



THE USE OF SPACE TECHNOLOGY FOR
SUPPORTING SUSTAINABLE DEVELOPMENT
FOR AFRICA.

RABAT, MOROCCO, 25 - 27 APRIL, 2007.

BY

JOAN KABASELLEH

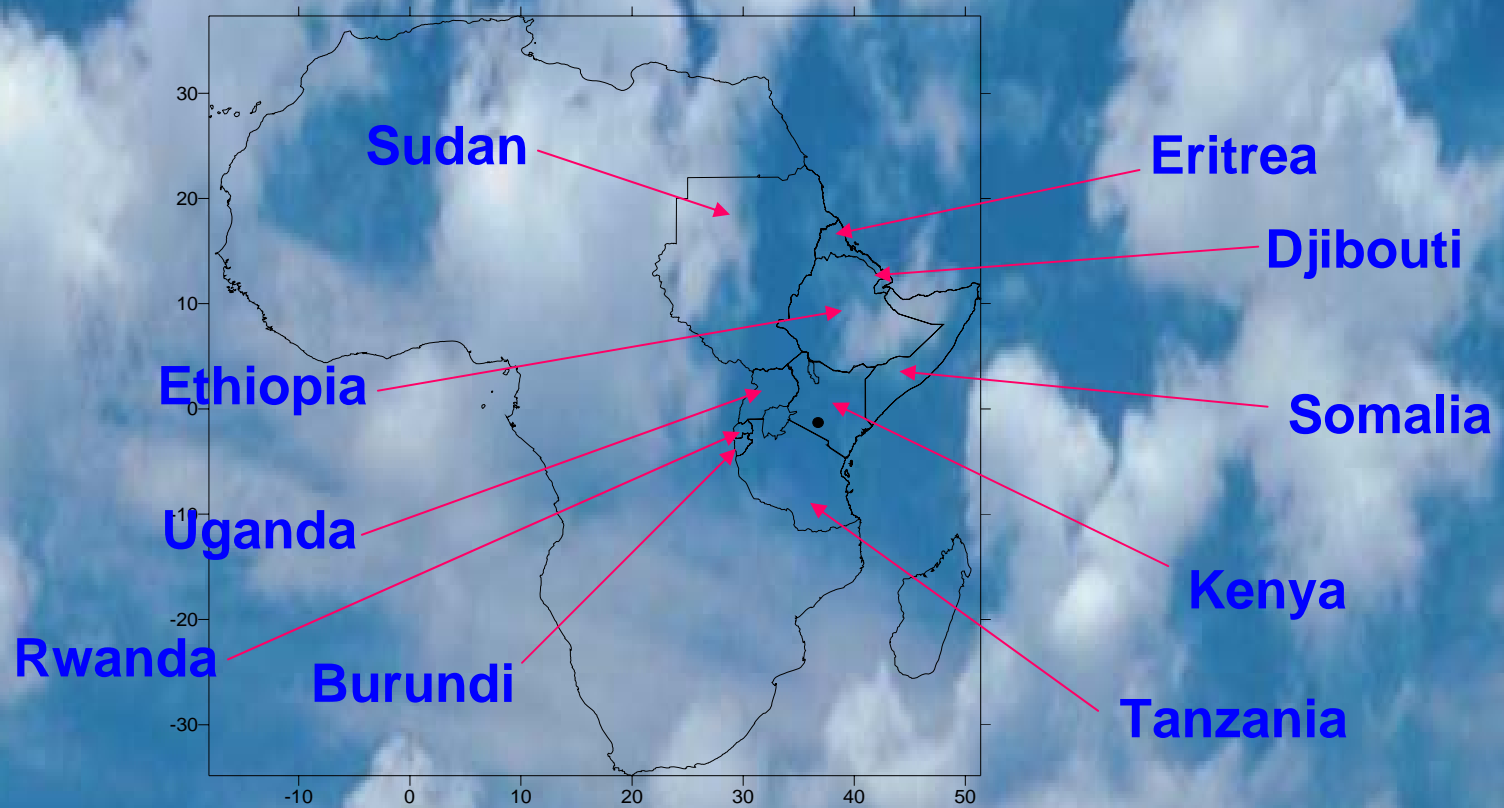
IGAD Climate Prediction & Applications
Centre

(ICPAC)

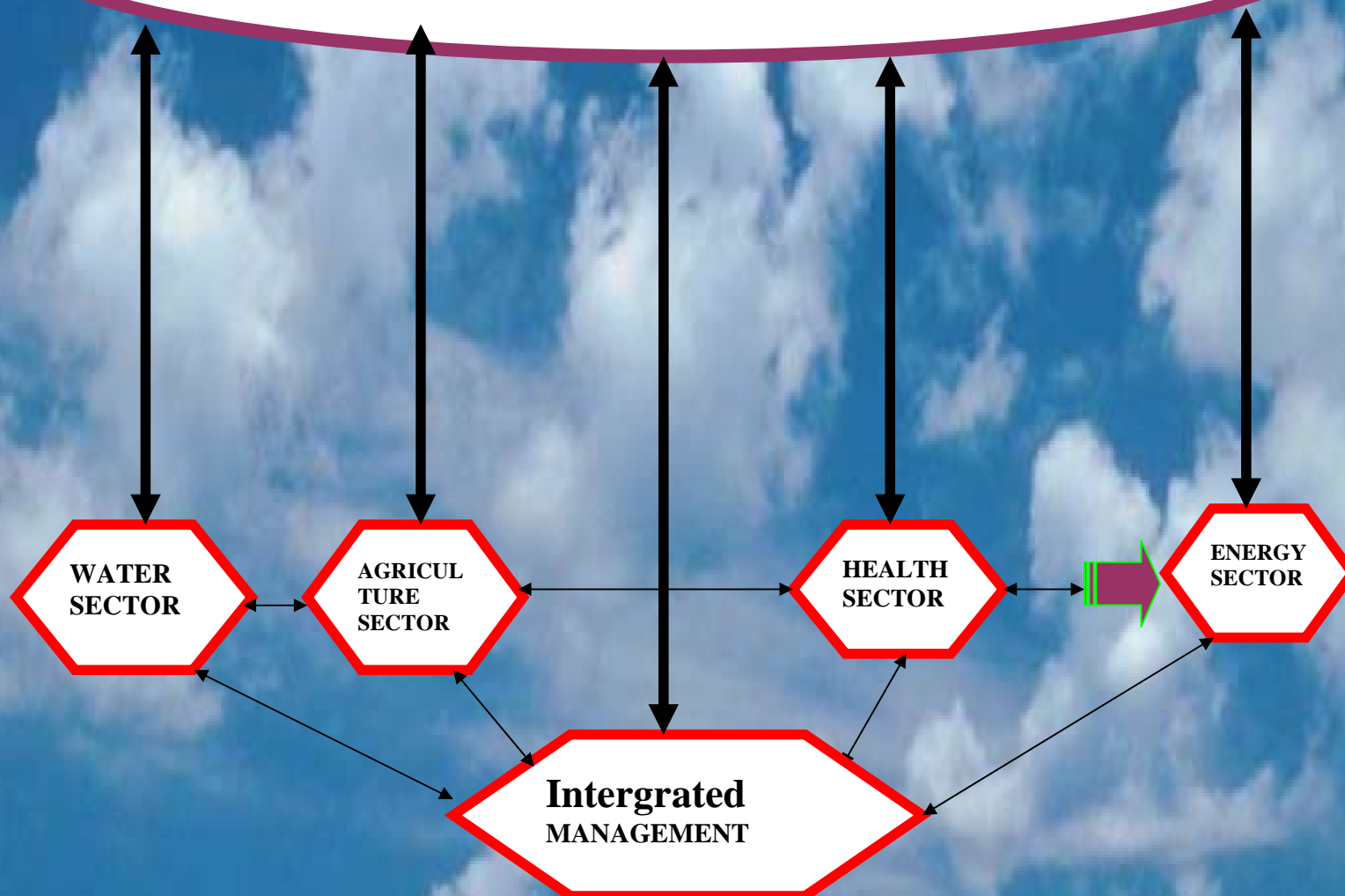
INTRODUCTION

IGAD Climate Prediction and Applications
Centre Nairobi (*ICPAC*) is a regional
climate early warning institution for
TEN COUNTRIES IN the greater horn
of Africa (GHA)

MAP OF COUNTRIES IN THE GREATER HORN OF AFRICA COVERED BY ICPAC



**WEATHER / CLIMATE INFORMATION &
PREDICTION PRODUCTS**



SUSTAINABLE DEVELOPMENT TRIANGLE

ENVIRONMENT: LAND ; WATER; AIR;
ECOSYSTEMS



CLIMATE

SOCIETY,
basic needs
, Population

ECONOMY
wealth, trade,
Poverty

CHALLENGES OF CLIMATE
IN SUPPORT OF SUSTAINABLE
DEVELOPMENT



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EXTREME CLIMATE EVENTS IN AFRICA

- Drought
- Floods
- Lightening
- Cyclones
- Strong Winds
- Desertification
- Extreme Temperatures
- Dust gust

IMPACTS OF CLIMATE VARIABILITY

DROUGHT - FOOD SECURITY



IMPACTS OF CLIMATE VARIABILITY

ENERGY - HYDROPOWER



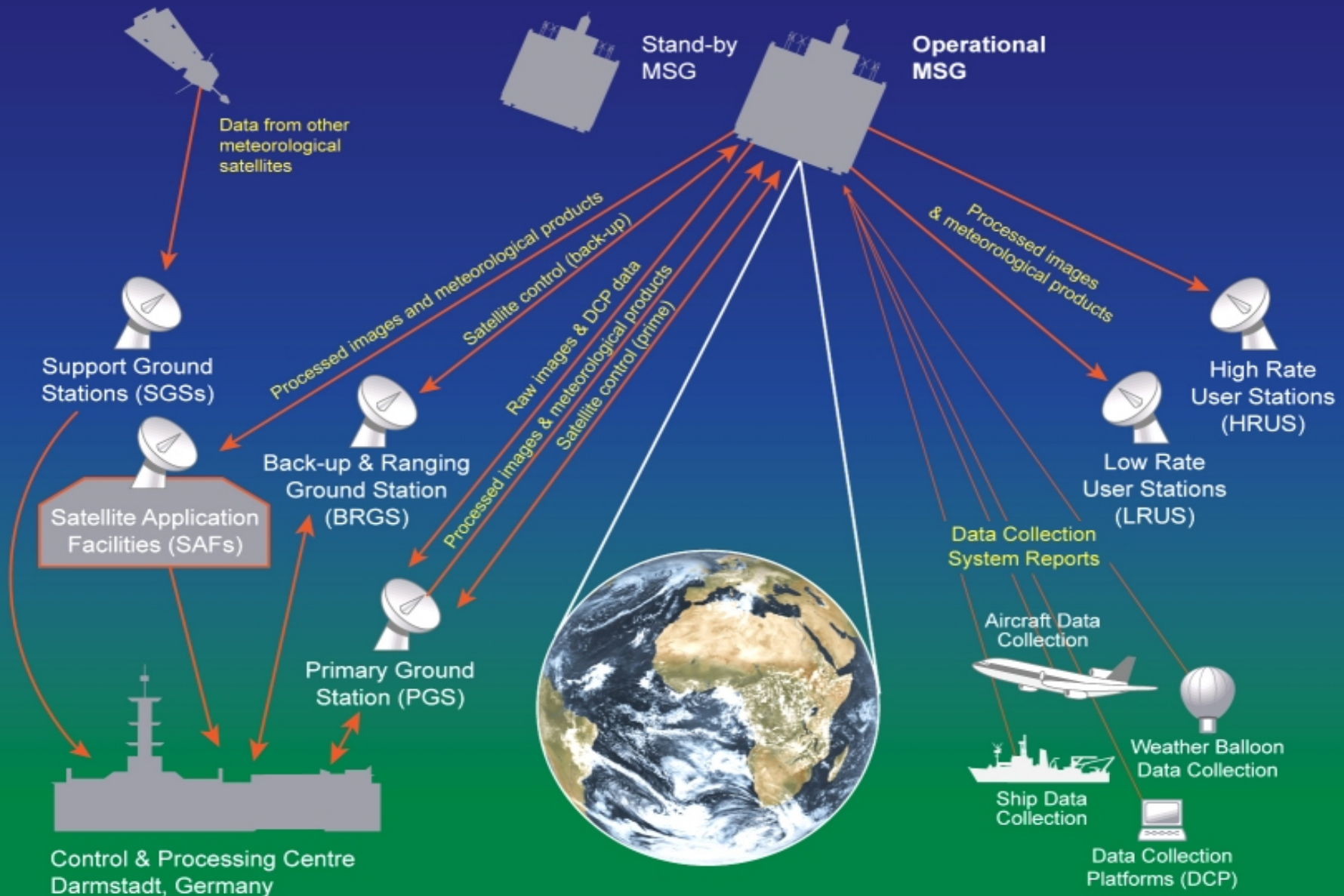
IMPACTS OF CLIMATE VARIABILITY FLOODS



Natural resource base of economic and social development

- Water management
- Energy
- Disaster management
- Agriculture
- Health
- Building capacity

MSG Mission Overview Diagram

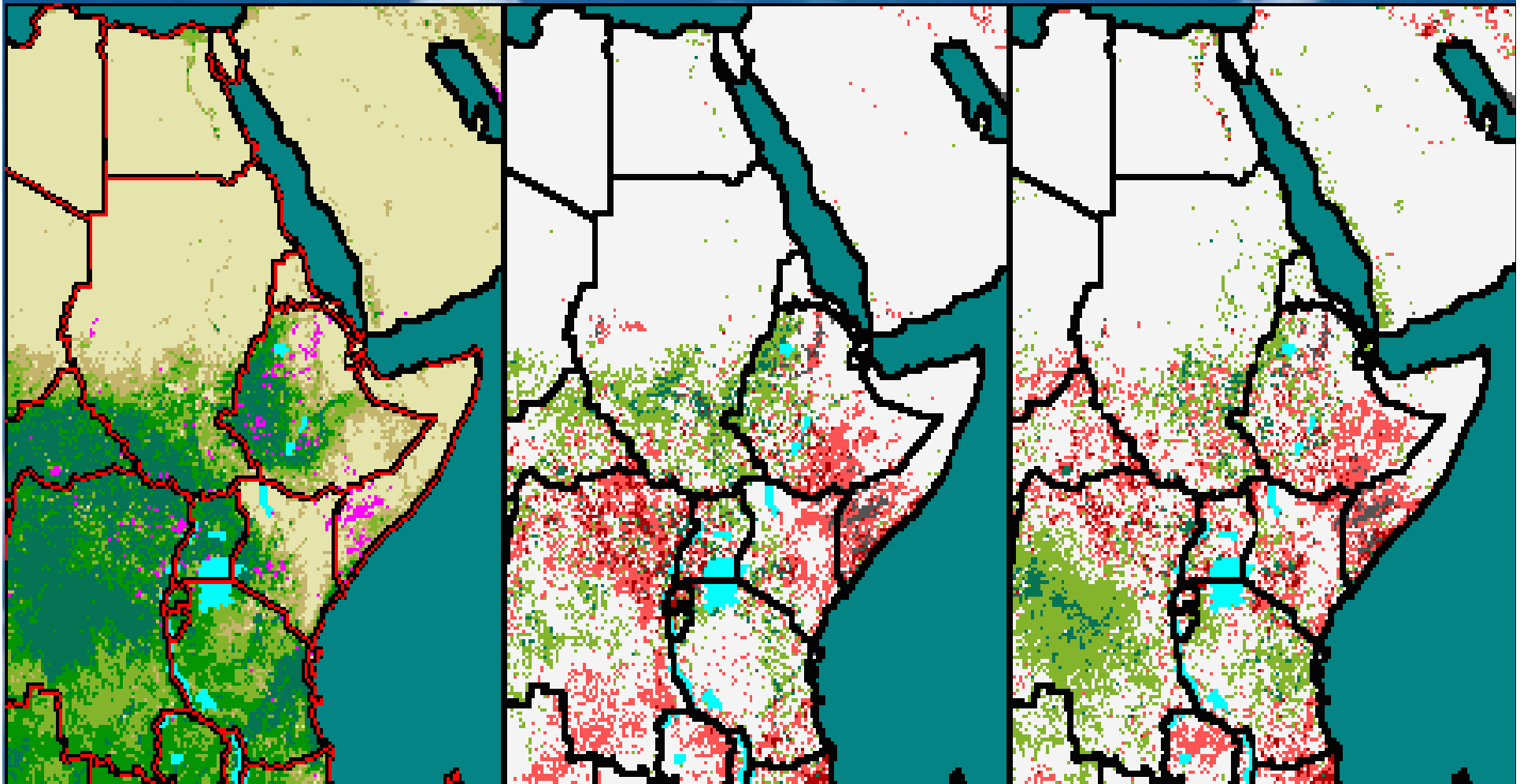


RS and GIS information as decision making tools for policy makers and managers

- Application of Remote Sensing for integrated Management of Ecosystems and Water Resources in Africa
- EUMETSAT - PUMA, used to provide access to data from Meteosat second generation satellites for national meteorological services in Africa

AVHRR: - Advanced Very High Resolution Radiometer

- **Normalized Difference Vegetation Index**
- **Monitoring tropical cyclones**
- **Sea Surface Temperatures**
- **Monitoring cloud patterns**



NDVI Jun 11-20 2001

vs Previous

vs Average

- Very Poor Vegetation
- Poor Vegetation
- OK Vegetation
- Good Vegetation
- Very Good Vegetation
- Clouds

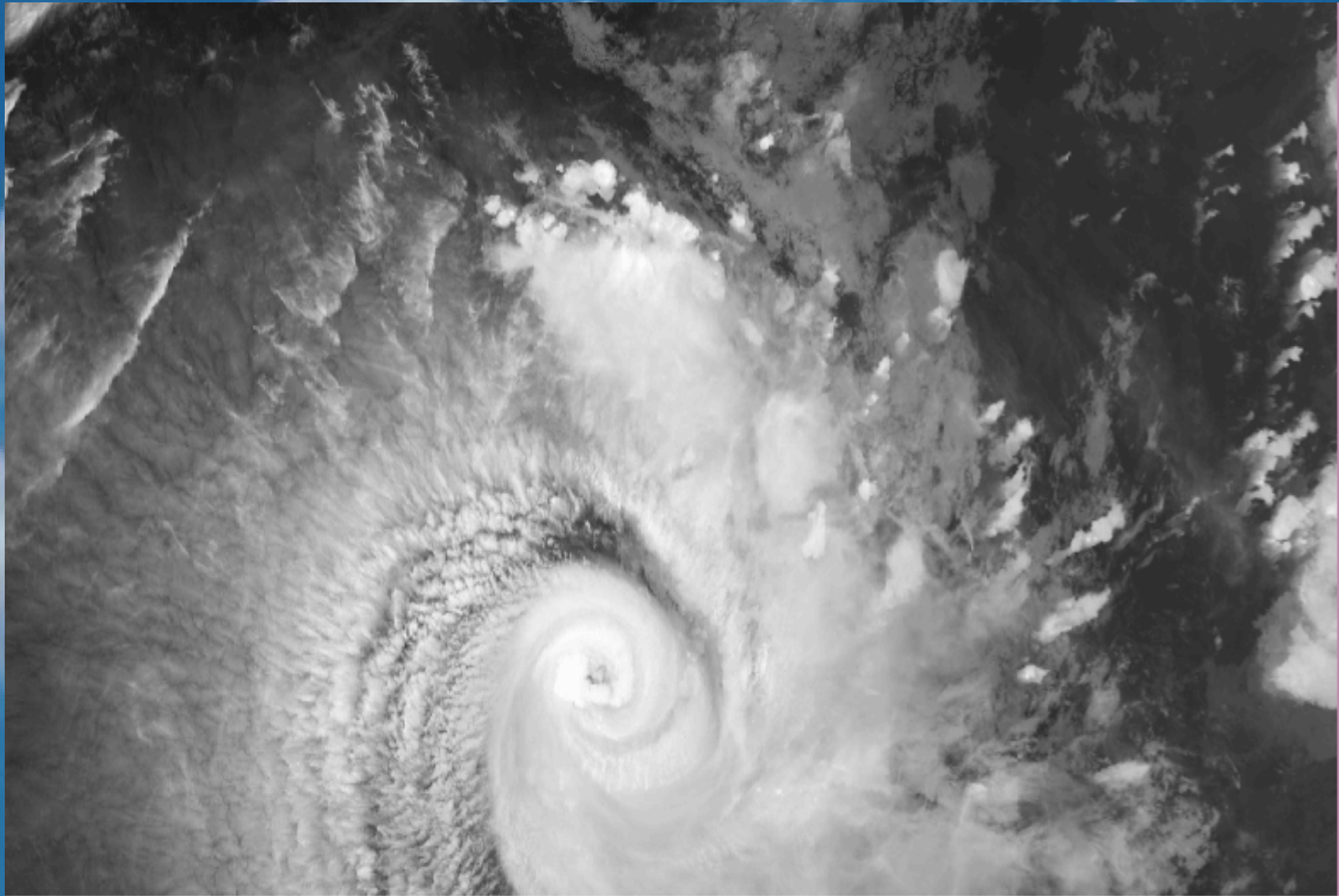
- Much Deterioration
- Deterioration
- Stable
- Improvement
- Much Improvement
- Clouds

- Much Below Average
- Below Average
- Average
- Above Average
- Much Above Average
- Clouds

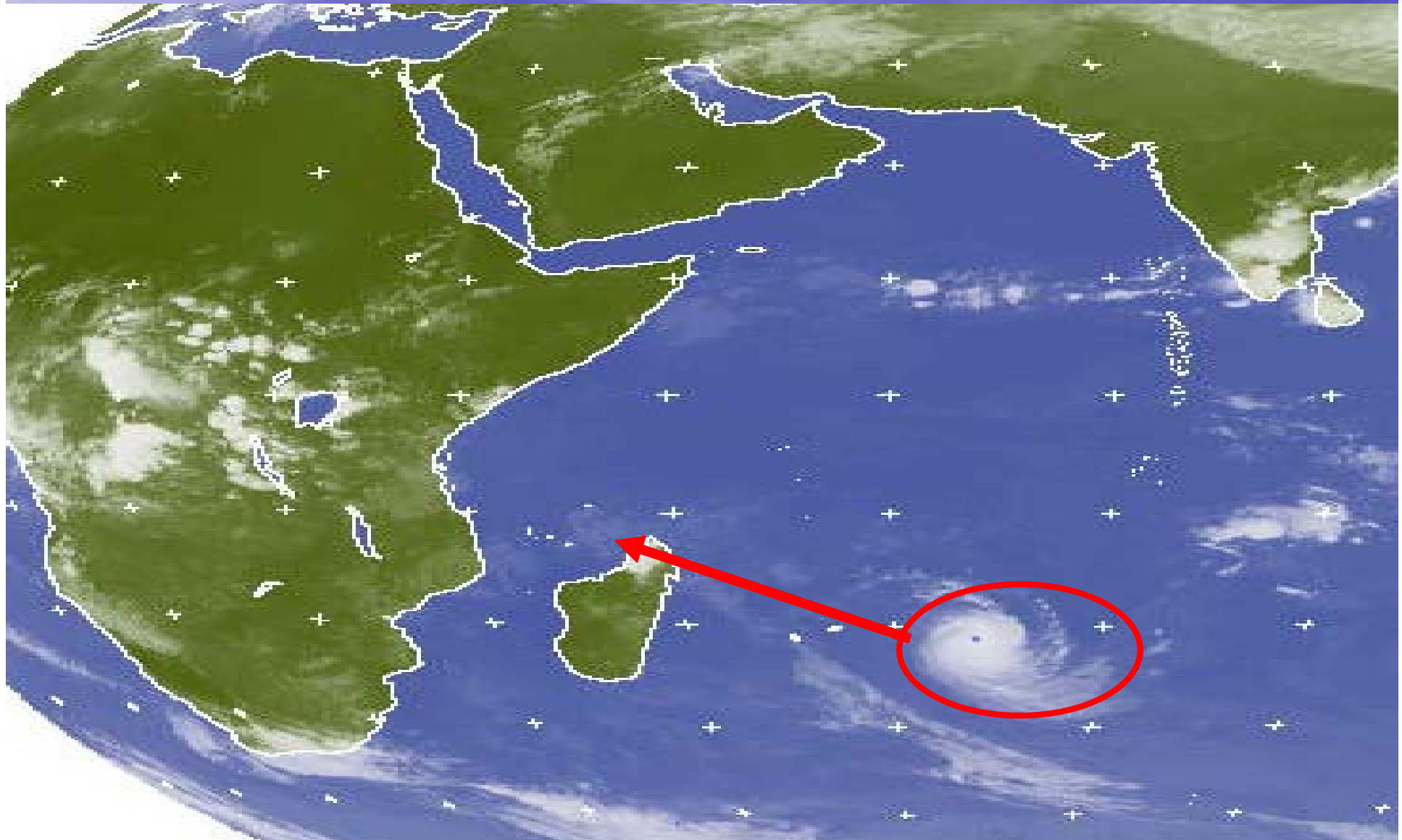
Monitoring tropical cyclones

- Tropical cyclone
An area of low pressure which develops over tropical or subtropical waters
- Tropical depression
A weak tropical cyclone in which the maximum surface wind is 38 mph (62 km/h or 33 kt) or less

Satellite imagery of a tropical cyclone



**SATELLITE IMAGERY DEPICTING
TROPICAL CYCLONE APPROACHING
EASTERN AFRICA COASTAL REGION**



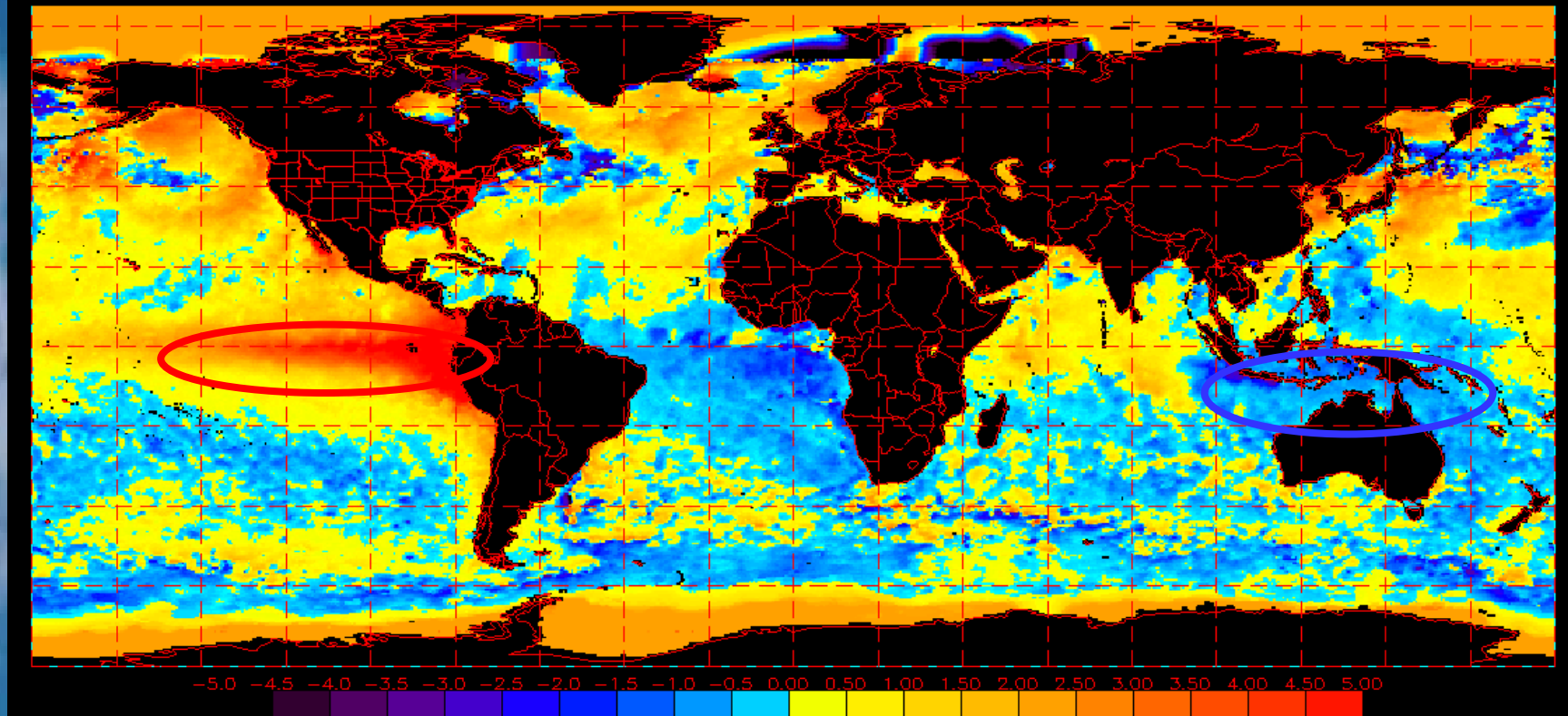
Impacts of strong winds/storms



Sea Surface Temperatures

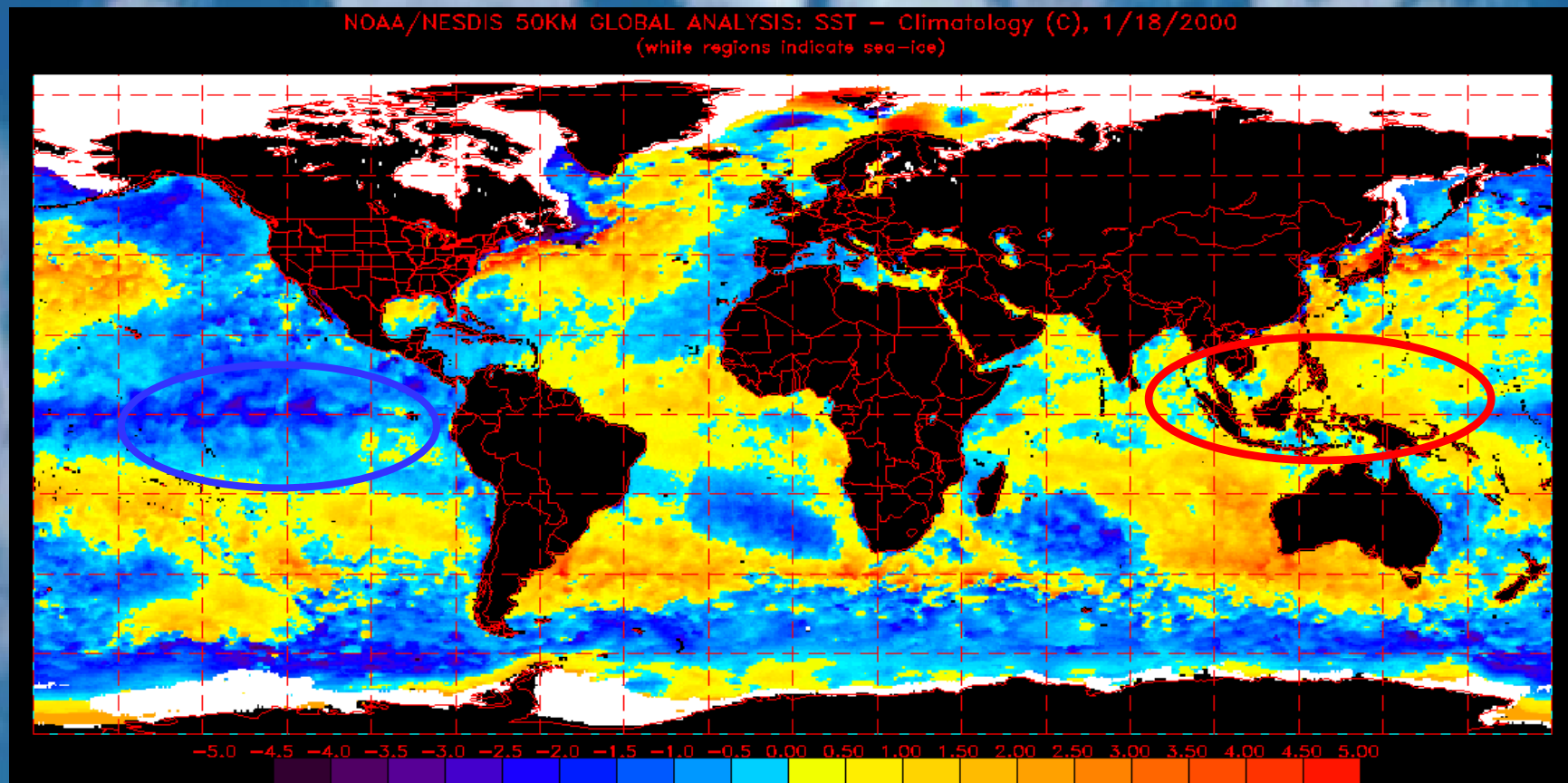
SST from AVHRR

NOAA/NESDIS 50KM GLOBAL ANALYSIS: SST - Climatology, 8/4/1997



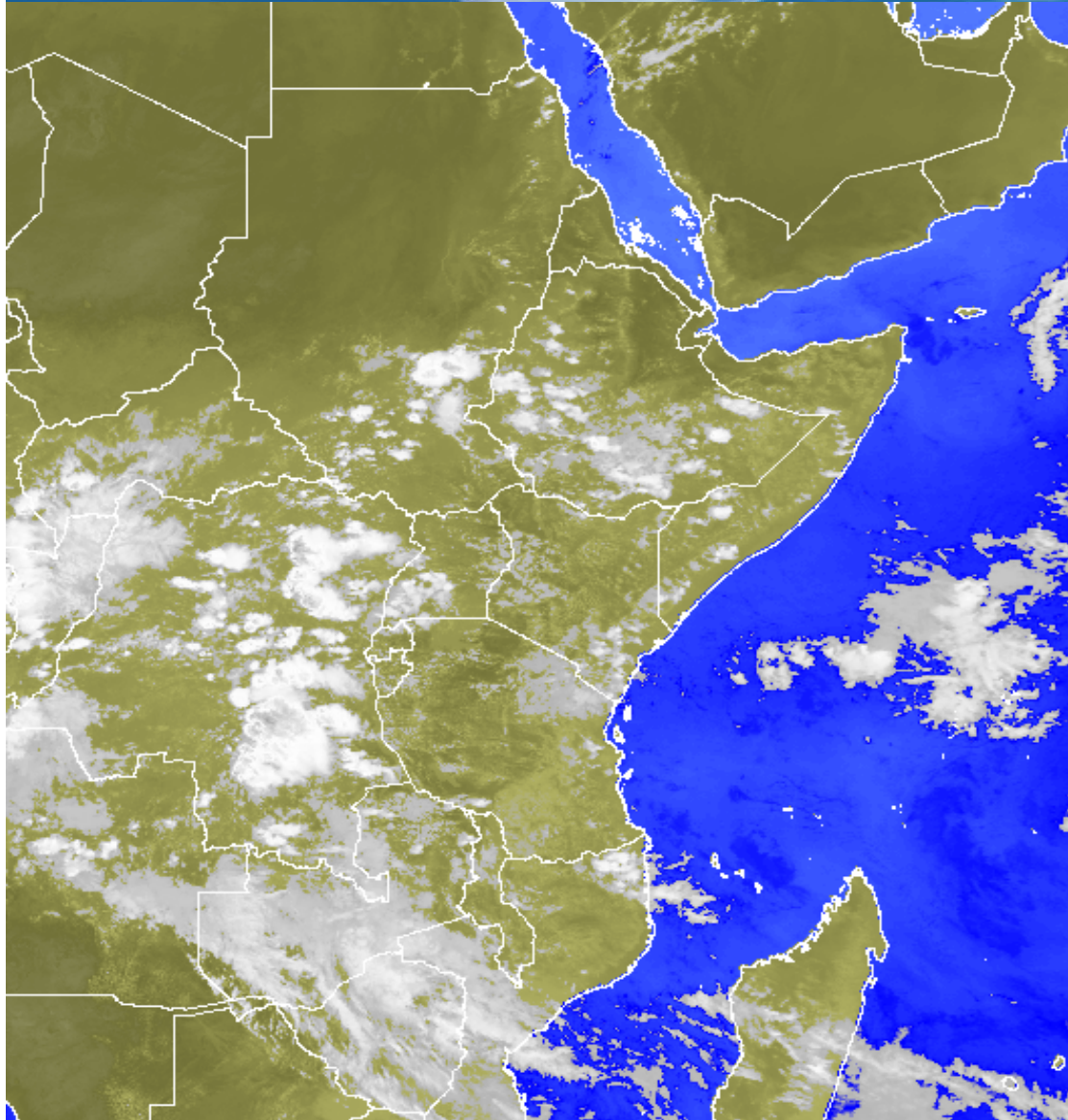
El Niño: 1997

Sea Surface Temperatures



La Niña: 2000

Monitoring cloud patterns



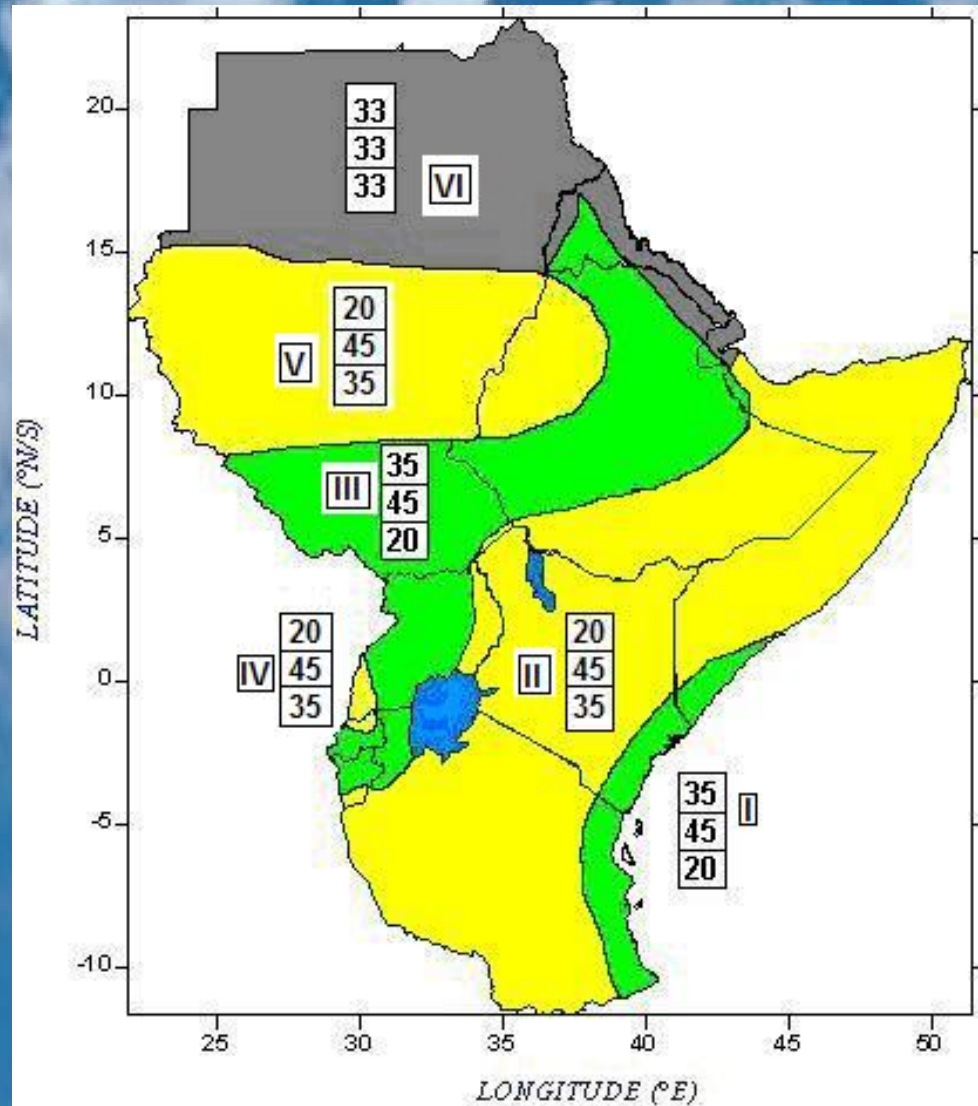
- CLOUDS AND POTENTIAL RAINING AREAS.

Clouds tracking:

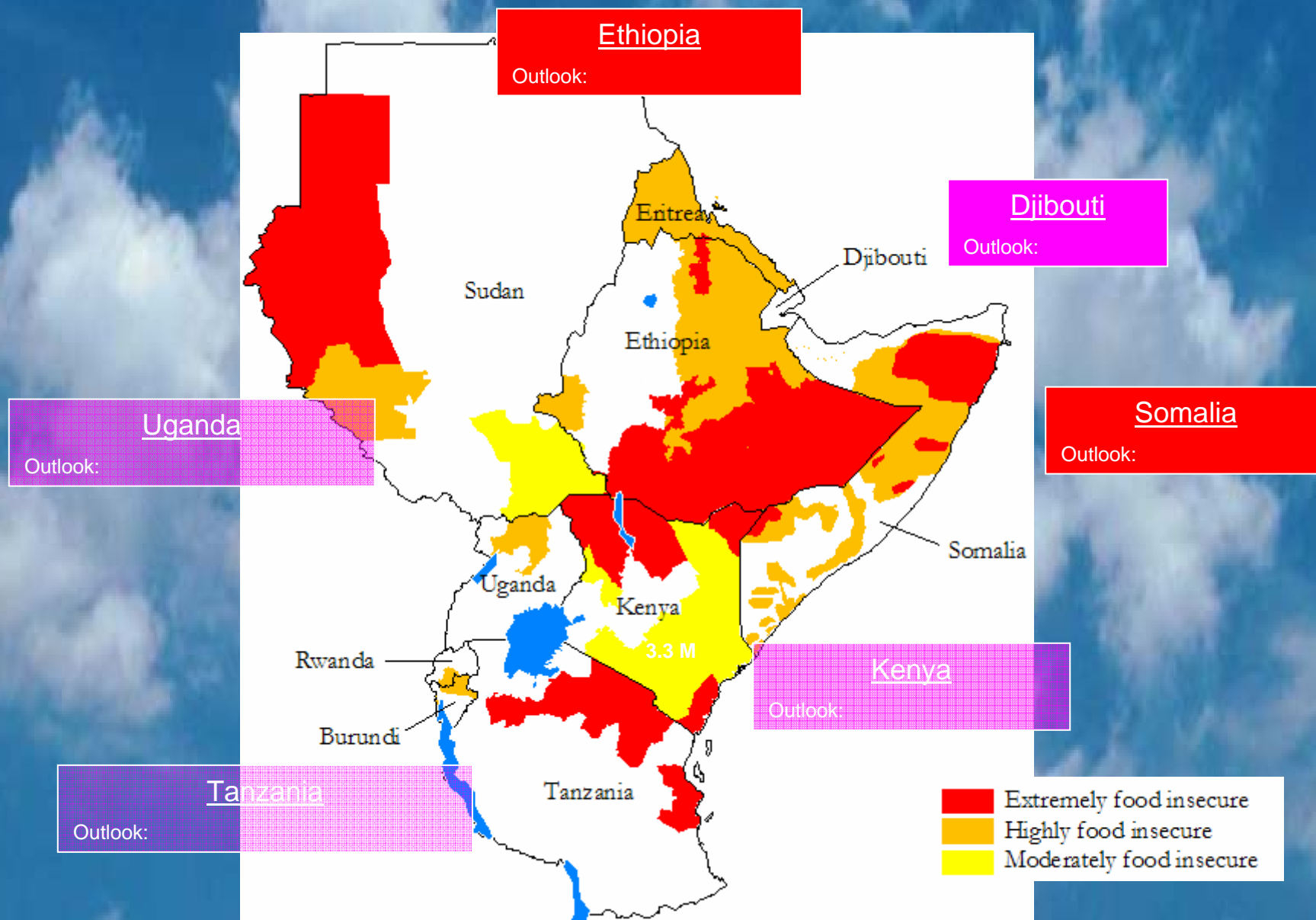
Image-2004-10-14-1130GMT

:MSG-Courtesy of PUMA

CONSENSUS FORECAST OVER GHA-MAM 2007



Food Security Status - Greater Horn of Africa –from COF14-(ICPAC/IRI/USGS/FEWSNET)



CONCLUSION

- With aid of MSG
 - severe weather developments are monitored closely
 - Early warning information are given in good time to avert potential disasters
 - information received are of great significance for sustainable socio-economic development

A vibrant blue sky filled with numerous white, fluffy cumulus clouds of varying sizes and densities. The clouds are scattered across the frame, creating a bright and airy atmosphere. The text 'Thank you all' is centered in the middle of the image.

Thank you all