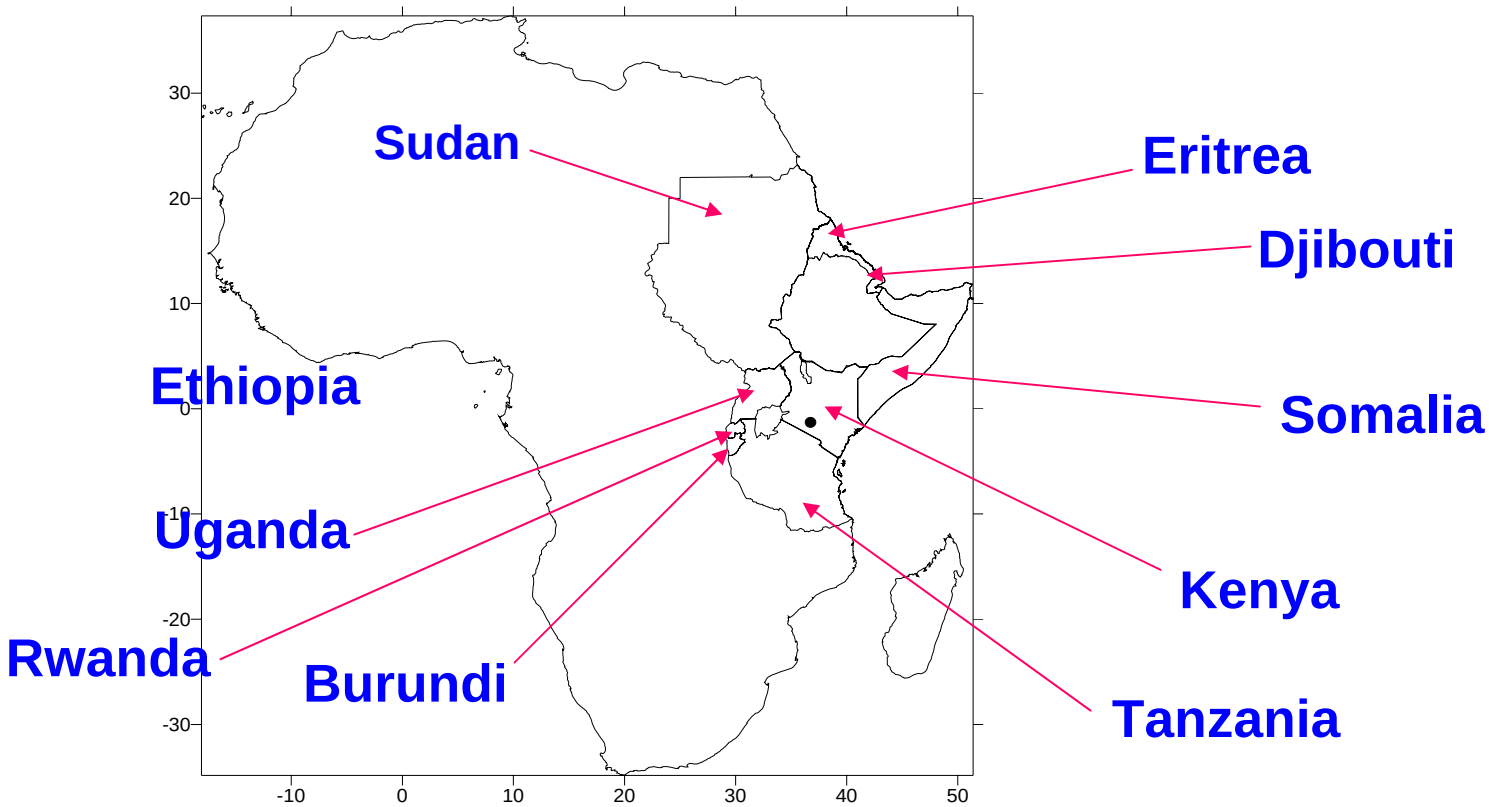
ADAPTATION ACTION – what is needed: Short and long term: Special reference to Africa

L.A.OGALLO

Director, IGAD Climate Prediction and Applications Centre (ICPAC)

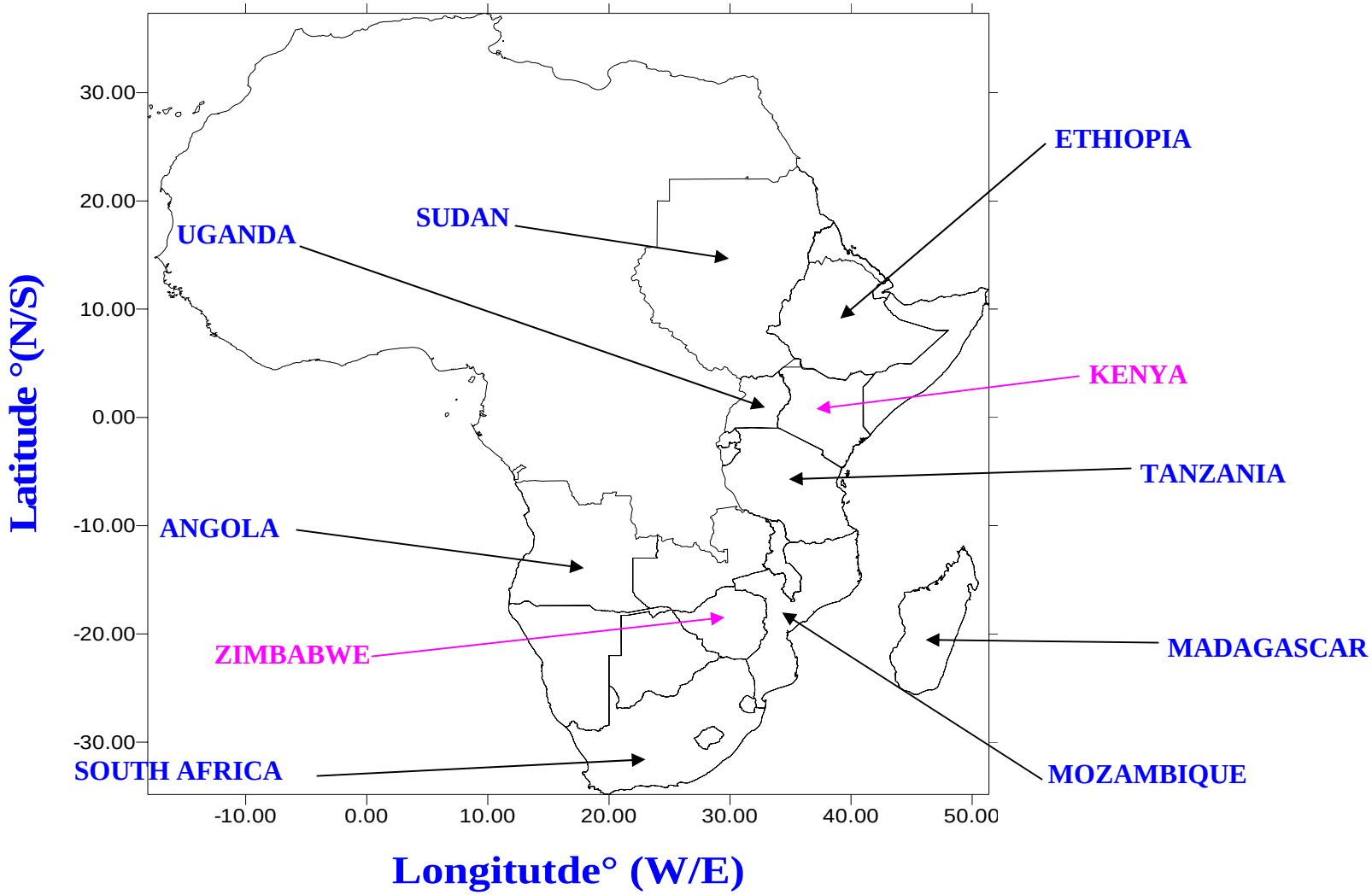
- ADAPTATION: SHORT AND LONG TERM NEEDS
- Climate threats to development
- CLEAN DEVELOPMENT PATHWAYS
- SHORT TERM: CLIMATE AND CURRENT DEVELOPMENT IN AFRICA
- LONG TERM: Clean Development pathways though Adaptation

IGAD Climate Prediction and Applications Centre (ICPAC)- Climate risk management centre for 10 Countries in Greater horn Africa: IGAD; WMO; NOAA USIAD; UNDP, EU,ROCKEFELER, CCAA/IDRC-DFID



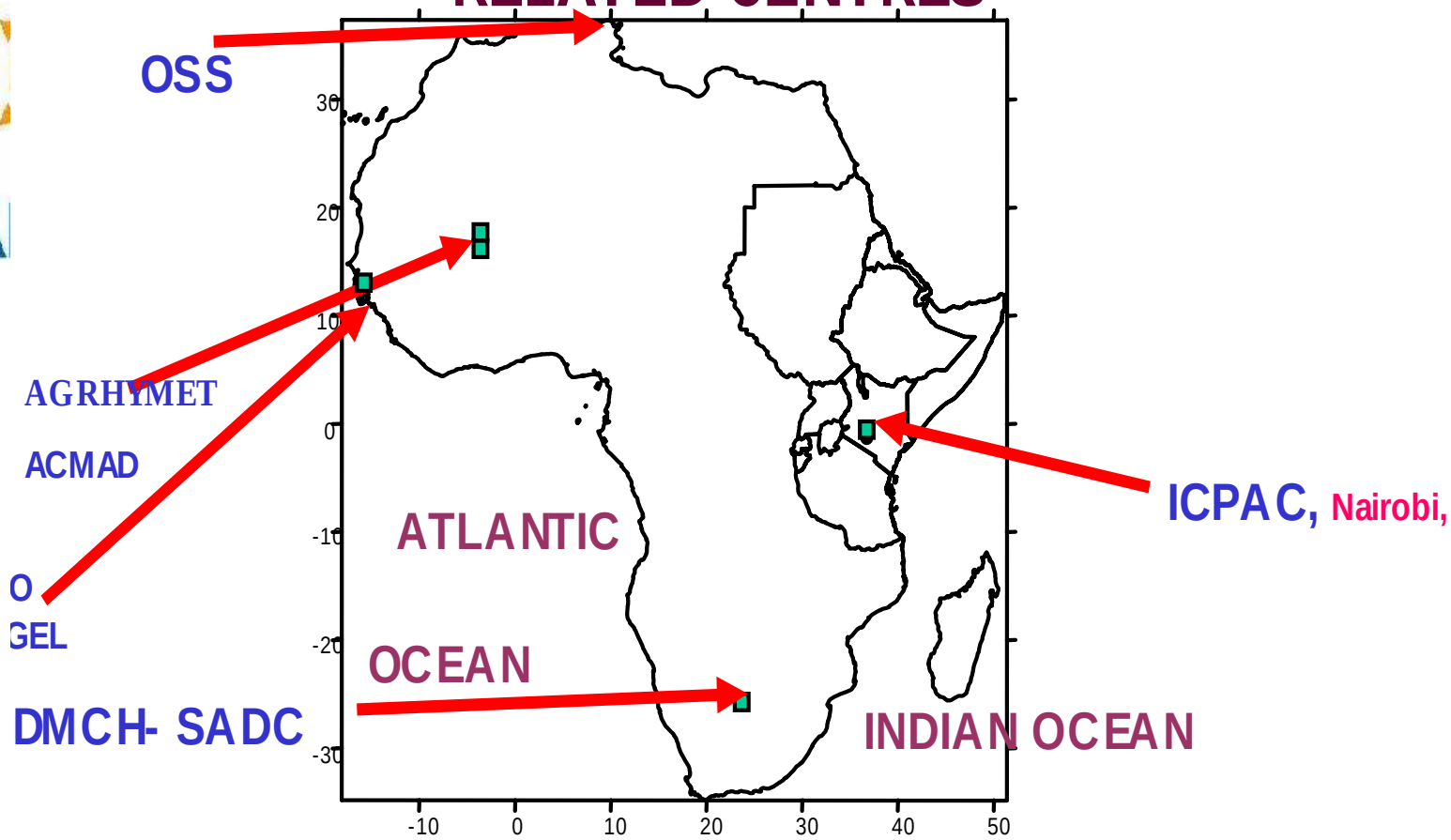
FOUNDER MEMBER COUNTRIES IN 1989

UNDP and WMO drought management Project



MAJOR AFRICAN CLIMATE

RELATED CENTRES



ADAPTATION ISSUES

- Climate change threats : short and long patterns
- Impacts
- Vulnerability
- Capacity
- Adaptation needs for clan development: Technology and Finance needs

HORN OF AFRICA

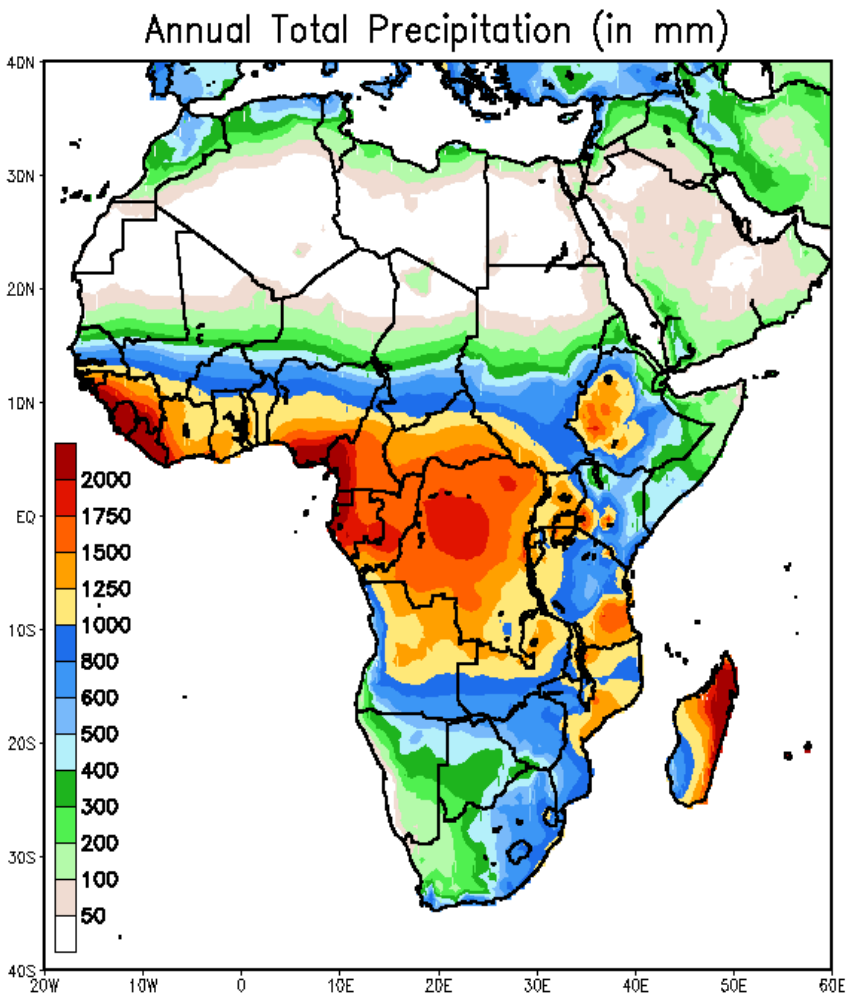
- Arid and semi arid climate: Very variable climate
- Livelihoods rain dependent - vulnerability to droughts and floods
- Society very poor : Low adaptation capacity
- Very Food insecure: **receive 40% annual food reliefs**
- Most conflict prone : water , grazing land based resources

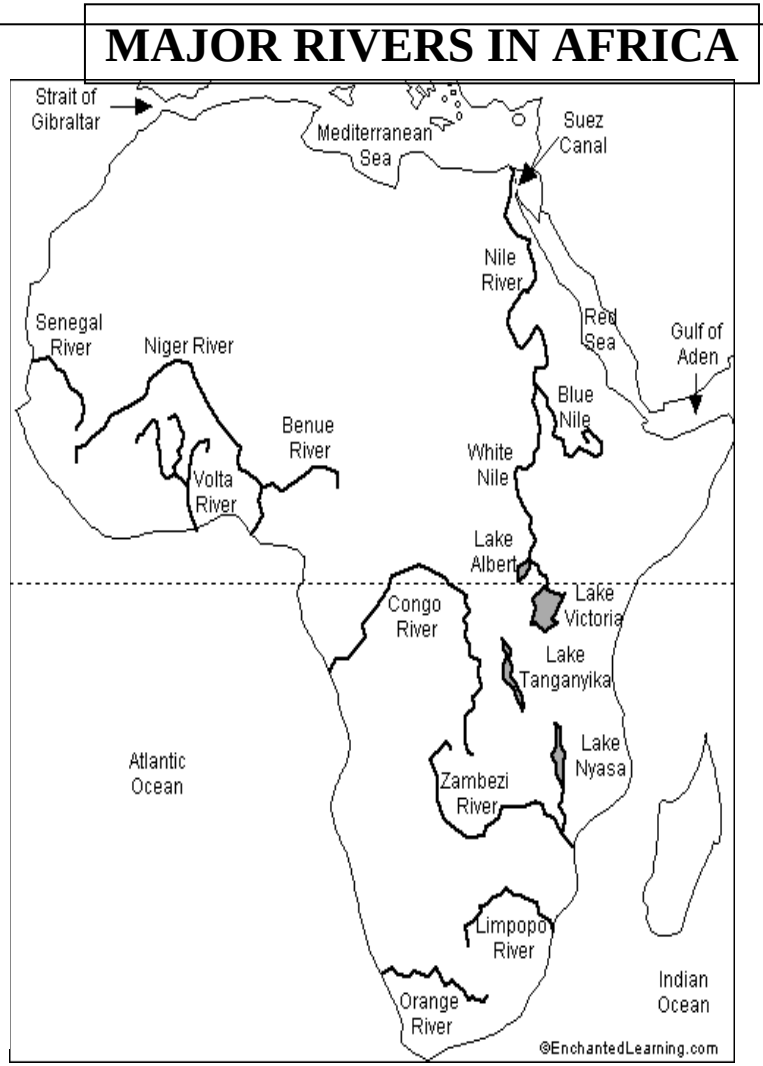
Fire risk and energy resources

SHORT TERM

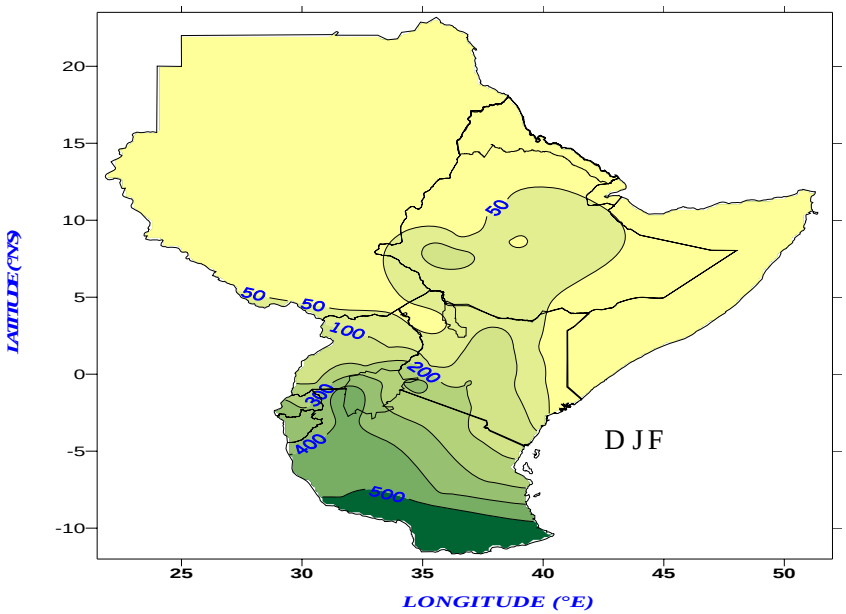
- WHAT ARE THE CURRENT CLIMATE THREATS?
- Are we coping Now?
- Coping needs: include Knowledge of current and short term Local/ regional Climate threats/ Hazards

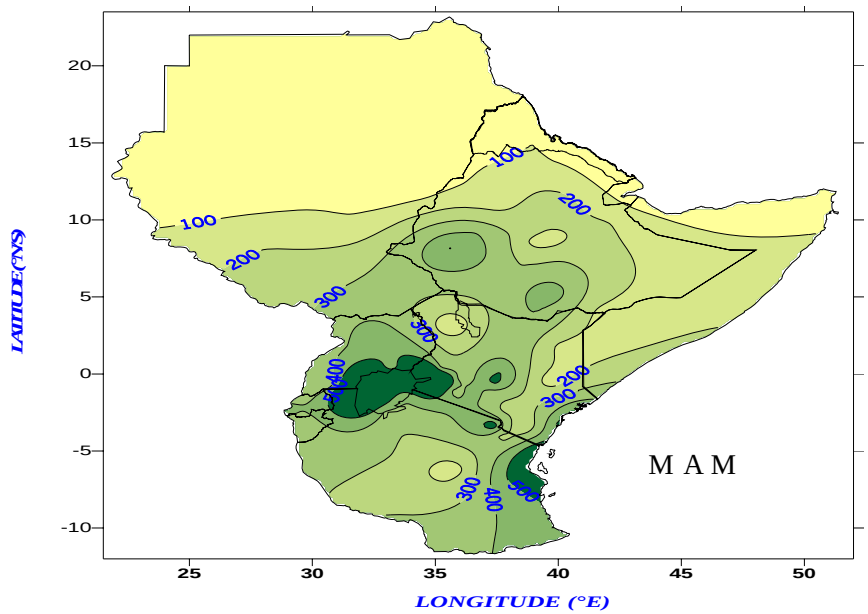
Understanding knowledge of African Climate resources

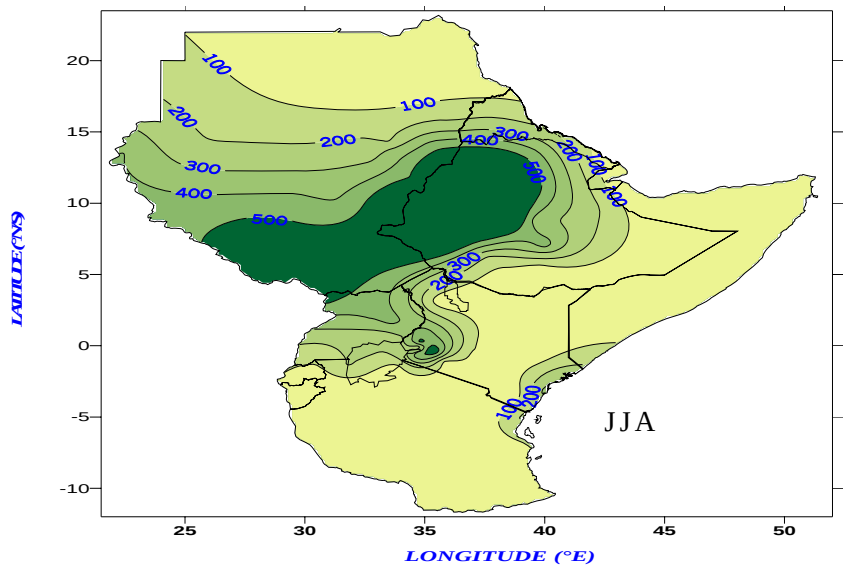


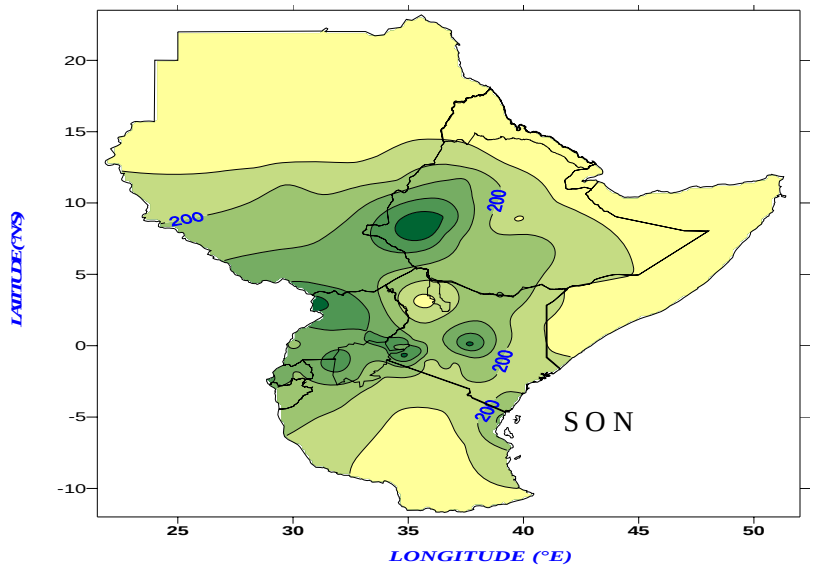


Annual rainfall and major African rivers/ water availability

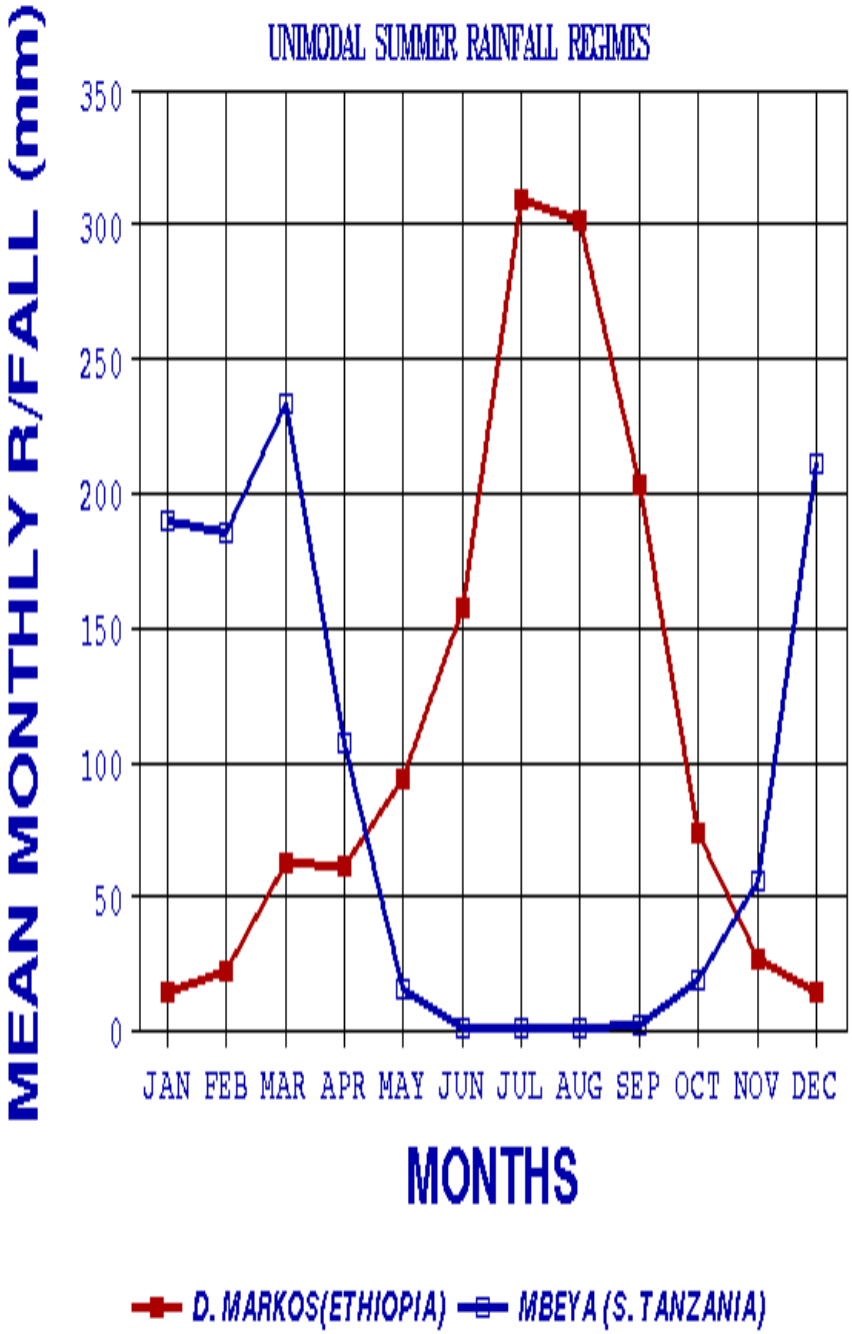


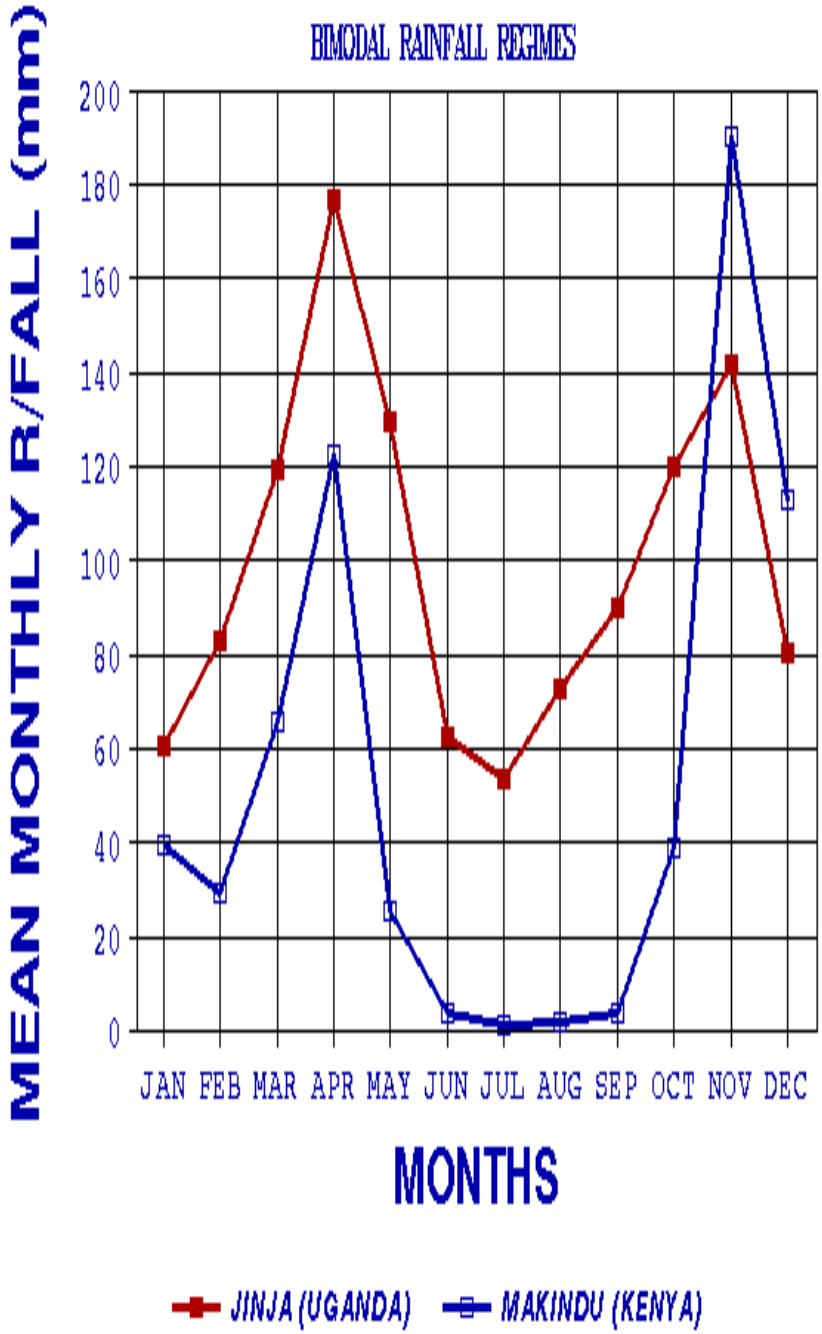


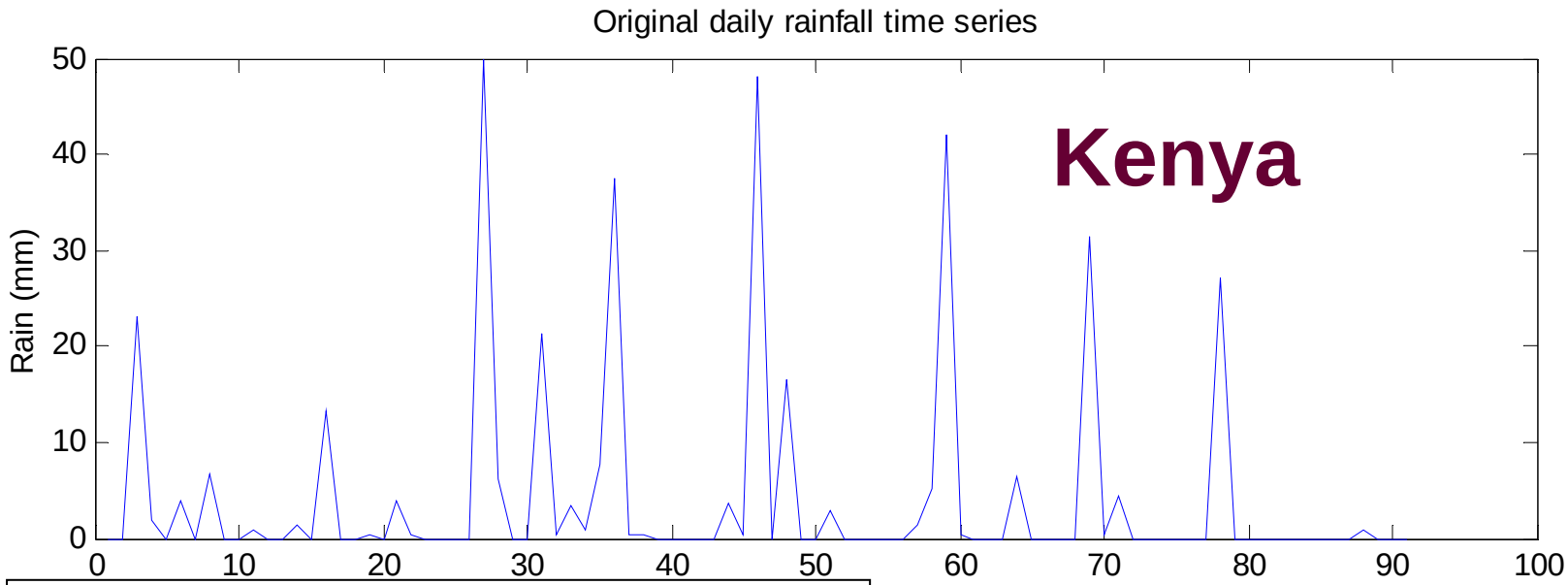




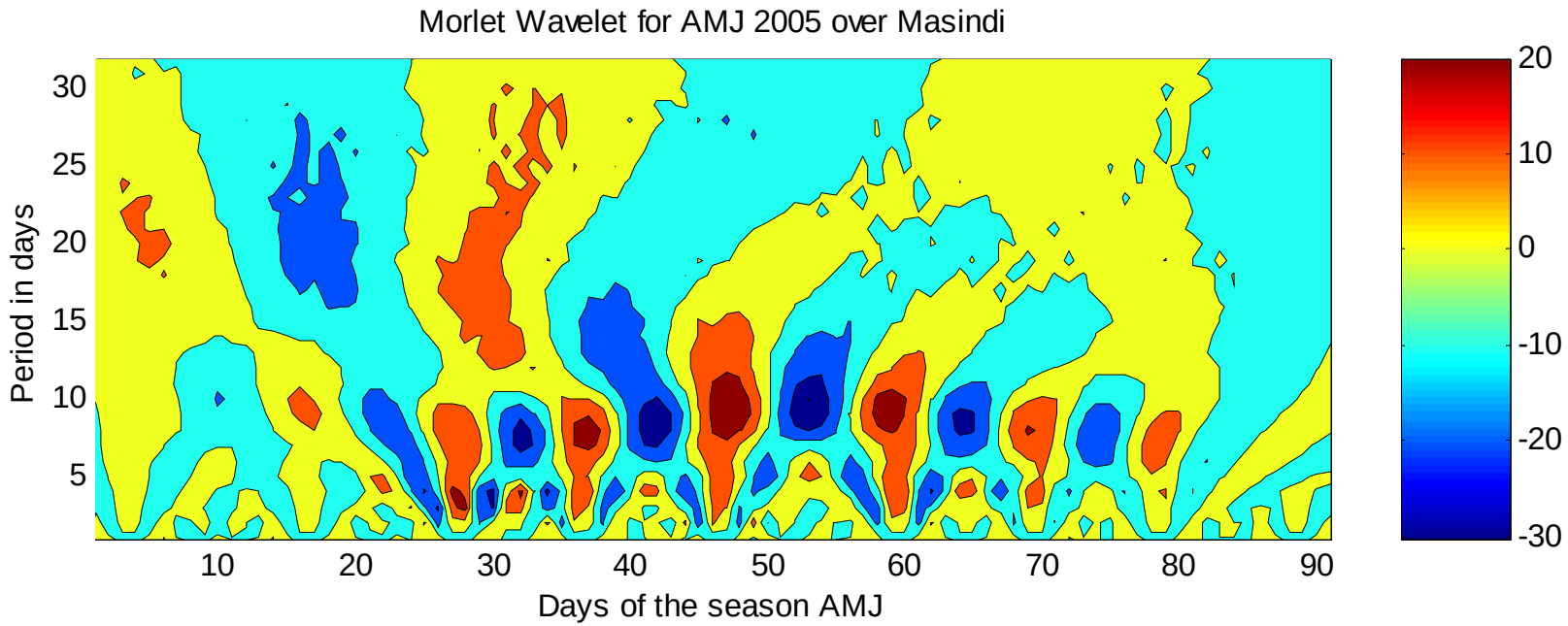
SEASONAL RANFALL PATTERNS

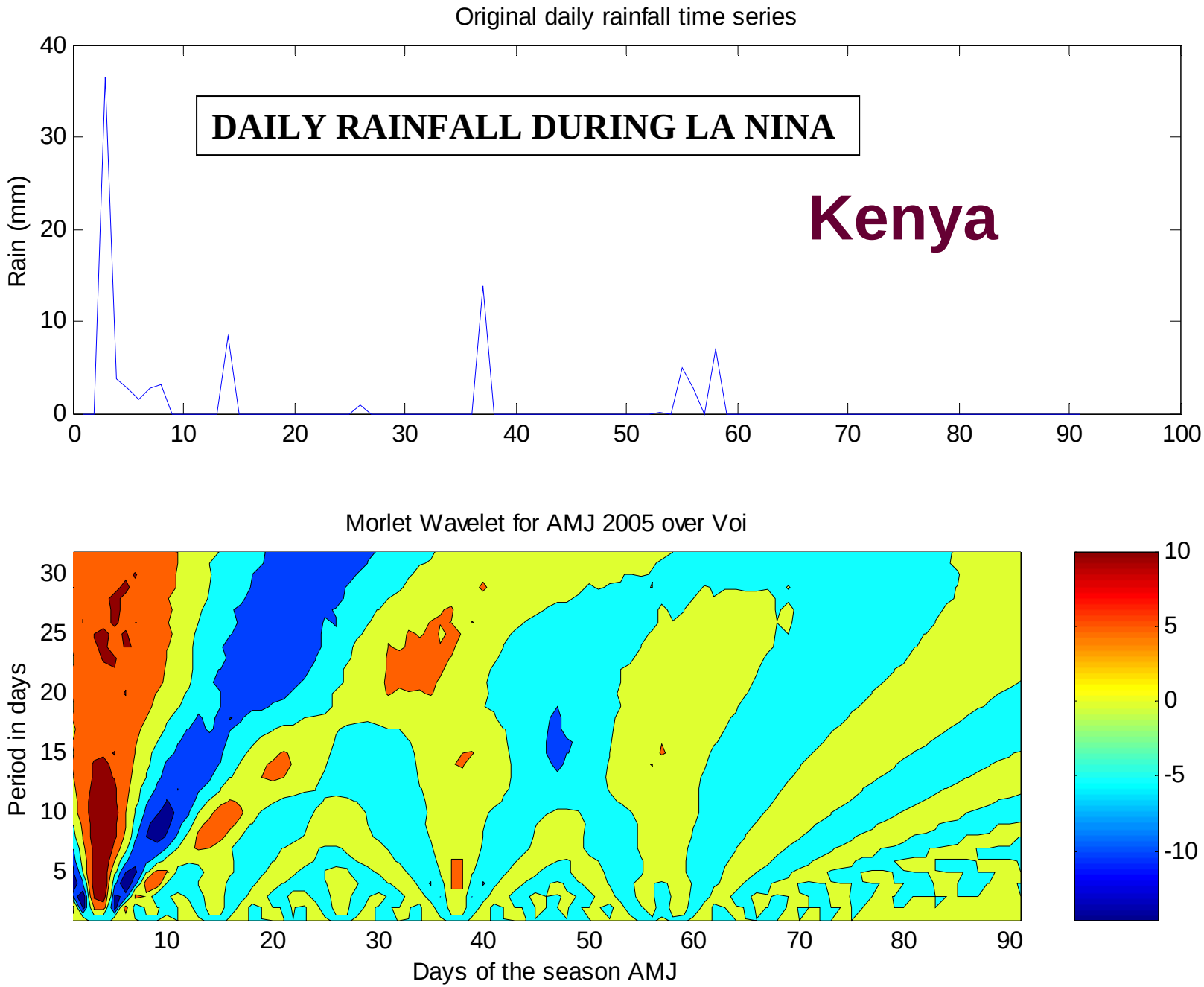

UNIMODAL SUMMER RAINFALL REGIMES
MEAN MONTHLY R/FALL (mm)
350
300
250
200
150
100
50
0
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
MONTHS
D. MARKOS(ETHIOPIA)
MBEYA (S. TANZANIA)

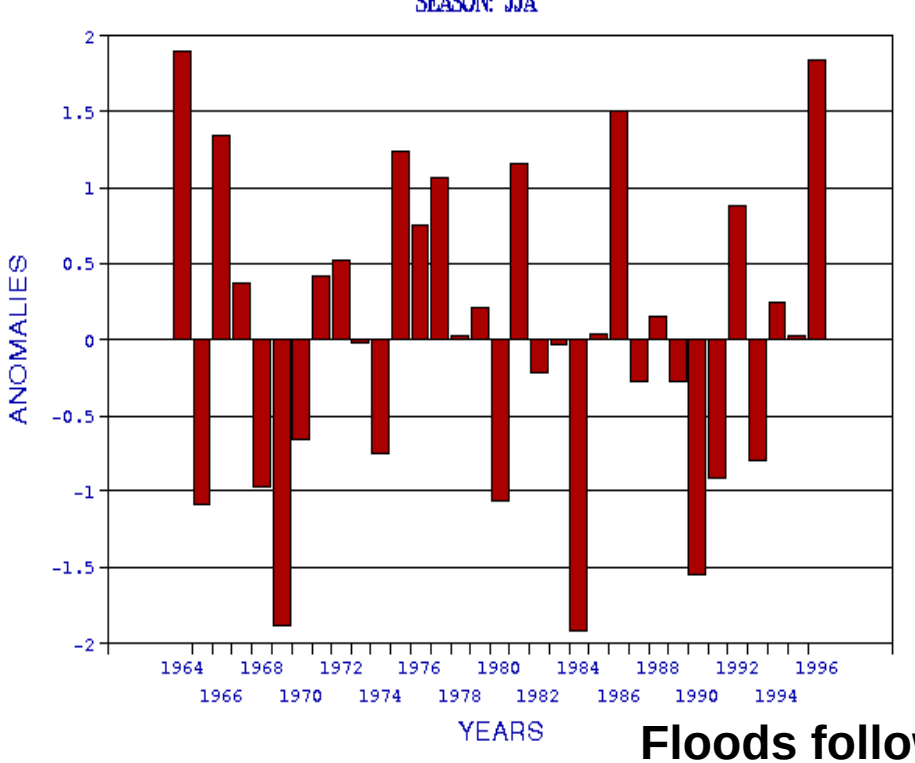

BIMODAL RAINFALL REGIMES
MEAN MONTHLY R/FALL (mm)
200
180
160
140
120
100
80
60
40
20
0
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
MONTHS
JINJA (UGANDA)
MAKINDU (KENYA)

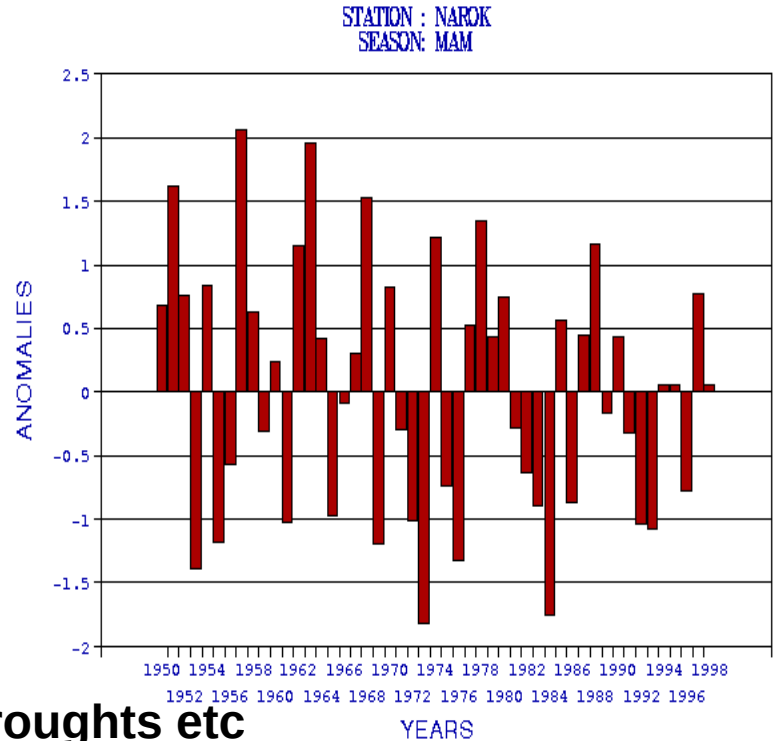


DAILY RAINFALL DURING EL NINO

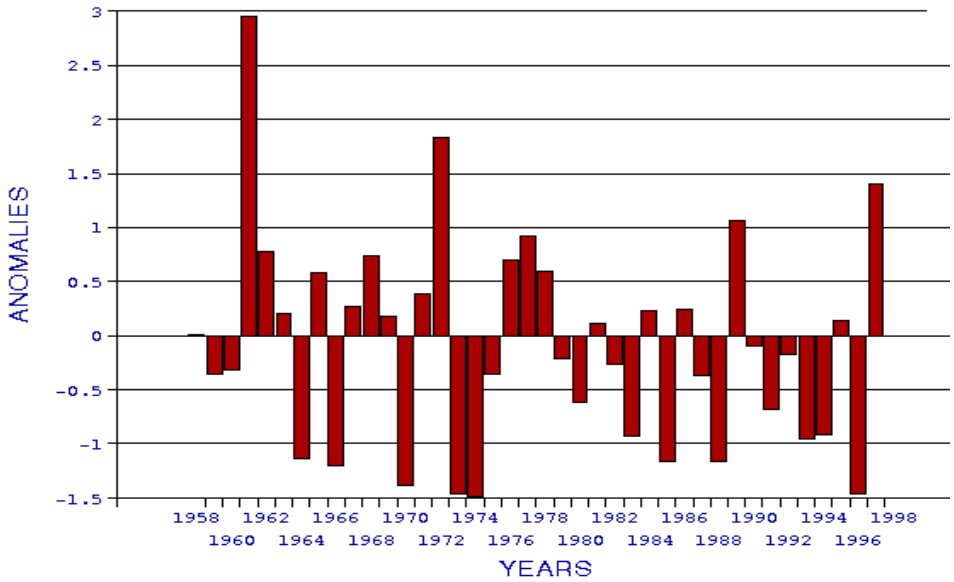


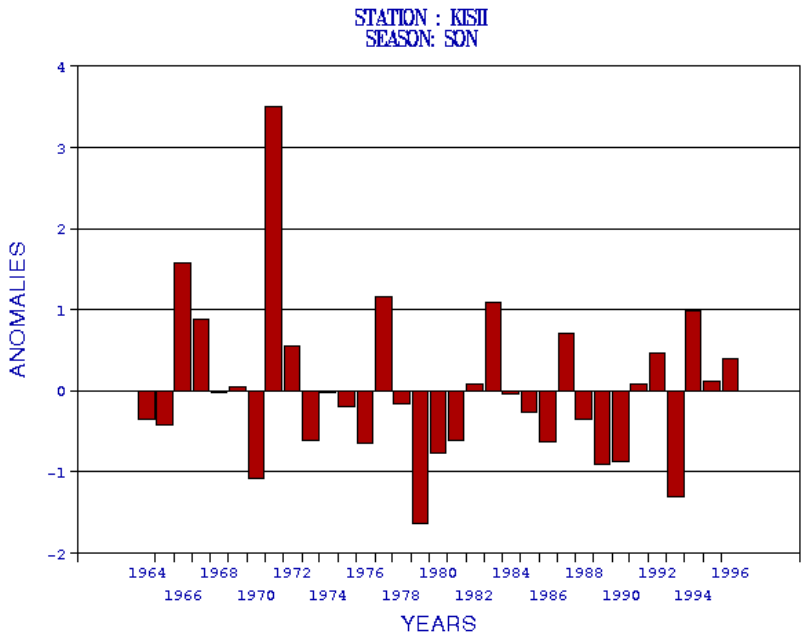

Original daily rainfall time series
DAILY RAINFALL DURING LA NINA
Kenya
Rain (mm)
0
10
20
30
40
0
10
20
30
40
50
60
70
80
90
100
Morlet Wavelet for AMJ 2005 over Voi
Period in days
5
10
15
20
25
30
10
20
30
40
50
60
70
80
90
Days of the season AMJ
10
5
0
-5
-10

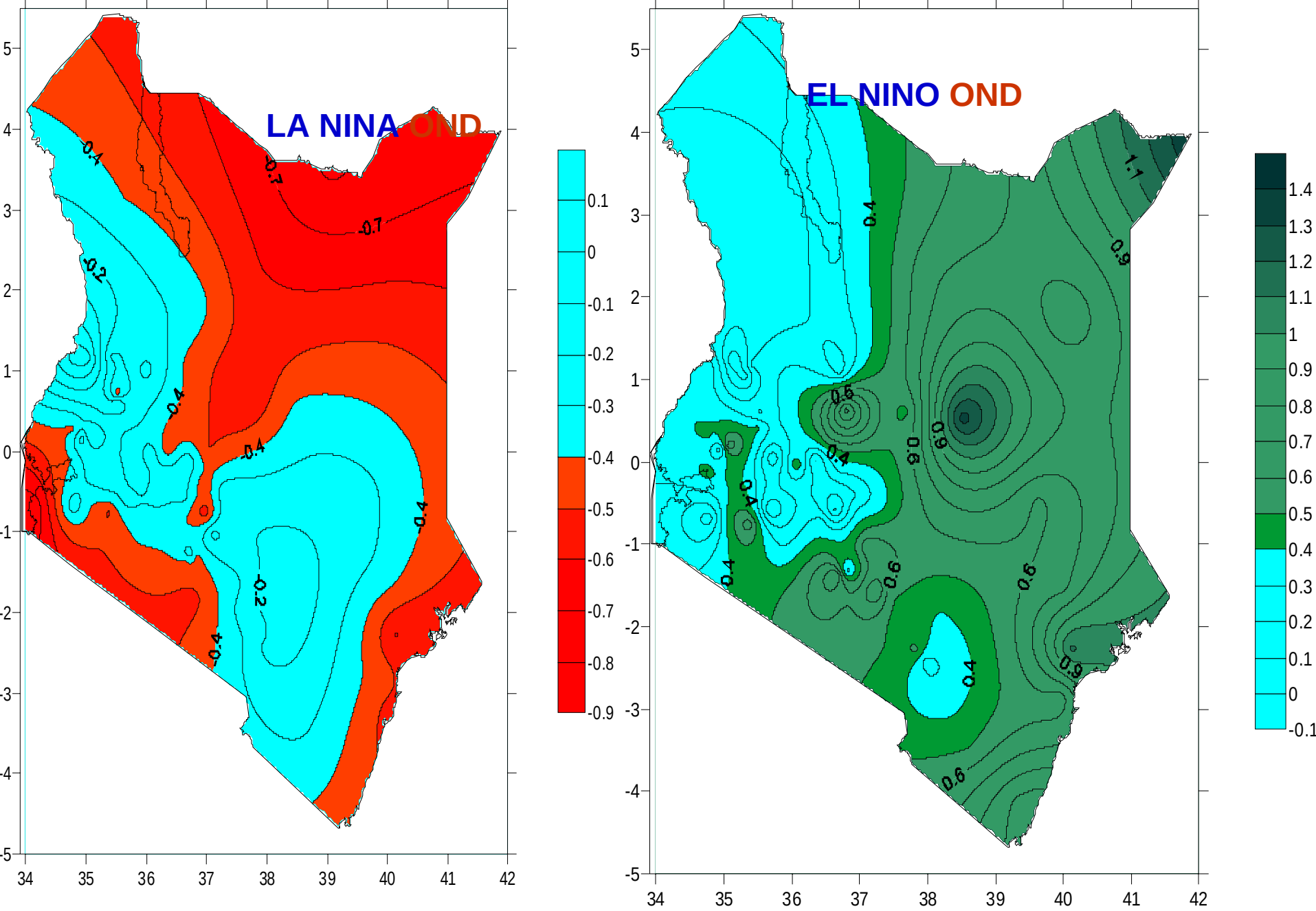




Floods follow droughts etc

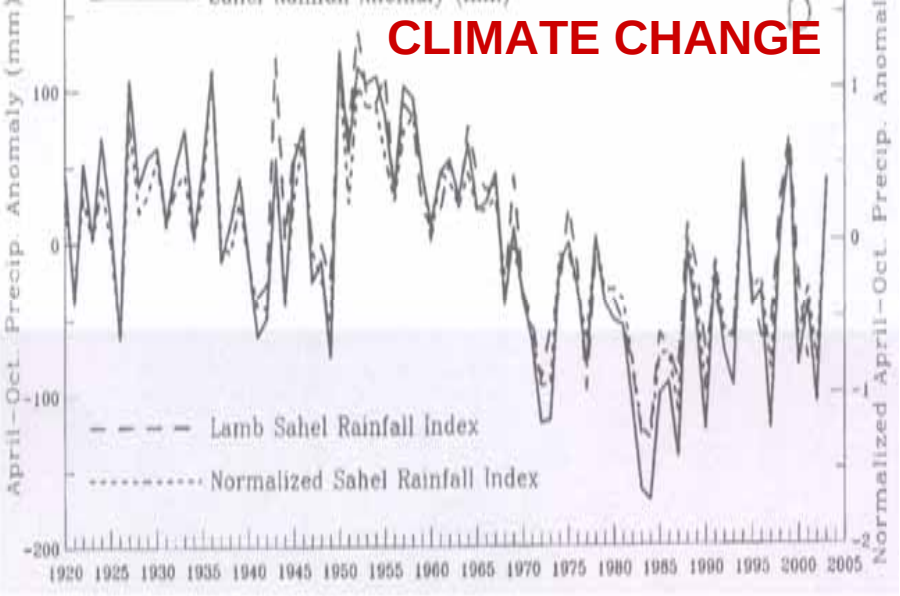




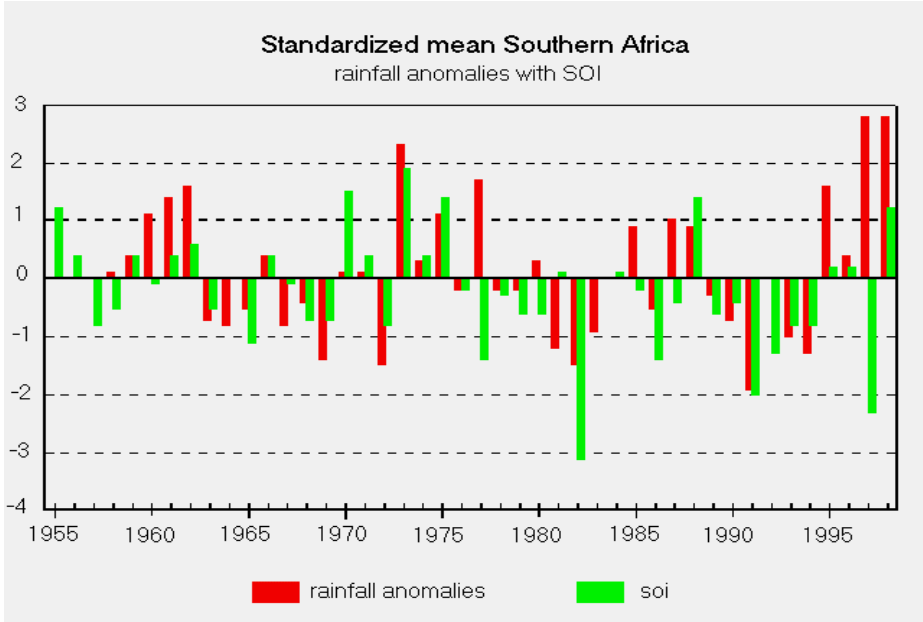


Understanding regional processes ENSO

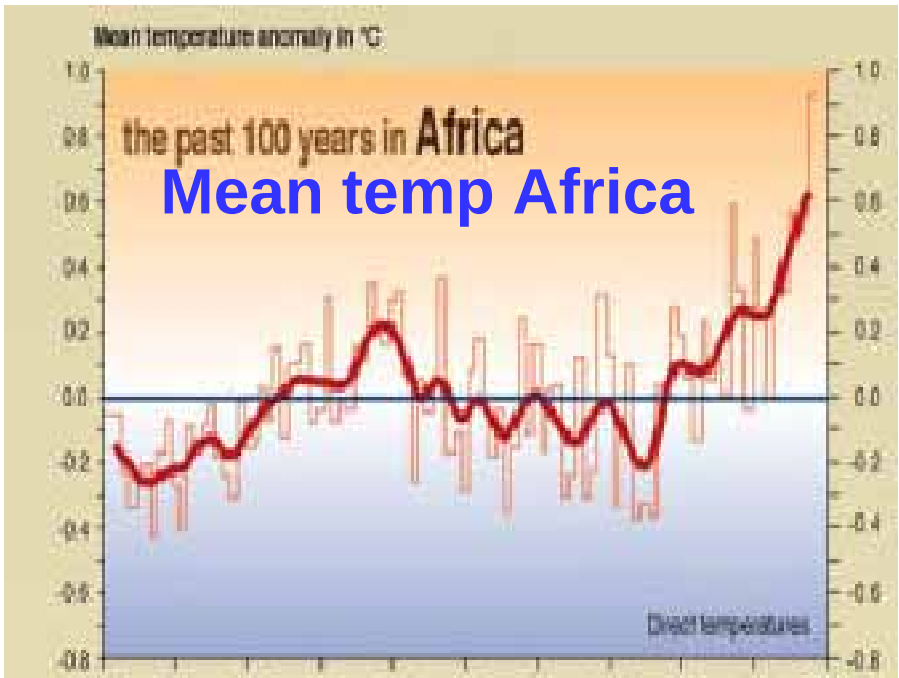
CLIMATE CHANGE

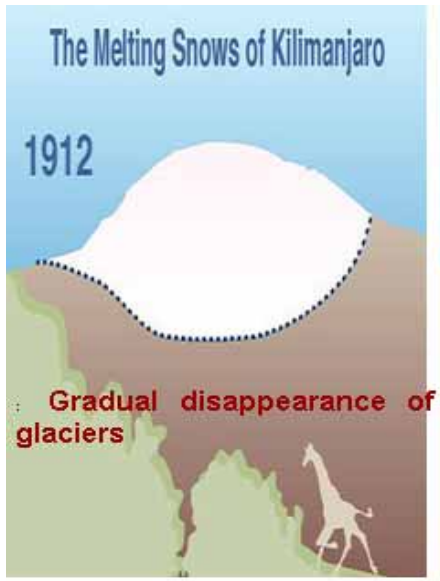


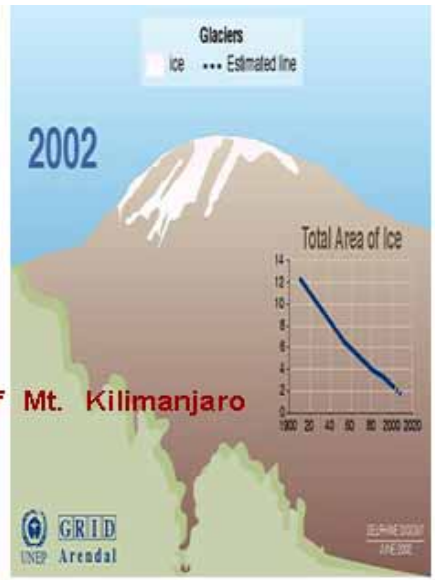
Southern Africa



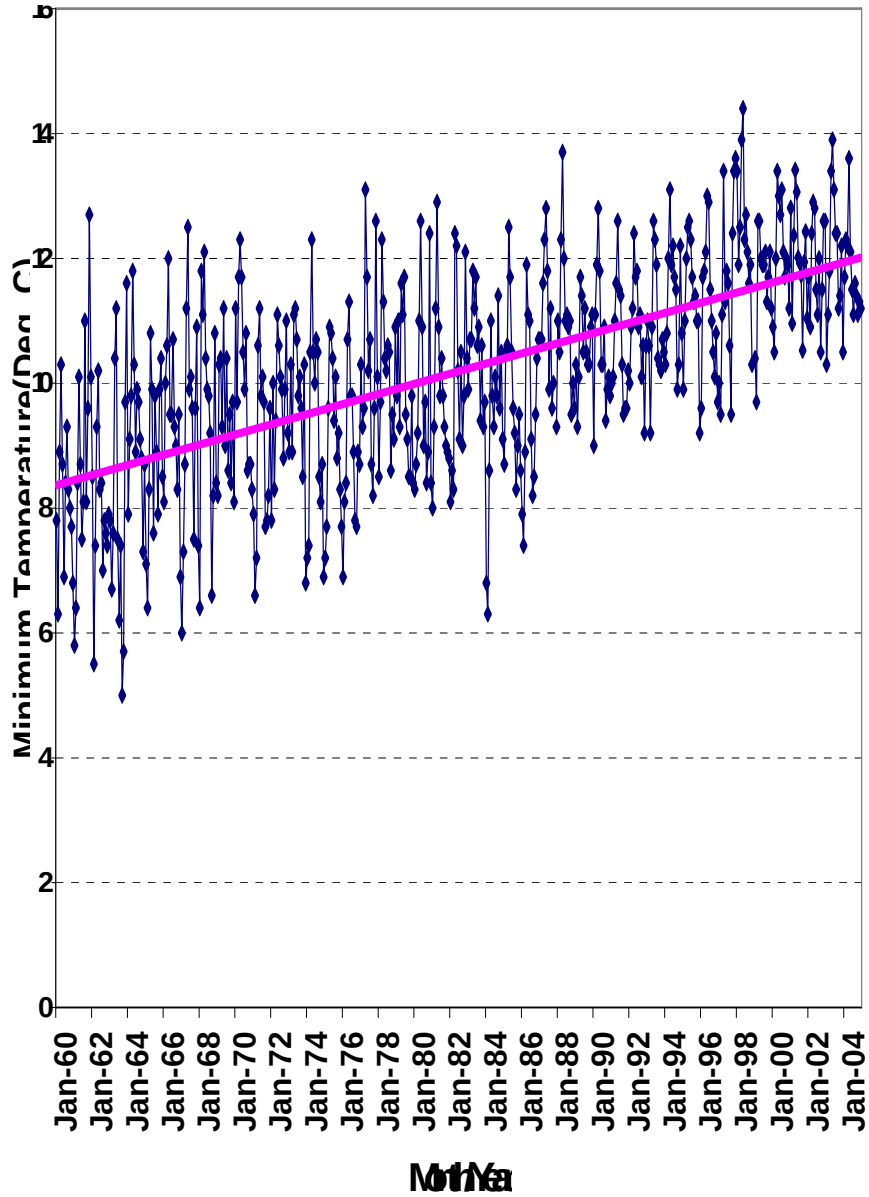
SAHEL RAINFALL





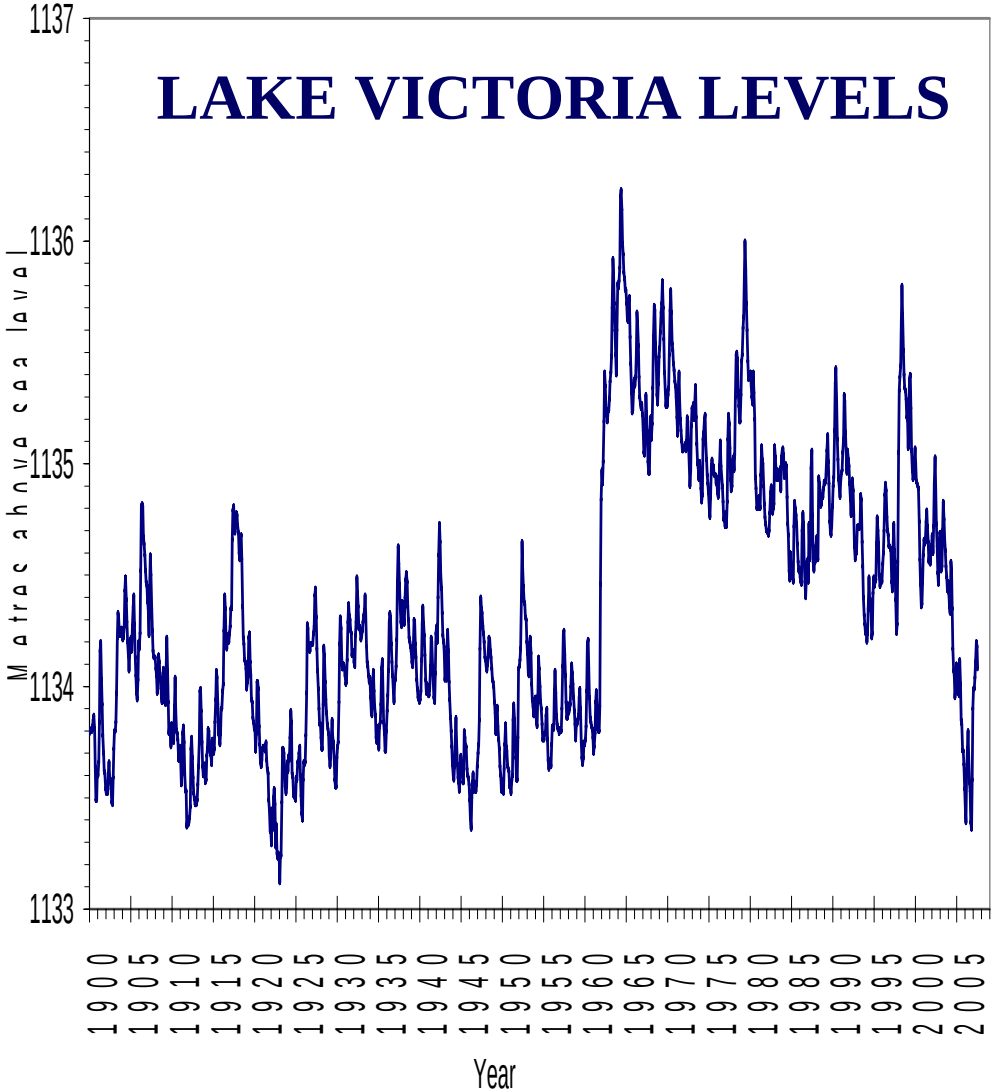


MIN TEMP KERICHO



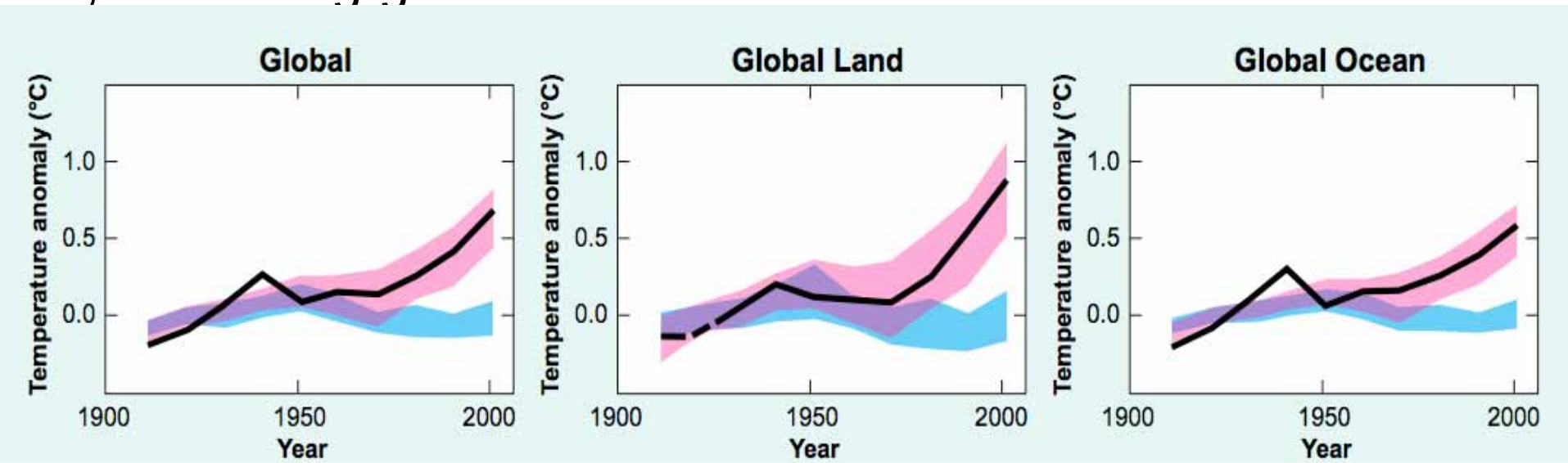
Lake Victoria level at Jinja (1900 to 2007)

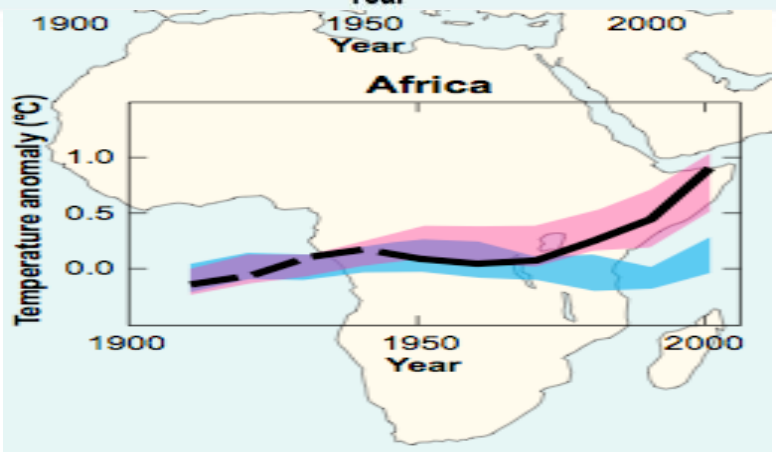
(End of month level in metres above sea level)



OBSERVATIONS (Continue)

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level





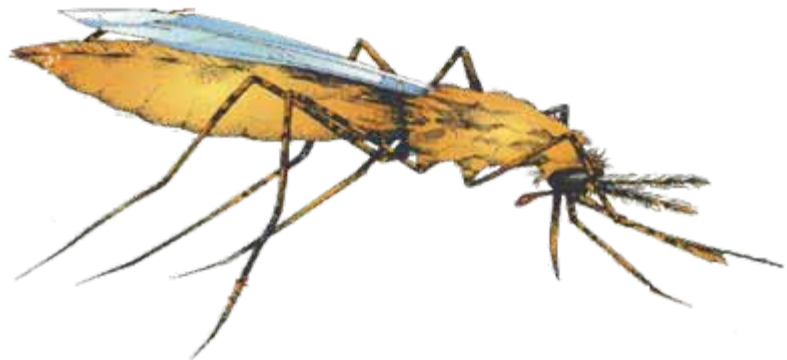
Conclusion

- African climate is changing with large space - time differences
- Diversification of strategies
- Limitation in climate Observations / data for climate change detection and attribution

- Associated impacts and vulnerability

Investments and LOSSES

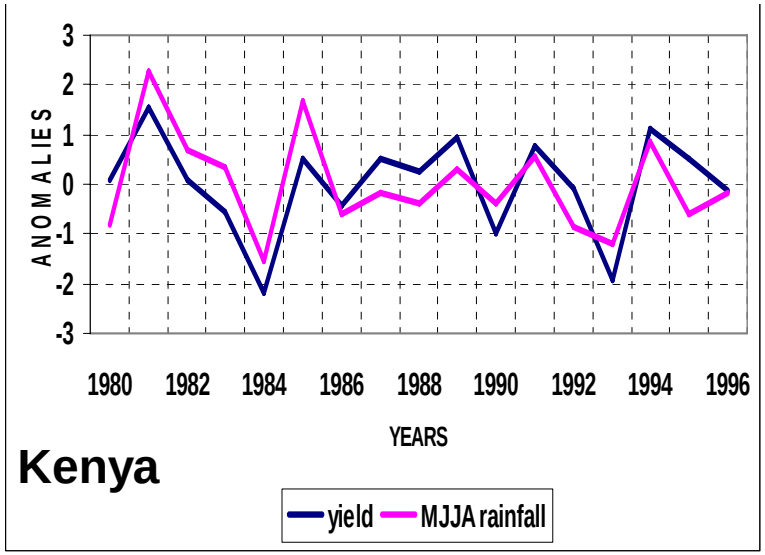
Refugees

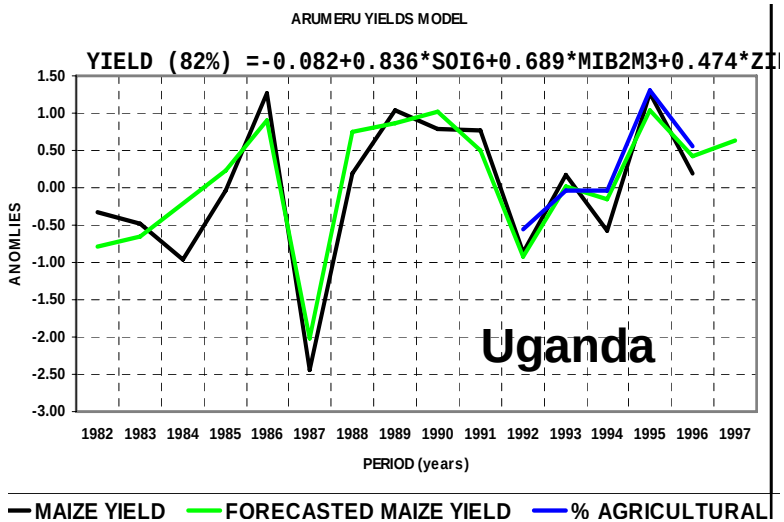


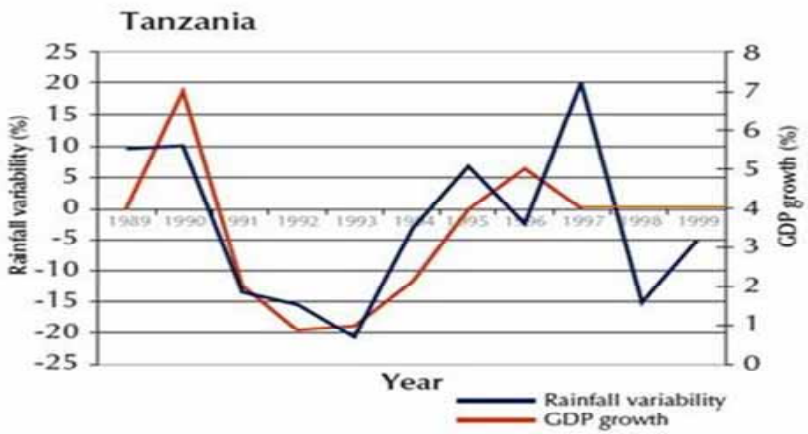
HEALTH

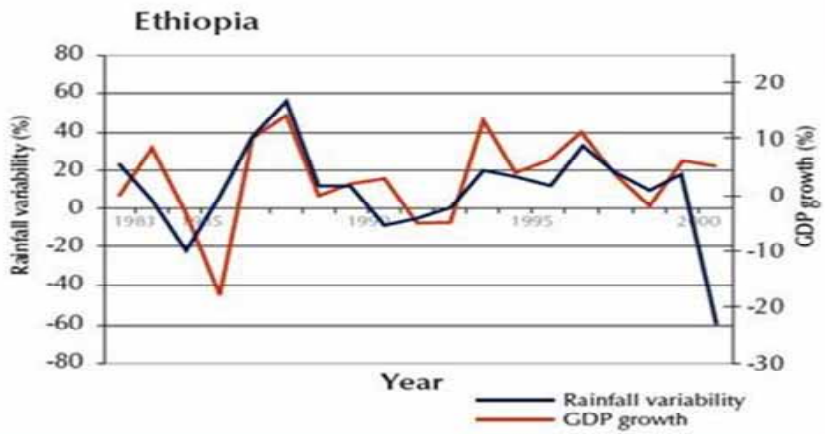
CLIMATE IMPACTS ON DEVELOPMENT

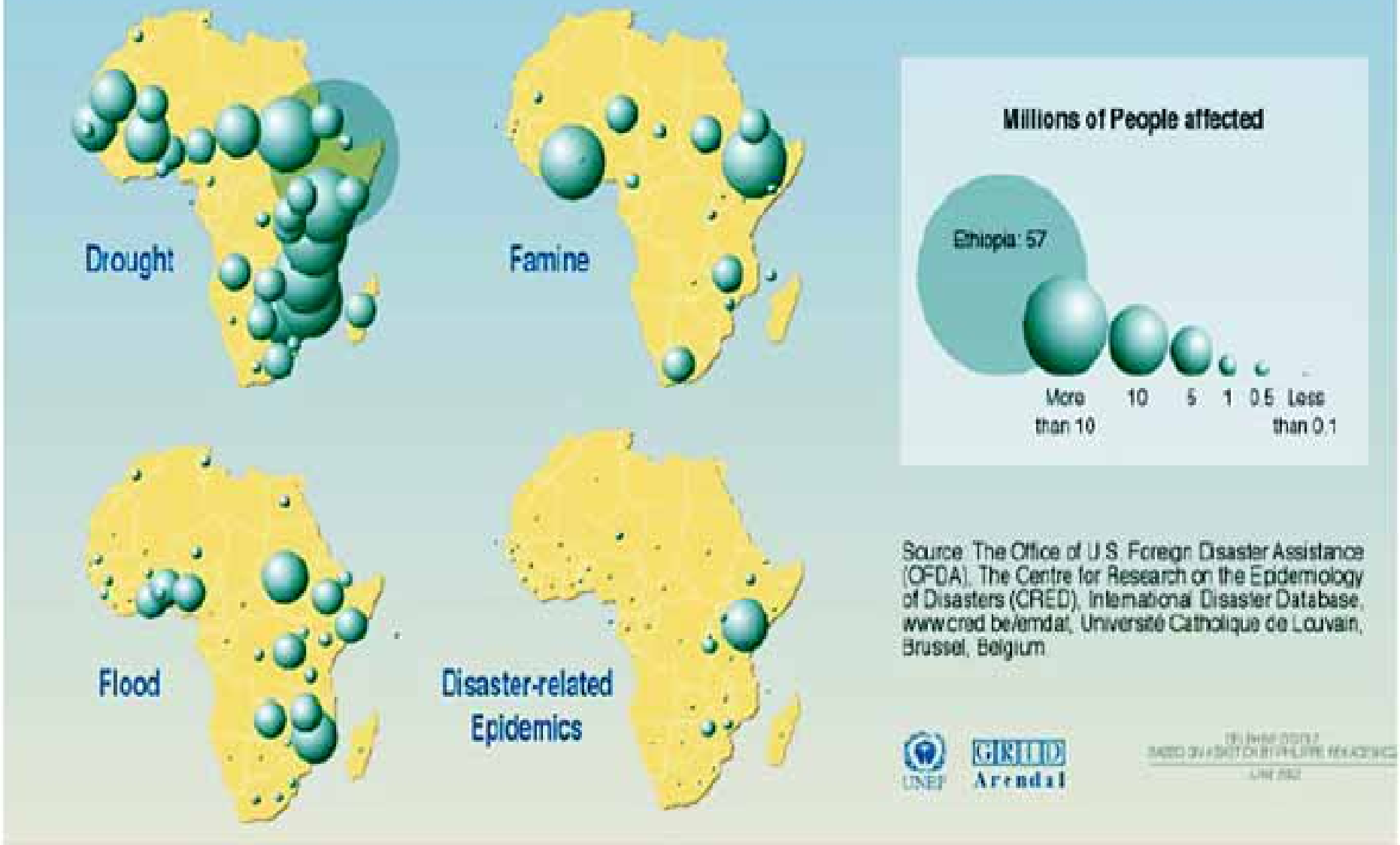
Rainfall, crop yield and GDP



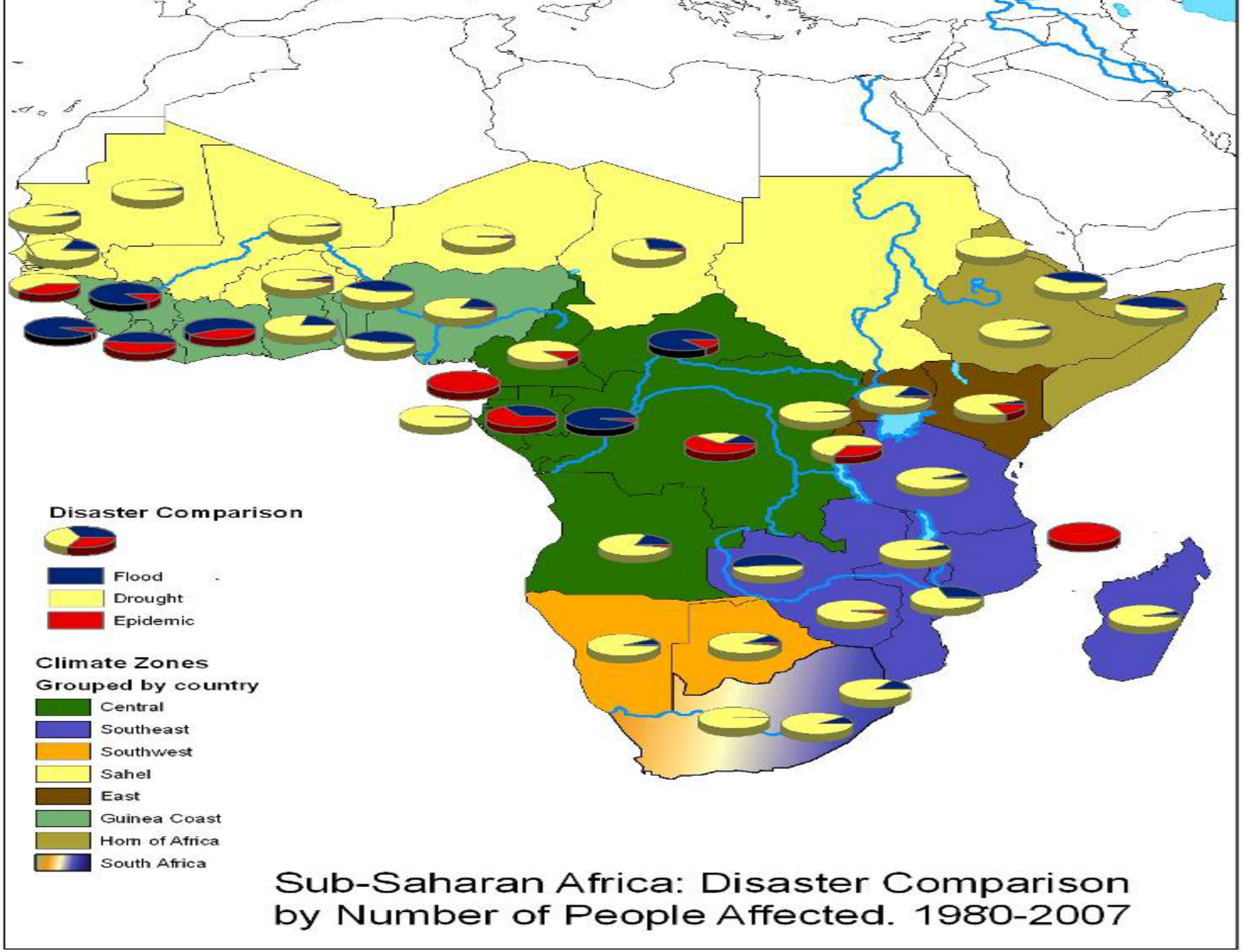








Source: UNEP – Vital Water Graphics, 2005



Sub-Saharan Africa: Disaster Comparison by Number of People Affected. 1980-2007

ADAPTATION NEEDS

- Adaptation is not an option for the continent
- Technology and finance needs

- VULNERABLE SOCIETY; economy and environment : capacity to cope very low

- African energy needs : mapping of renewable resources
- energy efficiency
- Capacity building needs at all levels
- Institutional capacity building

- Policy issues : Harmonization of National vs Regional / international eg for shared resources

- Mitigation issues : Roles of Agriculture; forestry, etc

- Political commitment and good governance on environment
- Support for Policy and strategy development : National / regional action plans
- Communication, outreach, Education and

- Data and data base –systemic observation: New generation observation systems- WMO and GCOS
- Knowledge of local climate (Science)- Research
- Methods and tools for impacts ; vulnerability , cost benefit and other assessments

- **Regional climate and development pathways scenarios**

- **Local diffusion of technology**

- **Funding Mechanism for Adaptation CDM vs others**

I THANK YOU ALL