

CLIMATE CHANGE IMPACTS, VULNERABILITY AND ADAPTATION ASSESSMENT IN EAST AFRICA

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INTRODUCTORY BACKGROUND

Impacts, vulnerability and adaptation studies in Kenya were undertaken through two projects namely:

Kenya Country Study Project that was funded by United States 1994-1995

GEF funded UNDP Project entitled “Capacity Building in Sub-Saharan Africa to respond to the UNFCCC 1996-1998 (4 countries: Ghana, Kenya Mali and Zimbabwe).

Other smaller scale studies undertaken addressing location specific areas of socio-economic sectors.

The V&A was undertaken by developing internally consistent scenarios using IPCC methodologies for 2030.

Scenarios applied to make assessments of vulnerability and adaptation in the major socio-economic sectors.

EAST AFRICAN CLIMATE

- Large variability in rainfall with occurrence of extreme events in terms of droughts and floods.
- Droughts in the last 20 years -1983/84, 1991/92, 1995/96, 1999/2001, 2004/2005 (led to famine)
- El-nino related floods of 1997/98
- The Lanina related drought of 1999/2001

VULNERABILITY AND ADAPTATION ASSESSMENT

Agriculture Sector

- Rain-fed agriculture is the mainstay of economic development in East Africa.
- Climate variability has the highest impact on agricultural production.
- Variability is expected to increase including more frequent occurrence of extreme events – especially in marginal rainfall areas.

Vulnerability will be associated with the following factors:

- Poverty among the small scale subsistence farmers.
- Farming in the marginal rainfall areas.
- Over-cultivation and land degradation

Agriculture Sector Cont..

- Lack of technologies to improve production.
- Lack of economic diversification.
- Lack of knowledge on the use of climate information to maximize agricultural production..

Adaptation

- Adoption of drought resistant/escaping crops.
- Soil conservation measures.
- Adoption of appropriate water conservation technologies.
- Crop diversification in subsistence farming.
- Alternative means of income generation for subsistence farmers.
- Public education and awareness raising on effective use of climate information. This will enable farmers to prepare for adverse climate conditions and to take advantage of favourable conditions to maximize production.

LESSONS LEARNED

- The most effective adaptation options are those that also address climate change mitigation.
- Soil conservation measures lead to carbon sequestration and enhanced vegetation growth.
- Afforestation and reforestation lead to enhancement of carbon sinks.
- Adaptation options must be consistent with national development plans and priorities. This enables them to be easily incorporated into the national development activities.
- Technical and institutional capacity to respond to climate change must be an ongoing process because of complexity of the problem and emerging issues which need to be addressed.

LESSONS LEARNED Cont..

- Regional cooperation is crucial because some of the resources that are vulnerable to climate change are shared among neighbouring countries.
- Involvement of the vulnerable communities is crucial for adaptation strategies.
- Public education and awareness raising is a central component of adaptation strategies.
- Research and technology has an important role to play in development of adaptation strategies. -
Development of drought resistant crop varieties

NEEDS

- to enhance systematic observations network in Africa in order to enhance our knowledge of climate characteristics
- to mainstream/integrate adaptation strategies into the national development plans and priorities. Some of these are already addressed directly or indirectly but not in a robust or sustainable way
- to employ research and technology in our adaptation strategies
- to incorporate indigenous knowledge and technologies into adaptation options
- to enhance technical capacity to undertake vulnerability and adaptation assessment.

NEEDS Cont..

- to incorporate indigenous knowledge and technologies into adaptation options.
- to enhance technical capacity to undertake vulnerability and adaptation assessment.
- to enhance institutional capacity to integrate adaptation into national development plans.
- to enhance institutional capacity for regional cooperation in climate change issues.
- to increase public education and awareness raising in climate change issues especially those that affect the communities.
- Climate information is a crucial component of climate change adaptation strategies in different socio-economic sectors

ROLE OF LOCAL, NATIONAL AND REGIONAL ACTORS

- Communities that are directly or indirectly affected by climate change must be fully involved in development of adaptation strategies.
- National policy makers and planners have a crucial role to play in:
 - i) Formulating policies that increase national and community adaptive capacity to climate change
 - ii) Formulating policies and measures that reduce poverty among vulnerable communities
 - iii) Integrating climate change issues into national development plans
- Regional actors have a crucial role of developing regional cooperation to address climate change issues related to regionally shared resource for example: **East African Community, IGAD, SADC etc.**

ROLE OF INTERNATIONAL ACTORS

- International cooperation is crucial in the following areas:

Systematic observations

- One of the main barriers to effective vulnerability and adaptation assessment in Africa is the inadequacy of systematic observations network which is necessary for climate characterization.
- This is an area where international cooperation can greatly enhance systematic observations in Africa.

ROLE OF INTERNATIONAL ACTORS

Technology transfer:

- The other main barrier as inadequate technological capacity to implement adaptation projects. This is the other area where international cooperation can enhance adaptation in Africa.

Capacity building

- Technical capacity building in Africa must be enhanced for effective vulnerability and adaptation assessment and implementation of adaptation projects.
- International cooperation can enhance this capacity in Africa.

HOW CAN UNFCCC PROCESS FACILITATE IMPACTS VULNERABILITY AND ADAPTATION ASSESSMENT?

Adaptation to climate change is the main priority in Africa because of the continent's vulnerability.

UNFCCC process should:

- promote international cooperation in adaptation.
- promote capacity building process. This capacity building should combine training workshops and hands on activities For example: **pilot adaptation projects for demonstration.**
- promote availability adequate and predictable funding towards adaptation in Africa.