United Nations Environment Programme (UNEP)

African Regional Implementation Review for the 14th Session of the Commission on Sustainable Development (CSD-14)

Report on Climate Change

Prepared by United Nations Environment Programme (UNEP) on behalf of the Joint Secretariat UNECA, UNEP, UNIDO, UNDP, ADB and NEPAD Secretariat

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I. Introduction

In preparation for the fourteenth session of the UN Commission on Sustainable Development (CSD 14), the conference secretariat will be addressing four main themes: industrial development; energy; atmosphere and air pollution; and climate change. The fourth of these, climate change, is particularly critical given the enormity of the imminent impacts of climate change on Africa's economies, communities and ecosystems. This special session of the CSD comes one year after the coming into force of the Kyoto Protocol, a key instrument in combating global climate change. Currently, Parties are grappling with the identification of appropriate strategies towards implementing this Protocol.

The CSD 14, scheduled for early May 2006, will among other things assess the progress achieved so far towards attaining the goals of Agenda 21 and the Johannesburg Plan of Implementation that relate to climate change. The economies of African countries largely depend on sectors such as forestry, agriculture, fisheries and tourism that are particularly vulnerable to environmental changes. Anthropogenic practices, and in particular energy production and consumption, have been identified as the main sources of greenhouse gas emissions causing climate change, although increasingly, there are reports which point to the emerging importance of dust as a key factor in the region's climate variability and change. Climate change is expected to result in increase in droughts, floods and other extreme weather events adding to stress on water resources, food security, health, infrastructure and thus overall development. Most African communities are vulnerable to these impacts mainly because of; inter alia, the high poverty levels, reliance on rain-fed agriculture, lack of access to technology and cultural practices.

This report aims to inform the CSD 14 on the status of climate change in Africa. Specifically, Section 2 discusses climate change in the context of sustainable development, Section 3 reviews strategies that have been used to combat climate change in the region in the recent past, while Section 4 analyses the region's vulnerability to climate change impacts, response activities and means of implementation. The paper concludes by identifying issues and questions to be considered for integration into future climate change mitigation and adaptation strategies of African countries.

II. Climate Change and Sustainable Development

- **Development paths and production and consumption patterns and their impacts on the climate system**

The Assessment of Impacts and Adaptations to Climate Change (AIACC)[1] study shows that climate is changing and has altered the micro-climates of the highland areas of East Africa. Analysis of time-series data from 1978 to 1999 reveals that the maximum and minimum temperatures have changed, with significant increases generally recorded at all sites. Analyses of

[1] AIACC Project Profile www.aiaccproject.org

data over the period 1961 to 2001 also reveal decreasing trends in rainfall. The temperature changes have been more pronounced at the higher altitudes than in the lowlands.[2] The temperature in the Kabale district of Uganda has also shot up by 2ºC (3.6°F) in the last three decades.[3]

Development paths that are high carbon intensive contribute to global warming. Overall Africa's energy per capita consumption remains low and hence contribution to global climate change minimal. However localized impacts are evident especially where extraction of wood for fuel is high and surpasses reforestation rates. Africa suffers modern energy poverty, a hindrance to sustainable development. It is expected that current energy consumptions patterns will prevail though the share of renewable energy will gradually increase.

The transport sector consumes the largest share of petroleum based fuels and alternatives are likely to be difficult to implement mainly due to high costs involved. However the overall average number of vehicles per person remains among the lowest globally. The relaxation of the laws governing importation of used vehicles in many countries is increasing the number of vehicles at relatively fast rate, causing congestion and hence increased localized emissions. Clearing of forest land to make way for settlement and agriculture affects the climate system and threatens water supply systems. The share of forest land in the continent is reported to be decreasing at alarming rates.

- **Climate change impacts on sustainable development (including impacts on agriculture, water resources, public health, natural disasters, etc.);**

Agriculture

Agriculture is the backbone of most African economies accounting for as much as 40%of the total export earnings and employing 60-90% of the total labour force in SSA. Over 50% of household food needs and an equivalent share of income emanate from agriculture. The bulk of agricultural systems is climate dependent, with for example most of sub-Sahara relying primarily on rain-fed agriculture. Climate change hence intensifies food insecurity as productivity decreases and prices go up in countries already suffering this insecurities. As Indicated in Figure one, the number of countries facing the threat is quite high. Hunger victims have been on the increase mainly as a result of extreme weather events. The current situation in Niger is not isolated. The ability to diversify is limited by a variety of factors including the global trade system. Projected loses in cereal production potential in SSA will be about 33% by 2060. Fish production will be negatively affected by sea level rise and coral bleaching.

Some countries have significant agricultural products from coastal zones which are threatened by sea level rise and increasing temperatures. These include Kenya (mangoes, cashew nuts, and coconuts); Benin (coconuts and palm oil); Guinea (rice) and Nigeria where coastal agricultural land accounts for about 75% of total. Though the research is inconclusive it is expected that off-shore oil production will be negatively impacted by rise in sea level.

[2] Wandiga *et al* (2004) Vulnerability to Climate Induced Highland Malaria in East Africa. Report of the Assessment of Impacts and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC) Project *In Preparation.*
[3] Ibid.

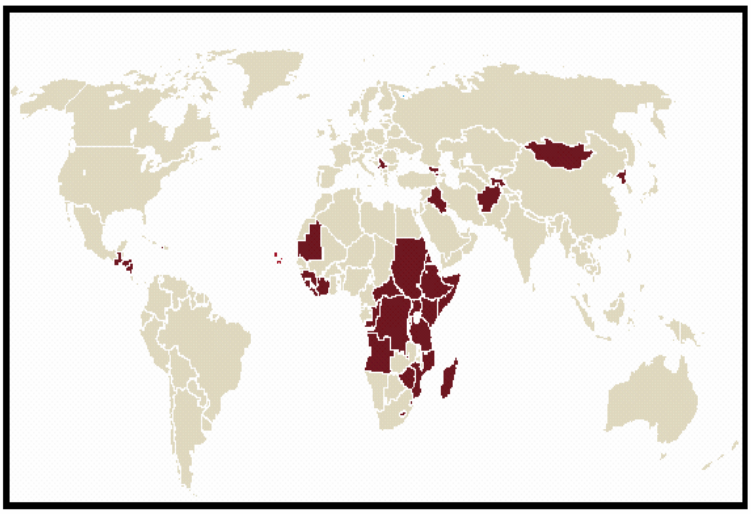


Fig. 1: Countries facing food insecurity (2004)

Water

Africa's water resources have been decreasing over time mainly as a result of persistent droughts and land use patterns. Climate change will exemplify this situation. By 2050 the area experiencing water shortages in SSA will have increased by 29%, while river flow in the Nile region will decrease by 75% by 2100 with damaging consequences on irrigation practices. Decreasing water levels is expected to affect water quality and exacerbate water borne diseases, and reduce available hydro-power.

The rainfall patterns are predicted to change. Under a fast global warming scenario, large areas of Africa would experience changes in December-February or June-August rainfall that significantly exceed natural variability, with significant consequences on agricultural systems and food security.

Health

Changes in rainfall and temperature associated with climate change are expected to increase the occurrence and geographic range of vector-borne diseases such as malaria, and rift valley fever. Cholera and meningitis will also be exemplified. The health issue is demonstrated by the El Nino effects. The 1997/98 El Nino in East Africa was accompanied by rising malaria, fever and cholera incidences. Predictions show that high altitude areas such as Nairobi may face new risks if the range in which mosquito can breed increases. Meningitis may spread beyond the drier West and Central African parts to the eastern African region. Africa already accounts for 85% of the deaths and diseases associated with malaria. Maternal mortality emanating from malaria-associated anemia is also likely to rise. With the co consequent decrease in water quality, disease levels are likely to rise. Areas with already poor sanitary conditions will become particularly vulnerable to disease as water scarcity intensifies.

Temperature increases in the East African Highlands[4] have enabled malaria vector mosquitoes to find new habitats in the highlands. This has resulted in high malaria epidemics in the highlands

[4] Wandiga *et al* (2004) Vulnerability to Climate Induced Highland Malaria in East Africa. Report of the Assessment of Impacts and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC) Project *In Preparation.*

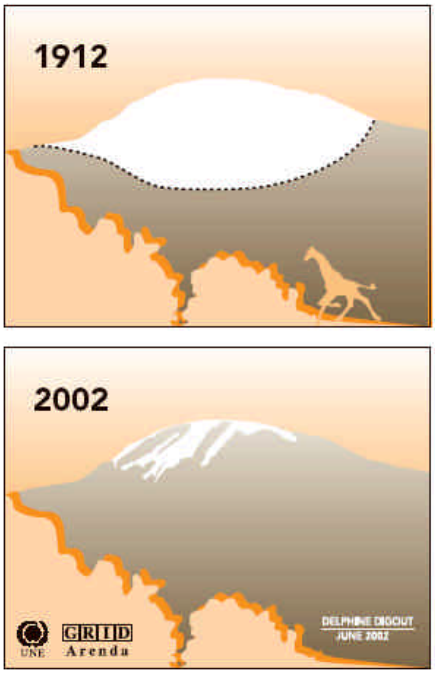
communities of East Africa in the recent past. Communities living at altitudes above 1100m are more vulnerable to malaria epidemics due to lack of immunity, climate variability and climate change. Evidence from the 1997/1998 El Nino indicate that the malaria epidemic months correspond with the onset of abnormally high short rains proceeded with a season of abnormally high maximum temperatures. An example includes the mean monthly maximum of 2.2 – 4.5C between January and March 1997 and 1.8 – 3.0 C between February and April in 1998.

Human settlement

Sea level rise due to climate change will shift coastal boundaries backwards forcing people to migrate and destroying infrastructure, fauna and flora. The West coast of Africa is one of the most vulnerable areas. By 2015 Lagos, Kinshasa and Cairo, all of which are located along the coastline, are expected to host about 8 million people, who will hence be exposed to sea level rise. The threat of cyclones will rise with sea surface temperature rise.

Glaciers and Water Supply

The gradual yet dramatic disappearance of glaciers on Mt. Kilimanjaro is a result of global warming. An estimated 82% of the icecap that crowned the mountain when it was first thoroughly surveyed in 1912 is now gone. According to recent projections, if recession continues at the present rate, the majority of the glaciers on Mt Kilimanjaro could vanish in the next 15 years.[5] The snow and glaciers of Mt Kilimanjaro act as a water tower and several rivers are drying out in the warm season due to the loss of this frozen reservoir.



Change in glaciers after 90 years

Towns and farming communities around the mountain are bound to be affected. Moshi has a population of over 200,000 people, most of whom are farmers. The bulk of Tanzania's coffee and bananas are produced here. With these rivers drying up, production of these crops is bound to be affected. There is, however, need for further temperature studies around the Kilimanjaro area to confirm or link the loss of glaciers to past temperature changes. Other glaciers in Africa (Ruwenzori in Uganda and Mt Kenya) are also under threat. The ice cap on Mount Kenya has shrunk by 40% since 1963 and a number of seasonal rivers that used to flow from atop the mountain to the surrounding areas have since dried up.

Wildlife Habitats

Scientists warn global warming will have "dramatic effects" on wildlife as new study finds 370 of 500 species are already changing behavior in response to warming temperatures, including birds laying eggs earlier in the spring and butterflies expanding their ranges to the north.

[5] Desanker PV (2003) WWF Report on Impacts of Climate Change in Africa.

- **Mitigating Climate Change and Poverty Alleviation Goal of MDG**

Natural systems are the main foundations of most economies with the poor being particularly dependent on nature for basic needs, food, medicine, shelter, fuel etc. climate change and variability are major threats to poverty alleviation, especially due to the pre-existing vulnerability. Climate change is expected to place about 96 million people in Africa at the risk of hunger. Many poor already reside in degraded areas which climate change, extreme weather events and increasing temperature will erode even further, hence reducing productivity. The poor tend to live in weather vulnerable squatters susceptible to floods, storms and climate change. A large share of those employed in the agricultural sector are the poor whose. As such negative threats to this sector by climate change further exacerbates poverty. Climate change will increase communicable diseases with the poor being the most vulnerable due to lack of access to health care and poor living environments.

Climate change is likely to curtail economic growth due to its impacts on food systems, infrastructure, labour productivity and ecosystems. This will have direct impacts on the poor as incomes depreciate and opportunities diminish.

- **Climate Risks/Opportunities Posed to Investments and the Role of the Business Community.**

The tourism industry faces various risks posed by climate change. The re-location of wild animals, marine and other birds in response to temperature changes will affect the attractiveness of certain sites. Sea level rise will affect tourism in coastal areas as well destroy the infrastructure the industry has invested in. loss of the reefs as a result of coral bleaching is likely to reduce number of tourists attracted by the reefs. Changes in rainfall patterns and quantity will reduce hydropower capacities and thus reduce incomes of electric utilities and industries relying on such power. Increase in incidences of extreme weather events such as storms and floods will cause damage to property and thus impacting negatively on the insurance industry which underwrites the risks related to natural events. Increased health impacts will increase the cost of health insurance. Climate change will increase the opportunities for renewable energy and energy efficiently technology trade.

III. Combating Climate Change

- **Reductions of GHG Emissions**

The Kyoto Protocol is a legally binding international agreement to reduce the greenhouse gas emissions causing climate change, which was initially negotiated in Kyoto, Japan in 1997. The protocol entered into force on February 16th, 2005 after at least 55 Parties to the UN Framework for Climate Change Convention, incorporating Annex I Parties which accounted in total for at least 55 % of the total carbon dioxide emissions for 1990 from that group, deposited their instruments of ratification, acceptance, approval or accession. Thirty seven African countries have achieved this status. The agreement commits Annex I (industrialized) countries to reduce emissions of six greenhouse gases (excluding 0_3 and water vapor) by 5% between 2008-2012.

The Kyoto Protocol has three innovative "flexibility mechanisms" to lower the overall costs of achieving its emissions targets; Clean Development Mechanism (CDM), Joint Implementation (JI) and Emissions Trading (ET). Though non-Kyoto initiatives are increasing with the latest being the pact with India along with Australia, the US, China and South Korea are getting together to develop technologies that would help curb greenhouse-gas emissions, Africa has not featured in these initiatives. Clearly such initiatives will have implications on the market of Kyoto Mechanisms. Cape Town is so far the only African city that has committed to reducing emissions under the Sustainable Cities Initiative through increasing share of renewables for electricity generation to 10% by 2010.

- **Market-Based Mechanisms to Reduce GHGs Emissions**

a) The Clean Development Mechanism

The clean development mechanism (CDM) aims to enable Annex I Parties to meet their emission reduction commitments under the Kyoto Protocol while facilitating sustainable development in Non-Annex I Parties. This implies that Annex I Parties invest in projects that emit little or no emissions (compared to what they might otherwise have i.e. the baseline) in Non-Annex I Parties and acquire the certified emission reductions (CERs) which are then used to offset their commitments. The executive board supervises the CDM, under the authority and guidance of the COP/MOP, and be fully accountable to the COP/MOP.

The modalities and procedures for a CDM are contained in Annex Decision 17/CP7. In accordance to these, project proponents request for registration of project activity by the Executive Board (EB). Such registration implies that project qualifies to be a CDM project. Eligible project include renewable energy, energy efficiency, recovery and utilization of methane, switching from fuels with greater to lesser GHG intensity, and planting trees or other biomass to sequester carbon. So far only thirteen project activities have been registered, none of which is from Africa. The ability to achieve high levels of emission reductions at relatively low transaction costs determines the attractiveness of a country or project to potential investors.

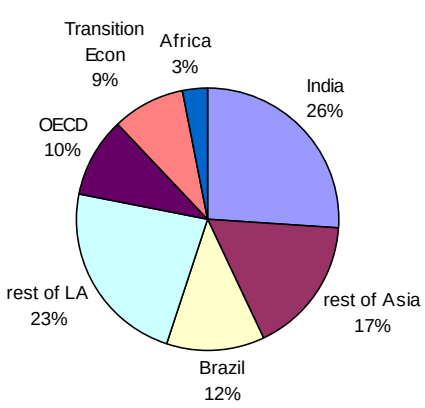
In general Africa is not competitive compared to other regions since on a per unit emission reduction basis, implementation costs are likely to rather high and overall emissions low. To engage in a CDM activity the country should have a Designated National Authority which approves the project based on generic guidelines set up by the EB. So far sixteen African countries have registered such an authority with the EB. The emission reductions from a project have to be verified by a Designated Operational Entity (DOE), upon which the Certified Emission Reduction Units (CER) are issued. The value of CER is determined by the market and has ranged from about USD3 to 7 per ton of CO2e (though not all project disclose prices).

Some programmes or funds have been established by governments and other institutions to enable investments into emission reduction projects within the framework of CDM. Those accessible to Africa include World Bank (WB) carbon fund (US$180m), WB community development carbon fund[6] ($128.6m), WB Biocarbon fund[7] (100m), IFC Netherlands Carbon

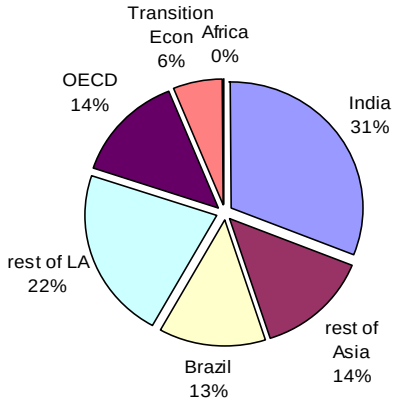
[6] Whose aim is to purchase emission reductions from small-scale projects in poorer countries and remote areas

Facility (44m EUROS), Austrian JI/CDM programme (24m euro in 2005), KfW carbon fund (50m Euros), SICLIP (Swedish: SEK 200m), Belgian JI/CDM Tender (10m euro), Finnish CDM/JI programme (20m euro), GG-Cap greenhouse gas credit aggregation pool (72 m euro)and e7 Fund for sustainable energy development.

Various support programmes also exist and aim at providing technical and capacity building support for development of CDM project documents. The WB Special Effort for Africa Program has provided support in developing eight community development carbon fund projects in sub-Saharan Africa in Kenya, Ethiopia, Tanzania and Uganda, though none has been approved yet. Africa seems to have mainly benefited from capacity building on CDM offered through the support programmes rather than from actual project investments (as evident from Figure 1). Uganda (with 1.3 million tCO2e for a total 6.6 MW hydro power plant projects) and South Africa (with 3.8 million tCO2e committed under the WB carbon fund for the 10 MW landfill gas fired electricity generation project) are the only countries where large carbon transactions have been completed, while transactions are underway in Ghana, Nigeria, Zambia and elsewhere. Though four projects from Africa (Tanzania, Niger, Madagascar and Uganda) are listed as potential candidates under the WB BioCarbon fund, there is no guarantee that any of these will be approved.



Jan 2003- Dec 2004



Jan 2004-April 2005

Figure 1: Location of emission reduction projects (by volume)

b) Joint Implementation (JI)

JI provides for Annex I Parties to implement projects that reduce emissions, or remove carbon from the atmosphere, in other Annex I Parties, in return for emission reduction units (ERUs). Since African countries are in the non-Annex I group, they cannot participate in JI.

c) Emissions Trading (ET)

Under ET Annex I Parties to acquire units from other Annex I Parties and use them towards meeting their emissions targets under the Kyoto Protocol. Only Annex I Parties to the Kyoto Protocol with emissions limitation and reduction commitments inscribed in Annex B to the

[7] targeting development of opportunities in the agro-forestry sectors

Protocol may participate in such trading. Since African countries are in the non-Annex I group, they cannot participate in ET.

d) Activities Implemented Jointly (AIJ)

In order to build experience and "learn by doing", a pilot phase of activities implemented jointly (AIJ) was launched in 1995, under which Annex I Parties may implement projects in other countries that reduce emissions of greenhouse gases or enhance their removals through sinks. AIJ under the pilot phase do not lead to any credits accruing to any Party. Based on the last report available from the UNFCCC (2002), there were a total of 157 AIJ projects. Out of this only 18 were in Africa.

e) Allowance Based Mechanisms

These are the new non-project based mechanisms where the parties can obtain credits from trading the allowed amounts within specified caps. There are four main functioning allowance based mechanisms: European Union Emissions Trading Scheme, the UK missions Trading System, the New South Wales trading system and the Chicago Climate Exchange. Volumes exchanged on these allowance markets has increased dramatically. Trading occurs within respective geographic boundaries and as such Africa in not involved. However judging by the growth rate in transactions, the attractiveness of these mechanisms threaten the project-based mechanisms (CDM, JI, and ET) and as such the further diminish the likelihood of projects in Africa.

- **Induced innovations in technology development: role of regulations and incentives.**

In a village in Gaza Province in Mozambique, farmers have formed informal farming association to lobby for access to both lowland and highland plots to ensure preparedness for both floods and drought. Through these groups lessons on technological developments are shared and this is reflected in the shifts to more drought resistant species of maize, sweet potatoes and cassava. In recognition of this efforts to mitigate climate change impacts, the Government of Mozambique is integrating local level measures to build resilience into national development strategies.

In Northern Kenya where climate change is reducing the water available for livestock as well as changing rainfall patterns and hence triggering water-related conflicts, sand dams are being built to increase access to water in traditional sand beds. The dams are made through building concrete walls across water channels to hold back the sand during flooding. These sand dam technology has been successful in other Kenyan districts such as Kitui and Machakos as well as in Namibia.

Early warning and improved information systems can reduce farmer and other vulnerability. The southern African countries have established a regional climate outlook forum where regional centres meet to develop consensus annual forecast which is then provided to farmers. This Southern African Regional Climate Outlook Forum (SARCOF) is a regional seasonal weather outlook prediction and application process adopted by the fourteen countries comprising the Southern African Development Community (SADC) Member States: Angola, Botswana,

Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe in conjunction with other partners.

IV. Adaptation to Climate Change

- **Adaptation in Agenda 21 and the Johannesburg Plan of Implementation**

Both Agenda 21 and the Johannesburg Plan of Implementation (JPoI) recognized the intertwined relationship between poverty eradication and sustainable development. Sustainable development can only be achieved if the causes of poverty are addressed. Both processes recognized:

- The increased risks of negative impacts of climate change faced by Least Developed Countries (LDCs) and Small Island Developing States (SIDS); Africa is home to 32 of the 49 LDCs.
- The need for provision of technical and financial assistance and capacity building to developing countries and countries with economies in transition in accordance with the commitments under the United Nations Framework Convention on Climate Change where applicable;
    - to promote technology development, transfer and diffusion to Africa and further develop technology and knowledge available in African Centres of excellence.
    - to assist African countries in mobilizing adequate resources for their adaptation needs relating to the adverse effects of climate change, extreme weather events, sea level rise and climate variability;
- The need to assist SIDS in mobilizing adequate resources and partnerships for their adaptation needs relating to the adverse effects of climate change, sea level rise and climate variability, consistent with commitments under the United Nations Framework Convention on Climate Change, where applicable; and
- That poverty remains a major challenge in Africa and that efforts to achieve sustainable development have been hindered by conflicts, insufficient investment, limited market access opportunities and side constraints, unsustainable debt burdens, historically declining levels of official development assistance and impact of HIV/AIDS.

- **Africa's Vulnerability to Climate Change**

Vulnerability to climate change is considered high in Africa due to many factors. These include, *inter alia*, heavy reliance on rain-fed agriculture, frequent droughts and floods, and poverty in many countries while adaptive capacity is low due to lack of economic resources and technology. HIV/Aids pandemic and poor governance in many parts of the continent brings in additional challenge to many households and communities.

Increased frequency and intensity of droughts and floods expected with climate change could worsen the food insecurity situation already prevailing in many parts of Africa. Regions like sub-Saharan Africa where rain-fed agriculture accounts for over 90% of food production could be adversely affected by climate change. Climate change could contribute to desertification through changing prevailing climatic conditions. Current predictions of future climate show that some

areas will become unsuitable for growing certain types of crops. Sea-level rise would likely affect the tourism industry through beach loss, inundation, ecosystem degradation, saline water intrusion and infrastructure damage. Tourism is a major foreign exchange earner and employs a significant number of people in many African/developing countries.

Box 1: Impacts of climate change, vulnerability and adaptive capacity in Africa.

- Adaptive capacity is low due to low GDP per capita, widespread poverty, inequitable land distribution, and low education levels. There is also an absence of social safety nets, in particular after harvest failures.
- Changes in rainfall and intensified land use would exacerbate the desertification process (especially in the Western Sahel and Northern and Southern Africa) at a time when individual coping strategies for desertification are already strained, leading to deepening poverty.
- More than one quarter of the population lives within 100 kilometers of the coast and most of Africa's largest cities are along coasts vulnerable to sea level rise, coastal erosion, and extreme events.
- Major rivers are highly sensitive to climate variations and may experience decreases in run-off and water availability, affecting agriculture and hydropower systems, which may increase cross-boundary tensions.

Source: IPCC 2001 b

Change in temperature and precipitation would likely affect the availability and distribution of water resources. Much of Africa is dry and suffers inadequate water supply. Such areas could get drier with climate change decreasing further water availability and access. Areas such as east Africa expected to receive increased precipitation could suffer from increased flooding, damage to infrastructure and ecosystems. Climate Change could also affect the outbreak and distribution of climate-sensitive diseases including malaria, cholera and Rift-Valley Fever and meningitis. The 1997/98 El-Nino for example was associated with outbreak of malaria, Rift Valley Fever and Cholera in many east African countries.[8] Meningitis on the other hand is associated with dry and dusty conditions.

- **Special Concerns of SIDS and LDCs**

LDCs and SIDS remain particularly at risk of climate change impacts. LDCs which are the world's poorest countries are the most vulnerable to the effects of climate change due to their location in some of the most vulnerable regions and their low capacities to adapt to these changes.[9] . The lack of economic and social resources means that poor countries are ill-equipped to adjust to the long-term changes in climate.[10] Out of the 49 countries which belong to the LDCs, 32 are found in Africa.

Global warming will affect the production of major food crops hence reliance of many poor countries on food imports may increase if climate change adversely affects crop farming. Pastoral livelihoods are likely to be affected by reduced precipitation anticipated for most dry land areas. The Small Island Developing States (SIDS) are particularly at risk of increased occurrence and magnitude of tropical cyclones which may increase the risk of flooding,

[8] Huq, S. H Reid, M Konate, A Rahman, Y Sokona and F Crick .2004. Mainstreaming adaptation to climate change in Least Developed Countries (LDCs). ***Climate Policy 4***:25-43.
[9] Ibid.
[10] Orindi VA and Murray LA (2005) Adapting to Climate Change in East Africa: A Strategic Approach. *Gatekeeper Series No. 117*. International Institute for Environment and Development.

accelerate rates of beach and coastal erosion and cause displacements of settlements and infrastructure. Some of the SIDS (for example Kiribati, Maldives) which are only a few metres above the sea level could be easily submerged by rising sea levels.

- **Adaptation Activities and Means of Implementation**

Since the earth summit in1992, a number of strategies to support adaptation to climate change have been implemented with mixed degree of success. The strategies range from the more policy reforms, technological options (including use of improved crop varieties) to research and information exchange and institutional as well as human resource development. In addition to these, communities have over time learnt to cope with extreme weather.

a.) Technology and Policy Responses

New and innovative methods are being developed to deal with the challenges brought about by climate variability and the changing climate. Examples of adaptation strategies instituted include use of drought resistant/ genetically modified organisms, crop diversification, adoption of improved farming technologies (Agroforestry, improved fallows, integrated pest management), reduction of water loss through water conserving technologies, promotion of rainwater harvesting, use of efficient and non-polluting sources of energy (LPG, solar cookers) and policy reforms to control environmental degradation (eg deforestation). However, some of the strategies remain expensive and largely inaccessible to majority of the poor in Africa. In addition in most cases comprehensive adaptation policy measures are yet to be adopted.

b.) Implementing Obligations to the UNFCCC and Kyoto

All Parties to the Convention, including African countries, being Parties to the Convention on Climate Change are at various stages of preparing and submitting their National Communications to the UNFCCC. Several have completed their first report and have begun their second while some have just begun this process prepared and submitted their Initial National Communications to the UNFCCC identifying possible climate change impacts and adaptation strategies. These were mainly funded by the GEF Enabling Activities Programme. The National Communications are being used to guide adaptation activities at the country level. In addition to the National Communications, the LDCs are also preparing National Adaptation Programme of Action (NAPAs) giving a prioritized list of activities to be implemented. Many of the African LDCs are in the process of finalizing the NAPAs. So far only, Mauritania has submitted her NAPA in May 2005. Notably, The Conference of the Parties recently agreed to guidance to the GEF on funding the implementation of NAPAs through the LDC Fund (amongst other sources of funding).

UNEP as an implementing agency of the GEF is implementing a portfolio of 83 projects financed at US$167 million, including $79 million GEF resources, to assist countries to implement their commitments under the UNFCCC and to achieve the global energy-related objectives of the GEF under its operational programmes and guidance of the COP. This includes a portfolio of projects aimed at assisting 30 eligible countries, mostly in Africa, to prepare their national communications under article 12 of the UNFCCC and 12 countries to prepare their

National Adaptation Programmes of Action. To this end a global support programme has been successfully implemented by UNEP in collaboration with UNDP and with GEF support.

c.) The Marrakech Funds

The Kyoto protocol (KP) came into force in February 2005 following the ratification by Russia. This is considered a step in the right direction though the continued absence of the world's biggest emitter, USA, is still a cause for concern. The Least Developed Countries Fund (LDCF) fund is fully operational, the operational guidelines for the Special Climate Change Fund (SCCF) have been presented to the GEF Council, and the KP Fund is linked to the coming into force on the Kyoto Protocol. Donors have already pledged voluntary contributions to both the LDCF and SCCF.

- The SCCF is to support adaptation, technology transfer, energy, transport, industry, forestry and waste management and activities to assist developing country parties in diversifying their economies. Contribution by the developed countries to the SCCF is voluntary and supposed to finance technology transfer and related capacity building.[11]
- The LDCF supports preparations of national adaptation programs of action (NAPAs). This Fund is already operational.
- The Kyoto Protocol Adaptation Fund (AF) aims to implement concrete adaptation projects and programmes in developing country Parties that have become parties to the protocol.

It is important that African countries begin laying strategies on how they could harness funds from the SCCF and the AF, while intensifying efforts aimed at identifying alternative funds from other local sources particularly the private sector.

d.) Building Human and Institutional Capacity for Adaptation

The urgent challenge in terms of capacity building for the developing countries concerns strengthening the social, economic and technical resilience of the poorest and most vulnerable against extreme climate events.[12] The issue of adaptation is particularly important for LDCs and SIDS because the threat of climate change is more immediate and intense while the ability to adapt is least developed. Capacities that need to be supported and strengthened are those that promote/aid adaptation to climate change at the local levels where vulnerabilities are most pronounced. Working with civil society and community based organizations to strengthen the social, economic and technical resilience of vulnerable local communities not only promotes adaptation to climate change but also sustainable development.[13]

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[11] Dessai, E., E L F Schipper., E. Corbera. B, Kjellen. M, Gutierrez and A, Haxeltine. 2005. Challenges and outcomes at the Ninth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change. ***International Environmental Agreements 5***: *105-124.*

[12] Najam, A. Huq, S and Sokona, Y (2004). Moving beyond Kyoto: Developing Countries, Climate Change and Sustainable Development in Bigg, T (ed). Survival for a Small Planet: the Sustainable Development Agenda. IIED / Earthscan.

[13] Ibid.

Some of the capacity building initiatives carried out in Africa among other places include a project to strengthen the capacity of the civil society in the Least Developed Countries for Adaptation to Climate Change (CLACC) (Box 2). This is supported with funds from the Government of Norway and implemented by institutions under the RING[14] framework. So far 16 fellows—four from regional organizations including ACTS (eastern Africa); ENDA (west Africa; ZERO (southern Africa) and 12 others from selected LDCs in Latin America and Asia have benefited from the CLACC fellowship scheme that involved each fellow spending a 3-month internship at a European climate research institution under a mentor.

Another significant feature is the establishment of policy research institutions (think-tanks) to respond to climate change related challenges identified by the UNFCCC. These include ACTS,[15] ENDA[16], South Centre[17] and ERC.[18] These institutions and their broader networks have contributed immensely towards the UNFCCC negotiation process as well as submission of policy options to regional and national governments—most options of which are yet to be assimilated by governments. Climate change has therefore remained low on Africa's political agenda.

Box 2. Capacity strengthening of civil society in the Least developed countries for Adaptation to Climate Change (CLACC)

The National Adaptation Programmes of Action (NAPA) process, started under the aegis of the United Nations Framework Convention on Climate Change (UNFCCC), is one mechanism through which national stakeholders can understand the problem of climate change and their role in building resilience to its adverse impacts, and identify a portfolio of appropriate adaptation projects. CLACC aims to strengthen civil society in order to support the official NAPA process and support implementation of adaptation projects in the LDCs over the coming years. This is to be achieved through establishing an information and knowledge system to help countries to deal with the adverse impacts of climate change and integrating adaptation to climate change into the work of key non-government institutions, and mainstreaming the NAPA process with these institutions. Phase II of Project is schedule to start in October 2005 with a training workshop in Kenya. it will involve a research programme assessing grass-roots adaptation activities in various sectors (coastal areas, water management, disaster preparedness and response, health, agriculture, forestry etc.), and feeding this information into national adaptation planning (including NAPAs) and international decision-making.

Another excellent example worth mentioning in Africa is the project on the Assessments of Impacts and Adaptations to Climate Change (AIACC) in multiple regions and sectors in Africa.[19] The AIACC has 11 project in Africa, 5 in Asia, 5 in LAC and 3 in the SIDS. The studies covered a wide range of areas/sectors including food security, biodiversity, coastal zone, health, agriculture, water and fisheries. The final reports comprising the vulnerability and adaptation are being compiled in 2 manuscripts which should be available for policymakers, researchers and development specialists. The studies provide useful information on the vulnerabilities to current climate variability, and make suggestions on possible adaptation options in the face of the

[14] See RING at www.ring-alliance.org
[15] African Centre for Technology Studies, visit www.acts.or.ke
[16] ENDA Tiers Monde can be visited at www.enda.sn/
[17] Southern Centre for Energy and Environment Visit http://www.scee.co.zw/
[18] Energy Research Centre, University of Cape Town. (formerly EDRC) http://www.erc.uct.ac.za/
[19] Find project description and milestones at www.aiacc.org/

enhanced risk due to climate change. AIACC is a global initiative developed in collaboration with the UNEP/WMO Intergovernmental Panel on Climate Change (IPCC) and funded by the Global Environment Facility (GEF) to advance scientific understanding of climate change vulnerabilities and adaptation options in developing countries.

By funding collaborative research, training and technical support, AIACC aims to enhance the scientific capacity of developing countries to assess climate change vulnerabilities and adaptations. In addition, the project aims to generate and communicate information useful for adaptation planning and action. AIACC is implemented by the United Nations Environment Programme and executed jointly by the System for Analysis, Research and Training (START)[20] and the Third World Academy of Sciences (TWAS). In addition to the funding from the Global Environmental Facility, collateral funding has been provided by the United States Agency for International Development, the Canadian International Development Agency, the United States Environmental Protection Agency, and the World Bank. Substantial in-kind support has also been donated by participating institutions in developing countries.

With respect to capacity building for monitoring, prediction and timely early warning, the region has the WMO-funded Drought Monitoring Centre (DMC) located in Nairobi, Kenya and sub-centres in Niamey, Niger and Harare, Zimbabwe. The centres' potential is not yet fully utilized. In particular, climatic monitoring and skillful seasonal climate prediction is crucial for proper planning and management of all climate sensitive activities including agriculture, water resources, and hydroelectric power supply among others. Although many governments in the region have meteorological centres that provide weather information, it is hardly used by those who need it. It is important that such data be used as early warning tools and be immediately linked to development programmes—particularly those around food security.

e.) Mosquito Nets

Some African countries—such as Kenya, Ethiopia, and Malawi—have recently promoted programmes aimed at distributing mosquito nets to protect households from the malaria parasite carriers. These programmes, though sanctioned by governments, have been largely NGO driven. The Global Fund[21] and the World Bank[22] are also providing support of this measure. It is expected that these nets will reduce the millions of deaths annually linked to malaria, hence contribute significantly to ongoing global initiatives.

f.) Traditional Coping Strategies

Households and communities have over the years developed a number of coping strategies in response to extreme climatic events. The strategy adopted in response to climatic shocks (eg drought, floods etc) depend on the types of resources, economic activities and social networks.[23] Activities often range from collection of wild fruits, migration to other areas, reducing the

[20] www.start.org/
[21] Global Fund to Fight AIDS, TB and Malaria. Visit http://www.theglobalfund.org/en/about/malaria/default.asp
[22] http://web.worldbank.org/WBSITE/EXTERNAL/
[23] Orindi VA and Eriksen S (2005) Mainstreaming Adaptation to Climate Change in the Development Process in Uganda. *Ecopolicy Series No.15*. African Centre for Technology Studies.

number of meals, depending on remittances, switching to non-farming activities (eg trade and petty business) or to sale of assets in extreme cases. It is worth noting that some of the coping strategies may become inadequate due to climate change and the rapidly changing socio-economic circumstances in Africa. They do however provide important lessons on how households and communities in Africa can better prepare and adapt to climate change.

V. Moving Forward

Integrating climate change mitigation and adaptation into policy processes and decision making across a range of sectors and scales is a critical next step in managing climate change and its impacts.[24] Efforts to achieve this objective might be undertaken under the direction of the UNFCCC or independently through actions supported by governments. Economic and social development at all levels needs to be undertaken with an eye to ensuring that it is "climate proof" and "climate friendly" Doing so will require mobilization of human capacity and knowledge, institutions and governance, tools and technologies, and appropriate financial resources.

As the international community moves forward in its efforts to take an integrated approach to addressing the challenges that climate change presents, consideration will need to be given to addressing the following questions:

a.) How may African Parties to the UNFCCC support an integrated approach to adaptation to climate change by bringing these concerns into other regional processes such as AMCEN and NEPAD, and efforts to achieve the MDGs?

b.) In what new ways can the Parties reach out to and engage with other communities such as the private sector, financial sector and NGOs—mainly those that engage in disaster management?

c.) How may the knowledge generated so far by African think-tanks and knowledge networks among institutions such as ACTS (Kenya), ENDA (Senegal), South Centre (Zimbabwe) and EDRC (South Africa) be collated and integrated into national policy and decision-making processes? How may such institutions and networks programmes be strengthened?

d.) How could African Parties position themselves to harness from the Marrakech Funds—LDCF, SCCF (both under the UNFCCC) and the AF (under the Kyoto Protocol)?

[24] Parry et al. (2005) Climate Change and Adaptation. IISD Issue Paper for COP 11. August 2005. International Institute for Sustainable Development. www.iisd.ca/publications/