Report of the Fifteenth Climate Outlook Forum for the Greater Horn (GHA) of Africa, commonly known as East Africa March 2 to 4, 2005, Mombassa, Kenya

The Climate Outlook Forum

From 2 to 4 March 2005, the fifteenth Climate Outlook Forum (COF15) was convened in Travellers Beach Hotel, Mombassa, Kenya by the Inter-Governmental Authority for Development's (IGAD) Climate Prediction and Applications Centre (ICPAC) to formulate consensus guidance for the March to May rainfall season in the eastern Africa sub-region (sometimes referred to as the Greater Horn of Africa) comprising of Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania and Uganda. Users from marine and fisheries management, food security, and media, among other sectors were active participants in the forum. They participated in the development of the outlook and formulated the implications of the outlook for their respective countries and sectors. The forum reviewed the state of the global climate system and its implications for the sub-region. Among the principal factors taken into account were the observed and

predicted SSTs in the tropical Pacific Ocean, and over the tropical Atlantic and Indian Oceans.

COF is an international framework initiated by National Oceanic and Atmospheric Administration, Office of Global Program (NOAA-OGP) and a range of partners such the United State Agency for International Development's Office for Foreign Disaster Assistance (USAID-OFDA). It is a pre- seasonal forum that generates, evaluates and disseminates seasonal climate information to help regional decision makers plan and respond to climate related disasters such as droughts and floods, and for natural resource management for sustainable development. The outputs of this forum (climate information and capacity building), contribute to NOAA's mission goals of understanding climate variability and change to enhance society's ability to plan and respond to climate risks, serving society's needs for weather and water information, and NOAA's crosscutting priorities of environmental literacy, outreach and education and international cooperation and collaboration. The forum was funded by the ***United State Agency for International Development's Office for Foreign Disaster Assistance (USAID-OFDA)*** through its long-term partnership with the National Oceanic and Atmospheric Administration, Office of Global Program (NOAA-OGP).

Summary statement of March to May forecast for 2005 rainfall season
Consensus climate outlook derived from international and regional prediction models indicate that there is increased likelihood of near to below normal rainfall over much of the Greater Horn of Africa during the period March to May 2005. However, probabilities of near normal to above normal rainfall favour central and northern Tanzania; Burundi; Rwanda; southern Uganda; central and southern Kenya eastern Djibouti; North Eastern and western Ethiopia as well as eastern Sudan. It should be noted that episodic intense short rainfall events might occur even in areas with a likelihood of near to below normal rainfall. The outlook is a combined input for the following centres: IGAD Climate Prediction and Applications Centre; Drought Monitoring Centre, Harare; International Research Institute for Climate Prediction (IRI); World Meteorological Organisation (WMO); USGS/FEWS-NET, the U.S National Centre for Environmental Prediction/Climate Prediction Centre (NCEP/CPC), UK. Met Office, and the European Centre for Medium Range Weather Forecasts (ECMWRF).

Additional inputs for the forecast development were provided by representatives of the national Meteorological and Hydrological Services from ten GHA countries (Insititut Geographique du Burundi; Meteorologie Nationale de Djibouti; Eritrea Meteorological Services; National Meteorological Services Agency of Ethiopia; Kenya Meteorological Department; Rwanda Meteorological Services; Somalia meteorological services, Sudan Meteorological Authority; Tanzania Meteorological Agency and Uganda Department of Meteorology) and climate scientists as well as other experts from national

The outlook is relevant only for seasonal time scales and relatively large areas. Local and month-to-month variations may occur. Forecast model outputs indicate transition from mild El Niño to neutral conditions over the equatorial Pacific Ocean during the forecast period. The current sea surface temperature (SST) anomalies over much of Atlantic and

South Western Indian Oceans are warmer than average while southern central Atlantic and South Eastern Indian Oceans are dominated by cooler than average SSTs. It should be noted that development of tropical cyclones in the Indian Ocean during March - May period might influence the rainfall patterns in the sub-region.

The National Weather Services and the Inter Governmental Authority for Development's (IGAD) Climate Prediction and Applications Centre *(*ICPAC) provide update forecasts during the season. The forecasters, therefore, strongly advised users to keep in contact with their National Meteorological Services for interpretation of this outlook, finer details, updates and additional guidance.

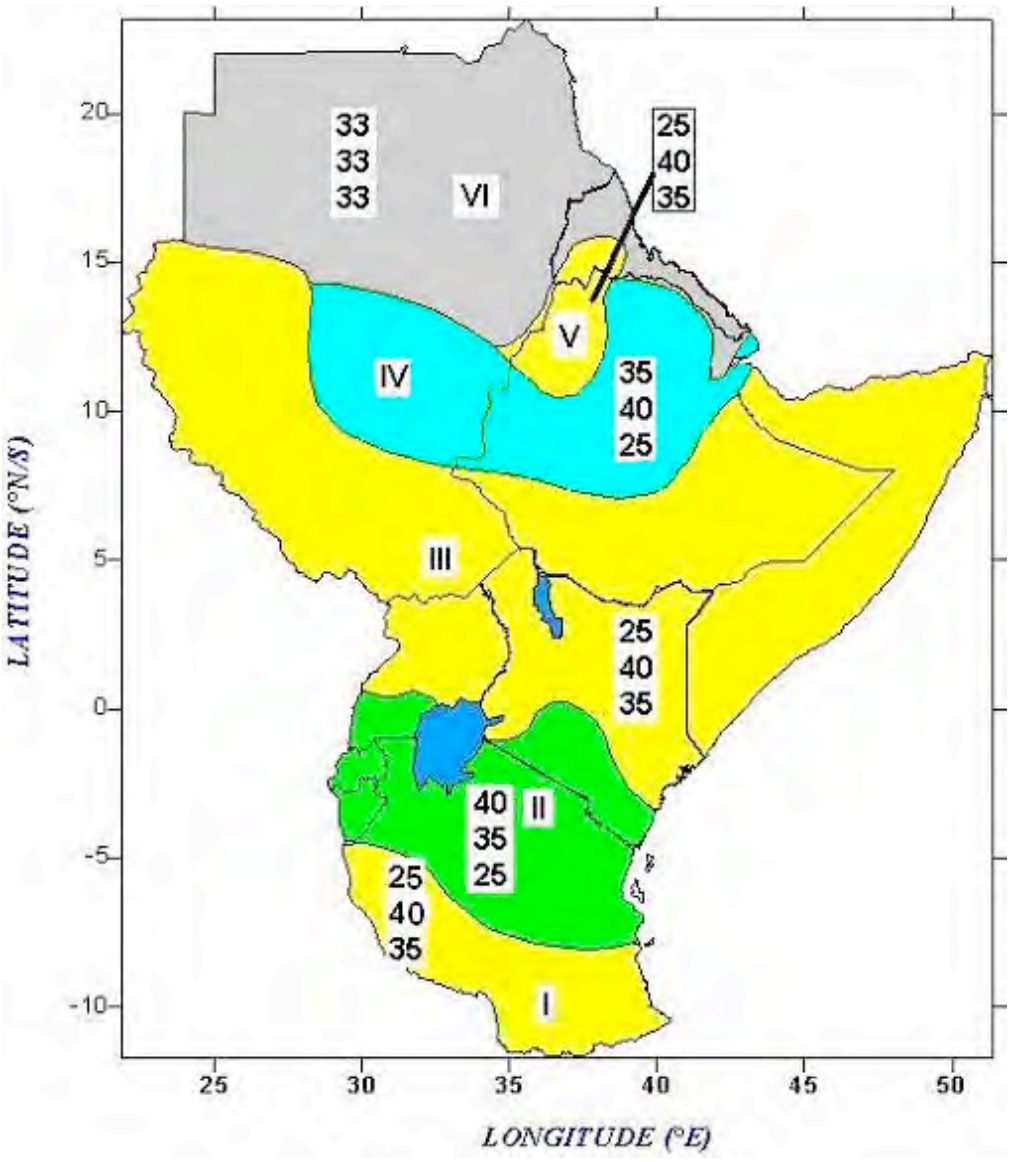
Methodology

The forum examined the current and expected SST anomalies over the Pacific Ocean as well as the Indian and Atlantic Oceans together with other factors that affect the climate of the sub-region. These factors were assessed using coupled ocean-atmosphere models, statistical models and expert interpretation. The current status of seasonal to inter-annual forecasting allows prediction of spatial and temporal averages and may not fully account for the physical and dynamical factors that influence regional and national climate variability.

The experts established probability distributions to indicate the likelihood of above-, near-, or below-normal rainfall for each zone (see Map). Above-normal rainfall is defined as within the wettest third of recorded rainfall amounts in each zone; near-normal is defined as the third of the recorded rainfall amounts centred around the climatological median; below-normal rainfall as within the driest third of the rainfall amounts. Climatology refers to a situation where any of the three categories have equal chances of occurring.

The Outlook for March, April and May rainfall Season, 2005

March to May constitutes an important rainfall season over the equatorial parts of the Greater Horn of Africa sub-region. The rainfall outlook for each zone within this sub-region is given below.



Greater Horn of Africa Consensus Climate Outlook for the Period March to May 2005

Zone I: Increased likelihood of near to below-normal rainfall over southern and South Western Tanzania.

Zone II: Increased likelihood of above to near normal rainfall over central and northern Tanzania, Rwanda, Burundi, southern Uganda and central and southern Kenya.

*Zone III***:** Increased likelihood of near to below-normal rainfall over much of Kenya; central and northern Uganda; southern western Sudan; southern and eastern Ethiopia and Somalia.

*Zone IV***:** Increased likelihood of near to above- normal rainfall over eastern Djibouti, western Ethiopia and parts of eastern Sudan.

*Zone V***:** Increased likelihood of near to below normal rainfall over North Western Ethiopia and South Western Eritrea.

*Zone VI***:** Climatology is indicated over northern Sudan, much of Eritrea and western Djibouti.

Note:

The numbers for each zone indicate the probabilities (chances of occurrence) of rainfall in each of the three categories, above-, near-, and below normal. The top number indicates the probability of rainfall occurring in the above-normal category; the middle number is for the near normal and the bottom number for the below-normal category. For example, in case of southern and South Western Tanzania (zone I), there is 35% probability of rainfall occurring in the below normal category; 40% probability of rainfall occurring in the near-normal category; and 25% probability of rainfall occurring in the below normal category. It is emphasised that boundaries between zones should be considered as transition areas.

Sectoral Recommendations of the various Expert Groups that participated in the meeting

Climate and Marine Experts

1. Develop policies and strong laws that will enforce and ensure climate information is factored in coastal zones and inland waters planning and management for sustainable development
2. Establish an early warning system for maritime disasters
3. Enhancement of inland maritime and coastal weather/climate observation networks
4. Sensitization of potential users on the importance of climate information in their various sectors and activities
5. Encourage networking and collaboration with other programs and institutions on maritime science training and research

Food Security Recommendations

1. Establish mechanism for validating, disseminating, monitoring and reporting outcomes of food security outlook forum
    - Action by National food security networks (MET, Ministry of Agriculture, Ministry of Health, FEWS NET, FAO, World Food Program (WFP), the Media) Initiation by FEWS NET
2. Use Food Security Outlook Products in contingency planning processes and establish operational mechanisms for activating such plans (Example, use of scenarios: quantify the effects of insecurity and recommend interventions relief and development
    - Action by Disaster Management departments (DMDs) and national food security networks. Lead institutions: DMDs
3. Explore the possibilities for sustainable implementation of the food security outlook through the IGAD food security strategy
    - Action by IGAD, ICPAC, Organizing committees

Climate Experts

1. Enhancement of the Computing System at ICPAC, both Hardware and Software:
2. Local Area Network (LAN) needs an upgrade to use its own network server with a fast and wide band Internet link.
3. The Statistical Modeling laboratory at ICPAC needs an upgrade as some of the computers are either unserviceable or often breakdown.
4. The High performance Dynamical modeling Computing system at ICPAC needs to be upgraded to handle ensemble runs more efficiently.
5. There is a need to establish a Dynamical Modeling laboratory with appropriate workstations and software.
6. Enhancement of the computing Systems at the National Meteorological and Hydrological Services (NMHS)
7. Provision of hardware and software at the national level for use by the ICPAC trained national scientists on their return home to produce statistical and dynamical weather/climate diagnostic products for local consumption
8. Encourage and support NMHS to establish Numerical Weather Prediction (NWP) laboratories at the national level to enhance capacity building in, and operationalize dynamical modeling practices.
9. Regional staff Attachment programs at ICPAC and at International research and climate prediction Centers should be continued.
10. More training in statistical analysis is needed, namely, theoretical aspects of EOF, PCA, CCA, SVD
11. Time for the Dynamical Modeling Workshop should be extended to six weeks in order to gain more experience.

The Media Experts:

1. Regular updated information on the Inter Governmental Authority's Climate Predictions and Application Centre (ICPAC) website for jour journalists to access climate information.
2. It must be clear whom the journalists can call in case of any clarifications of climate information.
3. The website must be used to define difficult scientific words and uncertainties of the probability forecast.
4. There must be links to other useful sites that may have more climate information.
5. Between now and the next Climate Outlook Forum (COF), there is need for training of journalists in Climate Reporting, especially in countries that have so far not benefited from media training workshops i.e. Djibouti, Sudan, Ethiopia, Eritrea and Somalia.
6. There is need to develop and fund a curriculum for the training of journalists.