



PRESENTATION FROM NMHS(Zambia)

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Current Products and Services

ZMD provides the following products:

- Seasonal Weather Forecast
- Crop Weather Bulletins
- Daily Weather Forecast
- Climate Databank services (Data supplied on request)
- Seven-Day Weather Forecast
- T.V. Weather Reports and Forecast
- Flash Floods Forecast
- Climate variability and Climate Change Adaptation Awareness messages (Television and Radio)
- Aviation services
- Early Warning Systems on severe weather such as droughts, floods and flash floods.(SARFFG

Severe Weather Forecast & Warning Products

1. Severe Weather Warnings Products

Meteorological hazards for which warnings are generated include;

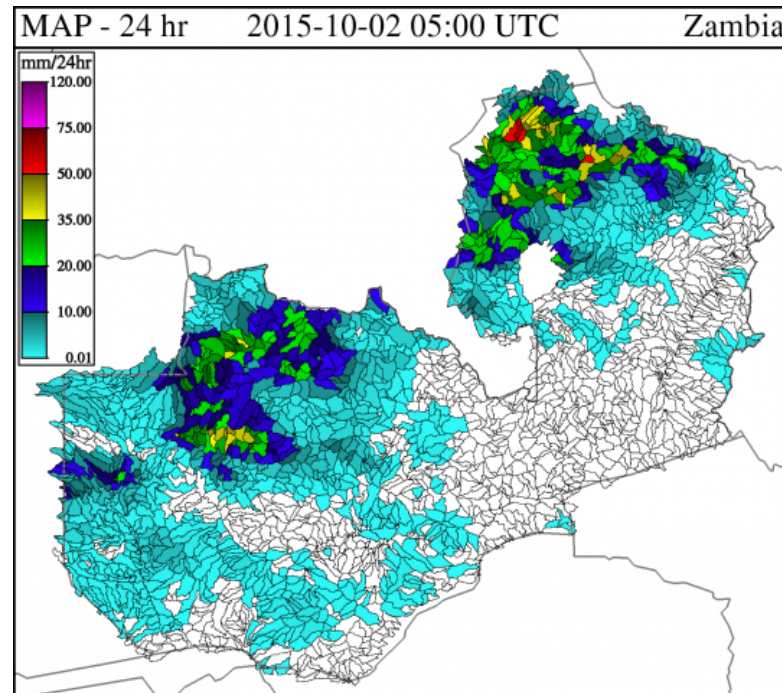
Tropical Cyclones, Thunderstorms, Strong winds, Intense colds Drought and Floods

- In case of extreme weather events ZMD does not issue warnings but issue advisories to Disaster Management and Mitigation Unit (DMMU)
- This is done in the form of press release or going to DMMU



Flash Flood Forecast & Warning Products

- We use products generated using SARFFG. Below is the sample flash flood warning product which was used to warn farmers to secure their maize in view of expected sporadic showers and thunderstorms in the next 24hrs.
- Issuing of flood warnings is the mandate of the (DMMU), is only effected after DMMU has gotten approval from all stake holders involved in flood forecasting before a warning can be issued



Lusaka Flash Floods 2014



Circled areas most prone to flash floods

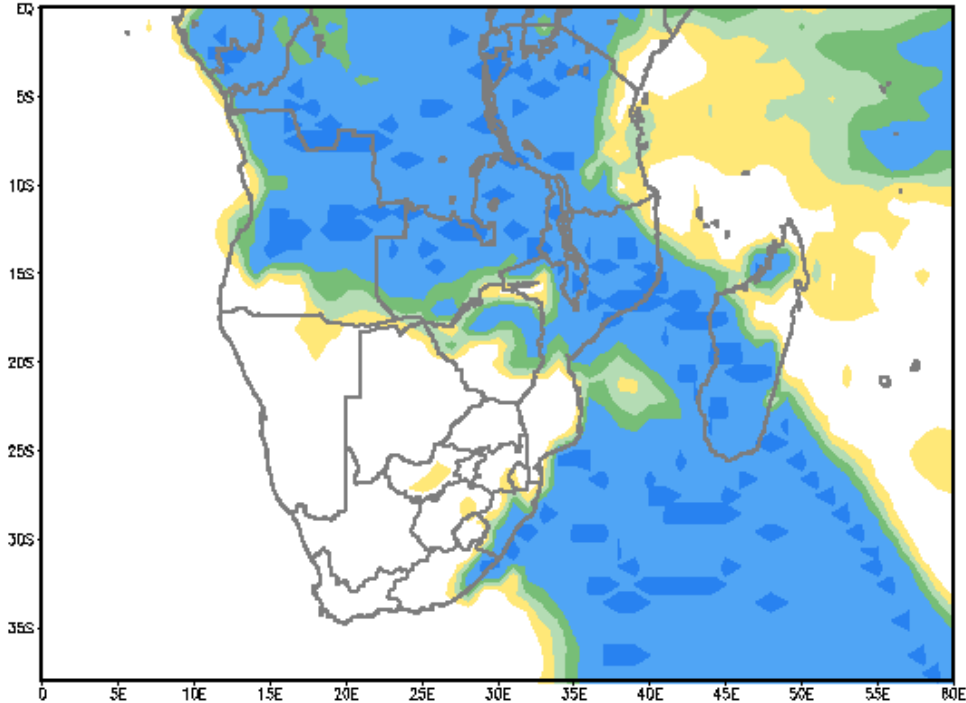


How are the forecasts and warning produced

- **Severe weather in Zambia mainly occurs as drought, floods and flash floods, which have devastating effects on both human and animal lives as well as on agricultural production.**
- **The Zambia Meteorological Department (ZMD) uses NWP and EPS products from the different global centers: ECMWF, NCEP, UK Met-Office, SAWS and RSMC guidance products.**
- **Satellite Images from Eumetsat**
- **Several data sets received through Eumetsat via Eumetcast are used in our daily weather forecast:**
- **Satellite data are increasingly being used in conjunction with conventional meteorological observations in the synoptic analysis and conventional weather forecast to extract information of relevance for the public and agriculture .**
- **NWP products provide guidance on the expected weather (e.g.)**

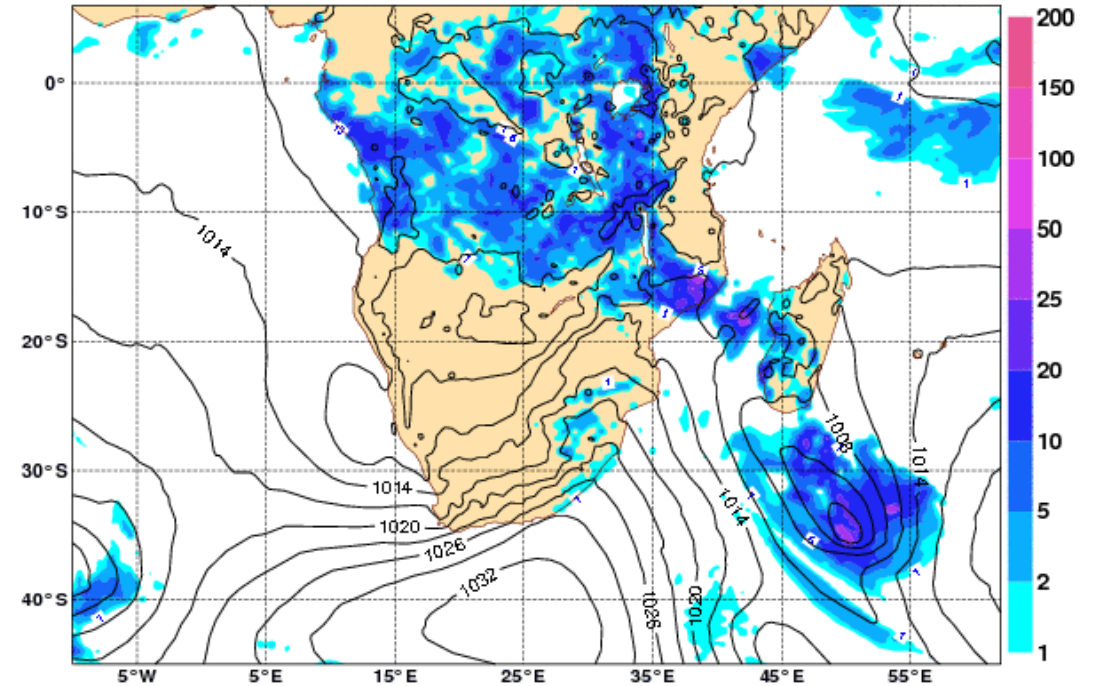
RSMC- PRETORIA AND ECMWF GUIDANCE FORECASTS

Probability of regional rainfall exceeding 1 mm



Forecast for 1 Nov 2012 – Forecast day: 2

ECMWF Fc 2012103012 +48 h MSLP (hPa) and Precip (mm) since last 6 h





How products are disseminated to users

- A number of media institutions(radio,TV, Newspapers) have been collaborating with ZMD in disseminating weather forecast.
- ZMD maintains an email list of subscribers to weather forecasts and warnings and the current.
- Through ZMD website.
- Through community based dissemination programmes.
- Through RANET Project where communication of weather and climate information to rural communities is done for sustainable development.



Who are the users

The following sectors are the users of our products and warnings:

- Aviation
- Agriculture
- Water resource management
- Education and Research
- Health
- Buildings and Civil Engineering
- Disaster Management
- Insurance, Commerce and industry
- Tourism and Sport

The products and warnings are used for planning and management purposes

Weaknesses and gaps in the forecast and warning process

- **Inadequate Station Network Density**
- **Obsolete meteorological and telecommunication equipment**
- **Missing data in the climate datasets**
- **Limited Skilled manpower**
- **Inadequate facilities for effective data processing and dissemination**
- **Lack of Feedback from users of forecast and warnings**
- **Insufficient information on user needs**
- **Inadequate interaction with users of forecast and warning**
- **Limitations in climate information reaching vulnerable communities**

What new products would improve forecast service? Provide specific examples and say why

- Product from Radar System for tracking storms
- Need to develop localised forecasting models e.g. WRF to improve resolution.

THANK YOU