

CLIMATE CHANGE ACTIVITIES IN THE GREATER HORN OF AFRICA (GHA) BEING UNDERTAKEN AT DMCN

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1. Introduction

Extreme climate events such as droughts and floods are very common in the Greater Horn of Africa. Floods lead to displacement of people and animals, loss of life and property, environmental degradation, destruction of infrastructure, large losses to the economy, among many other socio-economic miseries. Drought on the other hand has harsh negative impacts on agriculture, livestock, wildlife, Tourism, Water resources and hydroelectric power generation. Drought results into low water flows and fall in the levels of dams that are often associated with severe power rationing, closure of some industries, and large losses in their economies. Water supply for industrial and domestic consumption is usually severely interrupted during the drought. Lack of water and pasture in some areas often lead to severe conflicts between wildlife and pastoral communities. Notable examples of the hazards of extreme climate events were demonstrated by the impacts of the 1997/98 El-Niño related floods and the 1999-2001 drought. Recent IPCC assessment has indicated discernible evidences of climate change that could lead to global warming and change in the space-time patterns in extreme rainfall and other climate parameters, including magnitude, frequency and geographical patterns of extreme events that would have far reaching environmental, economical and societal implications. Challenges related to climate change in GHA require long period high quality data; good knowledge of regional / local scale climate variability /change science, impacts / mitigation and adaptation policy. Most of these are still very weak in GHA. This paper will present some of the relevant climate change activities that are being undertaken at DMCN and the region at large.

The main objective of the IGAD Drought Monitoring Centre-Nairobi (DMCN) is to contribute to climate variability monitoring, prediction, early warning and applications for the mitigation of adverse impacts in hydrometeorological / environmental /economic events on various socio-economic sectors in the region. Several climate change issues are also being undertaken at DMCN.

2. IMPROVING CLIMATE OBSERVATIONS, REGIONAL CLIMATE DATA BASE AND CLIMATE CHANGE INDICES

Long period high quality data is required to study past pattern of regional climate changes .DMCN has a data base of Max / Min temperature and rainfall for all the ten member countries. DMCN also provides timely climate information and outlooks on 10-day, monthly and seasonal time scales to serve as early warning for food security and other sectoral applications to reduce disaster losses for sustainable development

DMC is also working with GCOS and the NMHSs of the region to improve observation network for climate change studies. DMCN has organized a regional meeting for 38 countries in the region to develop regional climate change monitoring policy. DMCN has also been mandated to

develop regional climate change indices that include the use of the mountain glaciers of the region. DMCN produces yearly summaries of the regional climate indices.

3. REGIONAL CLIMATE CHANGE DETECTION AND ATTRIBUTION

DMCN has been involved in several studies of the regional climate change science and attributions using both observations from the various indices, and climate change modelling. Results from some of these studies will be reviewed.

4. REGIONAL CLIMATE CHANGE SCENARIOUS

One of the major challenges in regional / local climate change studies has been no availability of realistic regional / local scale climate change scenarios for driving the impacts, mitigation and adaptation studies. Some of the climate change modelling efforts that are being undertaken at DMCN will be reviewed.

5. CLIMATE CHANGE IMPACTS, MITIGATION AND ADAPTATION STUDIES

DMCN has under taken several pilot studies on the vulnerability of the region to extreme climate variability including those that have been linked to ENSO. DMCN has also undertaken several climate change impacts, mitigation and adaptation studies with other partners. Some of these will be reviewed in the DMCN presentation

6. CAPACITY BUILDING

One of the key activities of the DMCN is to enhance the capacities of scientists in the region in areas such as data processing, climate, monitoring, prediction and applications of information in various socio-economic sectors. In addition, DMCN is introduced a new department has been established within its current structure to address regional climate change capacity building challenges including the science, impacts, mitigation / adaptation issues.

7. Policies, Education and awareness

Most of the public and policy makers have little knowledge regarding the potential impacts of climate change and the degradation of environment has continued unabated. Some of the regional education and awareness requirements and priorities will be highlighted.

8. Research

Resources for research are very limited in the region, and allocation to climate change research is zero in most of the GHA countries. Yet it is through research that the region can be able to enhance regional knowledge on all climate change issues. Regional climate change research priorities will also be addressed.

7. Collaboration/Partnership

Regional capacity to address most of the climate change challenges is quite weak in GHA. Close collaboration is required between regional institutions and the advanced countries centres, sector specific researchers, etc in order to provide sector specific models that are required for addressing sectoral climate change impacts, mitigation and adaptation issues.

The paper will address all these issues with specific reference to the current most vulnerable systems to regional climate variability including coastal areas; agriculture, water resources, and health sectors.