity. This can lead to improved overall resource use efficiency, sustainable resource management and equitable benefit sharing. In turn, institutions need to be flexible, adaptive, and enabled to cooperate with institutions representing other sectors.

Rather than creating new institutions or departments the aim should be to maximise the use of existing integrated frameworks. In recent years in Africa, considerable efforts have focused toward the implementation of integrated water resources management (IWRM) frameworks and plans. These provide a foundation to evolve partnerships with water-using sectors whose policies and strategies are governed by many factors outside the water sector.

Source: AU-AMCOW, 2012.

XI.9. WATER RESOURCES

Currently, over half of Africa's population resides in regions with absolute water scarcity and the number is expected to increase to over 800 million by 2025. The greatest impact of climate change is on the earth's water cycle (constant movement of water from oceans to the atmosphere to land surface to oceans). The challenge is, thus, to understand the cycle and how climate change will modify it. Climate change will affect the intensity and distribution of rainfall which is the primary source of freshwater which flows on land, and is stored in rivers and lakes. The rate of evaporation and levels of soil moisture will also be affected by climate change. More impacts will be felt on the natural system i.e. accelerated glacier melt, altered precipitation, run-off, ground water recharge systems/patterns, extreme droughts and floods, water quality changes, salt water intrusion in coastal aquifers, and changes in water use.

For Africa, climate change impacts raise serious concerns about water security (the availability of, access to, water resources to meet the sustainable needs of households and communities). This will be due to major hydrologic variability and water security challenges such as droughts and floods.

In the face of revised water policies, there will be a need for Africa to devise an appropriate adaptation framework to address water challenges. The framework would lead to the preparation of an adaptation strategy, defining a range of measures, actions and regulations. With respect to Sharm-El-Sheikh Declaration, adaptation strategies would be designed to mitigate against the consequences of climate change. Critical water management approaches would include control, organization, planning, staffing, and leading (leadership, governance).
Climate Change is mainly manifested by temperatures and precipitation whose impacts have resulted in disasters characterized by floods and landslides, disease, structural damage as well as drought on the other end of extremes and whose cost includes the ultimate price of lives. High water demand from rapid population growth, agriculture, urban and industrial water on one hand and on the other degradation of water sources, pollution and climate change driven erratic rainfall draw a grim picture of water insecurity. Integrated Water Resources Management frameworks allow understanding of demand and supply conditions of water resources and the prevailing threats to quality and quantities so as to plan and implement appropriate sustainable management interventions.

Goal 18: Water secure Africa for climate resilience

Action 1: Strengthen water resource management within the framework of Africa Water Vision 2025
Action 2: Coordinate implementation of decisions adopted by AMCOW;
Action 3: Provide leadership in ensuring water security and the provision of basic water supply and sanitation services across AU member states.
Action 4: Promote and support the development and improvement of national frameworks for IWRM in addressing climate change challenges.
Action 5: Promote and support development and implementation of frameworks for regional watershed management.
Action 6: Systematic climate change observations and research.
Action 7: Enhance cooperation with Climate Technology Centres and Network (CTCN) for water security
Action 8: Provide leadership in water security and efficient water technologies including recycling of waste water, increase water quality, significantly improve waste water treatment; water efficiency; reduce water losses; water storage facilities and technologies.
Action 9: Provide platforms for communicating and sharing of experiences in adapting to climate change Africa's water challenges.
Action 10: Provide leadership, guidelines and support regional required for trans-boundary water resource management of lake and river basins.
Action 11: Promote and support development of water resource management infrastructures.

XI.10. BIODIVERSITY AND ECOSYSTEMS

The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993. The Convention has three main goals namely conservation of biological diversity (or biodiversity); sustainable use of its components; and fair and equitable sharing of benefits arising from genetic resources. Biodiversity degradation largely occurs

outside protected areas and is under threat from habitat loss and over-exploitation of natural resources, among others, whose effects are exacerbated by climate change.

Box 14: Adaptation-related Commitments in the Sharm el-Sheikh Declaration on Water and Sanitation

- Put in place adaptation measures to improve the resilience of countries to the increasing threat of climate change and to the increasing variability of water resources, and to improve Africa's capacity to meet the water and sanitation targets.
- Ask Regional Economic Communities and River and Lake Basin Organisations to initiate regional dialogues on climate change and its impacts on the water sector, with the aim of designing appropriate adaptation measures.
- Ensure the equitable and sustainable use – and promote an integrated management and development – of national and shared water resources in Africa.
- Significantly increase domestic financial resources allocated for implementing national and regional water and sanitation development activities, and call upon ministers of water and finance to develop appropriate investment plans.

Source: AU-AMCOW, 2012

Climate change will reduce the limits of tolerance of ecosystems and the adaptive capacities of biotic systems. Economic policies not rooted in service will fail to enhance the resilience of structure and functions of natural resource environments. Moreover, deficiencies in knowledge tend to weaken the potential efficiency of decision-makers, this resulting in the development of suboptimal policies benefit of scientific, economic, social, and sectoral dimensions of climate change. Further, legal and institutional systems have not succeeded in reversing patterns of natural resource consumption that reinforce stresses of climate change.

Goal 19: AU to provide leadership through its specialized technical committees (STCs) in the negotiation and implementation of CBD, UNCCD and other biodiversity related conventions and agreements.

Action 1: Provide support for the implementation and tracking of the various decisions by AU, AMCEN biodiversity (CBD), and land degradation (UNCCD) among others.

Action 2: Provide required support for developing or improving frameworks for implementation of climate resilient biodiversity management within AU Member States, RECs and other regional relevant bodies.

Action 3: Provide leadership in the development of a framework for capacity building, training, research and communication on climate resilient biodiversity preservation and conservation.

Action 4: Support development, improvement and harmonization of common policies, laws and strategies relating to biodiversity; land desertification etc. including trans-boundary issues for the conservation and sustainable utilization of biodiversity in and outside protected areas.

Box 1511: Climate Resilience through Payments for Ecosystem Services: Green Water Credits in Kenya's Tana River

Green water credits are a financial mechanism that offers incentives for farmers in the upper reaches of Kenya's Tana River to improve land and water management. Various soil and water conservation measures in the headwaters of the Tana River have been assessed to determine their potential to sustainably increase local productivity and water availability and, at the same time, to reduce siltation of downstream reservoirs. These reservoirs are especially important because Nairobi's water supply, most of Kenya's electricity supply, and several large irrigation schemes depend on them. A number of powerful economic actors, such as water and power companies and export producers, have come forward to support this ecosystem approach as an alternative to a conventional 'end-of-pipe' solution, which in this case would be to build a new reservoir once an old one has silted up.

This project is a good example of the application of an alternative approach (financial incentivisation) to achieve key goals (protection of water resources for downstream users) without adopting potentially climate-risky investments (a new dam to maintain supply). The option represents a dual benefit situation, as the farming community shares the benefits of preserving the supply with other users. Sound land management delivers benefits regardless of the climate change scenario and is therefore a no-regret strategy.

Source: AU-AMCOW, 2012.

XI.11. HEALTH

The African Union recognizes the increasing impact of health consideration on the economic performance of its Member States with respect to investments and effective interventions in the health sector. This disease burden is aggravated in the face of the eminent changes in climatic conditions associated with climate change. Diseases that have been linked to climate change include the spread of malaria with the increase of warmer conditions and flooding. Other links to climate change impacts are due to worsening nutrition, associated micronutrient deficiencies and land degradation. It is important to note that several of the Millennium Development Goals and the Rio Agenda 21 are environment and health related.

Goal 20: Strengthening climate resilience of health systems in Africa

Action 1: AU to encourage the factoring of climate change scenarios in the planning and formulation of health related policies and programmes.

Action 2: Promote knowledge, experience and technology sharing among specialized institutions in climate resilient health systems.

Action 3: Enhance provision for training, education, awareness, capacity building on climate resilient health systems including integrated approach to climate sensitive health early warning systems such as for malaria, cholera, dysentery among other climate sensitive diseases.

XI.12. TOURISM

Tourism is one of Africa's fastest growing industries. It is based on wildlife, nature reserves, hotels, coastal resorts, pleasant climate for recreation and culture among others. In Africa, the sector is a key source of economic growth, foreign exchange earnings, investment, job creation, social welfare and diversification of economy. The industry is multisectoral and requires inputs from many industries including agriculture, construction, manufacturing, water, transport and energy, among others, from both the public and private sectors[2].

Climate determines the choice of leisure travel destinations for most tourists. Climate change will therefore have direct economic consequences to some countries that depend on tourism industry. Seaside tourism seems likely to suffer damage from most of the effects of climate variability and change, notably beach erosion, higher sea levels, greater damage from sea surges and storms, and reduced water supply. Rises in sea levels and sea temperatures could have devastating consequences on the coast of Africa with risk of inundation of many important commercial centres, loss of infrastructure, and population displacement.

Goal 21: To promote the development of appropriate policies and strategies to ensure tourism development and management are climate resilient.

Action1: Provide support for formulation and reform of policies that ensure climate resilient tourism management.

Action 2: Promote the harmonization and development of frameworks that guide trans-boundary tourism sites management.

Action 3: Promote research and development in tourism monitoring with a focus on climate change scenarios.

XI.13. TRADE AND CLIMATE CHANGE[3]

Over the past five decades, the world experienced an unprecedented expansion in international trade. This rapid growth has been fuelled by dramatic technological innovations in the spheres of transportation and communications, where significant reduction in costs has facilitated more trade and investments around the world. Needless to say, this trade has largely been unfriendly to the climate. In the context of a worsening climate environment worldwide, concerns have been raised about the possible impacts of growing trade on greenhouse gas emissions, and the prospects to enhance flows of goods and services across international frontiers that address both adaptation and mitigation imperatives.

Indeed, it is projected that Africa will witness substantial levels of investment on the one hand, and growth of interstate trade, on the other, in the years ahead as it seeks to spur economic resurgence across the continent. Accordingly, financing, technology transfer, and trade-oriented cooperation between the region and countries elsewhere will be critical in ensuring sizeable adaptation and emission benefits for Africa.

Africa stands to gain from a comprehensive understanding of the linkages between trade and climate change. In particular, the economic aspects of the links are likely to draw a greater part of analytical attention though trading relations involving technology transfers to the continent will

[2]The expected changes in precipitation and temperature patterns from climate change are expected to affect land productivity and consequently the composition, structure and performance of vegetation, which would in turn affect associated herbivores and their predators. The reactions of wildlife to the projected climate change are to adapt to the new climatic conditions or, in the extreme, extinction which will affect tourism.

[3] International trade and climate change: economic legal and institutional perspectives- the World Bank (2007)

also have significant social and governance implications. If investments flows in both finance and technology are expected to rise, then measures to influence trade in forging climate-friendly mitigation and adaptation alignments will become necessary.

The global trading system has shown that climate change mitigation and adaptation measures, including policies, intersect with international trade in many ways. As far as policy measures are concerned, either regulatory schemes (standards and regulations) or economic incentives (e.g. taxes, tradable permits, and subsidies) have been invoked to promote climate-friendly international trade. There is therefore broad agreement that the risk of a rapidly changing climate calls for policy interventions to address the effects of competitiveness arising from the implementation of climate-friendly trade and environmental policies.

Member States are not expected to shy away from restricting or prohibiting the import of certain energy-inefficient products. But because bans and prohibitions have a direct impact on trade, it is vital that governments explore the availability of viable alternatives.

Trade can help African countries with adaptation, through generating export earnings and accessing technologies. Trade also has a role in mitigation of climate change through disseminating low carbon technologies. Having appropriate policies, strategies, plans and programmes as well as mechanisms and capacities, including financial capacities and agreements in place at global, regional, sub-regional, national, and local levels is of paramount importance to facilitate equitable, competitive, and environmentally friendly trade and thus minimize economic, social, and developmental consequences of climate change. The following are tangible goals along with corresponding prioritized actions to which countries need to commit to stimulate economic growth and thus address both mitigation and adaptation.

Goal 22: Promote climate-friendly international trade

Action 1: Develop appropriate financial mechanisms to promote trade in climate-friendly goods and technologies
Action 2: Establish and operationalize regulatory and fiscal policies, emissions trading systems, and voluntary agreements to combat GHG emissions.
Action 3: Increase investment in renewable energy such as solar and wind power generation.
Action 4: Facilitate uniform approach to the pricing of greenhouse gas emission
Action 5: Streamline the intellectual property rights, investment rules, and other policies (including environmental standards and regulatory policies and pollution charges)
Action 6: Design and implement forestry policies that curb deforestation and exports of timber with a view to protecting carbon sinks and promoting local climate stability
Action 7: Promote CDM arrangements that facilitate flows of climate-friendly international goods and services
Action 8: Establish regulatory systems designed to enhance labeling schemes that embed trade in energy efficient goods and services.

Goal 23: Minimize adverse impacts of climate change through international trade

Action 1: Develop cost-effective policies and mitigation technologies that contribute to long-term low-carbon growth paths.
Action 2: Liberalize trade in specific goods and technologies that are relevant for climate change mitigation
Action 3: Remove tariff and nontariff barriers to facilitate the diffusion of climate friendly and clean energy technologies in African countries
Action 4: Promote and support trade between African countries (especially in promoting clean energy technologies)

Action 5: Promote and support energy-intensive production in African countries

Goal 24: Ensure that trade in natural products does not intensify adverse climate change impacts.

Action 1: Introduce tighter policy and legislative measures to prohibit trading transactions harmful to sustainable climate stability.

Action 2: Promote trading transactions that enhance sustainable conservation of natural resources and reinforce climate-friendly processes.

Action 3: Increase the funding capacity and awareness of relevant institutions to enhance climate-proof national, regional, and international trading systems.

Goal 25: Ensure that natural resources (whose products also enter national, regional, and international markets) are not exposed to harmful exports and imports.

Action 1: Enhance cooperation and coordination between national, regional and international organizations in implementing protocols and conventions prohibiting trade in hazardous wastes and chemicals.

Action 2: Strengthen national and cross-border custom institutions to prevent flows of goods and services that may undermine the carbon-sequestering potential of natural resources.

Action 3: Promote awareness and advocacy among producers and consumers to adopt sustainable production and consumption methods that are climate friendly.

Action 4: Increase the funding to, and capacities of, environmental management organizations to enhance trade enforcement and regulations.

XI.14. URBANISATION

The rapid pace of urban population growth in Africa is unprecedented. It is well understood that climate change influence the migration of people, the resources such as water and food available to cities, and generally the manner in which cities develop. On the other hand, cities are involved in activities that influence the pollution levels, winds (urban and rural winds factors), temperature contrasts (urban heat islands), among others, that eventually lead to urban climate change[4].

To foster organized and systematic regional and urban planning, the AU through its African Ministerial Conference on Housing and Urban development (AMCHUD) provides a platform for sharing of experiences and transfer of technologies.

Goal 26: Create an enabling environment for climate resilient sustainable urban development

Action 1: Provide leadership to AU Member States to ensure availability of harmonized "climate-smart" urban development policies including the required building codes and standards as highlighted in "safer cities campaign" by UNISDR.

[4]Mechanisms that define the interaction between climate change and urbanization include changes in transportation, land-use patterns, and the production and consumption patterns of urban residents. The economies of scale, as well as proximity and concentration of enterprises in cities, make it cheaper and easier to take the actions and provide the services necessary to minimize both emissions and impacts of climate related hazards.

Action 2: AU through AMCHUD to partner with UN-HABITAT and other stakeholders/partners in accessing information that addresses climate change in relation to urban development.

Action 3: AU to promote the use of energy efficient technologies and sources in urban development.

Action 4: Promote greening of cities through tree planting, chemical and waste management and mass city transport systems.

Action 5: Provide leadership for increased advocacy, education, training, and awareness of the urban residents and planners.

XI.15. COASTAL AND MARINE RESOURCES

The oceans, seas and coastal areas form an integrated and essential component of the earth's ecosystems are critical for its sustainability. Over-utilization and degradation of marine and coastal ecosystems together with climate change impacts with most of them being attributed to the outcomes of ocean warming and increased sea levels are inevitably resulting in the degradation and destruction of the ecosystems, salt water intrusion, and damaging and destruction of infrastructure, with implications on food security, economic growth, and livelihoods.

Africa has developed various frameworks aimed at promoting sustainable management of marine and coastal ecosystems, including Regional Seas Programmes and these are the Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention) and the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (Nairobi Convention).The northern African countries are part of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) while Egypt, Sudan, Djibouti and Somalia are also members of the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA).

Key recommendations from all the above conventions and conferences have recommended a number of broad strategic interventions aiming at addressing impacts of climate change. These interventions are focusing on options for increasing coastal and climate resilience that can be implemented at the regional, national, community and ecosystem levels, in collaboration with global, regional and intergovernmental organizations, the private sector and nongovernmental organizations.

Goal 27: Strengthen of resilience to climate change in coastal areas

Action 1: Review the status of the implementation of existing Integrated Coastal and Marine Management (ICZM) with the purpose of promoting climate-resilient development in the coastal and marine environments.

Action 2: Provide guidance in the development of a framework for the assessment of current and projected climate risks including marine and coastal zone hazards such as the coastal area flooding, storm surges, sea level rise; cyclones, tsunamis, and associated impacts on society, tourism, fisheries, infrastructure and livelihoods.

Action 3: Enhance R & D, education, training and awareness in aspects relevant to climate change impacts and responses to marine and coastal zone related disasters.

Action 4: Develop fisheries management approaches that incorporate resilience-enhancing practices.

Action 5: Ensure that development of aquaculture initiatives have attributes that enhance their resilience to impacts of climate change.

Box 1612: Mitigation Project in Kuyasa, South Africa

Kuyasa is a suburb of Khayelitsha, which is a relatively new township on the urban fringe of Cape Town, South Africa. The majority of the residents of Kuyasa are poor and are thus recipients of a once-off state housing subsidy. The subsidy had been used to build tens of thousands of $30m^2$ one-roomed houses with road access, storm water drains, piped water, electricity, and water-borne sewage. The houses were without ceilings, warm water or ablution facilities, and installation of these were identified as needed.

In 2002, South South North Africa with the approval of community leaders packaged a CDM project that would include the installation of solar water heaters, insulated ceilings, energy efficient lamps and associated infrastructure (wiring switches, warm and cold water plumbing). Facilitators were trained, a steering committee was selected, and pilots were arranged to provide both baseline information and affirming demonstrations of the technologies. The CDM project that was registered included a 'suppressed demand' as a result of poverty and lack of fixed water heating technologies for energy services baseline methodology.

The financing for the project included an estimated USS$3.76 million from the Government's Extended Public Works Programme channelled through the National Government's Department of Environmental Affairs and Tourism and the Certified Emissions Reductions (CERs), pre-sold at approximately US$20.20/CER. The capital subsidy from Government was used to purchase the technologies and install them, and the income from the CERs was used to fund the maintenance. The credits are owned by the City of Cape Town and managed by South South North Africa (a not-for-profit NGO) in collaboration with a community trust. As at 2011, 2,300 houses were retrofitted and a further 5,000 were being retrofitted in a second phase. Further elements include household contributions through the backing of developmental micro-lenders operating in the area.

The Kuyasa project was always envisaged as a pilot for national up-scaling for both retrofit and greenfield subsidised housing. This is starting to take institutional shape under the Development Bank of Southern Africa (DBSA) in the form of a National Sustainable Settlements Facility. Sustainable financing of the facility is envisaged through a blend of carbon finance (cleared by the Facility), national demand side management contributions (through the National Energy Regulator of South Africa), and other eco-services income. A Gold Standard CDM Programme of Activities (PoAs) is currently under validation to cover the carbon side, and a NAMA has been tabled to cover the bridging finance for the Facility. Should the model work, it could create a model for further national, regional and sectoral interventions resulting in progress towards decarbonising energy services while addressing sustainable development requirements of the poor.

Source: Adapted from ACPC, 2012

XI.16. TRANSPORT

It is recognized that integrated mass transportation of people in public systems, and non-motorized transportation against individual cars have demonstrated significant reductions in the transportation carbon footprint. Higher investment in climate-proofing of road infrastructure is also among adaptation recommendations for predicted high and erratic extreme rainfall areas. Stricter regulations for the promotion of ICE vehicle efficiency through testing are also recommended. The need to develop sustainable transport systems, including energy efficient multi-modal transport systems, notably public mass transportation systems, clean fuels, vehicles, as well as improved transportation systems in rural areas are integral component of any good climate change strategy.

Goal 28: Support Member States to develop appropriate policies in support of economical and climate resilient transport systems.

Action 1: Urge Member States to develop policies and strategies for expeditious urbanization and reduce vehicular travel distances.

Action 2: Urge members to develop policies (including incentives) on importation of energy efficient cars.

Action 3: Promote development of efficient public transport and mass-transit systems.

Action 4: Promote development of policies and regulations to monitor and limit motor vehicle emission levels.

Action 5: Promote the development and implementation of investment for climate-smart transport systems.

Action 6: Promote climate proofing in the design and architecture of transport systems (air, roads, bridges, railways, ports, sea/lake transport).

Box 17: Ghana Urban Transport Project in Accra and Kumasi

Accra and Kumasi are two expanding metropolitan cities in Ghana. The population of Accra is estimated at three million people while that of Kumasi is estimated at one million people. The growing population of these cities is putting an enormous pressure on the transport infrastructure, resulting in heavy congestion, weak traffic management measures, poor road safety monitoring, high accident rates as well as heavy dependence on informal private bus services.

The Ghana urban transport project, being implemented by the Department of Urban Roads in Ghana, focuses on improving urban transport systems as well as addressing institutional, management, and regulatory issues in order to improve personal mobility in the cities of Accra and Kumasi. The key objective of the project is to improve mobility in the cities through a combination of traffic engineering measures, management improvements, regulation of the public transport industry, and implementation of a Bus Rapid Transit (BRT) system. The project is estimated to cost about US$83 million, sourced from a consortium of partners including the World Bank, the Global Environment Facility (GEF), the French Development Agency (FDA) and in-kind contributions from the Government of Ghana, and is to be implemented over a period of five years starting from 2007. The timeframe of the project has recently been extended to end of 2014.

At completion, the project is expected to result in a direct reduction of 240,000 tonnes of CO_2 eq during the project timeframe. In addition, it is expected that the metropolitan cities of Accra and Kumasi will benefit from an upgraded transport infrastructure and management system as well as improved traffic.

Sources: The World Bank (2013) and the GEF (2013)

XI.17. FORESTS

Over 70 per cent of Africa's population depends on forests, which provide many social, economic and environmental benefits, including carbon sinks, biodiversity conservation, watershed protection and livelihoods. They are homes to more than 80% of the world's terrestrial biodiversity and help protect watersheds that are critical for the supply of clean water to most humanity (FAO, 2013). Climate change, however, poses enormous challenges for forest, forest dependent people and society through reduced delivery of forest products and forest ecosystem services culminating from increased incidents of forest fires due to high temperature, decreased forest health and vitality and increased water stress leading low growth and survival rates and bush encroachment. In some African countries, up to one third of greenhouse gas emissions can be attributed to such activities.
Forests contribute significantly to climate change mitigation though their carbon sink and carbon storage functions. They also play a crucial role in reducing vulnerabilities of people and ecosystems to climate change.

In many countries, climate change issues have not been fully addressed in national policy frameworks and sectoral frameworks. The lack of integration of climate change issues into policies and strategies may impact negatively in achieving sustainable forest management and climate resilient forests. Several countries have identified the need for legal reforms to implement national and regional mitigation strategies. REDD+ initiatives have played important roles in highlighting these challenges, and offer opportunities to help African nations manage forests and receive payments for storing carbon.

Box 1813: REDD+Initiative in Africa

There initiatives under REDD+ that are being implemented by selected African nations under the auspices of the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) which is a joint initiative of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). The World Bank Forest Carbon Partnership (FCPF) is a global partnership focused on REDD+. The FCPF assists tropical and subtropical forest countries develop the systems and policies for REDD+ and provides them with performance-based payments for emission reductions.

Furthermore, there are regional and national initiatives that seek to promote climate resilient forestry practices other than REDD+ to promote sustainable forest management, conservation and increasing carbon stocks in Africa. These include various variants of joint forest management initiatives between state authorities and local communities. Forest Convergence Plans of ECOWAS and COMIFAC are all aiming to promote SFM and enhancing the resilience of the forest sector to climate in West and Central Africa respectively. The African Forest Forum which is a professional based organization also promotes sustainable management of forests and trees on farm in a bid to reduce the impacts of climate change on forests and trees, and to enhance the contribution of forests in climate change adaptation and mitigation.

Source: ECOWAS & COMIFAC

Box19: The Humbo Community-based Natural Regeneration Project in Ethiopia

The Humbo project is the largest forestry project in Africa to gain CDM registration. The project involves the restoration of indigenous trees species and is aimed at bringing environmental and financial benefits to the local communities in Humbo, which is situated in the highlands of Ethiopia. The Humbo project is a partnership cutting cross many entities including World Vision offices in Africa and Ethiopia, the World Bank, the Ethiopian Environment Protection Agency, as well as local and regional governments and the community. The project covers 2,728 hectares of degraded forest with an estimated carbon sequestration potential of the project is estimated at 880,296 tonnes of Carbon dioxide equivalent (tCO2e) for an operating lifetime of 60 years.

The project preparations began in late 2004 while field operations started in 2006. Since then, the project has recorded significant achievements that include its validation as an Afforestation/Reforestation (A/R) project under the CDM in 2009 and also becoming the first project in Africa to sell temporary Certified Emission Reductions (CERs) in 2012. In total 73,000 credits were purchased by the World Bank BioCarbon Fund. The sale of the carbon credits under the BioCarbon Fund will provide an income stream of more than US$ 700,000 to the local communities over a minimum of ten years. The full amount of the carbon revenue awarded is being used to improve the livelihoods of the local community that include investments for the people in micro businesses such as beekeeping, livestock husbandry and the construction of a flour mill and grain storage facility.

Sources: The Redd Desk (2013), Biryawaho et al, (2012)

Goal 29: Sustainable Forest Management

Action 1: Develop a continental framework/strategy for REDD+
Action 2: Promote and support development and review of forest policies and strategies at regional and national levels that enhance community participation;
Action 3: Promote and support development and implementation of REDD+ strategies at regional and national levels.
Action 4: Enhance capacity to implement REDD+ and CDM.
Action 5: Enhance improvement of forest research, as well as transfer of relevant science and technology.
Action 6: Promote and support integration of climate change policies and strategies in forest management.
Action 7: Support initiatives that safeguard and promote forest conservation.

XI.18. WASTE MANAGEMENT

Sound management of chemicals and wastes is crucial for the protection of human health and the environment, yet many African countries lack the capacity for sound management of chemicals and waste throughout their life cycles. Solid wastes, such as electronic and plastic waste, continue to pose particular challenges that must be well addressed. Coordination and cooperation during conferences dealing with toxic chemical and other wastes have been highlighted in the Basel Convention, the Rotterdam Convention and the Stockholm Convention. AU leadership for the development and enforcement of comprehensive International, regional, national and local waste management policies, strategies, laws and regulations is needed now more than ever as a result of increased reports of illegal dumping, and their link to climate change.

Anthropogenic excesses potentially provoke further climate-induced aggravation and reduction in the quality of life if toxic chemicals and hazardous and radioactive wastes are not disposed sustainably. The problems will be compounded when these are internationally traded and trafficked illegally. The poor management of solid and liquid wastes would also exacerbate the stresses of climate change on human livelihoods and welfare. Besides, the broad negative implications of the above on the wider flora and fauna would also intensify in a detrimental manner, such as:

- Undermining sustainable development efforts;
- Subverting the ability of Member States to adapt and sustain resilience and
- Constraining the capacities of governments to pursue meaningful progress towards achieving a sustainable society.

Goal 30: Gaseous, Liquid and solid waste management and co-benefit for health and environment protection

Action 1: Enhance support for the development and enforcement of comprehensive regional, national and local waste management policies, strategies, laws and regulations to address climate change.

Action 2: Support development and application of technologies required for sound management of wastes

Action 3: Provide leadership for increased advocacy, education, training, and awareness on liquid and solid waste management for health and environment protection, including through the AUC MEAs Project.

XI.19. INDUSTRY

In 2012, Africa's growth rate in over eighty per cent of African countries was higher than the global growth rate of 2.7 per cent. In addition, sixteen African countries were among the top thirty to be experiencing the highest growth rates in the world. However, the growth performance, thus far, remains highly vulnerable to external shocks and has not translated into meaningful job creation for most countries. These shocks include:

- Impact of global economic crisis;
- Impact of climate extremes associated with climate variability and change; and
- Global commodity price volatilities due to the continent's reliance on agriculture and primary commodities for its performance.

Due to its low industrial base, Africa is noted by the UNFCCC as the lowest emitter of GHGs. Therefore, Africa is the only continent with potentially highest carbon credits and thus, industrialization space. The continent needs to make use of its comparative advantage, using its abundant natural and energy resources as the cornerstones of industrial development.

Box 20: Action Plan for Accelerated Industrial Development of Africa (AIDA)

African leaders are determined to seize emerging opportunities to foster industrial development as an effective, socially responsible and sustainable means to economic transformation. This is evidenced by a series of proclamations, declarations and decisions made at major summits and meetings such as the 10th African Union (AU) Assembly, 2008 devoted to Africa's industrialization, at which African Heads of State adopted the Action Plan for Accelerated Industrial Development of Africa (AIDA). However, despite the adoption of AIDA and its implementation strategy, concrete actions are yet to be taken to transform it into reality. This is mainly due to challenges in planning and financing Africa's industrialization, which must be the central focus of economic, planning and financing experts on the continent.

Source: AUC, 2008

Goal 31: Promotion of industrial transformation and growth that is in accord with the principles of sustainable development and fosters climate resilience of Africa's economies and communities

Action 1: AU to provide leadership in the development of industrialization policies and legal frameworks that provide enabling and systematic environment for sustainable-type of both domestic and foreign investment with priority on value addition type of industries (manufacturing and processing) in relation to climate change.

Action 2: Promote the prioritisation of the development of appropriate and climate resilient infrastructure (including energy transport and communications) to support industrialization at the national, regional and continental levels and guarantee their efficient management and maintenance in relation to climate change.

Action 3: Develop standards that meet international standards (the building of capacity to improve, certify and assure the quality and standards of industrial products)

Action 4: Promote Green Productivity to ensure more efficient use of the natural resources and the long term competitiveness of African economies.

XI.20. ENERGY

Developing regions such as those of Africa must focus on increasing energy access and security (a pre-requisite for the much needed economic growth and human welfare), while at the same time reducing *energy intensity per capita GDP growth,* and reducing environmental impacts of energy uses (including the associated $C0_2$ emissions). The latter is referred to as relative decoupling focusing on mainstreaming energy efficiency in both the supply and demand sides. The second principle, which is a means of achieving the decoupling objective, is to focus on mainstreaming both demand and supply side efficiencies in the energy sector.

It is also recommended to focus on fiscal policy measures (including environmental taxes, subsidy reform and carbon pricing, among others) to minimize environmental impacts of energy use and diversification of energy systems and integrating renewable energy options in the energy mix.

Goal 32: Develop and promote the use of the vast endowment of sustainable energy resources and foster sustainable development in Africa.

Action 1: Invest in endogenous scientific skills, technologies, and innovation capacities to harness and deploy the available renewable energy (RE) options.

Action 2: Increase efficiency in the existing and anticipated exploration and development of energy resources e.g. natural gas.

Action 3: Encourage Integrated Collaborative Regional and International Sustainable Energy Research and Development (R&D) programs amongst universities, research institutions, non-governmental and governmental institutions/agencies within Africa and between Africa and elsewhere.

Action 4: Promote environmental regulation and standards on energy supply technologies imposing efficiency targets in the priority sectors including transport, industry, buildings and household appliances.

Action 5: Develop policies to encourage public private sector partnerships in renewable energy development, deployment and diffusion.

Box 14: Biogas Development in Africa

Biogas development is spreading fast across Africa. The Netherlands government is providing funds of €30 million, which is one third of the total programme costs of the Africa Biogas Partnership Programme (ABPP). This is a partnership programme between HIVOS (the Humanist Institute for Development Cooperation) of Tanzania and the Netherlands Development Organisation (SNV) in supporting national programmes on domestic biogas in six African countries. The programme aims to construct 70,000 biogas plants in Ethiopia, Kenya, Tanzania, Uganda, Senegal and Burkina Faso, which will provide access to sustainable energy for local communities by the end of 2014 (HIVOS, 2013).

The SNV estimates that for Tanzania alone, the technical potential for domestic biogas is around 165,000 households with Kilimanjaro, Mbeya, Iringa and Ruvuma area holding the most potential. However, the relative high initial investment to build a biogas plant is a challenge. According to SNV. To stimulate demand, the project team provides financial incentives such as investment subsidies and special biogas loans. Currently, the project has already built over 25,000 biogas digesters, which has already benefitted over 90,000 people directly as well as the protection of over 13,000 hectares of forest from deforestation. By the end of 2014, the project is expected to extend access to biogas to about 500,000 people.

Sources: HIVOS (2013), ACPC (2011) and SNV (undated)

XII. CROSS-CUTTING ISSUES

XII.1. GENDER, YOUTH AND DISADVANTAGED GROUPS AND CLIMATE CHANGE

When climate change disasters occur they affect women hardest because they are the poorest and more vulnerable than men. Women make up an estimated 70 percent of those living below the poverty line, yet are often left out of the discussions and planning on environmental issues even though they may sometimes be in the best position to provide solutions. Women often have invaluable knowledge about adapting to erratic environmental changes and when involved in disaster preparedness training, (Oxfam America, 2008/2009). Climate change also impacts on population movement and displacement.

The AU and Member States have undertaken various commitments towards promoting gender equality within the AU framework, RECs and at national levels such as the AU gender policy, the Solemn Declaration on Gender Equality and the African Protocol on the Rights of Women. AU also recognizes that women and youth are more vulnerable to disasters. Climate change impacts will be more devastating if no major efforts are taken to mainstream gender, youth and disadvantaged groups into climate change adaptation and mitigation. Pre-existing inequalities among gender and vulnerable groups increases vulnerabilities to climate change risks and lead to lower levels of adaptive capacity among women. However, the understanding of interrelations between climate change and gender, youth and vulnerable groups is prerequisite in addressing the inequalities and developing responsive polices.

Goal 33: Reduce the impacts of climate change on gender, youth and disadvantaged groups.

Action 1: Support and enhance education, training and capacity building for women, the youth and disadvantaged groups so as to increase awareness and their participation in decision making on climate change issues

Action 2: Facilitate a review of existing climate change coping strategies and policies from a gender perspective.

Action 3: Promote gender mainstreaming (and mainstreaming of youth and disadvantaged groups concerns/issues) into climate change frameworks as well as sectoral policies and programs

Action 4: Promote gender sensitive adaptation measures to address the impacts of climate change on women, the youth and other disadvantaged groups.

XII.2. PEACE, SECURITY AND CONFLICTS IN THE CONTEXT OF CLIMATE CHANGE IN AFRICA

The existing pressures on natural resources that are becoming scarce in the face of climate change and growing population could lead to insecurity and conflicts undermining peace in Africa. Climate is a natural resource for sustainable development that need equal access and utilization. At the same time, the climate change impacts reduce natural based earth's environmental resources that can be depleted or completely used up. Uneven use of such scarce resources could lead to conflicts.

Many natural resources such as water, wildlife, ecosystems and grazing land also extend beyond the boundaries of the specific groups and countries. Serious resources based conflicts are already being witnessed over many parts of the region, especially during the periods of climate extremes. With increasing population, and corresponding demands for the continuously degraded environment resources, forced migration and natural disasters increase in resources-based conflicts in Africa.

Goal 34: Promote peace and good practices in preventing climate induced conflicts and settling disputes

Action 1: Assist in the development of a data base for natural resources susceptible to the impacts of climate change that may lead to conflicts and ensure peace and security on the continent.

Action 2: Promote the development of conflict management tools and methods, provision for monitoring, prediction and early warning of key conflict indicators.

Action 3: Coordinate the development and implementation of polices and strategies for dealing with climate change related conflicts across boundaries in Africa.

Action 4: Support and enhance education, training, awareness, capacity building on resources based and climate change related conflicts in Africa.

Action 5: Organize platforms for exchanging good practices on peace, conflict and security in Africa.

XII.3. SMALL ISLAND DEVELOPING STATES

There are five SIDS in Africa: Cape Verde and Sao Tome in the Atlantic coast of Africa and the Seychelles, Comoros, Mauritius and Madagascar in the Indian Ocean. These SIDS differ in size and level of economic development, however they share common environmental features that can have a profound influence on their development. These SIDS share problems related to impacts of sea level rise, waste management, and inadequate availability of freshwater and rapidly disappearing unique biodiversity (particularly endemic species).

Climate change and variability and sea-level rise continue to pose significant risks to SIDS and their efforts to achieve sustainable development and, for some, represent the gravest of threats to their survival and viability. This is mainly due to the high concentration of population and economic activities in limited low-lying coastal zones of these Islands. SIDS such as Mauritius is

located in the most vulnerable regions in relation to intensity and frequency of natural disasters including cyclones, causing high economic, social and environmental consequences.

The RIO+20 outcomes noted that the SIDS remains a special case for sustainable development in view of their unique and particular vulnerabilities. These vulnerabilities derive from their small sizes, remoteness, narrow resource and export base, and exposure to global environmental challenges and external economic shocks. The large range of impacts from climate change through potentially more frequent and intense natural disasters complicates these vulnerabilities. This calls for enhanced efforts to assist SIDS in implementing the Barbados Programme of Action and the Mauritius Strategy.

Goal 35: Enhance the integration of climate change resilience in the development plans and programmes of SIDS.

Action 1: Promote the creation of an enabling environment for sustainable climate change adaptation in SIDS.
Action 2: Promote agricultural practices that thrive on saline environments.
Action 3: Promote climate resilient infrastructure through regional and urban planning.
Action 4: Promote the diversification of coastal livelihood options.
Action 5: Address island biodiversity in a manner that responds to the unique characteristics of SIDS.
Action 6: Enhance experience sharing between SIDS and mainland Africa on climate change adaptation.
Action 7: Promote the development of green economy in SIDS using blue capital.

PART VI: OPERATIONALISING THE STRATEGY

This section presents the operationalization of the strategy which includes means of implementation, and monitoring, evaluation and reporting.

XIII. MEANS OF IMPLEMENTATION

Means of implementation is critical for operationalization of any strategy. The major components include capacity development, technology development and transfer, finance and resource mobilisation, communication framework, implementation, roles and responsibilities.

XIII.1. CAPACITY DEVELOPMENT

In order for Africa to effectively respond to the immense challenges of climate change, there is an urgent need to build and strengthen capacities in the areas of adaptation and mitigation at various levels. This calls for the development and implementation of a capacity building framework and tools at regional and national levels.

Goal 36: Promote and strengthen capacity building of Member States to deal with climate change.

Action 1: Empower relevant capacity building institutions, regional networks and facilitate sharing of experiences, information and best practices.
Action 2: Enhance communication, education and awareness-raising at all levels in relation to climate change impacts.
Action 3: Facilitate the development of tools, methods and technologies in support of adaptation and mitigation.
Action 4: Support and strengthen participatory and integrated approaches in mainstreaming of climate change impacts into planning and decision making processes.
Action 5: Support specific capacity building needs of African countries to address institutional and technical challenges and constraints at national and local levels.

XIII.2. TECHNOLOGY DEVELOPMENT AND TRANSFER

As emphasized in the African Concensus Paper, in preparation for RIO+20, the development and transfer of appropriate technology form an integral part of Africa's efforts to adapt and mitigate climate change impacts in the continent. This strategy acknowledges the establishment of the Climate Technology Centre Network (CTCN) which is a body to facilitate technology development and transfer.

Technology development and transfer key areas include:

(a) Enhancing technology development and transfer, including hard technologies (e.g., drip irrigation, water harvesting, drought-resistant crop varieties, renewable energy technologies, building technologies) and soft technologies (e.g., knowledge, systems, procedures, best practices).
(b) Addressing technology transfer barriers, including rules of trade tariffs, intellectual property rights barriers and technical trade barriers (standards, eco-labeling).

(c) Enhancing and supporting the research and development capacity in African countries to foster the development and local manufacture of cleaner mitigation and adaptation technologies.
(d) Enhancing technology cooperation between African countries and others. African common position on Technology development and transfer includes the need for developed countries to commit to the deployment, diffusion and transfer of technologies to developing countries, based on principles of accessibility, affordability, appropriateness and adaptability, as well as to address barriers to technology transfer.

Goal 37: Support active development, transfer and adoption of appropriate technology among Member States

Action 1: Promote policies for the development and transfer of climate friendly technologies among Member States.
Action 2: Support research and institutional development to foster enhancement of endogenous technologies as well as the development and localization of cleaner mitigation and adaptation technologies.
Action 3: Promote and establish a regional network in support of the Climate Technology Network Centre.

XIII.3. CLIMATE CHANGE FINANCE AND RESOURCE MOBILIZATION

Africa needs to take direct and urgent responsibility in mobilizing climate finance to implement climate change programmes in all sectors of the economy. In this regard, the financing mechanisms should clearly spell out what Africa is able to do from its own resources, even as it has to be given new, additional, and massive complimentary support from external sources, especially Annex 1 countries.

Sources identified for financing climate change actions include:

- National or domestic investment;
- Multilateral funding;
- Grant, loan and concessional;
- Bilateral investment and donor funding;
- Insurance and other risk management instruments;
- Private sector instruments; and
- Market-based instruments, e.g., carbon finance.

For Africa to maximize on resource mobilization from these sources, there is need for negotiations to focus on:

- Improving access to financing through rationalizing the ever-growing number of funds;
- Harmonizing the governance of the funds;
- Reducing conditionalities for disbursement;
- Streamlining bureaucratic procedures; and
- Reducing transaction costs.

Box 15: Examples of the Use of Climate Funds to Improve Water Security and Climate Resilient Development - Eritrea

Eritrea is particularly vulnerable to climate change. Current adaptive capacity is low and the country has Africa's highest level of food insecurity, accompanied by high levels of malnutrition. Finance from the Adaptation Fund (approximately US$6.5 million) has been used to promote increased food security through ecologically sustainable and climate resilient improvements in agricultural production. This programme is aligned with the priorities set out in Eritrea's National Adaptation Programme of Action (NAPA), as well as with its Interim Poverty Reduction Strategy Paper (PRSP), and increases community climate resilience and adaptive capacity through a range of measures, including:

- increased water availability and erosion control through floodwater harvesting and irrigation technologies;
- enhanced climate resilient agricultural and livestock productivity;
- improved use of climate risk information and climate monitoring to raise awareness of and enhanced community preparedness for climate change hazards; and
- use of knowledge management systems.

Source: AU-AMCOW, 2012

Goal 38: Provision of adequate financing means for climate change adaptation and mitigation.

Action 1: Facilitate the identification of global, regional and national financing sources.
Action 2: Facilitate coordination of sustainable African climate change financing.
Action 3: Support capacity development of African Negotiating Group (ANG) for partnership building and resource mobilization.
Action 4: Build capacity of the RECs, AU Member States and other stakeholders on how to access resources from various climate financing facilities.
Action 5: Urge members to prioritise and allocate national resources to support climate change resilience activities.
Action 6: Develop capacity amongst Member States institutions to be accredited to access global funds.

XIII.4. COMMUNICATION FRAMEWORK

The climate change strategy must have a communication and dissemination plan, the goal of which is to link all stakeholders to enable effective understanding of the key issues, information sharing, and collaboration and attract support and evaluate the impacts of the strategy. The communication framework must consider the role of institutions such as the Climate Change and Desertification Unit (CCDU) to enhance cooperation, collaboration advocacy, education and awareness about climate change issues. The AU Climate Change Communication system must help identify priorities and get to know potential partners and collaborators as well as their specific needs. It should also help to identify and develop leveraged, high impact vehicles for disseminating climate change messages to the targets and stakeholders. Further it should be designed and implemented in such a way that its implementation and evaluation mechanism impacts/effects are well aligned with a set goals and actions.

The following actions need to be undertaken:

Goal 39: Establishing a robust communication framework

Action 1: Establish African regional media network of African Climate Change Strategy;
Action 2: Develop a local media network in each African States for the better awareness on the issues of climate change at the grassroots level in their respective countries;
Action 3: Dedicate a website mainly focused on social media interaction, which helps to address the vast majority of African citizens;
Action 4: Maximize the advocacy issues of climate change through different communication channels;
Action 5: Target specific strong African media institutions to link up with African Negotiators, and to support on the process;
Action 6: Set-up a sub -committee composed of concerned institutions on climate change communications;
Action 7: Produce promotional items in the area of climate change strategy;
Action 8: Allocate adequate budget for the implementation process;

Goal 40: Ensure that Government's climate change campaigns provide national guidance for communicating climate change issues.

This goal will enable institutions to set out principles that all climate change communication plans can follow. This action will help to ensure that consistency between messages on climate change is built as part of business from the start in governments. Consistency in language used to explain climate change will help internalization of the policy in people's minds, directing their actions towards positive change.

Action 1: Integrate climate change imperatives in regional and national communication strategies.
Action 2: Facilitate the integration of climate change communication in corporate plans.
Action 3: Promote sensitization and awareness-raising activities at regional and national levels.
Action 4: Integrate climate change in curricula at all levels of learning.

Goal 41: Promote the creation of a community that is well informed about climate change and able to take appropriate actions for risk reduction.

Action 1: Strengthen leadership in the development of frameworks that ensure raising the level of awareness in communities about opportunities and threats brought about by climate change, and able to fulfill their responsibilities to adapt to, and mitigate against, the impacts of climate change.
Action 2: Share success stories on communication to disseminate experiences and best practices

Goal 42: Harness the use of endogenous and indigenous capacities for understanding and communicating climate change and its implications on communities.

Action 1: Promote and strengthen communication, education, and awareness-raising at all levels
Action 2: Conduct training of science communicators, media specialists and relevant professionals on basic climate sciences
Action 3: Organize training of scientists on "good packaging of climate science" to be better understood by citizens

Action 4: Invest in state of the art technologies for climate data collection, processing, management and dissemination.

Action 5: Engage stakeholders (such as farmers, rural communities, civil society organizations, faith based organizations and NGOs) on reporting climate impacts.

Goal 43: Promote leveraging the use of ICTs in communicating climate change issues

Action 1: Public education and outreach programs on climate change communication for citizens - (focus on youths, women, and the Media**)**

- Electronic media - e.g. podcasts, social networks, photo galleries
- Print media - e.g. newsletters, catalogues, policy briefs, books
- Multimedia tools - e.g. TV, video and radio
- Cultural activities - traditional dances, plays with climate themes
- Public relations - e.g. seminars, conferences and workshops

Goal 44: Encourage Regional Cooperation in Climate Services Center (CSC)

Action 1: Document and share best practices in CSC across African countries

Action 2: Support regional institutions with mandates on climate science communication and knowledge brokerage

Action 3: Develop inventories of existing information sources

Action 4: Mainstream CSC in climate strategies and policies of the RECs

Goal 45: Knowledge Brokerage and Networking

Action 1: Encourage stakeholder dialogue involving different stakeholders using existing platforms

Action 2: Foster participation of African experts in global panels such as the IPCC/UNFCCC

Action 3: Support training of African negotiators

Action 4: Profile climate change audiences for better targeting e.g. researchers, academia, civil society, policy makers

XIII.5. IMPLEMENTATION, ROLES AND RESPONSIBILITIES

Climate change is a multi-disciplinary and cross-cutting issue and thus the implementation of the strategy for interventions require close coordination and partnership of all stakeholders at all levels including international, regional, national and local levels, each with specific roles. The implementation of the strategy should also take advantage of all current and future opportunities guided by the AU common positions on UNFCCC and the associated international and regional conventions and treaties. The key stakeholders in the implementation of the strategy include the AUC Member States, RECs, UN Agencies, the private sector, civil societies, NGOs and CBOs. Other stakeholders include faith-based organizations and media associations, among others. Each of the partners should have specific roles and responsibilities with AUC coordination framework.

Box 16: Partners' Roles and Responsibilities

- Emphasize the sense of urgency – the issue of climate change and its impacts needs to be communicated to everyone as a matter of urgency. Many Africans, particularly those in rural areas, are struggling in the face of increasingly unpredictable weather. Individuals and communities need greater information, resources, and locally relevant practical information to help them adapt and respond to climate change. Effort should be invested in developing appropriate climate change terminology in local African languages so that climate change can be discussed in locally relevant ways that can help to provide an insight into the reality of the changes that most Africans are experiencing.
- Link climate change to sustainable development – climate change has traditionally been communicated as a complex, scientific environmental challenge. However, it should be perceived as a deeply socio-economic and environmental issue. Climate change has a crosscutting impact on a wide range of sustainable development dimensions such as water and sanitation, agriculture, forestry, fishing, infrastructure, settlement, tourism, roads and transport, industry, trade, energy and other sectors. In order to address the impact of climate change
- Promote/demonstrate models of best practice – as a way of creating buy-in and building coalitions to promote change. Demonstrating/promoting models of best practice for adaptation or mitigation at community level which can be scaled up and replicated across a range of climate and socio-economic contexts is a key strategy. Learning networks, platforms and other innovative approaches can be used to disseminate information on these models so that such best practices can be adopted by civil society and government institutions across Africa and globally.
- Leadership – decision makers are struggling to provide leadership on climate change. They need to know more about climate change in order to communicate confidently on the issue and incorporate mitigation and adaptation strategies into their decision making processes. Local community leaders are least informed on climate change issues yet they are well placed to communicate climate change information and help their communities to respond. Religious and faith leaders could play an important role in informing and catalyzing responses to climate change.
- Media – many actors in the sector lack adequate knowledge of climate change and tend to consider it either as too scientific or not an audience priority. The capacity of the news and non-news media is important if climate change is to be communicated in locally relevant ways.
- Information – African citizens need spaces to exchange ideas and information, foster understanding and plan(s) for action. Clear messages should be identified at the international, regional, national and local levels in order to cut through the climate change 'noise' and facilitate public engagement.
- Resource mobilization -Need for significant, dedicated resources, including major additional funding, assigned to the communication strategy. It is therefore critical to mobilize resources at all levels. Possible sources would include provisions and funding mechanisms under Art. 6, and Art. 4.9 of UNFCCC for education, training and public awareness. In addition, AMCEN would benefit from climate change funding opportunities through the GEF decisions, multilateral and bilateral arrangements. Private sector funding is also available through independent Foundations, business organizations, donors including cooperation partners and financial institutions. AMCEN could also explore funding options under the South-South cooperation.
- Feedback mechanism- In order to track progress on the implementation of the Comprehensive Framework for African Climate Change Programmes, AMCEN needs to develop an effective tool.

Source: AMCEN, 2010

XIV. MONITORING, EVALUATION, AND REPORTING

XIV.1. MONITORING, EVALUATION AND REPORTING

A Monitoring and Evaluation (M&E) framework is a tool for tracking the performance and impact of implementation of specific goals, actions and outputs presented in this climate change strategy. Monitoring in this context refers to systematic collection of data in order to provide information on the extent of progress and achievement of the goals and actions of the strategy. Evaluation refers to the systematic and objective assessment of the strategy design, implementation and results covering specified criteria which includes coverage, relevance,

efficiency, effectiveness, impact, sustainability and replicability/up scaling of climate change programmes. The evaluation framework will emphasize an approach of participatory identification of challenges, constraints, success factors as a basis for conclusions, lessons learned and decision on courses of action or change. The M&E framework will be a mechanism to link accountability and learning for better management of climate change programmes.

XIV.2. CLIMATE CHANGE, NATURAL RESOURCES, AND ENVIRONMENTAL ACCOUNTING

Evidence has been mounting that climate change has been impacting adversely on natural resources such as water, coastal and marine biosystems, forests, and so on. Such negative trends are expected to intensify as the climate crisis deepens. For adequate safeguards to be designed against climate risks, it would be necessary to monitor, evaluate, and report not only on the extent of damage inflicted by climate change, but also use the findings of research and prediction models to guild scenarios of potential natural resource change.

As regards estimating the impacts caused by climate change, an effective tool that can be used to determine, mentor, and track changes of natural resources is the system of economic and environmental accounting. Natural resources deliver consumptive and non-consumptive services and functions. Such flows would be impaired more and more as climate change aggravates.

By conducting valuation exercises on a regular basis it would be possible to estimate losses in livelihoods and declines in economic welfare.

Goal 46: Ensure the establishment and systematic operationalization of a robustly functional natural resource accounting system.

Action 1: Prepare a natural resource accounting framework
Action 2: Carry out regular valuation of natural resources to make objective inferences about climate change impacts.
Action 3: Build capacity of planning and statistical institutions to conduct valuation.
Action 4: Introduce policies and an accounting framework for environmental valuation of natural resources.

Goal 47: Establish a standardized monitoring, evaluation and reporting framework for climate change programmes

Action 1: Develop standardized M&E tools, methods and indicators for climate change programmes.
Action 2: Develop harmonized M&E reporting channels and formats**.**
Action 3: Strengthen the capacity of AU Member States in M&E of climate change programmes and using the M&E tool for accountability and transparency in implementation.
Action 4: Develop a mechanism for recognition of excellent performance in climate change strategy implementation and highlight the importance of M&E best practices.
Action 5: Develop mechanisms for replicating and up-scaling M&E best practices.
Action 6: Carry out regular reviews of climate change programmes and their impacts on economy and society, and report through the established organs.

Box 17: Natural Resource Accounting for Africa

African countries have used the conventional system of national accounts to determine the state of economic development and changes in economic growth of their states. This approach has largely been economistic i.e. it has concentrated on determining the value of economic goods and services produced by a country in any given year. Changes in the value of economic production have served as indicators of improvement or decline of economic welfare. Over the years, policy-makers have paid considerable attention to the vector of these changes, and have sought to devise investments programmes based on information that would improve on the quantity and quality of growth.

But the system of national accounts has been particularly inadequate in capturing the changes taking place in the environment. The impacts of current methods of economic production on the state of health of natural resources such as water, air, forests, soils, etc. have not been measured nor incorporated into the accounting methodologies. For sure, the production of, say, chemicals to produce paint or pesticides have invariably appeared as growth-oriented changes, for which increased values were interpreted as indicating economic progress. Yet, the consequences on life-support functions of natural resources and the continued sustainable flow of essential ecological services by environmental assets has hardly been a feature of calculations of economic planners and statisticians.

As a result, the true scarcity and productivity values of natural wealth is not known since no efforts have been made, on a consistent and systematic basis, to measure the influence of externalities on the actual status of our natural resources every few years. On this account, the true values of our GDPs are not known, and this gives a misleading picture of events both for policy and planning.

At the same time, the failure of current national accounting systems to capture environmental changes have denied African policy-makers with the kind of relevant information suitable in monitoring the vector of sustainable development. The question that arises is whether countries have readily instrumental means, in the form of satellite accounts, to show the condition of natural wealth at any given time or specified period of years.

Of course, the Human Development Report has introduced methodologies that give the social and human dimensions sharp prominence in the calculation of GDP values. By the middle of the 1990s, criticisms abound that the HDR format did not account for environmental changes.

Natural Resource Accounting is a tool that States can invoke to build relevant capacities for undertaking natural resource valuations and accounting in a bid to determine the true value of their respective natural resources, the trends they exhibit over a period of time, and the interpretations that can be drawn from any observed changes. These will help policy-makers make informed decisions about the scope and depth of interventions needed.

Source: AUC, 2014

DEFINITIONS

Adaptation: Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects.

Afforestation: Direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.

Anthropogenic
Made by people or resulting from human activities. Usually used in the context of emissions that is produced as a result of human activities.

Capacity building: Technical skills and institutional capabilities in developing countries and economies in transition to enable their participation in all aspects of adaptation to, mitigation of, and research on climate change, and in the implementation of the Kyoto Mechanisms,

Carbon dioxide (CO_2): The principal anthropogenic greenhouse gas that affects the Earth's radiative balance. It is the reference gas against which other greenhouse gases are measured, thus having a Global Warming Potential of 1.

Carbon Footprint: The total amount of greenhouse gases that are emitted into the atmosphere each year by a person, family, building, organization, or company.

Carbon Sequestration: A process by which trees and plants absorb carbon dioxide, release the oxygen, and store the carbon. Geologic sequestration is one step in the process of carbon capture and sequestration (CCS), and involves injecting carbon dioxide deep underground where it stays permanently.

Climate: The average weather conditions of a given place or the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years

Climate variability: Climate variability refers to the commonly observed departures of every day weather and climate from the usual expectations that are often manifested as droughts, severe storms such as hailstorms, floods, etc. These events occur naturally, and recur year by year.

Climate change: Mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change is manifested in the changes in the traditional patterns of every day weather and climate including extreme events such as high/low temperatures, droughts, hailstorms, floods, etc..

Climat System: The five physical components (atmosphere, hydrosphere, cryosphere, lithosphere, and biosphere) that are responsible for the climate and its variations.

Deforestation: Practices or processes that result in the conversion of forested lands for non-forest uses. Deforestation contributes to increasing carbon dioxide concentrations for two reasons: 1) the burning or decomposition of the wood releases carbon dioxide; and 2) trees that once removed carbon dioxide from the atmosphere in the process of photosynthesis are no longer present.

Desertification: Land degradation in arid, semi-arid, and dry sub-humid areas resulting from various factors, including climatic variations and human activities.

Disaster: A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community/society to cope using its own resources.

Disaster risk reduction: The systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) adverse impact of hazards,

Early warning: The provision of timely and effective information, through identified institutions, that allow individuals at risk of a disaster to take action to avoid or reduce their risk and prepare for effective response.

El Niño/La Niña - Southern Oscillation (ENSO): An atmosphere-ocean phenomenon causing warm surface waters in the Indonesian area to flow eastward to overlie the cold waters of the Peru current. This event has great impact on the wind, sea surface temperature, and precipitation patterns in the tropical Pacific. It has climatic effects throughout the Pacific region and in many other parts of the world. The opposite of an El Niño event is called La Niña.

General Circulation Model (GCM): A global, three-dimensional computer model of the climate system which can be used to simulate human-induced climate change. GCMs are highly complex and they represent the effects of such factors as reflective and absorptive properties of atmospheric water vapor, greenhouse gas concentrations, clouds, annual and daily solar heating, ocean temperatures and ice boundaries.

Global warming: Global warming refers to the gradual increase, observed or projected, in global surface temperature, as one of the consequences of radiative forcing caused by anthropogenic emissions.

Global Warming Potential: A measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to carbon dioxide.

Gross Domestic Product: Gross Domestic Product (GDP) is the monetary value of all goods and services produced within a nation.

Greenhouse Effect: Trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. Some of the heat flowing back toward space from the Earth's surface is absorbed by water vapor, carbon dioxide, ozone, and several other gases in the atmosphere and then reradiated back toward the Earth's surface.

Gree**nhouse Gas (GHG):** Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydro chlorofluorocarbons, hydro fluorocarbons, perfluorocarbons, sulfur hexafluoride.

Hazard: A potentially damaging physical event, phenomenon or human activity, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Millennium Development Goals (MDGs): A list of ten goals, including eradicating extreme poverty and hunger, improving maternal health, and ensuring environmental sustainability, adopted in 2000 by the UN General Assembly,

Mitigation: These are structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards as well as climate change in general.

Natural Climate Variability: Variations in the mean state and other statistics (such as standard deviations or statistics of extremes) of the climate on all time and space scales beyond that of individual weather events.

Preparedness: Activities and measures taken in advance to ensure effective response to the impact of disasters, including the issuance of timely and effective early warnings and the temporary removal of people and property from a threatened location.

Renewable Energy: Energy resources that are naturally replenishing such as biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.

Resilience: A capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment.

Risk: A function of probability and consequences of an event, with several ways of combining these two factors being possible. There may be more than one event; consequences can range from positive to negative and risk can be measured qualitatively or quantitatively. and vulnerability.

Risk management: Systematic process of using administrative decisions, organizations, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters.

Risk Assessment: A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment..

Urbanization: The conversion of land from a natural state or managed natural state (such as agriculture) to cities; a process driven by net rural to-urban migration through which an increasing percentage of the population in any nation or region come to live in settlements that are defined as ‘urban centres’.

Vulnerability: A set of conditions and processes resulting from physical, social, economical and environmental factors, which increase the susceptibility of a community to the impact of hazards.

Water stress: The available freshwater supply relative to water withdrawals acts as an important constraint on development. Withdrawals exceeding 20% of renewable water supply have been used as an indicator of water stress

Weather: Atmospheric condition at any given time or place. It is measured in terms of such things as wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation.

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ANNEXES

A. Matrix of Implementation of the Strategy
B. Technical Background Document (To be Refined)
C. A Series of Policy Briefs (To be Developed)