Activities at ICPAC on Climate Risk Assessment, Management and Disaster Risk Reduction within the GHA Sub-region

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IGAD Climate Prediction and Applications Centre (ICPAC)

Workshop on 'integrating practices, tools and systems for climate risk assessment and management and disaster risk reduction strategies into national policies and programmes'

Havana, Cuba

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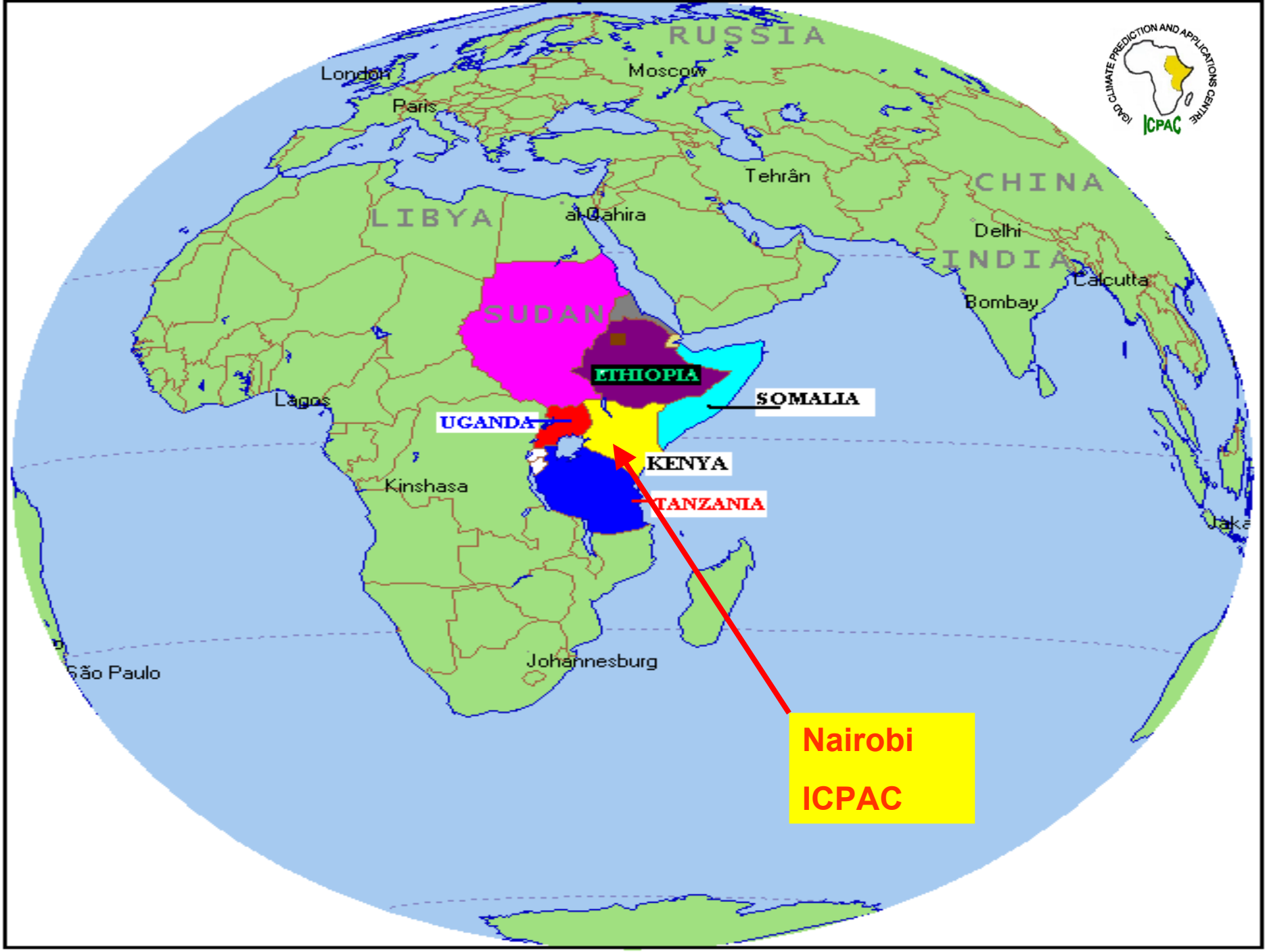
Introduction

- **Extreme climate events are common in the IGAD region and whenever they occur, they are associated with loss of life and property, destruction of infrastructure and large losses to the economy.**
- **Climate monitoring, prediction and timely early warning of extreme climate events is one of the best strategies for mitigating the negative impacts of such events.**

ICPAC'S Strategy

- To contribute to climate monitoring and provide timely climate information and prediction services for early warning and mitigation of the adverse impacts of extreme climate events on various socio-economic sectors in the region.
- The early warning products enable users to put mechanisms in place for coping with extreme climate and weather related risks for sustainable development in the Greater Horn of Africa (GHA).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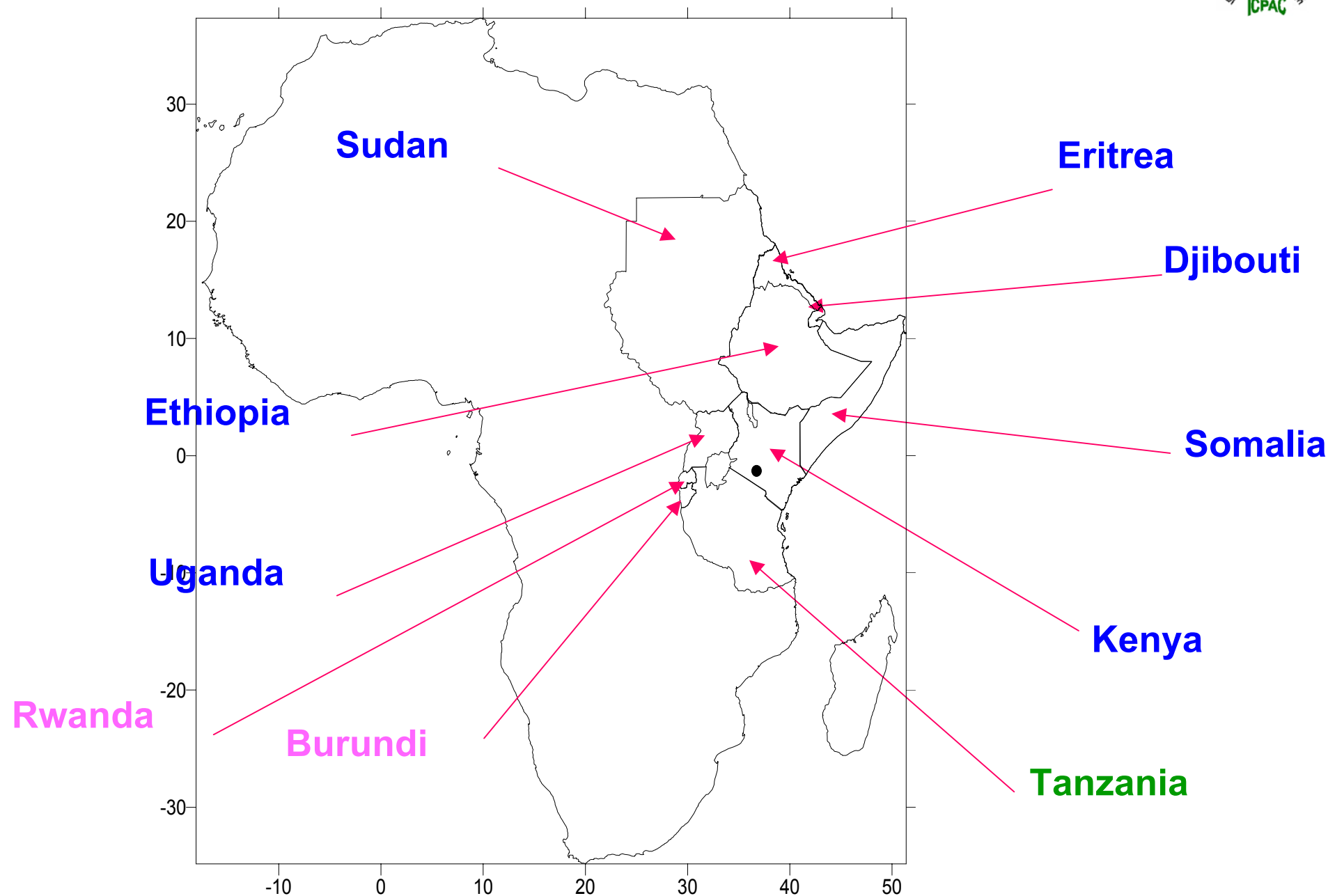
ICPAC PARTICIPATING COUNTRIES IN THE GHA



ICPAC's CORE PROGRAMMES

- Data Processing, Computing and Climatology
- Climate Monitoring and diagnostic– Near real time
- Climate Prediction and Early Warning
- Climate Applications
- Capacity building training and research
- Climate Outlook Forums for enhanced interactions between climate experts and sectoral users of climate Information and Prediction services (End-User Liaison)
- Operational Activities

Operational activities

- ✓ Development and archiving of regional and national quality controlled databanks
- ✓ Calibration of satellite derived climate records
- ✓ Data processing including development of basic climatological statistics
- ✓ Timely acquisition of near real time climate and remotely sensed data
- ✓ Monitoring space-time evolutions of weather and climate extremes over the region
- ✓ Generation of Climate Prediction and Early warning products
- ✓ Delineation of risk zones of the extreme climate events
- ✓ Networking with the NMHSs and regional and international Centres for data and information exchange
- ✓ Timely dissemination of early warning products
- ✓ Public awareness and education of sectoral users of meteorological products
- ✓ Development of sector specific climate information and prediction products
- ✓ Interactions with users through regional and national users workshops and pilot application projects, etc
- ✓ Climate change monitoring, detection and attribution
- ✓ Assessment of the impacts and vulnerability associated with climate extremes
- ✓ Research in climate and related fields

ICPAC's Products

DEKADAL PRODUCTS

- RAINFALL DISTRIBUTION
- DROUGHT SEVERITY
- AGROMETEOROLOGICAL CONDITIONS
- GENERAL IMPACTS
- WEATHER OUTLOOK
- CUMULATIVE TIME SERIES GRAPHS

MONTHLY AND SEASONAL PRODUCTS

- CLIMATOLOGICAL SUMMARIES
- DROUGHT SEVERITY
- AGROMETEOROLOGICAL CONDITIONS
- DORMINANT SYNOPTIC SYSTEMS
- CLIMATE OUTLOOK.
- GENERAL IMPACTS
- PRE - SEASON CONSENSUS OUTLOOKS
- CUMULATIVE TIME SERIES GRAPHS
- CLIMATE WATCH – Provides an update regarding the current and projected state of extreme climate events and their potential impacts

DISASTER RISK REDUCTION

- Most of the disasters of natural origin in the Greater Horn of Africa (GHA) are climate related and these disasters often have far reaching socio-economic implications in the region and some of them sometimes retard national economic grown backwards by several years.
- Optimum use of climate information and early warning products can be used to reduce the negative impacts of climate extremes and take maximum advantage of their positive aspects.
- Climate information can also be used to improve crucial decisions required in all the components of an integrated disaster management namely early warning, prevention, mitigation, preparedness, relief and rescue, rehabilitation and reconstruction.

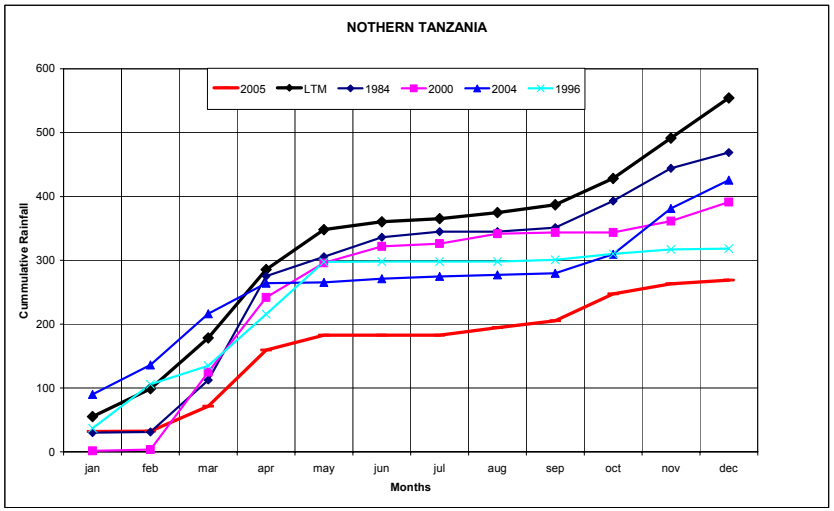
ICPAC's CONTRIBUTION TO DISASTER MANAGEMENT

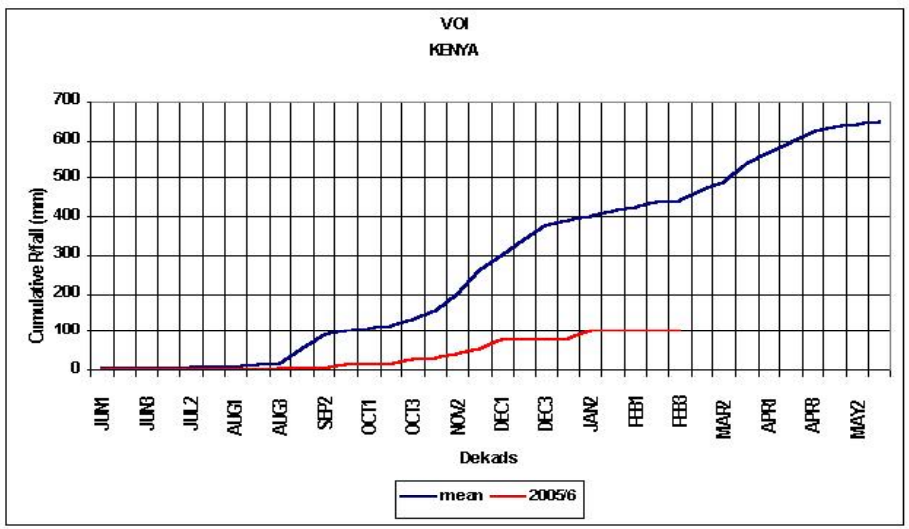
- Development of climate data / information base required for risk mapping and assessment
- Development of the specific products required by disaster management institutions
- Develop framework for timely availability and dissemination of climate information and prediction / early warning products required by specific sectors, stakeholders and the public.
- Multi disciplinary capacity building of the relevant national and regional public institutions in partnership with relevant disaster management institutions.
- Support the integration of climate information and products in the national / regional disaster risk reduction initiatives and policies.

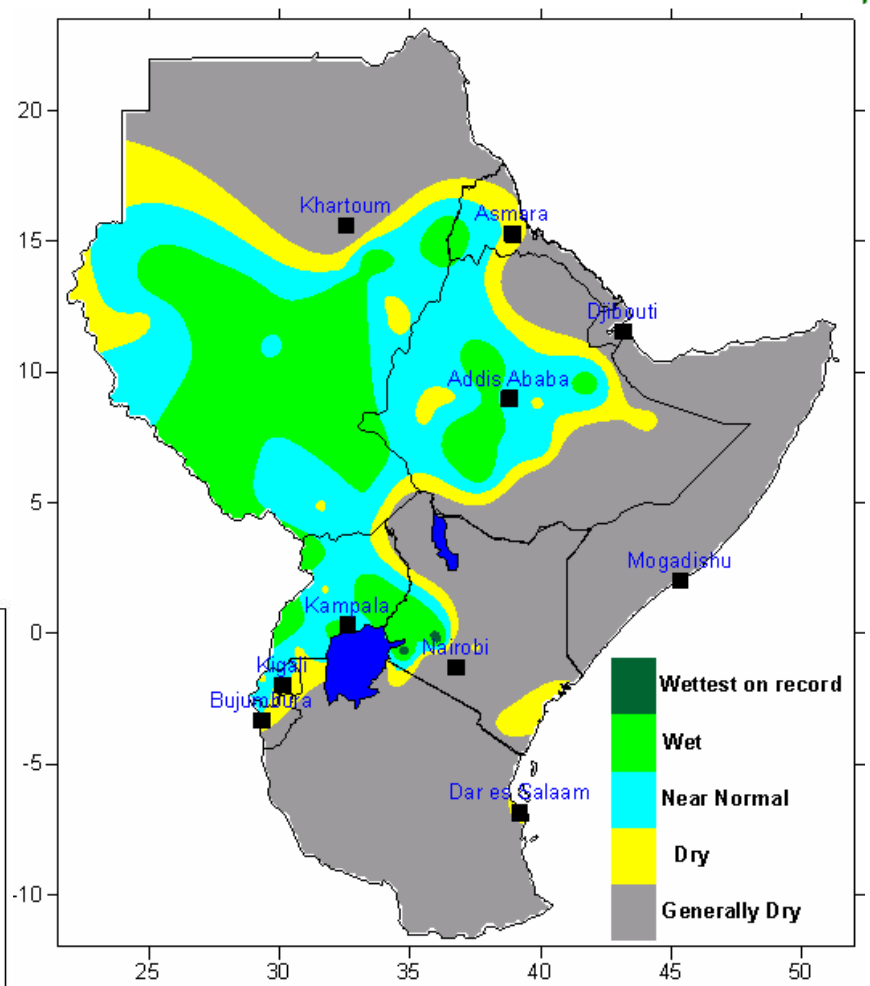
CONTRIBUTION Cont..

- Enhance regional / national capacity in Risk / vulnerability zoning and assessments.
- Raise awareness on how to cope with climate related risks.
- Education and awareness on how to live with climate related risks.
- Develop and implement new training programmes / curriculum on various aspects of disaster management.
- Sensitise and work with other partners to demonstrate the use of Indigenous knowledge (IK) in disaster management practices in the region (Pilot project being done in Kenya).
- Collaborations with all relevant national, regional and international bodies working on various environmental and disaster risk reduction challenges

Examples of products



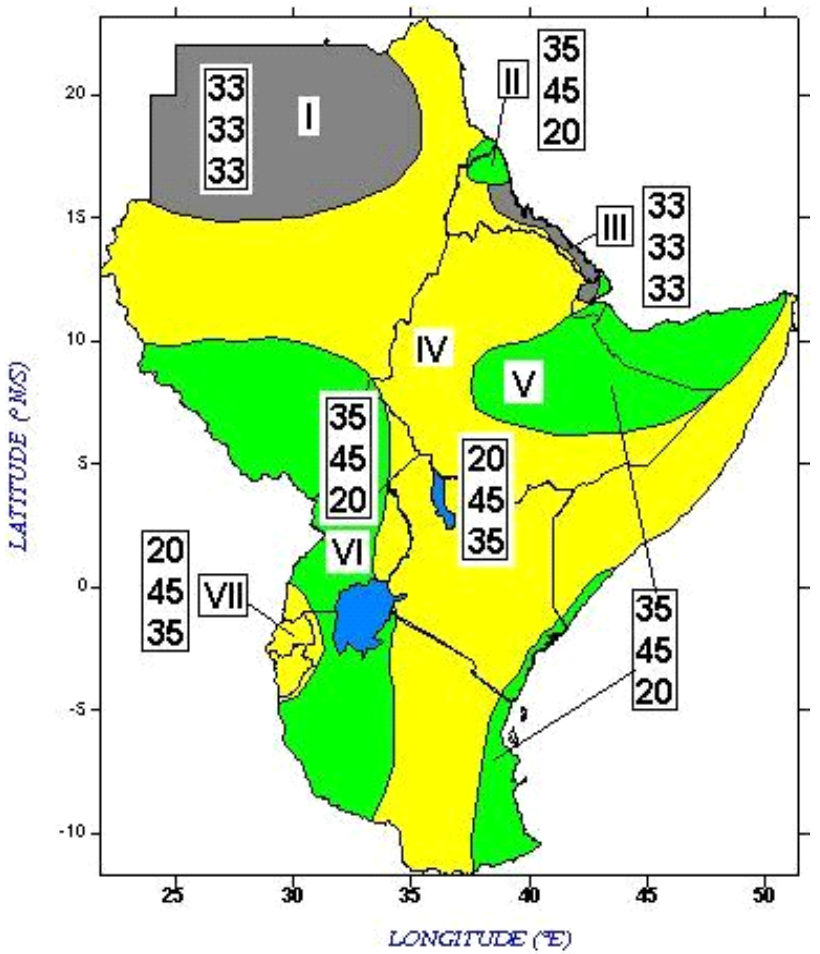




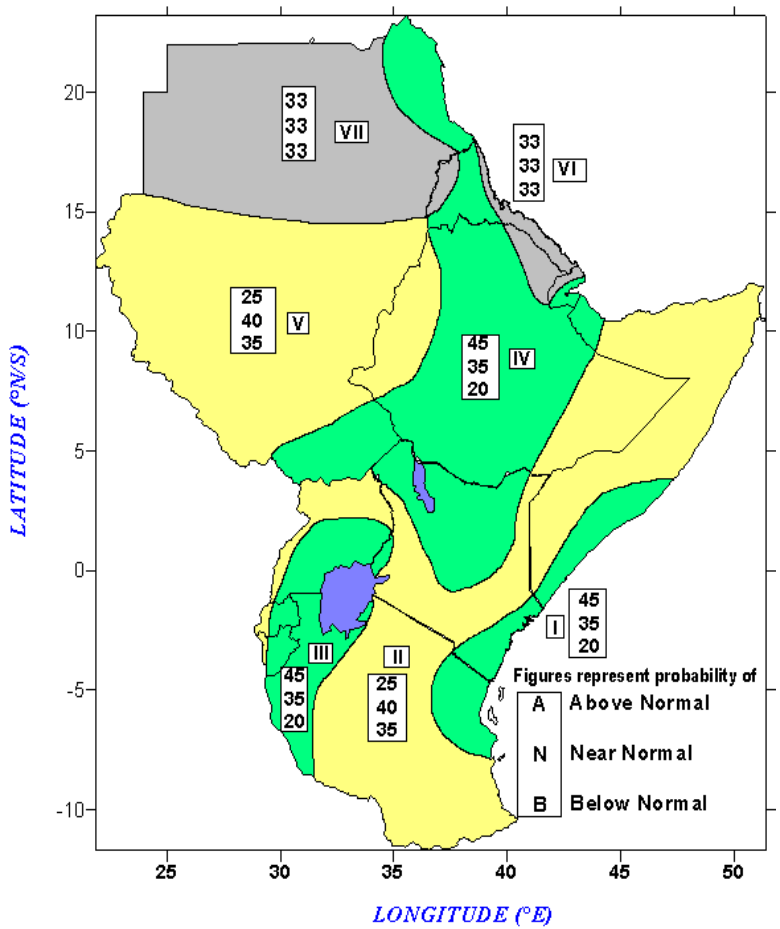
Drought Severity Index for Dekad 26 (11-20 September) 2005

Regional Stress Monitoring and Risk/ Vulnerability Zoning And Mapping

CLIMATE OUTLOOK FORUMS (COFs) PRODUCTS



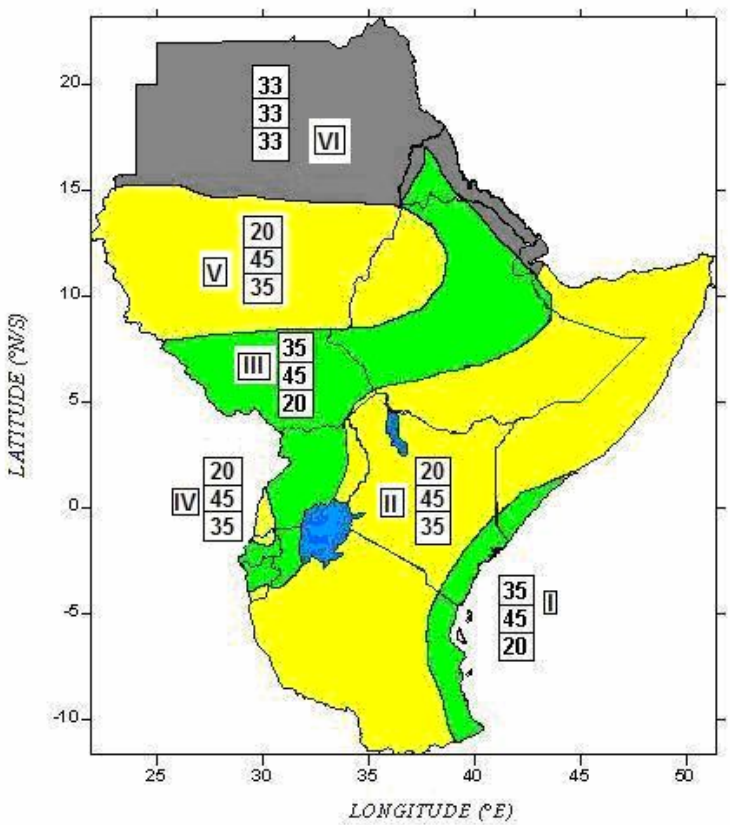
Consensus Climate Outlook for March –May 2006

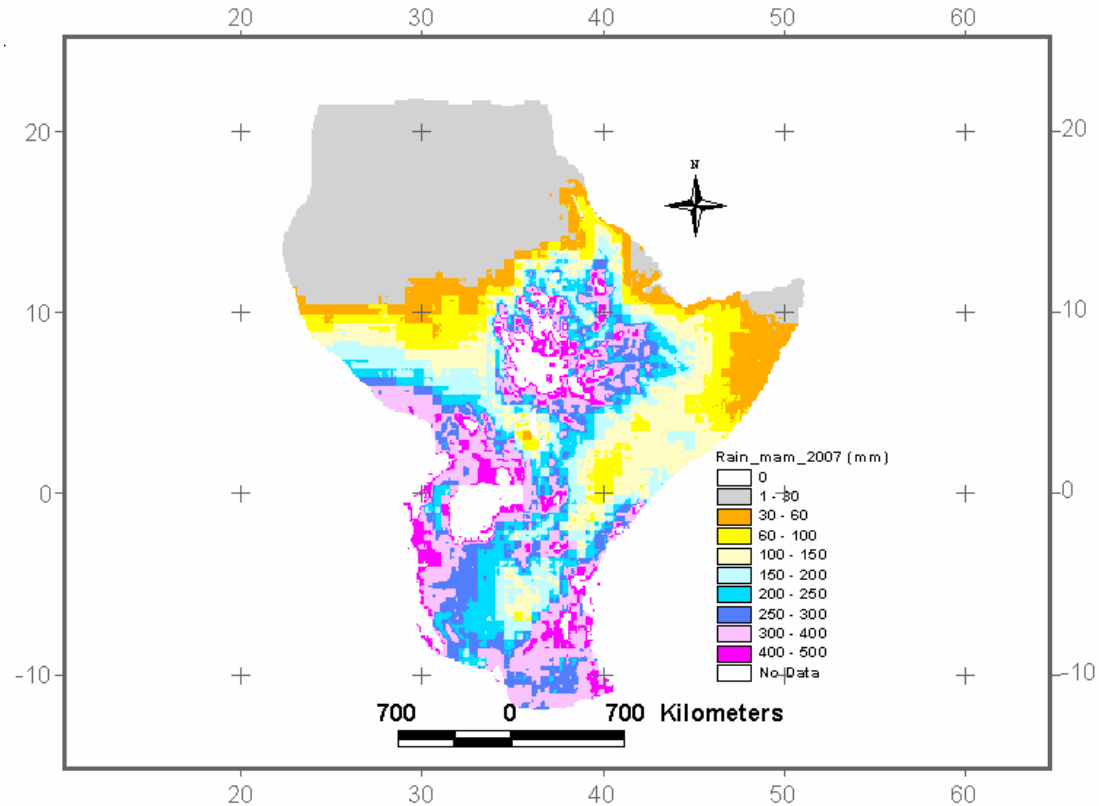


Consensus Climate Outlook for - Sept – Dec 2006

WATER RESOURCES APPLICATIONS- USGS / FEWS NET

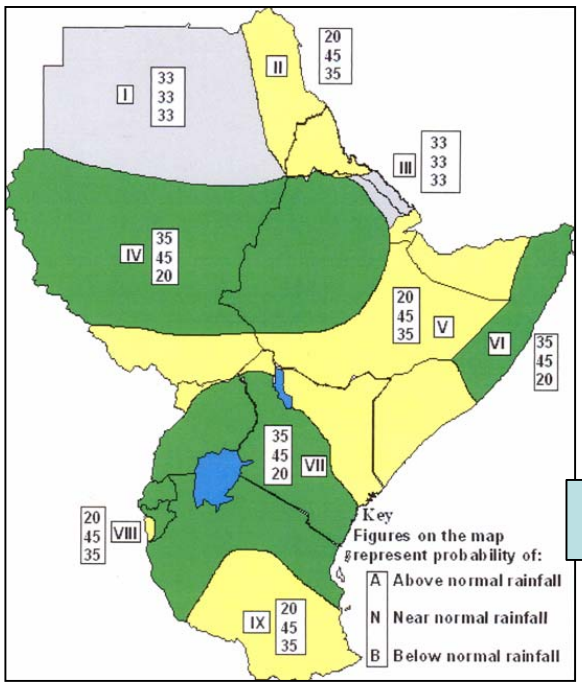
Translation of Seasonal Forecast into Potential Rainfall amounts using FACT/FIT Tool

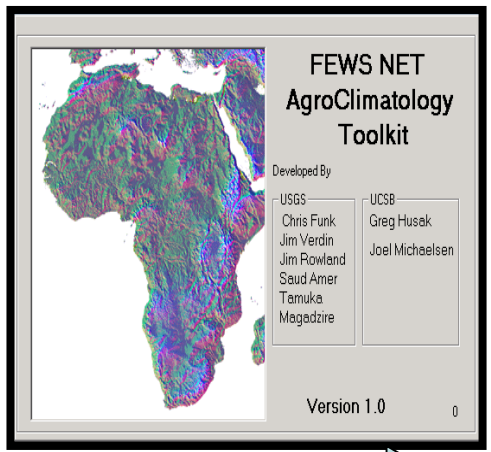




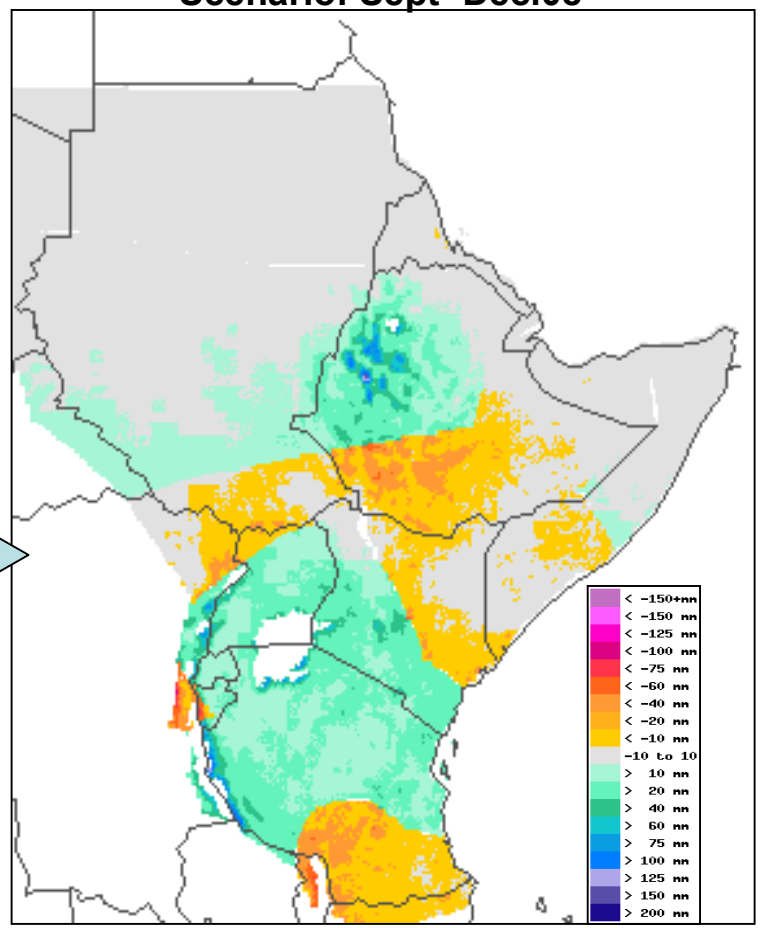
FACT/FIT: Seasonal Forecast Interpretation into Rainfall Anomalies (Risk Maps)

ICPAC SOND forecast

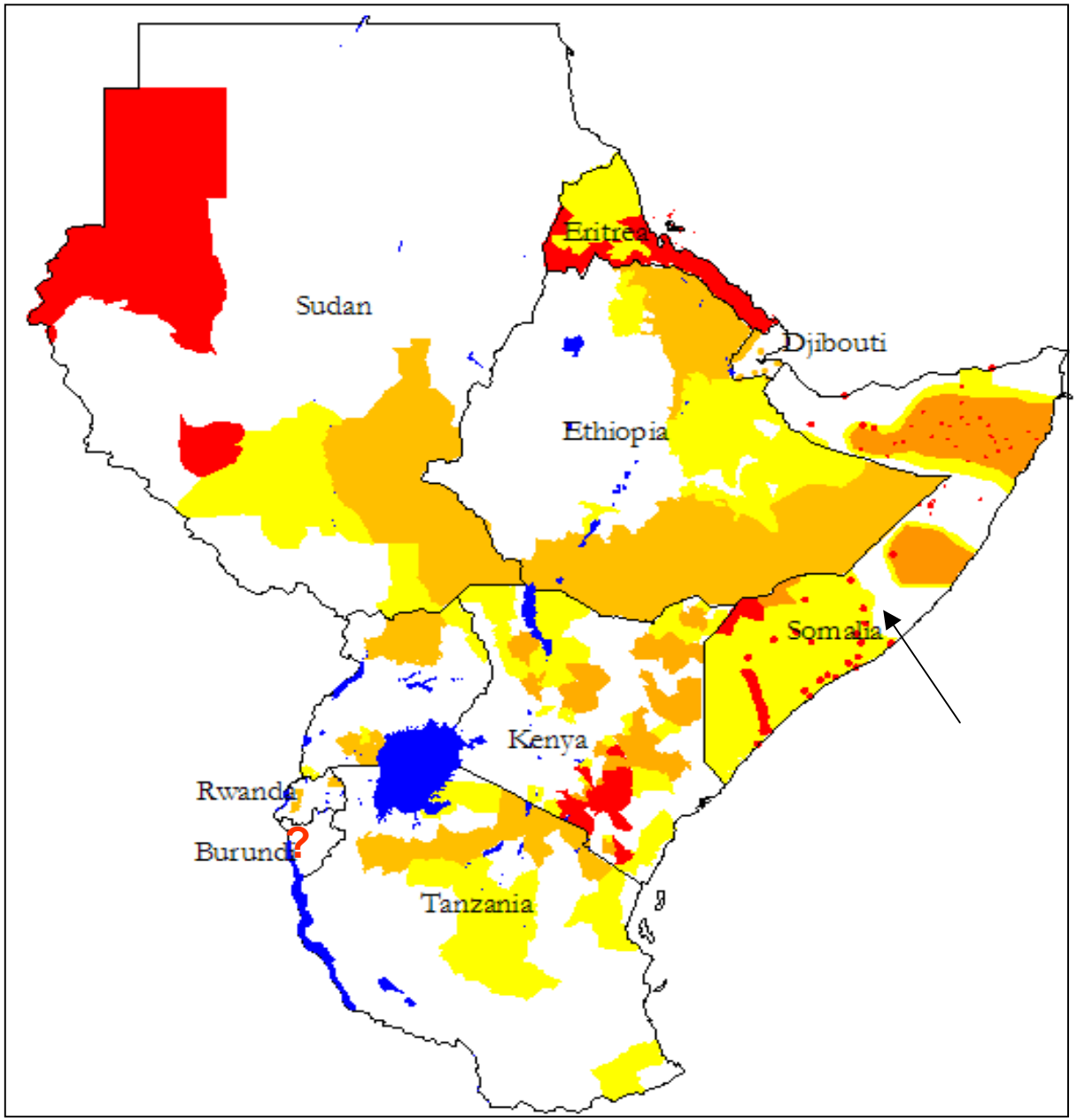




Most-likely Rainfall Anomalies Scenario: Sept -Dec.08



FOOD SECURITY OUTLOOK PRODUCTS



WITH

FEWS/NET

Extremely Food Insecure

Highly Food Insecure

Moderately Food Insecure

ICPAC's LESSONS AND EXPERIENCES

Since 1988

- Conduct studies to understand of local / regional climate systems
- Archive regional data
- Map regional climate hazards
- Predict regional variability / change
- Address Regional climate gaps and needs for sustainable development: Capacity building needs, Data; modelling and other tools;
- Conflict Early Warning
- Interact with users : Impacts, Vulnerability and Adaptation: (Integrated climate risk management)

Pilot Application Projects (PAPs):

- **A number of pilot application projects have been successful completed and documented at ICPAC. These PAPs broadly cover the following areas:**
- ***Assessing and communicating examples of successful use of seasonal climate prediction products while describing how the products have influenced sectoral decision-making process by specific users.***
- ***Assessing and communicating examples of impediments to successful use of seasonal climate prediction products.***
- ***Development of new methodologies for better production, dissemination, interpretation, use, and evaluation of climate information and seasonal prediction products in the mitigation of extreme climate events such as floods, droughts and frosts among others.***
- ***Developing tailor made prediction tools that enables decision-makers to take advantage of seasonal climate forecast information (Hydropower sector).***

REGIONAL CAPACITY BUILDING WORKSHOPS CONDUCTED TO DATE

- **Statistical Seasonal Climate Prediction (PRE-COFs)**
- ***Dynamical climate modeling***
- **Rainfall estimation using *remotely sensed data***
- **Downscaling regional climate outlook for applications in *Agriculture and food security***
- **Downscaling climate outlook for *water resources and hydropower management***

Cont..

- **Downscaling regional climate outlook for applications in the *Livestock sector***
- **Downscaling regional climate outlook for applications in the *Health sector***
- **Downscaling regional climate outlook for applications in *Disaster management***
- **Education and awareness creation for the *Media sector***
- **Awareness workshop for *Gender and Youth***
- **Integrated climate risk assessment for the on-going IDRC/ DFID climate change adaptation projects in Africa**

KEY CHALLENGES

- Observations and data management
- Research: Understanding of local / regional processes;
- Climate Tools: modeling, computing, Downscaling
- Capacity building
- Data / information exchange dissemination
- Education and awareness
- Dissemination strategies
- Climate change issues: Detection, attribution, impacts , vulnerability, mitigation, and adaptation
- Regional/Local Climate Change Scenarios (M&T)
- Integrated disaster risk management
- Partnerships with stakeholders
- Policies issues:

CONCLUSIONS

- **Weather/Climate monitoring and prediction is one of the best strategies for mitigating the negative impacts of weather/climate related disasters.**
- **ICPAC plays an important role in providing the IGAD subregion with weather and climate advisories and more importantly, timely early warnings on extreme climate events**
- **Various Governments of the GHA are now successfully using the ICPAC's predictions products to put measures in place to mitigate against some of the adverse impacts of extreme climate events.**

AWARENESS AND USERS INTERFACE : INTERACTIONS WITH THE USERS FROM INTERNATIONAL TO LOCAL LEVELS- CLIMATE OUTLOOK AND USERS WORKSHOPS

END

THANK YOU