APPLICATION OF CLIMATE INFORMATION IN ENERGY, INDUSTRY, TRANSPORT AND COMMUNICATION

By

Christopher Oludhe
Department of Meteorology
University of Nairobi

CLIPS Training Workshop for Eastern and Southern Africa, 29 July - 9 August 2002, Nairobi, Kenya.

Introduction

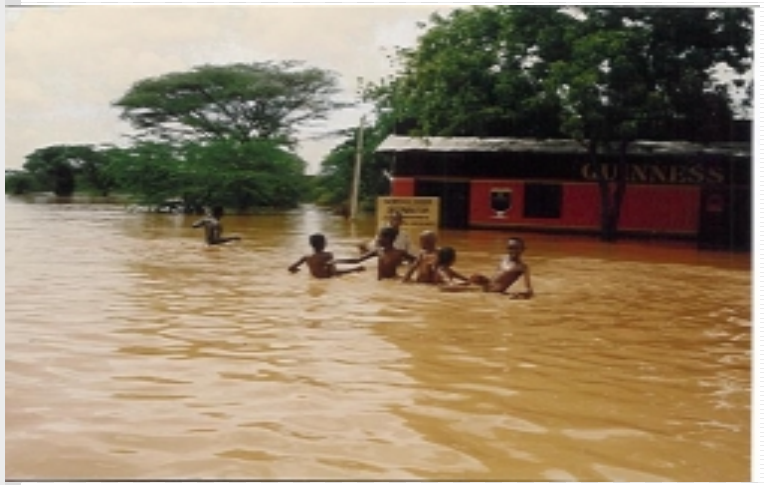
- Weather and climate related factors play a significant role in the overall economy of a country.

- Extreme Weather and climate events have been found to significantly affect the activities in the energy, industry, transport and communication sectors.

Introduction Cont..

- Excessive rains are known to have severe impacts on transport and communication sectors through disruption of infrastructures such as roads, bridges, rails, runways, telecommunication cables, public transport systems and overall loss in business.
- Drought on the other hand can cause reduced water shortages for hydropower generation with severe socio-economic consequences.
- Economic losses from extreme climate events can retard development among many other socio-economic miseries.

El-Nino related Floods in Kenya
(1997/98 Rains)



Damaged infrastructures in Kenya
(1997/98 El-Nino Rains)

Masinga Dam Filled to Capacity

(1997/98 El-Nino and May 2002)

Masinga Dam As Seen during Drought

(1999/2000 La-Nina Drought)

Sectoral Impacts

Energy Sector

- Excessive rains can disrupt electrical power supply through trees falling on power lines, flood waters uprooting the cable poles and vehicles knocking down power lines due to poor visibility among others.
- Impassable roads can disrupt/delay the normal production and distribution of essential fuel products such as cooking gas, kerosene and other motor vehicle fuels to isolated areas.

Impacts Cont..

Energy Sector

- Drought on the other hand results in reduced water levels in the dams hence low power generation and rationing.
- Power rationing has tremendous impacts on industries and on the overall economy of the country which can amount to several millions of dollars per day.

Impacts Cont..

Industrial Sector

- Power rationing due to drought has negative impacts on the overall outputs from the industrial sector.
- Drought can also bring about loss of raw materials for the industries.
- Poor state of the transport system may cause damage to perishable products from industries among many others.

Impacts Cont..

Transport Sector

- Poor state of roads and the washing away of bridges and railway lines can bring about disruption in transport services that may result in deterioration of perishable freight, passenger inconveniences/fatigue and massive losses in business.

Impacts Cont..

Communication Sector

- Heavy rains and falling trees can bring down communication cables thus cutting off communication links with major telephone subscribers.
- Heavy rains can also flood the underground communication cables thus cutting off links with crucial centres/institutions.

Reducing Climate Impacts

- The severe impacts associated with extreme climate events in the various sub-sectors can be reduced through good understanding of the climate patterns/events, enhanced monitoring, early warning, effective and timely dissemination of early warning products and awareness creation on the usefulness of climate information and prediction products.

Proposed Activities for reducing climate impacts

- Examine, Identify and document the extreme weather and climate events that affect the various sectors.
- Develop relevant policies that will factor climate information and prediction products into disaster preparedness and management.
- Encourage closer collaboration between the producers of climate information and the users of these information.

Cont..

- Encourage the creation of early warning units for disaster preparedness and management within the above sub-sectors
- Build Capacity in the usage, understandability and relevance of climate information products within the sectors.
- Document the climate information repackaging needs for the sectors.

Cont..

- Document the potential benefits of utilizing climate information products in the sectors.
- Develop vulnerability and risk maps for the sectors
- Encourage collaborative/joint research amongst the research institutions in addressing the devastating impacts of extreme weather and climate events.

Conclusions

- Extreme Climate events are recurrent and their impacts are quite severe.
- There is need to utilize the climate information and prediction products supplied by the national meteorological services and other climate centres in order to minimise the impacts of extreme climate events.

THANK YOU ALL FOR LISTENING