

# **DROUGHT MONITORING OVER THE GREATER HORN OF AFRICA COUNTRIES**

**Omondi P. A.**

**ICPAC, Nairobi, Kenya**

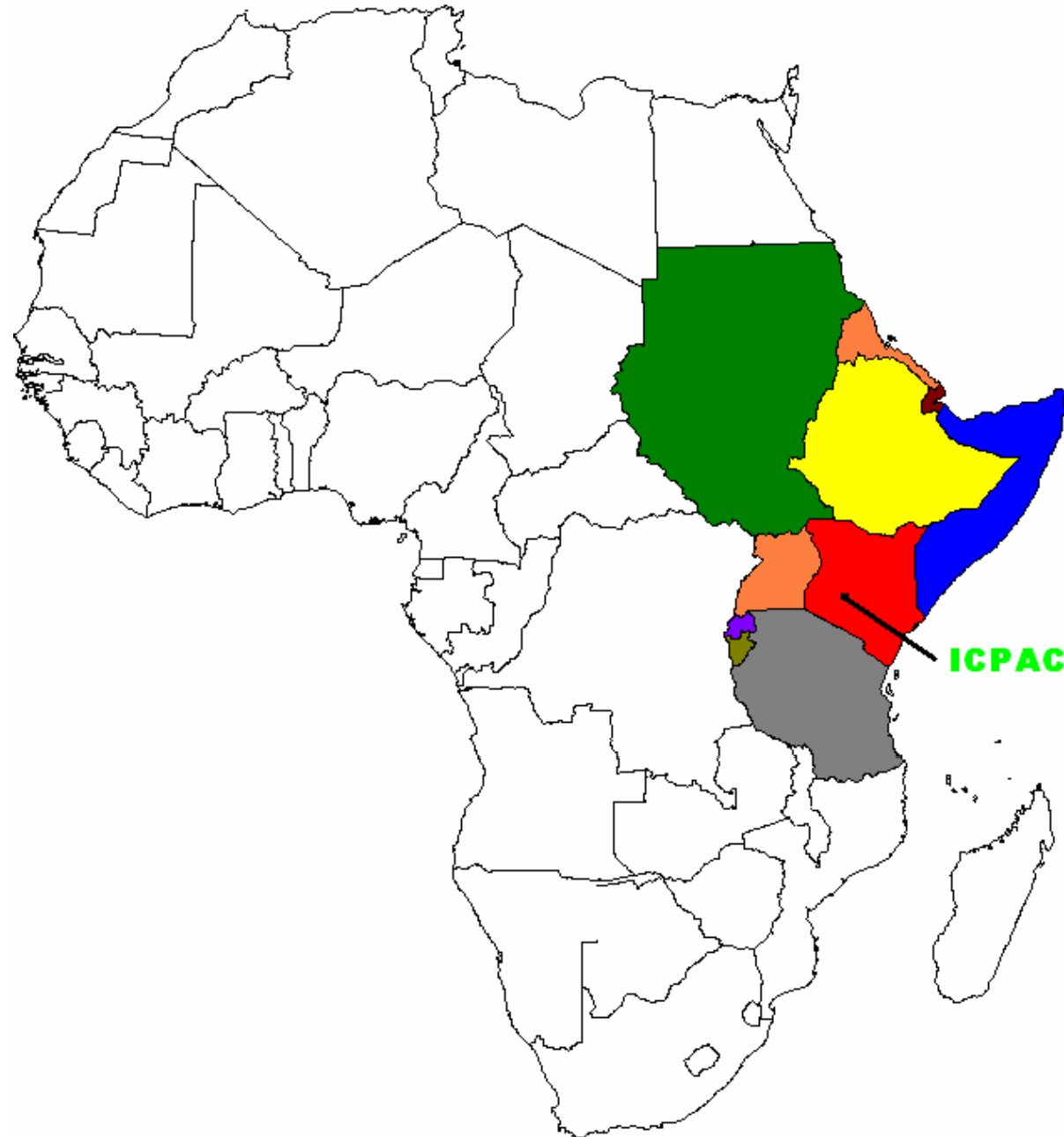
**Consultative Meeting on the Integrated  
Drought Management programme**

**Geneva, Switzerland, 15-16 November 2010**

# Outline

- **Brief on ICPAC**
- **Background**
- **Impacts of droughts over GHA region**
- **Monitoring and dissemination**
- **Challenges**
- **Conclusion**

# ICPAC Member Countries



# BACKGROUND

- The Horn of Africa is prone to extreme climate events droughts and floods with severe negative impacts on key socio-economic sectors.
- Rainfall and temperature determine availability of natural resources such as water, vegetation, wildlife, general flora and fauna, biodiversity etc that determines the livelihood of communities.
- Extreme climate/weather variability has far reaching implications on the livelihood of most of the rural communities in the region
- ICPAC was established 1989 in order to address the challenges of climate variability in the GHA sub-region

# IMPACTS OF DROUGHT

- Failure in Agricultural and Livestock Production
- Lack of water for livestock and domestic use
- Failure in hydro-power based industries.
- Destruction of infrastructure
- Loss of life and property
- Disease outbreak and epidemics
- Conflict among agro-pastoralists and between humans and wildlife

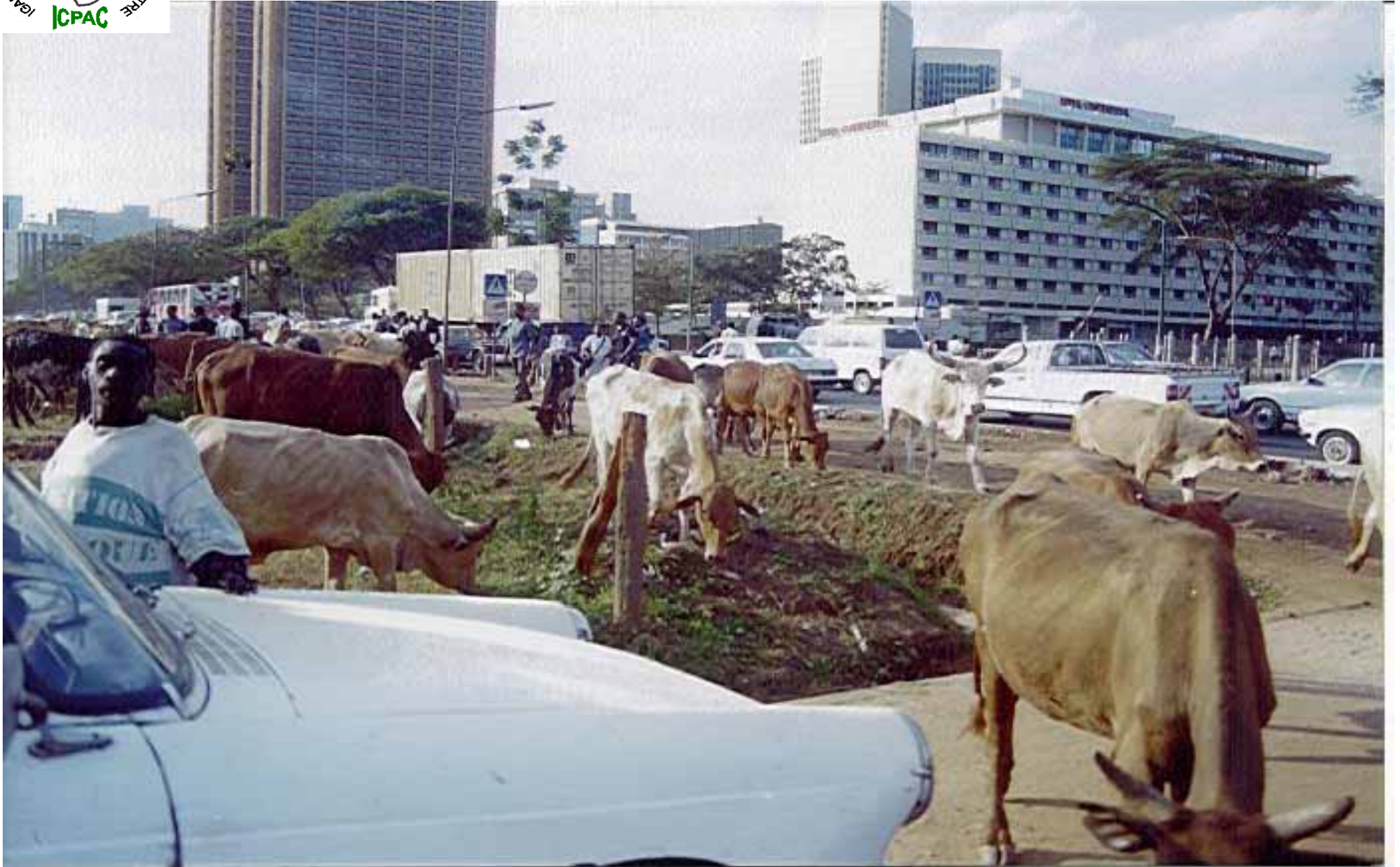
# A View of Masinga Dam during the 2007/2008 La-Nina Drought



# IMPACTS OF DROUGHT ON AGRICULTURAL PRODUCTION



## Grazing in the city centre due to severe drought



# **DROUGHT - THE CONCEPT**

- **Drought is a normal, recurring feature of climate; it occurs in virtually all climatic regimes.**
- **It is a temporary aberration, in contrast to aridity, which is a permanent feature of the climate.**
- **Drought is the consequence of a natural reduction in the amount of precipitation received over an extended period, usually a season or more in length. Other climatic factors are often associated with it.**
- **Drought is also related to the timing and the effectiveness of the rains.**

# DROUGHT - THE CONCEPT (contd.)

**Drought differs from other natural hazards in several ways.**

- **Effects of drought accumulate slowly.**
- **The onset and ending of drought are difficult to determine.** Hence it is referred to as **a creeping phenomenon.**
- **Absence of a precise and universally accepted definition of drought adds to the confusion as to whether it exists, and if it does, the degree of its severity.**
- **Definitions of drought must be region and application (impact) specific.**

# **ROLES OF ICPAC, NMHSs & OTHER PARTNERS**

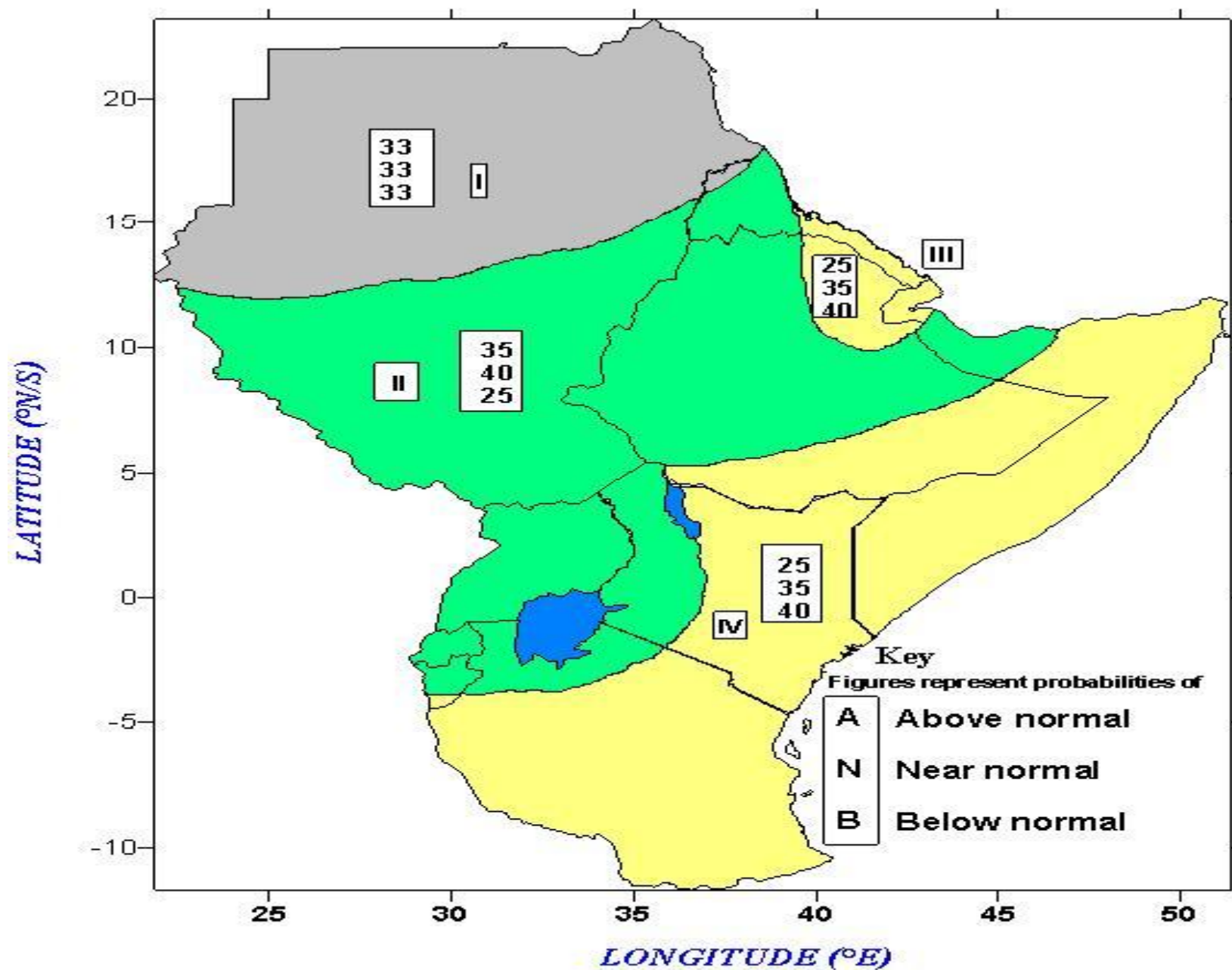
## **Post-, pre-, and response periods**

- Mapping past patterns
- Monitoring current patterns
- Understanding causes
- Predicting and early warning of future expectations

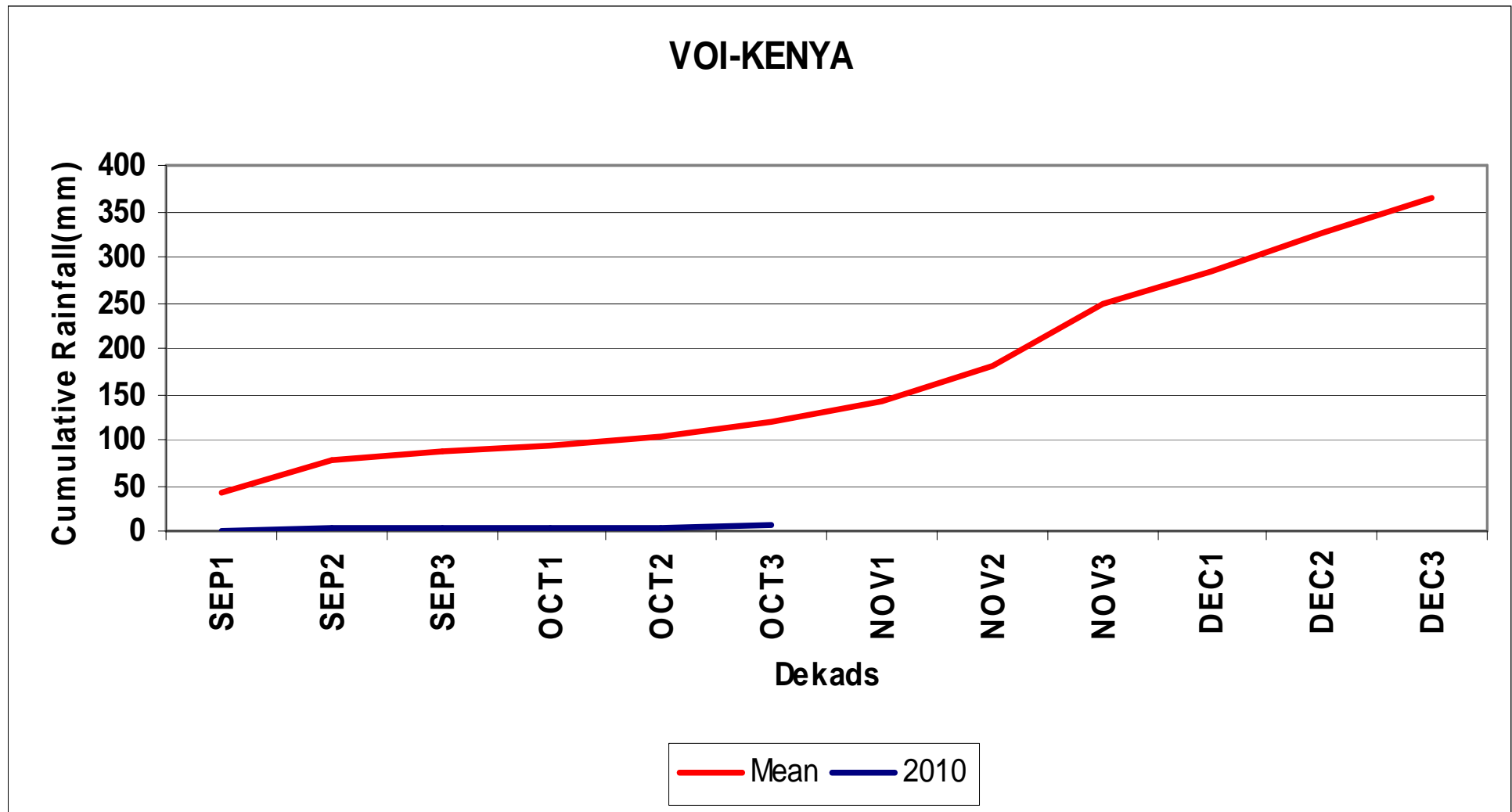
# ICPAC PRODUCTS

- Monitoring of past climate
- Recent past climate over the Horn of Africa is monitored on
  - a dekadal (ten day)
  - monthly and
  - Climate watch
  - seasonal time scales
- to detect the evolution of any significant anomalies that could impact negatively on the socio - economic activities of the region.

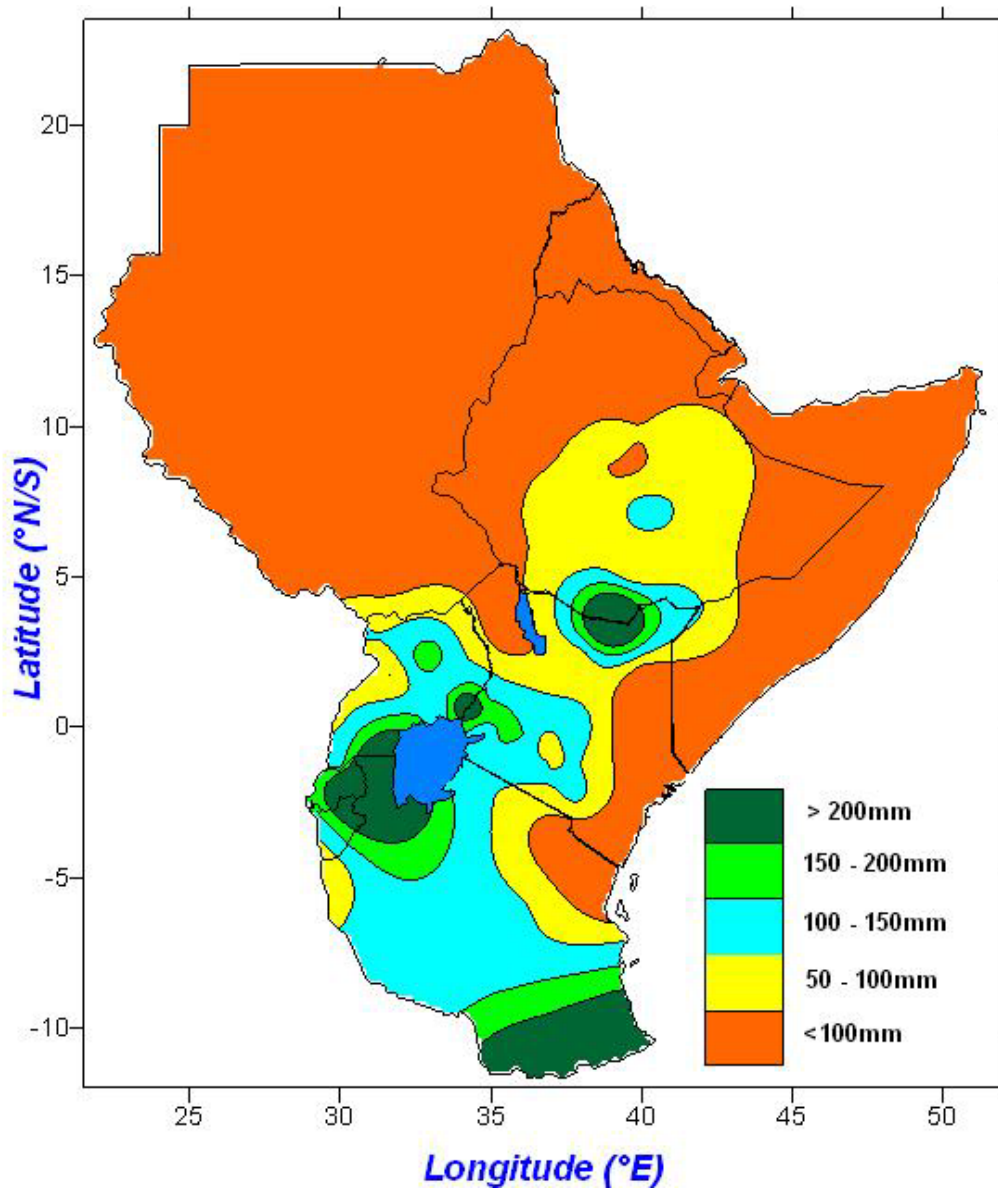
# Greater Horn of Africa Consensus Climate Outlook for the September to December 2010



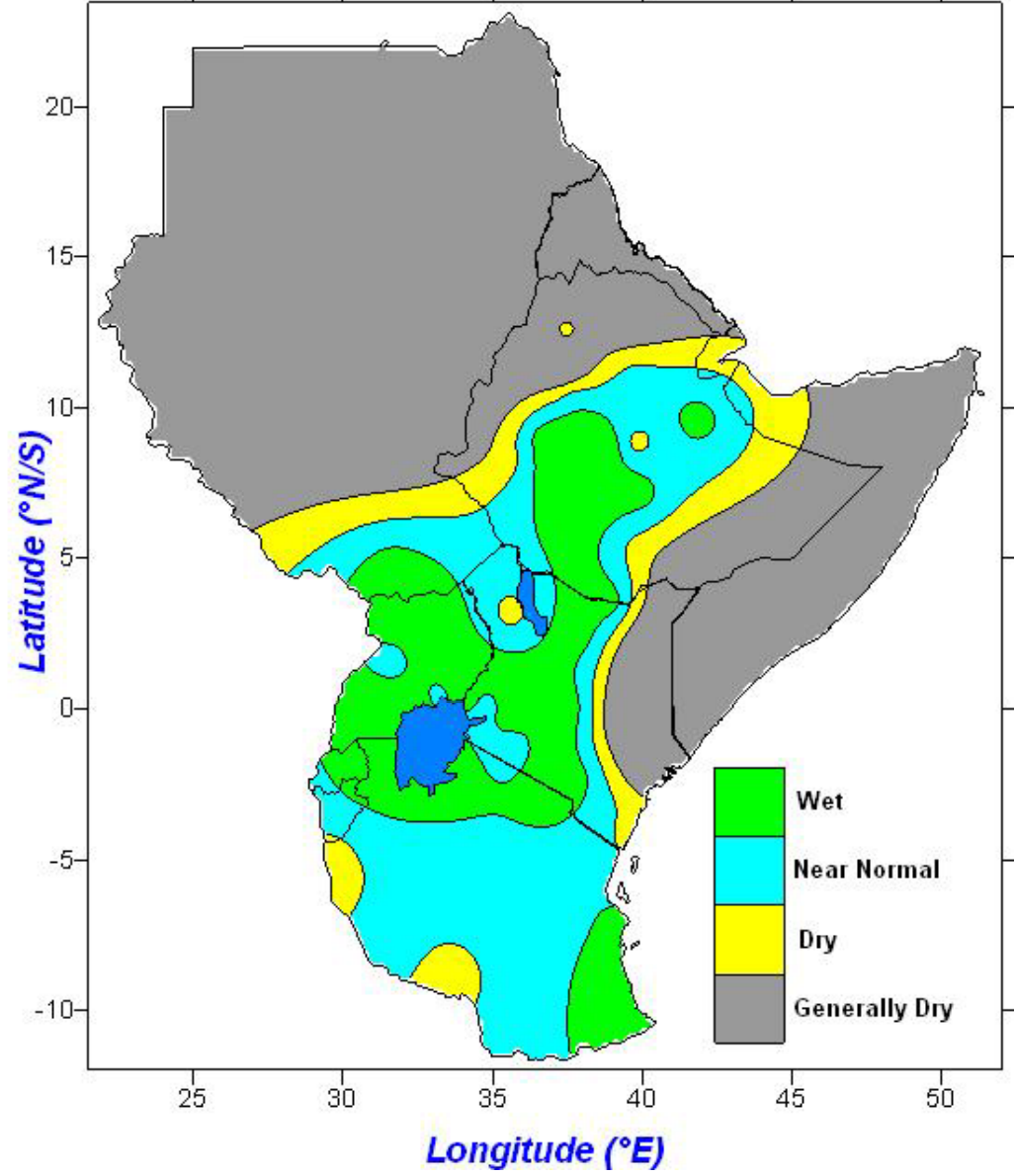
# Cumulative rainfall over the eastern sector of the GHA region



**Distribution of rainfall during February 2010**



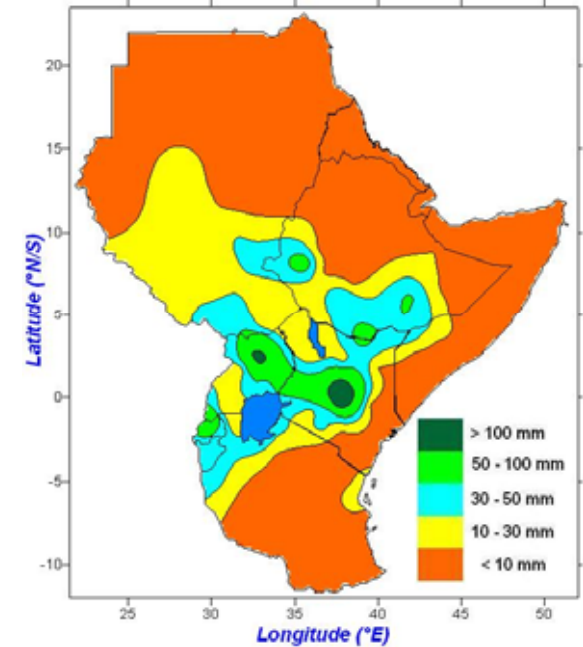
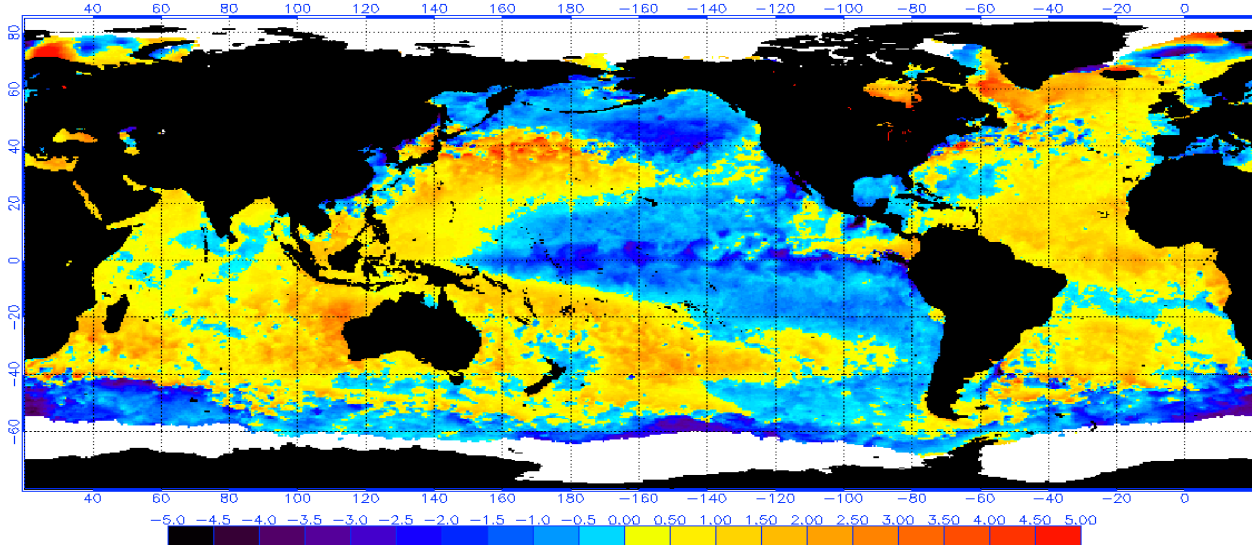
**Rainfall severity index for February 2010**



# USE OF ANALOGUE YEARS

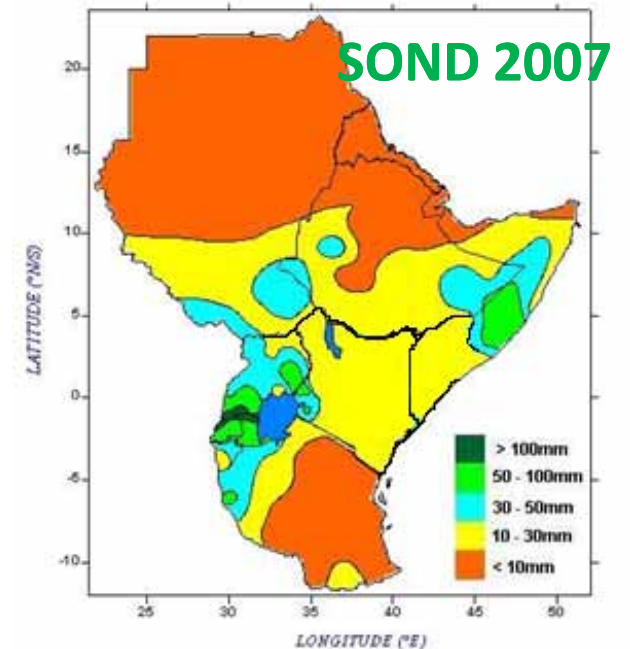
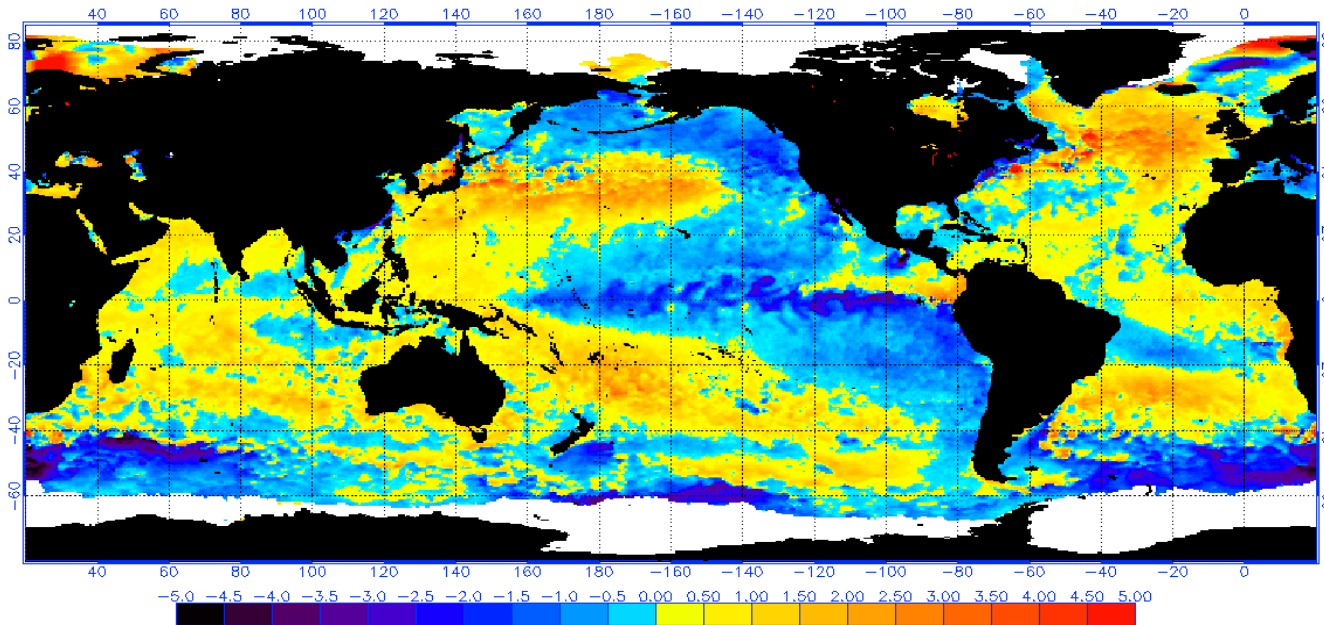
SOND 2010

NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 11/11/2010  
(white regions indicate sea-ice)



End of October 2010 SST anomalies (Courtesy of NOAA)

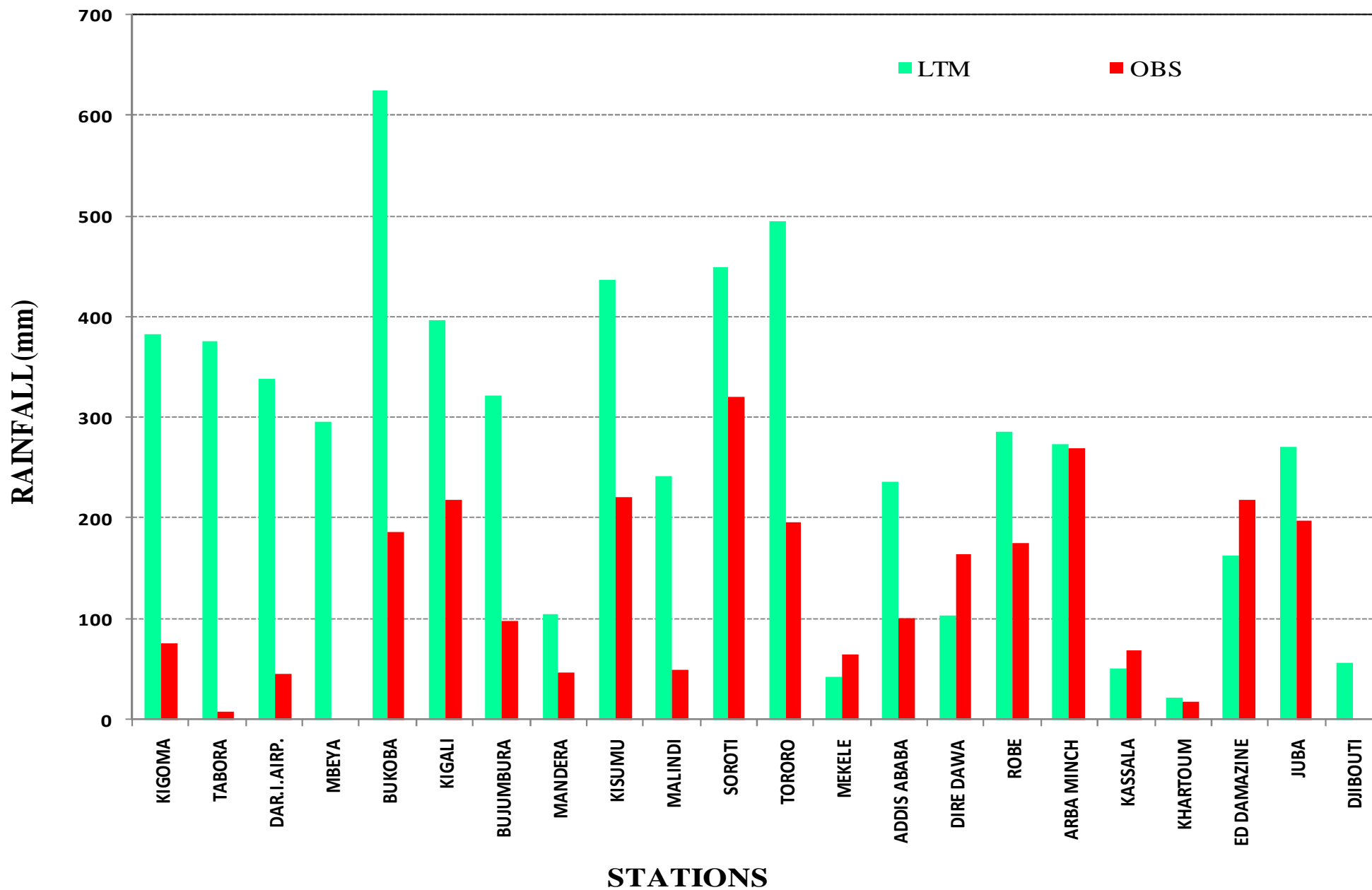
NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 11/12/2007  
(white regions indicate sea-ice)



SOND 2007

End of October 2007 SST anomalies (Courtesy of NOAA)

# Amount of Rainfall received end of October compared to the long term seasonal mean (SOND)



# CHALLENGES

- **droughts wax and wane in extent and duration often in an apparently random manner**
- **onset and ending of drought are difficult to determine – declare a national disaster**
- **Need to develop a better understanding of the tools and data sources (**more parameters to define drought**)**
- **No policy on drought**

# CONCLUSION

- Early warning systems for drought allow communities to act in sufficient time to reduce the possibility of loss of life and damage to property
- Through ICPAC and partners, there is regional availability of real- and near-real-time weather and climate information which is essential for early warning activities
- ICPAC and its 10 Member countries through NMHSs operate a unique regional system for collection, processing, distribution and exchange of weather information and warnings

**THANKS!**

**[pomondi@icpac.net](mailto:pomondi@icpac.net)**

**[www.icpac.net](http://www.icpac.net)**