

# STATEMENT FROM THE TWENTY FOURTH GREATER HORN OF AFRICA CLIMATE OUTLOOK FORUM (GHACOF 24)

24 – 25 AUGUST 2009, INTERCONTINENTAL HOTEL, NAIROBI KENYA

## Summary

September to December constitutes an important rainfall season over the equatorial parts of the Greater Horn of Africa (GHA) sub-region. El Niño phenomena (building up of a large pool of unusually warm waters in large parts of the eastern and central equatorial Pacific Ocean) will be a major feature influencing tropical climate during September to December 2009. The regional systems that include Indian and Atlantic oceans will however determine its influence over the Greater Horn of Africa.

The regional consensus climate outlook for the September to December 2009 rainfall season indicates increased likelihood of above normal rainfall over the equatorial western and eastern parts of the Greater Horn of Africa (GHA). The increased likelihood of normal to above normal rainfall is indicated over most of central areas. The southern parts of the sub-region have increased likelihood of receiving below normal rainfall.

It should be noted that the normal rainfall received during September to December months is relatively small in many parts of the sub-region. It should also be noted that some parts of the GHA sub-region have been under rainfall deficit for many successive seasons. The outlook is relevant only for seasonal time scales and relatively large areas. Local and month-to-month deviations might occur as the season progresses. For example episodic flash floods might be experienced in parts of areas that are predicted to receive near normal rainfall and poor rainfall distribution can be experienced in areas expected to receive above normal rainfall. Forecast updates for the whole sub-region will be provided every ten days by ICPAC, while the updates from the National Meteorological and Hydrological Services (NMHSs) will include time scales less than ten days. The users are therefore strongly advised to contact their National Meteorological Services for interpretation of this outlook, finer details, and additional guidance.

## The Climate Outlook Forum

From 24 to 25 August 2009, the Twenty Fourth Greater Horn of Africa Climate Outlook Forum (GHACOF 24) was convened at the Intercontinental Hotel, Nairobi, Kenya by the IGAD Climate Prediction and Applications Centre (ICPAC) and other partners to formulate consensus guidance for the September to December 2009 rainfall season over the GHA sub-region comprising of Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania and Uganda. Users from disaster risk management and water resources, agriculture and food security, health and media sectors as well as Non Governmental Organisations and development partners among others were active participants in the forum. They participated in the formulation of the potential impacts of the climate outlook on their respective sectors. The forum reviewed the state of the global climate system and its implications for the GHA sub-region. Among the principal factors considered are the El Niño conditions that have become established over the tropical Pacific, and likely to continue at least through September to December 2009; the evolving Sea Surface Temperatures (SSTs) observed over the tropical Indian and Atlantic Oceans including the Indian Ocean dipole, atmospheric circulation, and the regional processes.

## Methodology

The forum examined the evolving El Niño conditions that have become established over the tropical Pacific Ocean; the prevailing and expected Sea Surface Temperature (SST) anomalies over Indian and Atlantic Oceans as well as other factors that affect the climate of the GHA sub-region including the Indian Ocean Dipole, and atmospheric circulation processes that bring moisture into the sub-region, as well as the potential modifications by the regional systems. Implications of these factors on September to December 2009 rainfall

performance were assessed using coupled ocean-atmosphere models, statistical models and expert interpretation. The current status of seasonal to inter-annual climate forecasting allows prediction of large spatial and temporal averages relative to the long term mean conditions. This is the state of the art-climate modelling and prediction science and it may not fully account for all the physical and dynamical processes that influence the succession of wet and dry events at particular local areas of the sub-region.

The experts established probability distributions to indicate the likelihood of above-, near-, or below-normal rainfall for each zone (see figure 1). Above-normal rainfall is defined as within the wettest third of long term 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 recorded rainfall amounts. Climatology refers to a situation where any of the three categories have equal chances of occurring.

### Rainfall Outlook for September to December 2009

The rainfall outlook for various zones within the sub-region is given below.

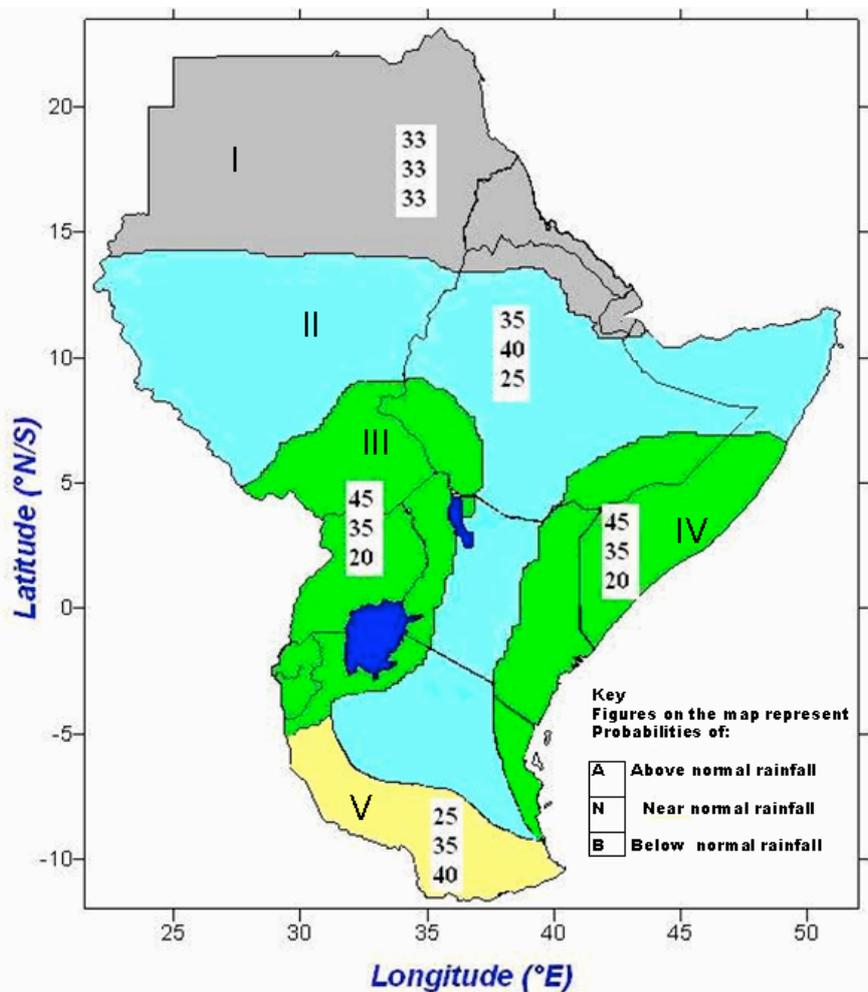


Figure 1: Greater Horn of Africa Consensus Climate Outlook for the September to December 2009

- Zone I:** This zone is generally dry and covers northern parts of Ethiopia, Eritrea, and Djibouti as well as central parts of the Sudan northwards.
- Zone II:** Increased likelihood of near normal rainfall. This zone includes central parts the Sudan, central and southern Ethiopia, the Rift Valley areas of Kenya, northern and central parts of Tanzania.

- Zone III:** Increased likelihood above normal rainfall. This zone covers western sectors around Lake Victoria basin and adjacent countries of Burundi, Rwanda, Uganda, southern Sudan and western Kenya.
- Zone IV:** Increased likelihood above normal rainfall. This zone covers parts of east and coastal Kenya, coasts of Somalia, Kenya and Tanzania.
- Zone IV:** Increased likelihood of below normal rainfall. This zone covers southern and south western Tanzania.

**Note:** *The numbers for each zone indicate the probabilities 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 near-normal and the bottom number for the below-normal category. For example, in case of eastern parts of Kenya and coastal parts of Tanzania (zone IV), there is 45% probability of rainfall occurring in the above-normal category; 35% probability of rainfall occurring in the near-normal category; and 20% probability of rainfall occurring in the below-normal category. It is emphasised that boundaries between zones should be considered as transition areas.*

### **Contributors**

The Twenty Fourth Greater Horn of Africa Climate Outlook Forum (GHACOF 24) was organised jointly by the IGAD Climate Prediction and Applications Centre (ICPAC); National Meteorological and Hydrological Services (NMHSs) and the World Meteorological Organisation (WMO).

Contributors to this regional consensus climate outlook included representatives of the Meteorological Services from GHA countries (Institut Geographique du Burundi; Meteorologie Nationale de Djibouti; National Meteorological Services Agency of Ethiopia; Kenya Meteorological Department; Rwanda Meteorological Services; Sudan Meteorological Authority; Tanzania Meteorological Agency and Uganda Department of Meteorology and climate scientists as well as other experts from national, regional and international institutions and organizations (IGAD Climate Prediction and Applications Centre (ICPAC); International Research Institute for climate and society (IRI); United Kingdom Met Office and Hadley Centre (MOH); World Meteorological Organization (WMO); USGS/FEWS-NET and University of Nairobi. Additional input was supplied by the National Centers for Environmental Prediction/Climate Prediction Centre (NCEP/CPC); Southern Africa Development Community/Drought Monitoring Centre (SADC/DMC); European Centre for Medium Range Weather Forecasts (ECMRWF) and ACMAD.