



Department of Climate Change and Meteorological
Services & Department of Water Resources

Standard Operating Procedure for Early Warning System in Malawi

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Presentation Outline

- Introduction
- Weather and Climate Products.
- Standard Warning Procedures.
- Type of Early Warning Messages and informations
- Dissémination Procedures and challenges
- What need to be done.

Introduction

Floods and prolonged dry spells are a recurrent problem in Malawi.

The Department of Disaster Management Affairs recorded 23 major flood events across the country between 1979 and 2008 which affected about 1.9 million people.

Poor households are more exposed to natural hazards (and other shocks) and likely more susceptible to suffer losses from such events.

Extreme rainfall events resulting into floods result in loss of lives, damage to public properties and loss of life.

A study of economic vulnerability to flood and droughts estimated that floods in the southern region alone reduced country's GDP by about 0.7% a year (about US\$ 26 million).

- DCCMS is mandated to monitor, predict and provide information on weather, climate and climate change, that would contribute towards the socio-economic development of the country.
- DWR is mandated to achieve sustainable and integrated water resource management and development that make water readily available and equitably accessible to and used by all Malawians.

Current products and Services

DCCMS

Short-range weather Forecasts (24-hours-3days);

- Medium-range weather forecasts (7-days, 10 days or decadal);
- Long-range forecasts (a monthly or more) and seasonal weather outlook)

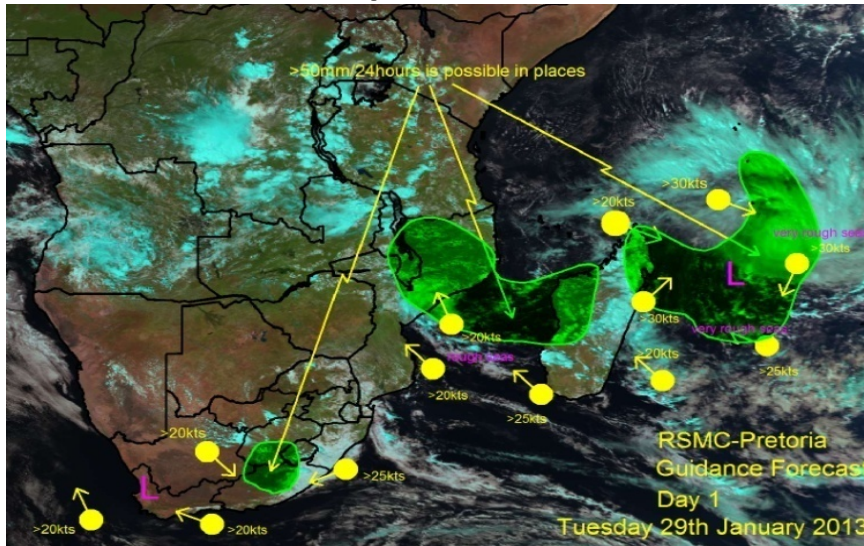
DWR -Flood Warnings

Services

- provision of tailor-made forecast (as a decision support tool) for planning and preparedness by weather and climate sensitive sectors;
- wide range of forecasts for aviation, marine, water resource, agriculture and insurance
- Lightening advisory and flash flood guidance, Dry spells and drought advisories, Flood forecasting & warnings by DWR

Severe Weather and flash flood guidance and warning products

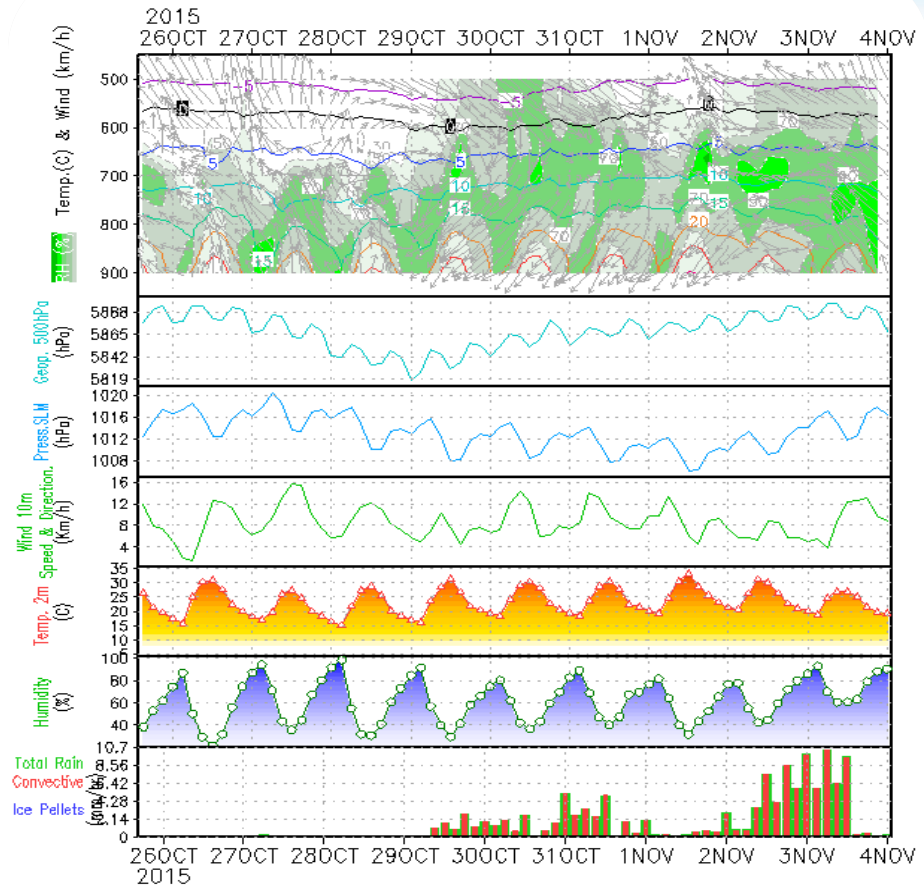
- SWFDP product



Notification Rule: Lightning Prx Lilongwe Airport #2

Lightning alert within 30km 30min
 Lightning Distance: 25.51 kilometers
 Stroke Location: Lat: -13.628 Lon: 33.6124
 Activated Time: 01/10/2015 03:01:19

Area Specific products WRF and COSMO



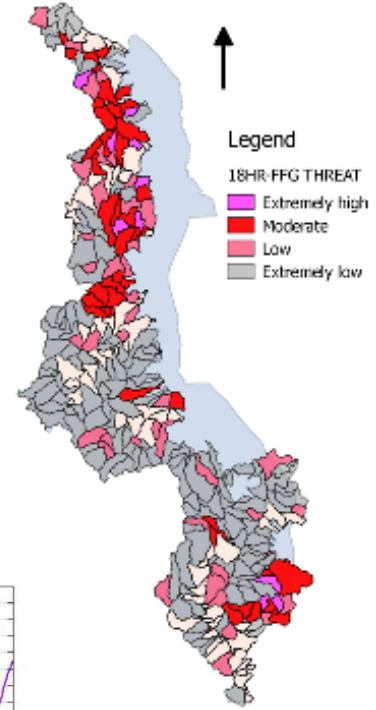
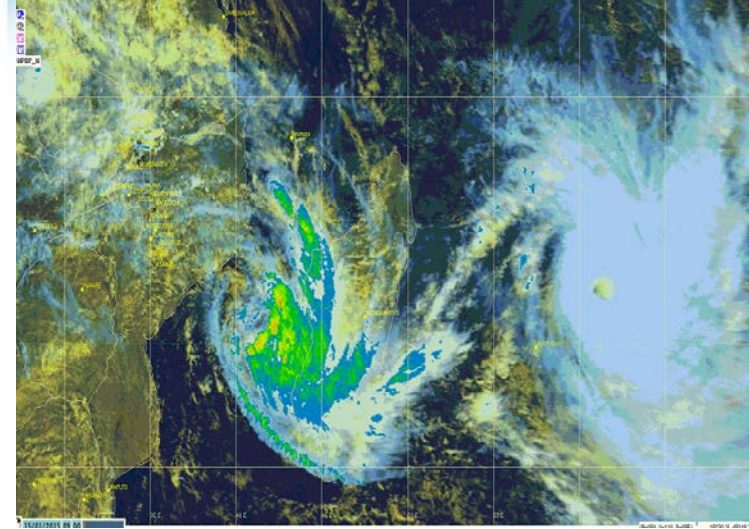
CHICHIRI BLANTYRE

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Severe Weather and flash flood guidance and warning products cont../

18 HR- FLASH FLOOD GUIDANCE FOR 11 JAN 2015

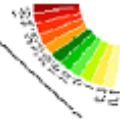
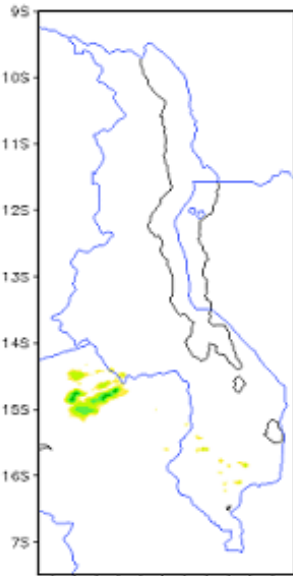
24 MEAN AREAL PRECIPITATION(MAP) FOR 12 JANUARY 2015



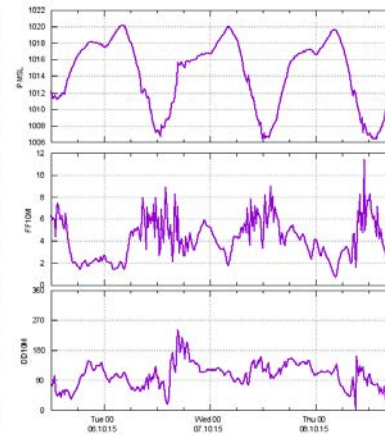
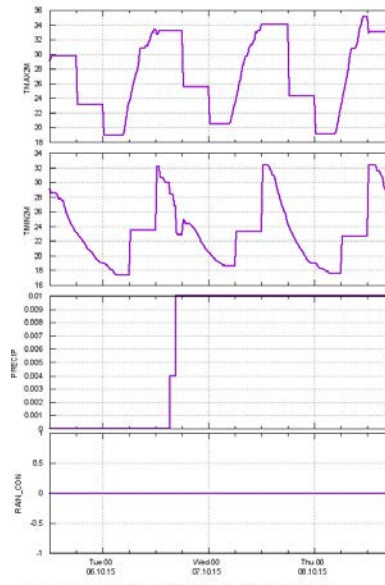
Total precipitations (mm/24h)

BASE (UTC)
12Z05OCT2015

VALID (UTC)
18Z05OCT2015
18Z06OCT2015

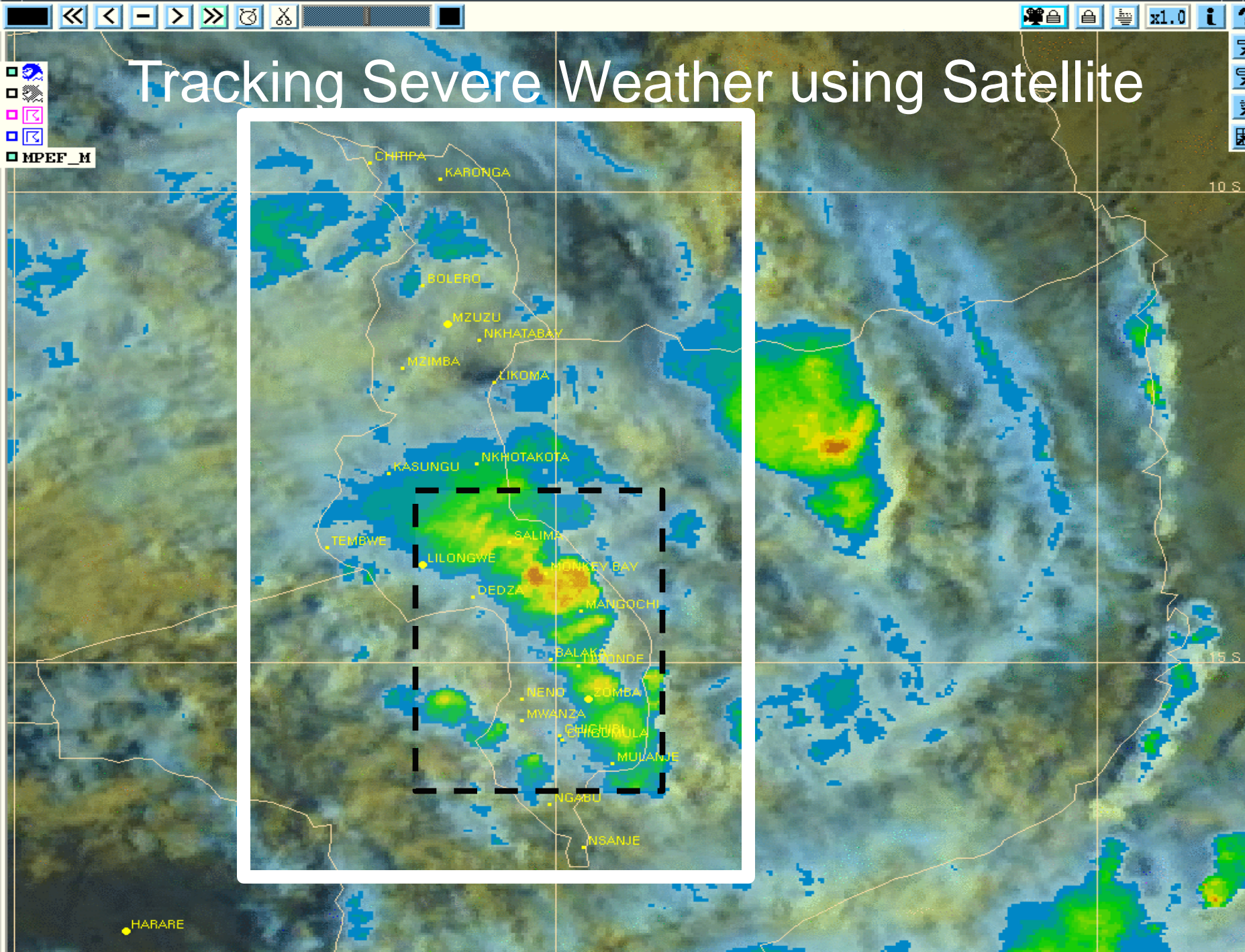


COSMO-MALAWI
COSMO=07km



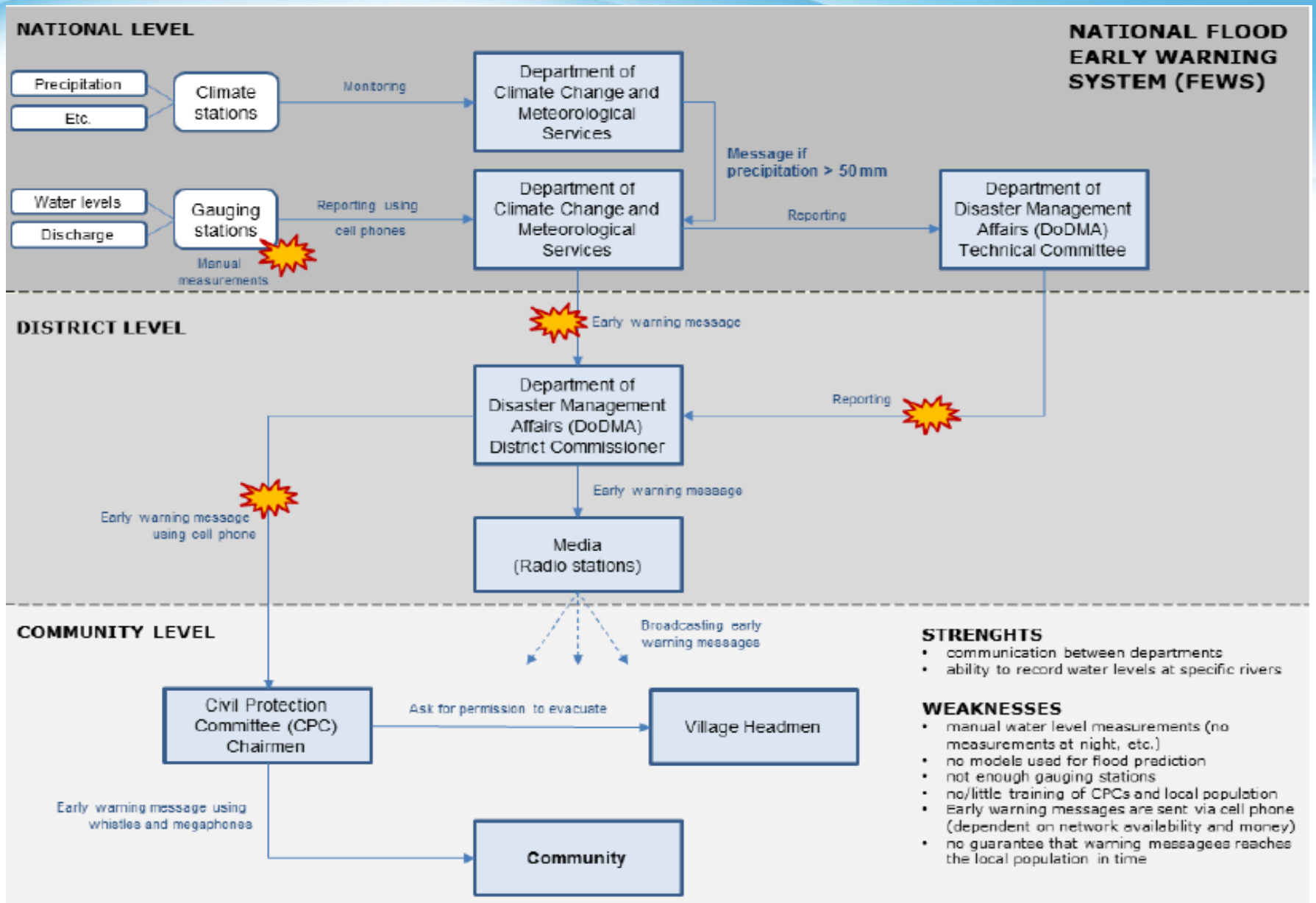
**Rapid
Developing
Thunderstorms
(RDTs)**

Tracking Severe Weather using Satellite

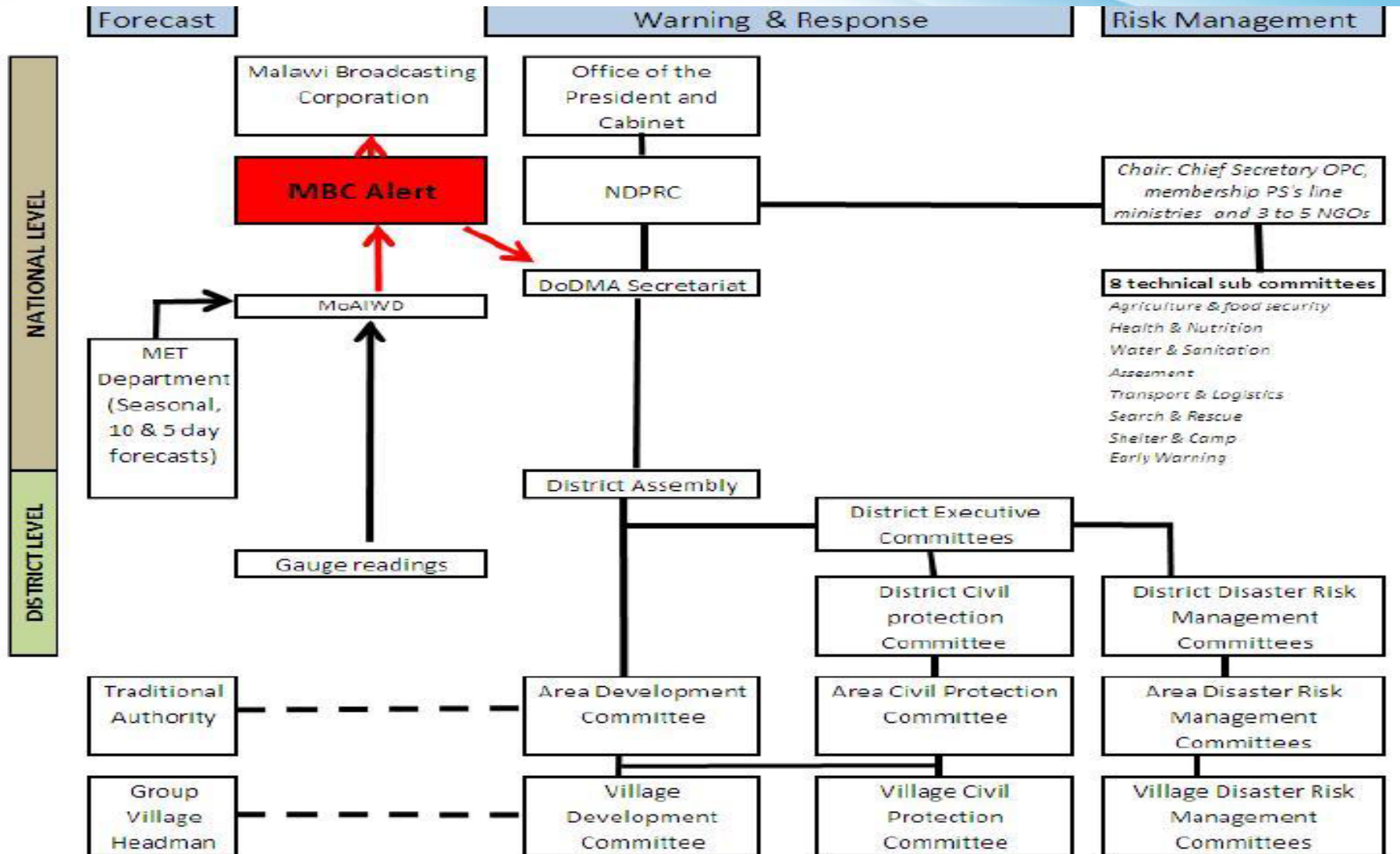


- MPEF_M
-
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Communication guidelines



Roles and Responsibilities



Using intermediaries

Department of Climate Change and Meteorological Services

Christian Aid (ECRP)

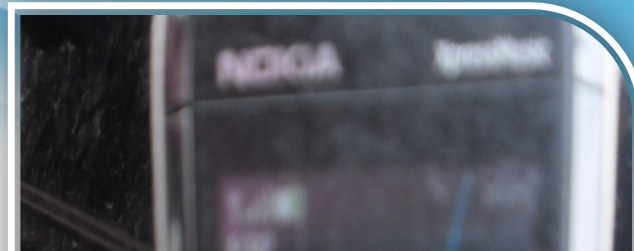
ESOKO

Community Volunteers

Community Volunteers

Community Volunteers

Community members



Ku Mulanje tiyembekezere nyengo ya dzuwa masana pa 3 June koma kuzizira usiku ndi mbandakucha kuchokera lachitatu pa 4 June, 2014.



SOPs OF REPORTING TROPICAL CYCLONES IN MALAWI

SOUTHERN AFRICA

INFORMATION STAGE:

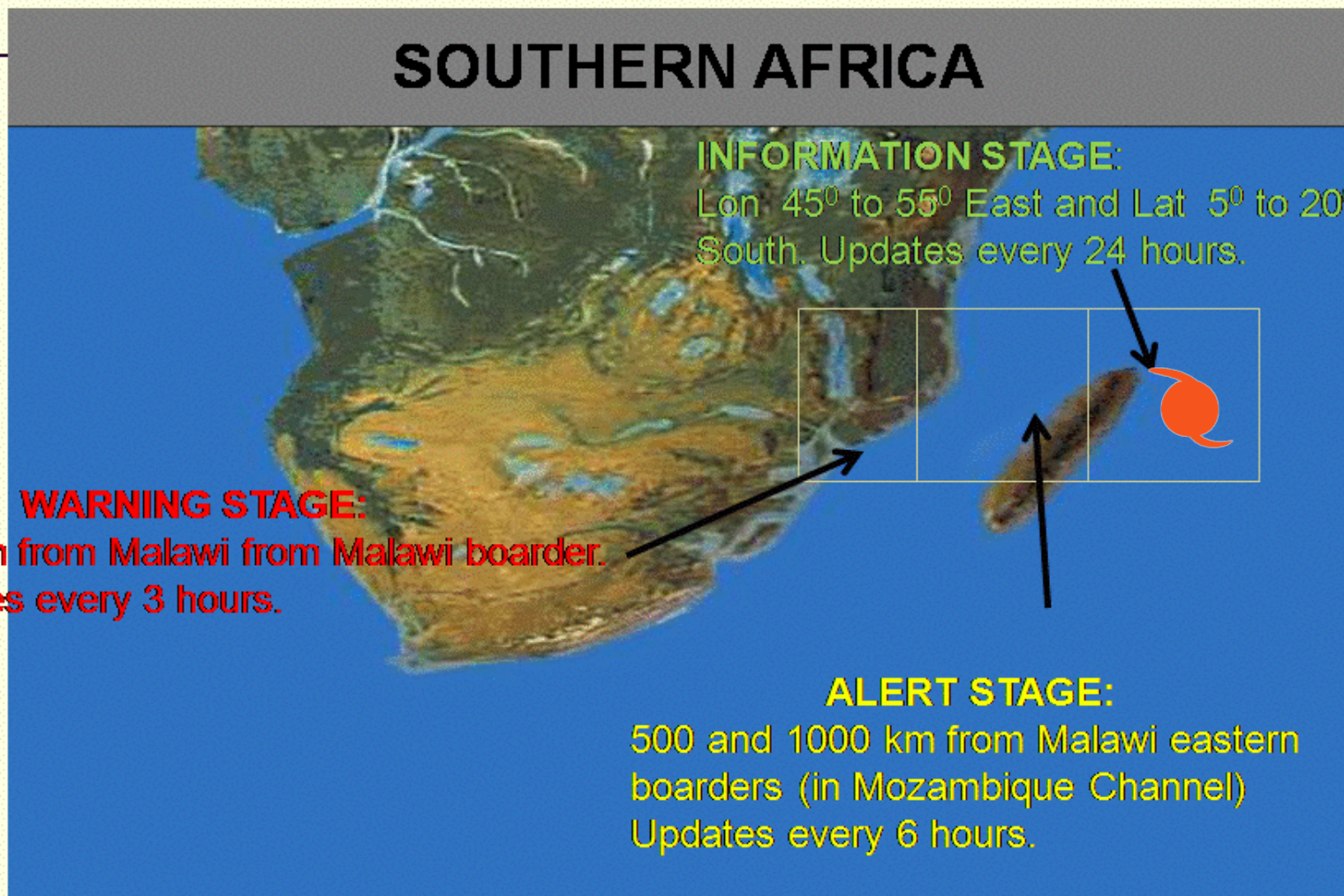
Lon: 45° to 55° East and Lat 5° to 20° South. Updates every 24 hours.

WARNING STAGE:

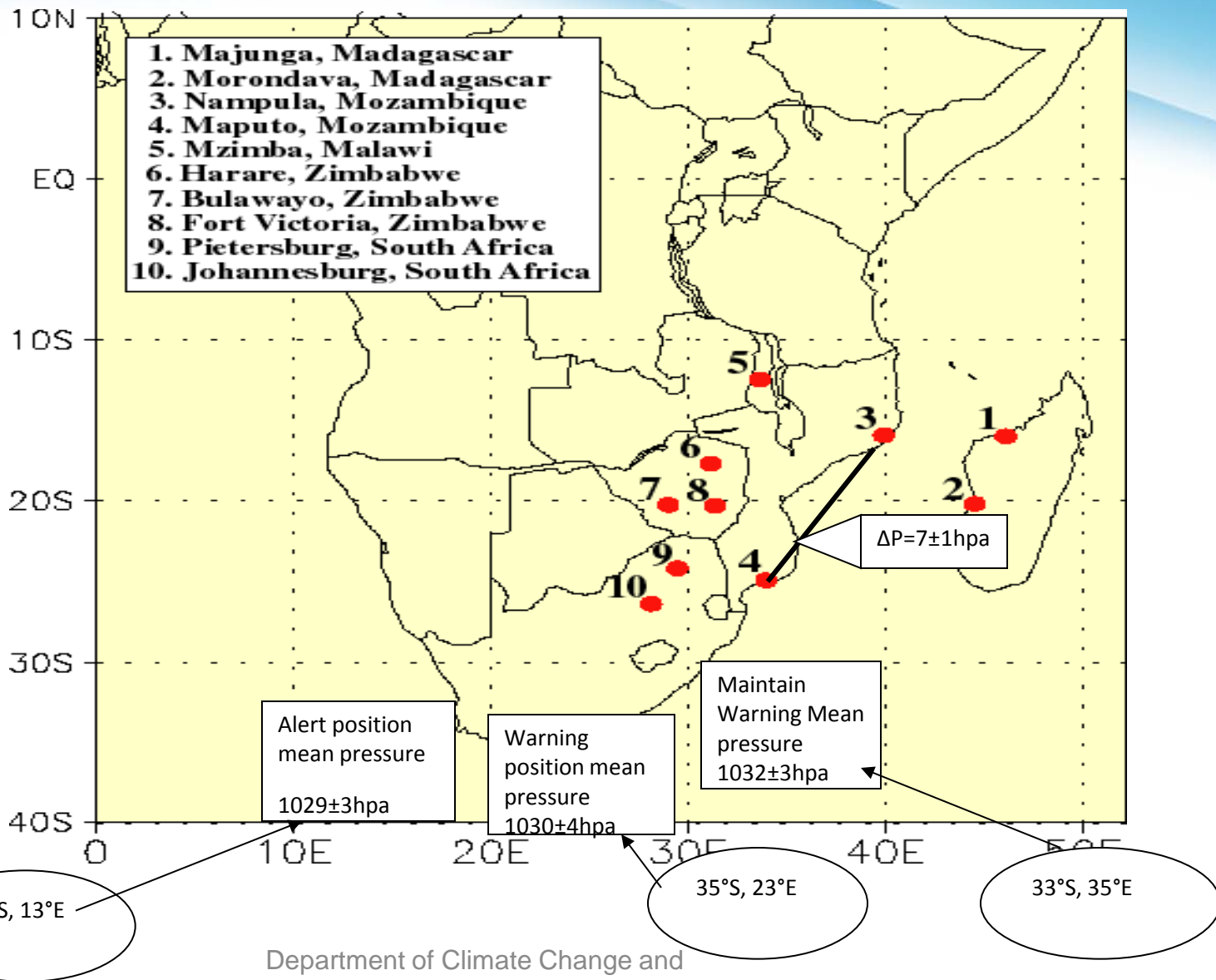
500 km from Malawi from Malawi boarder.
Updates every 3 hours.

ALERT STAGE:

500 and 1000 km from Malawi eastern boarders (in Mozambique Channel)
Updates every 6 hours.



Standard Operating Procedures for Strong winds (Mwera) and high waves on Malawi lakes



Dissemination of weather forecasts and warnings

A variety of communication channels are used:

- Radio and Television;
- The internet;
- Newspapers;
- Telephones (mobile and wireless)
- SMS through mobile phone for 5-day weather forecast
- Bulletins and Newsletters;
- Press conferences and briefings vital for wide coverage of important events such as high impact weather events.

CHALLENGES

- **Human Resource Matters**
 - inadequate staff to man the station 24/7
 - lack of experience to integrate information into useful message (Needs further training)
- **Service Delivery Matters**
 - Inadequate technological and lack of collaboration among stakeholders to meet the needs of the public
 - Lack of proper guidelines for meteorological, hydrological and climate-related services
 - Need for continuous public education and awareness;

Users

- Agriculture
- Energy
- Water resources
- Communities

Triggers water level monitoring
community level



How they use the information




CHALLENGES, WEAKNESSES & GAPS

- Lack of proper early warning system (real time) covering all sub basins (Main problem)
 - The locally community based managed systems are limited
- Bureaucracies in operations
- **Efforts to provide real time data..**
 - Installed AWS in disaster prone areas to provide near-real time observations
 - Installed lightening detectors on urban centers of Blantyre and Lilongwe

New products to improve the forecast service

- Quantitative products e.g: expected rainfall amounts and water levels
- Area specific products (provide warning by grid reference)
 - *Exact location of expected occurrence*
 - *Projection of magnitude of impact*



Zikomo kwambiri!
Ngibona kakhulu!
Ke leboha haholo!
Thank you very much!
Dankie!