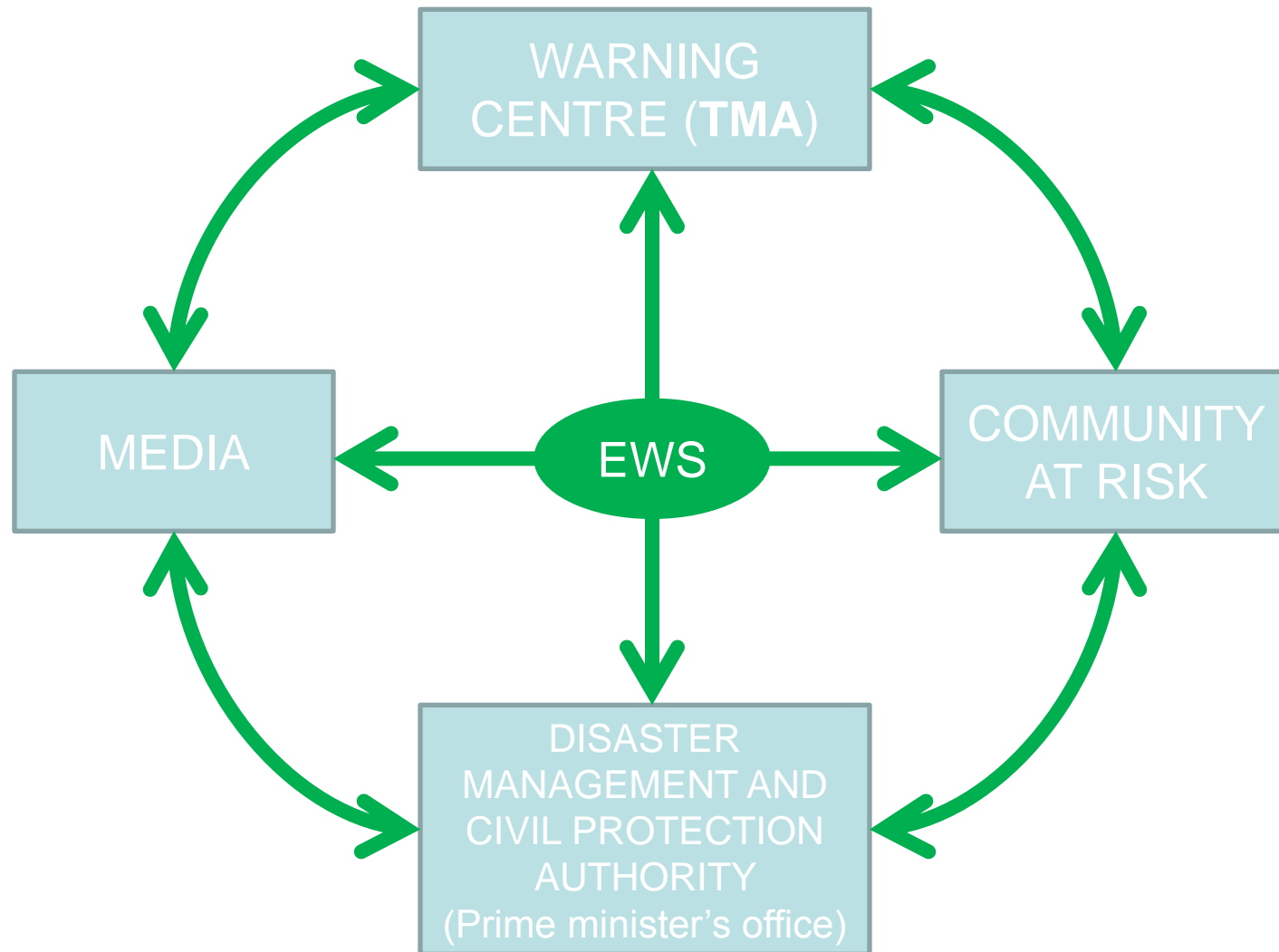


CASE STUDY

**Preparation of warning, collaboration with DMA and
Dissemination of warnings to decision makers and the
public**

A case study of 31st October, 2012

COMPONENTS OF EARLY WARNING SYSTEMS (EWS) IN TANZANIA



Each component above has Standard Operating Procedures

WARNING CENTRE (TMA)



Tanzania Meteorological Agency is a focal point in the country for issuing advisory and warnings on the following:

1. Weather and Climate related hazards

- ✓ Drought/dry spell
- ✓ Heavy rains/Floods
- ✓ Strong Winds
- ✓ Large waves
- ✓ Tropical cyclone

(TMA is in the process of formulating SOP.

Currently it uses the information from La Reunion and in relation for heavy rains and strong winds)

2. Tsunami along the coast

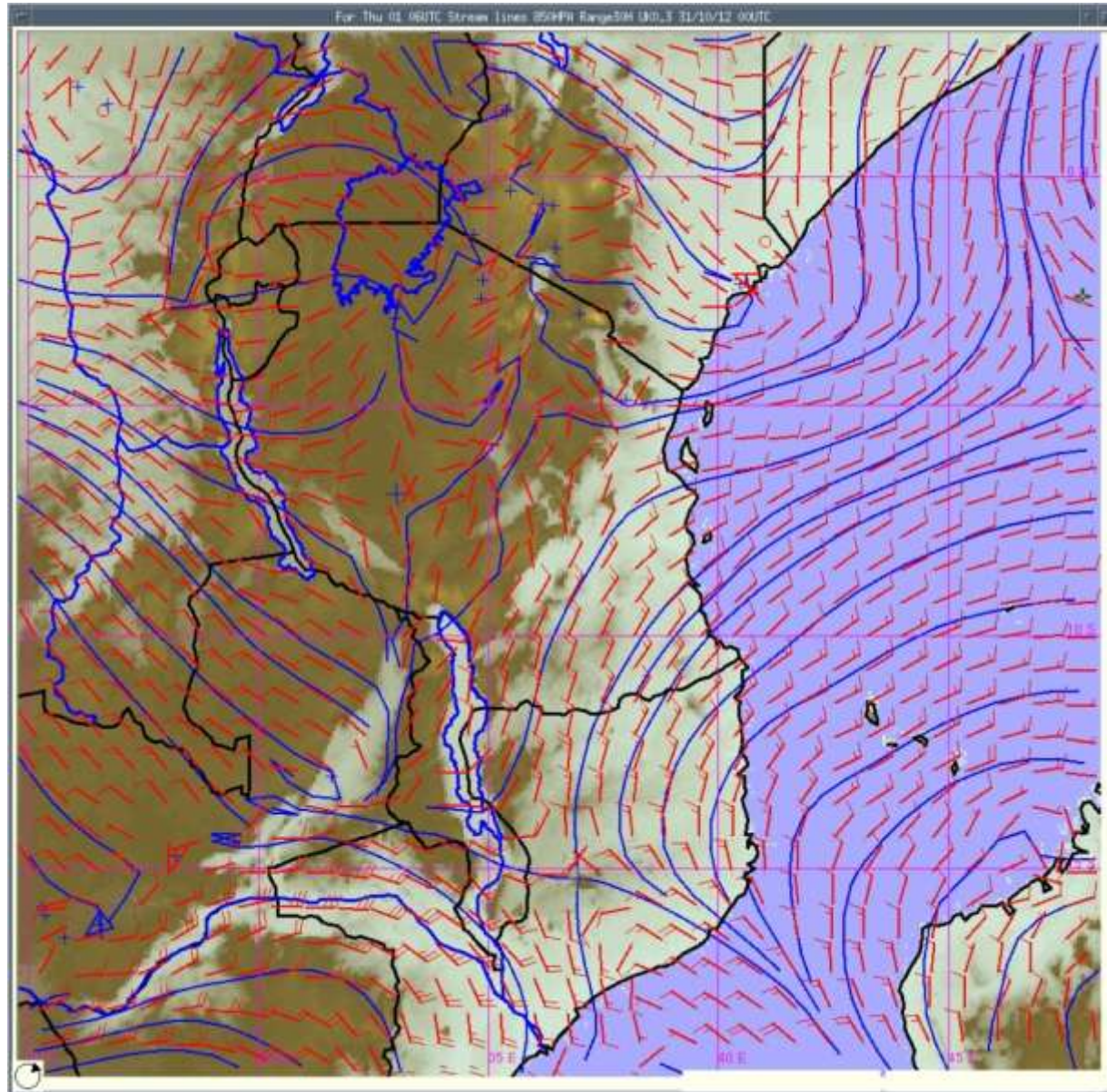


- During the OND 2012 seasonal outlook forum (mid September) TMA warned about normal to above normal rainfall possibilities
- Possible impacts were analysed and given out
- Authorities took appropriate actions
 - Municipals cleaned the drainage systems and people leaving in unplanned low lying areas were forced to move.
 - Electrical supply company changed supply line infrastructure.
 - Food security and drug store

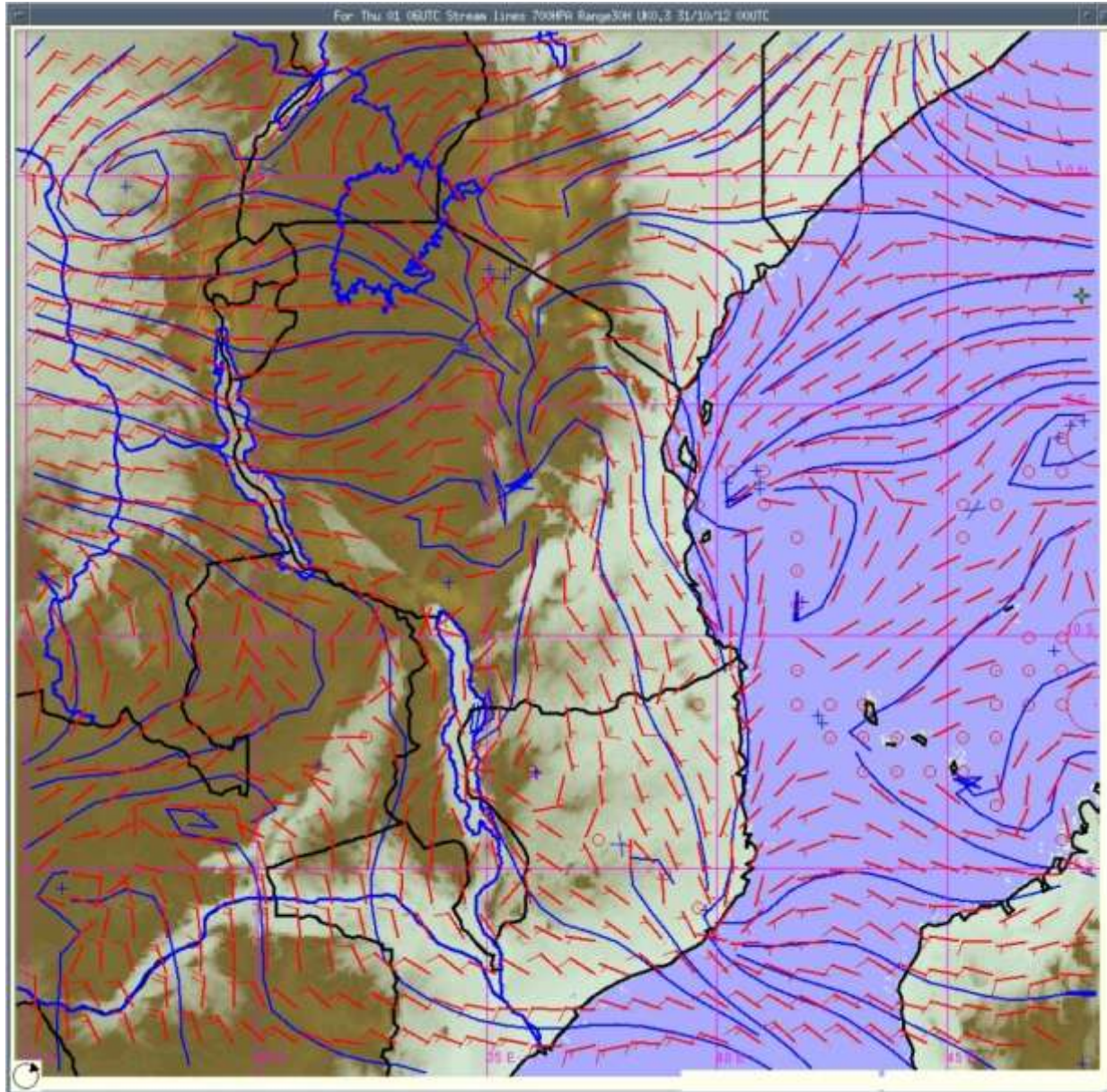


- About two heavy falls warning were issued
 1. 5/10/2012 For the northern coast area between 9th to 11th October 2012 where we expected a landfall of Tropical disturbance. The system weakened and died before reaching the coast, on 8/10/2012 we had to cancel the warning.
 2. 31/10/2012 for the western areas where MJO was anticipated. Warning, updates and feedback was issued

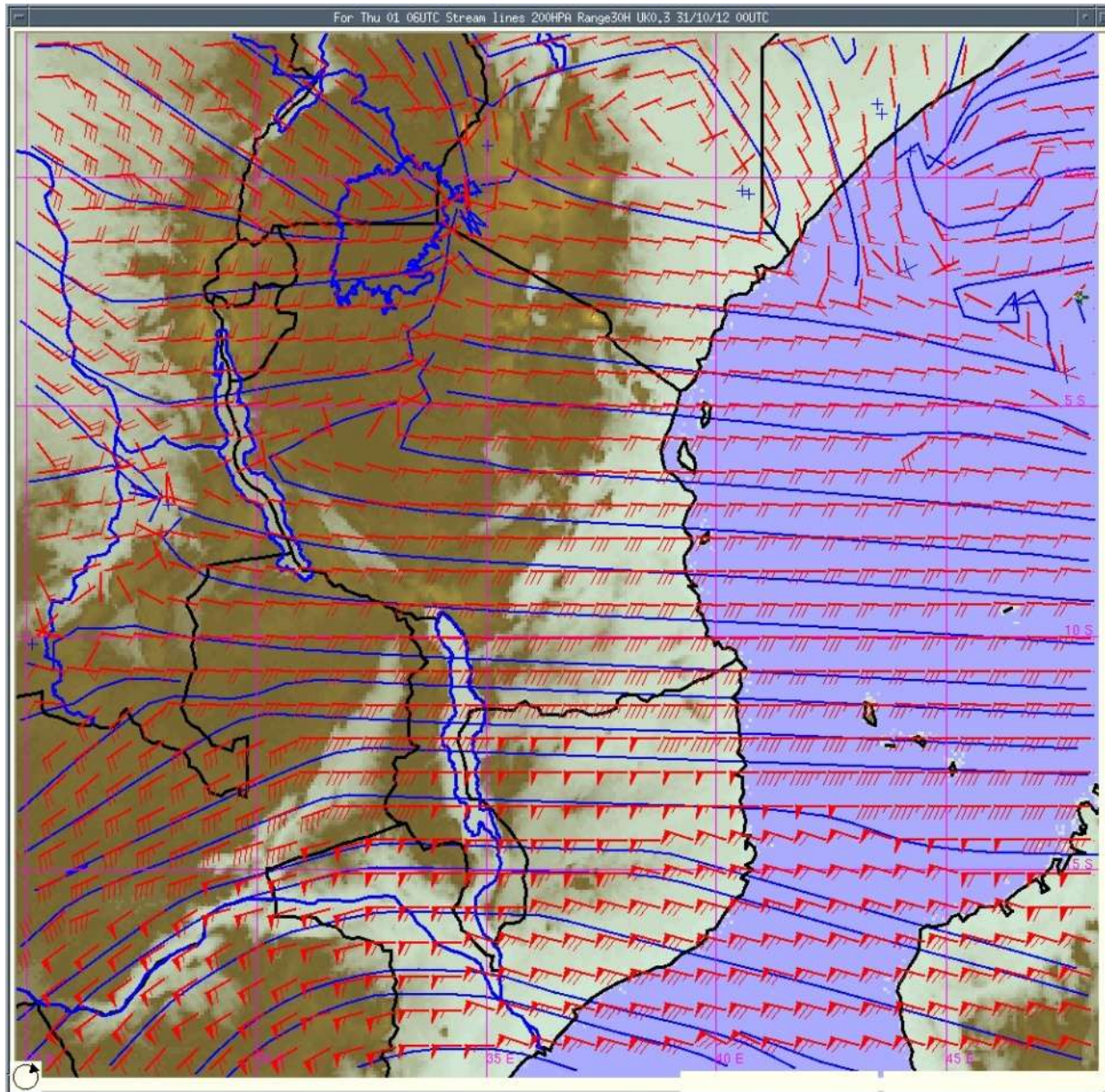
WIND AT 850hPa 01/11/2012 -0600Z



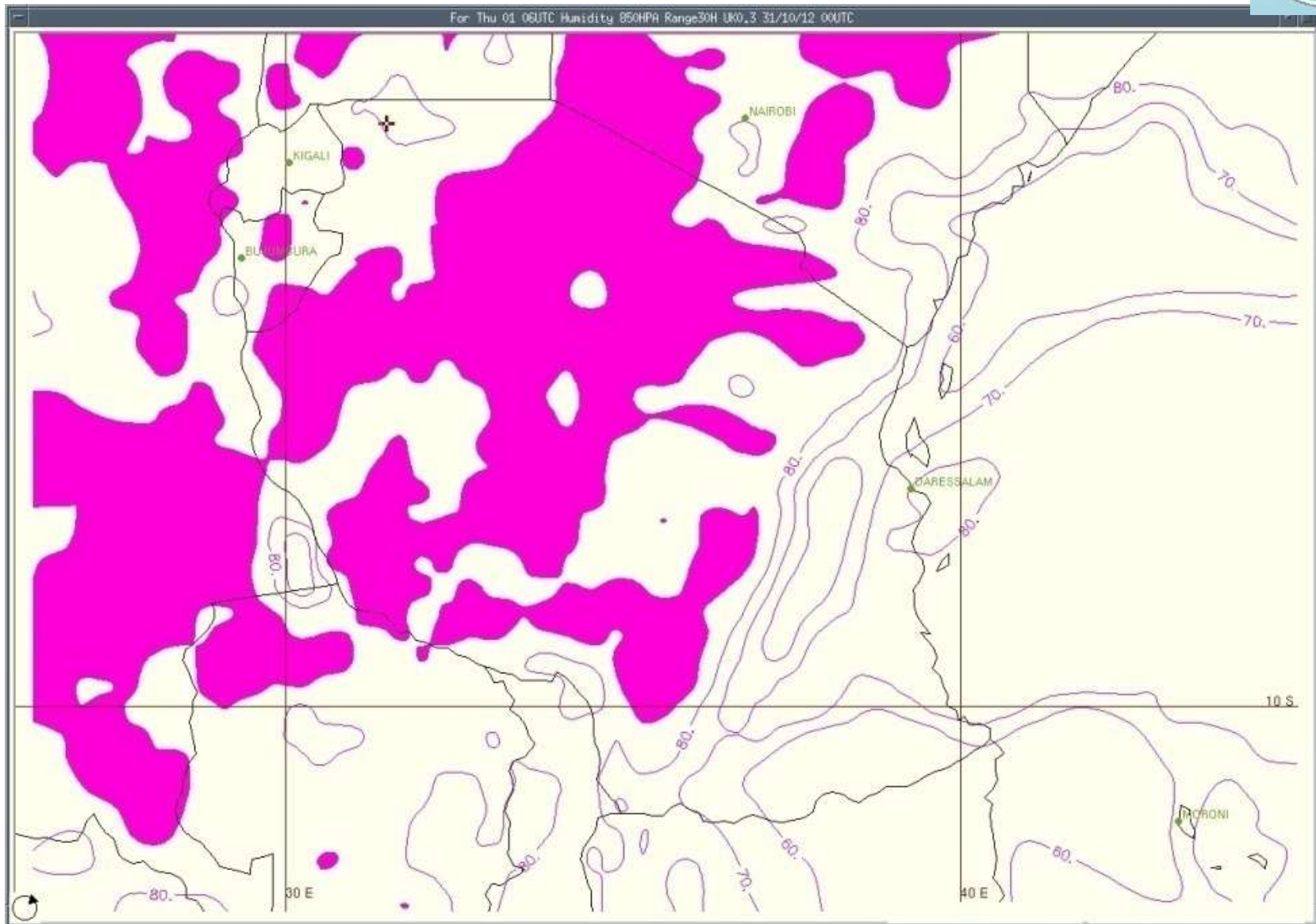
WIND AT 700hPa 01/11/2012 -0600Z



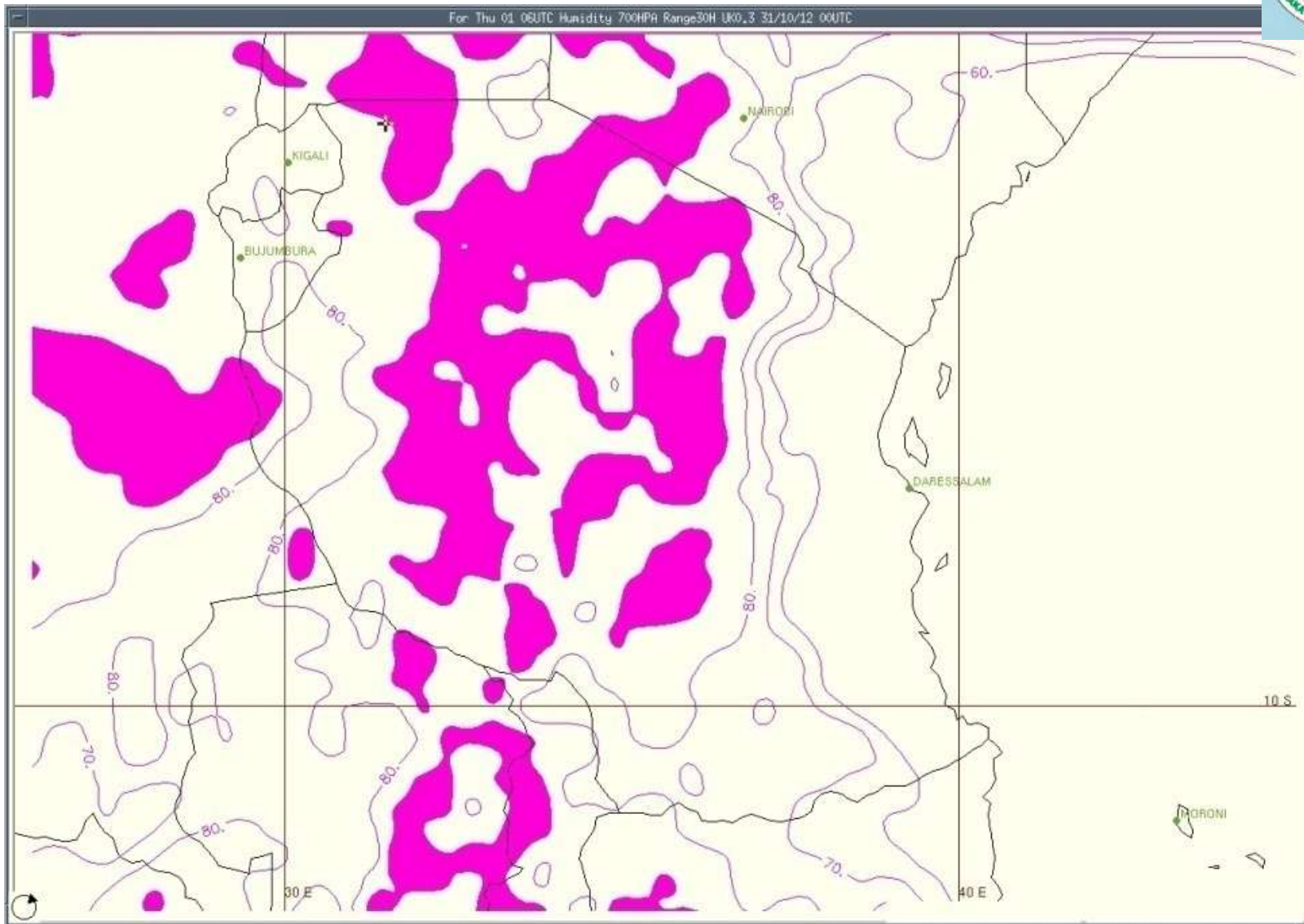
WIND AT 200hPa 01/11/2012 -0600Z



RH AT 850hPa 01/11/2012 -0600Z



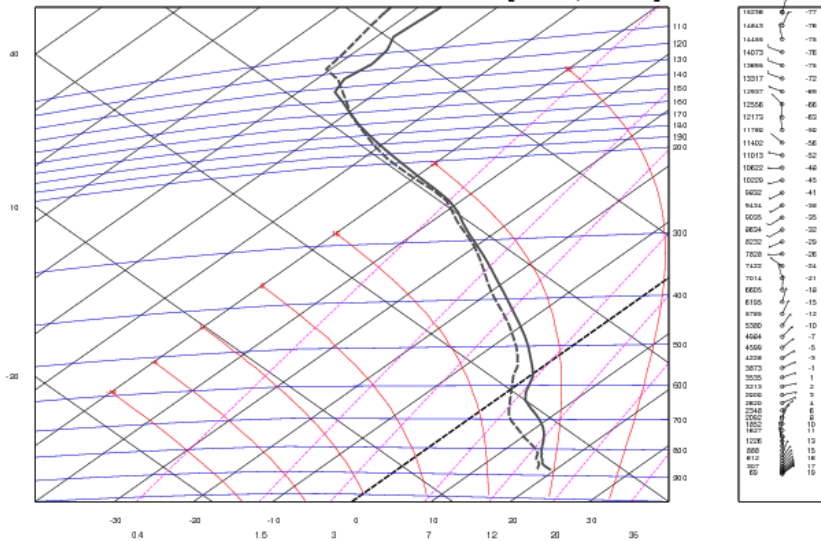
RH AT 700hPa 01/11/2012 -0600Z



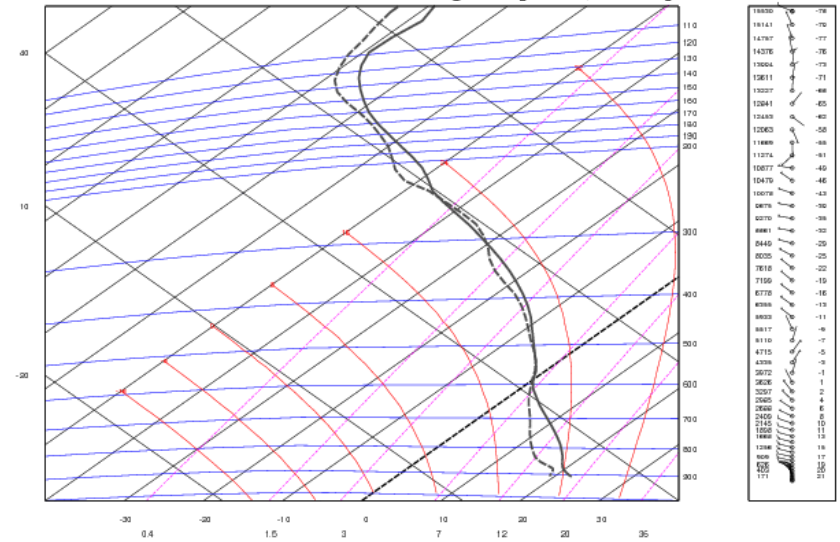
01/11/2012 -0600



ECMWF Fc 20121030 12 UTC +42h Mwanza [2.47S,32.92E]



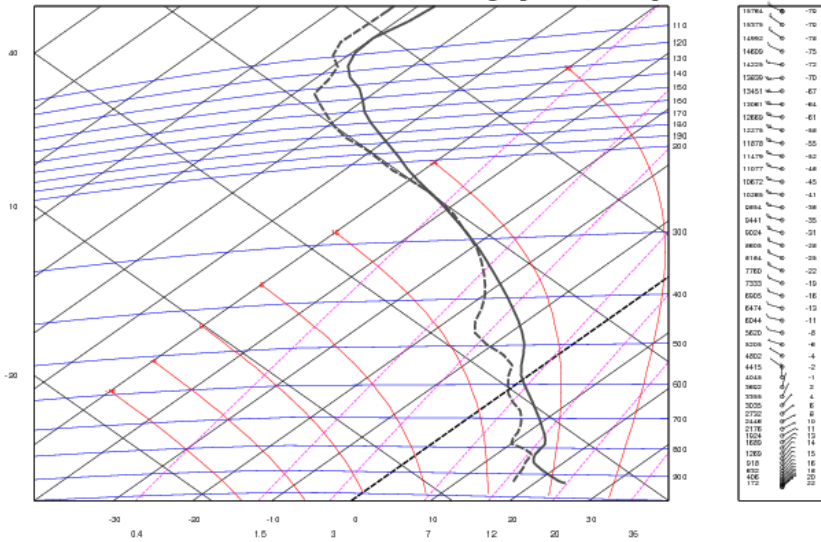
ECMWF Fc 20121030 12 UTC +42h Kigoma [4.88S,29.67E]



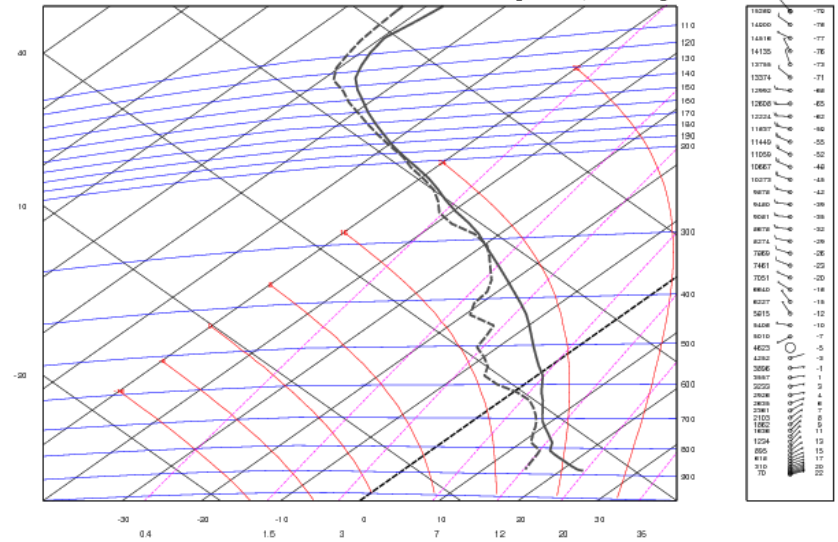
01/11/2012 -0600



ECMWF Fc 20121030 12 UTC +42h Mahenge [8.75S,36.8E]



ECMWF Fc 20121030 12 UTC +42h Dodoma [6.17S,35.77E]





EPS

TABORA

DODOMA

EPS Meteoogram
 Tabora 5.2° S 32.91° E (EPS land point) 1189 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

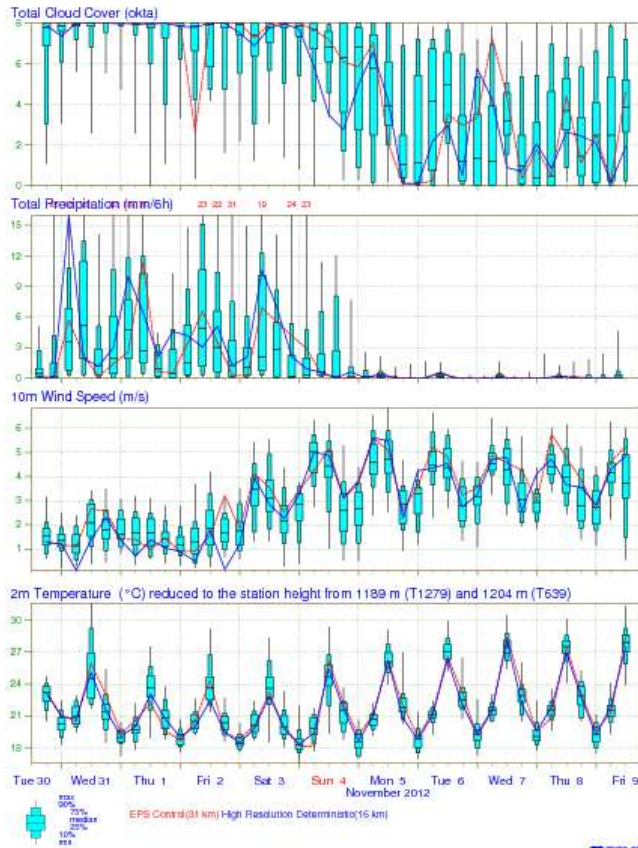


Figure 4-2.2.1

CEMWF

EPS Meteoogram
 Dodoma 6.04° S 35.72° E (EPS land point) 1121 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

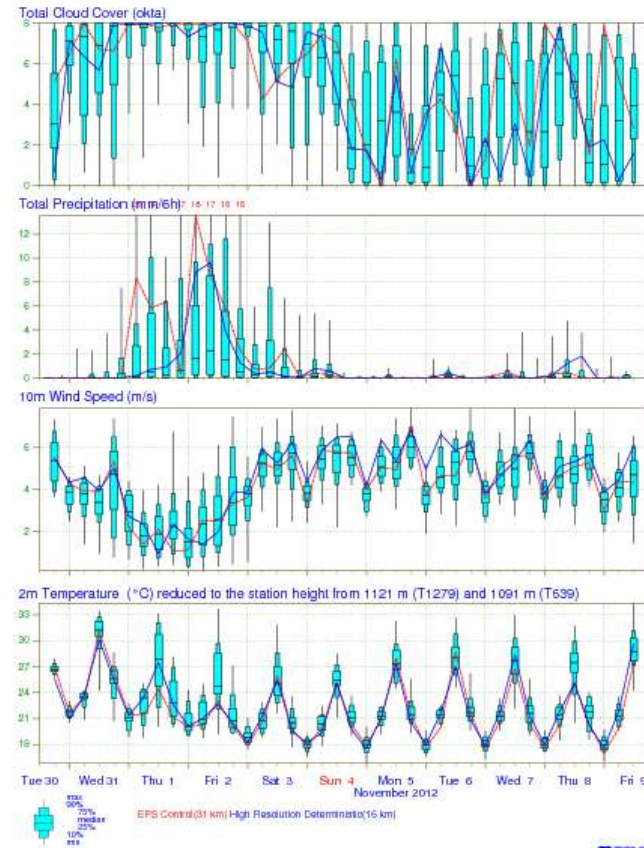


Figure 4-2.2.2

CEMWF



EPS

MWANZA

KIGOMA

EPS Meteogram
 Mwanza 2.67° S 32.91° E (EPS land point) 1180 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

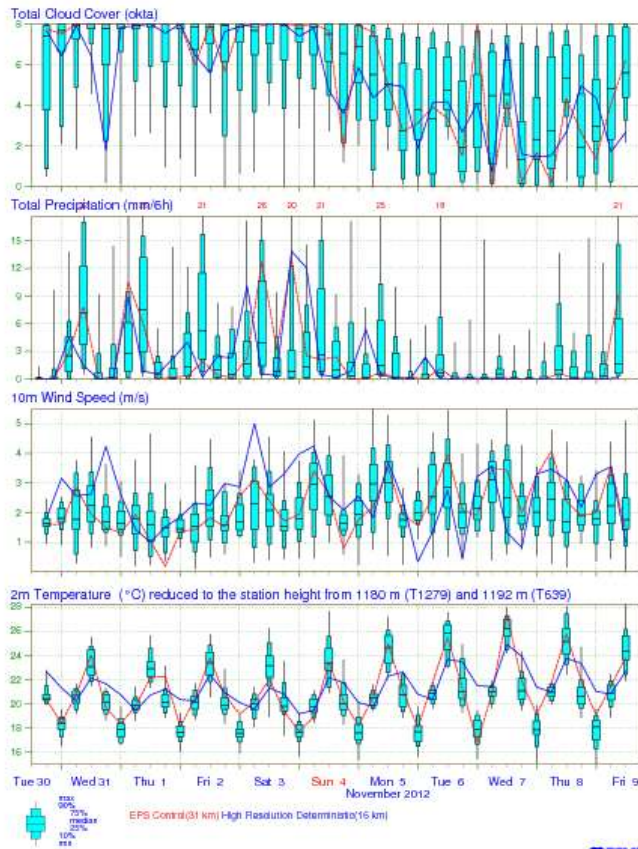


Figure 1-23.1

CECMWF

EPS Meteogram
 Kigoma 4.92° S 29.81° E (EPS land point) 892 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

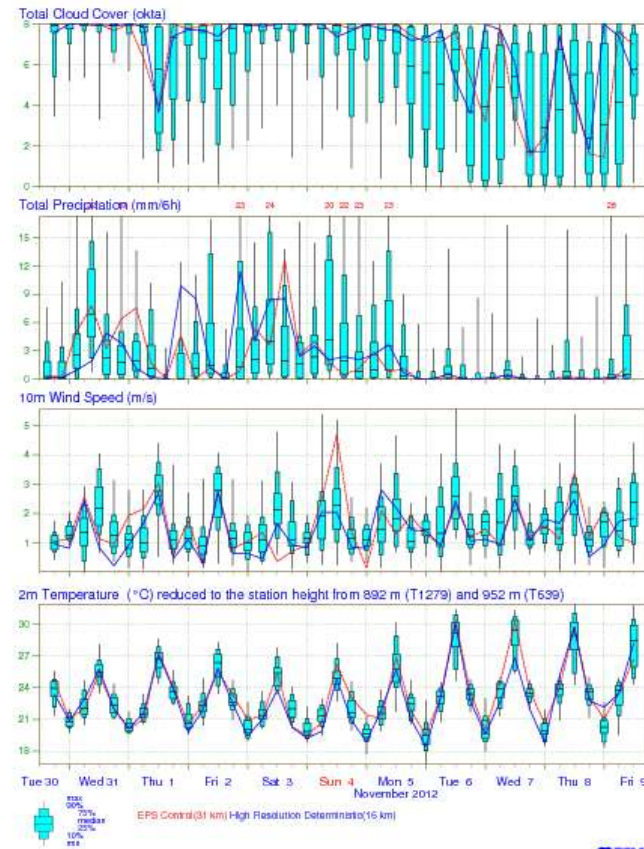


Figure 1-23.2

CECMWF



MAHENGE

EPS

MBEYA

EPS Meteogram
 Mahenge 8.85°S 36.84°E (EPS land point) 534 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

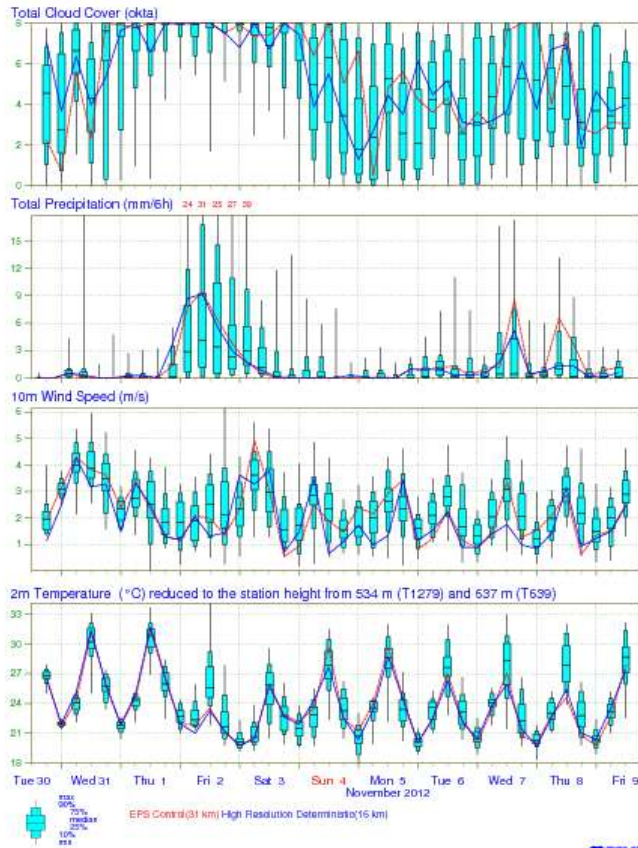


Figure 1-2.1.1

CEMWF

EPS Meteogram
 Mbeya 8.85°S 33.47°E (EPS land point) 1769 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

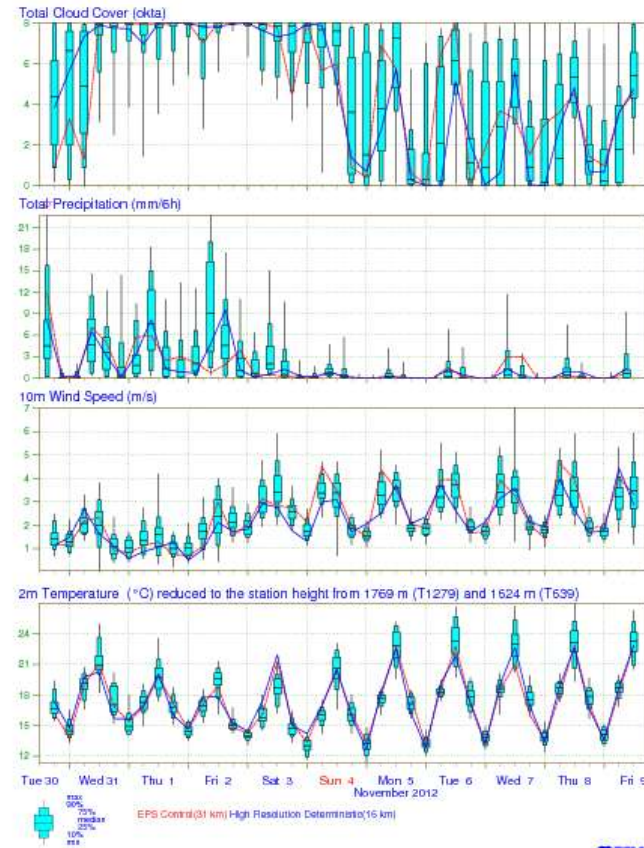


Figure 1-2.1.2

CEMWF



ARUSHA

EPS

ZANZIBAR

EPS Meteogram
Arusha 3.23°S 36.56°E (EPS land point) 1657 m (T1279)
Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

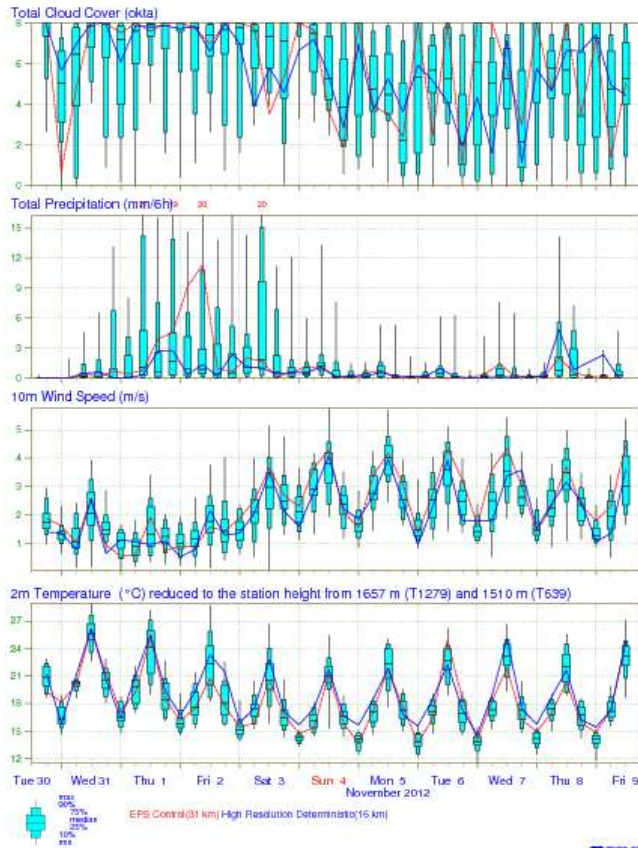


Image 4-2.2.2

CEMWF

EPS Meteogram
Zanzibar 6.32°S 39.38°E (EPS land point) 3 m (T1279)
Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

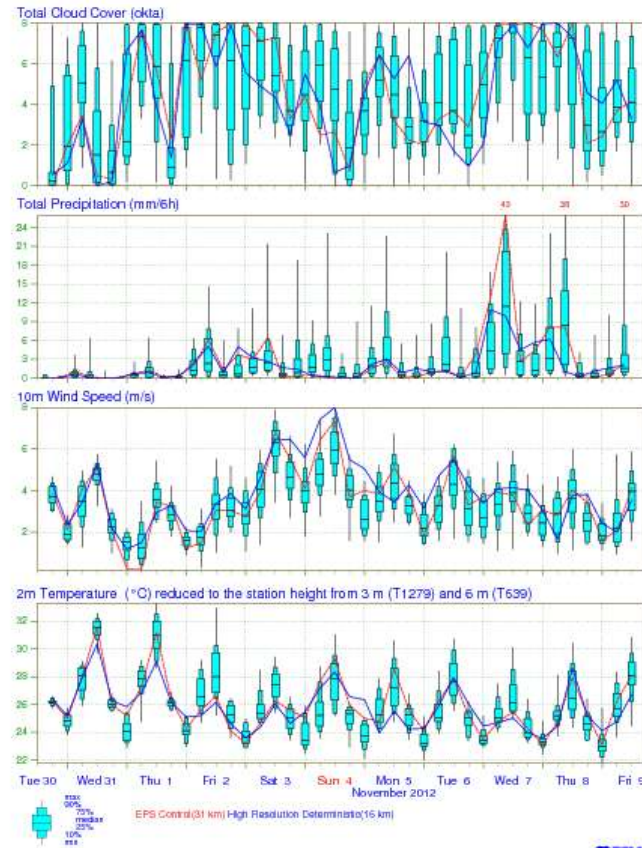


Image 4-2.2.2

CEMWF



DAR

EPS

MTWARA

EPS Meteogram
 DaresSalaam 6.89°S 39.09°E (EPS land point) 117 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

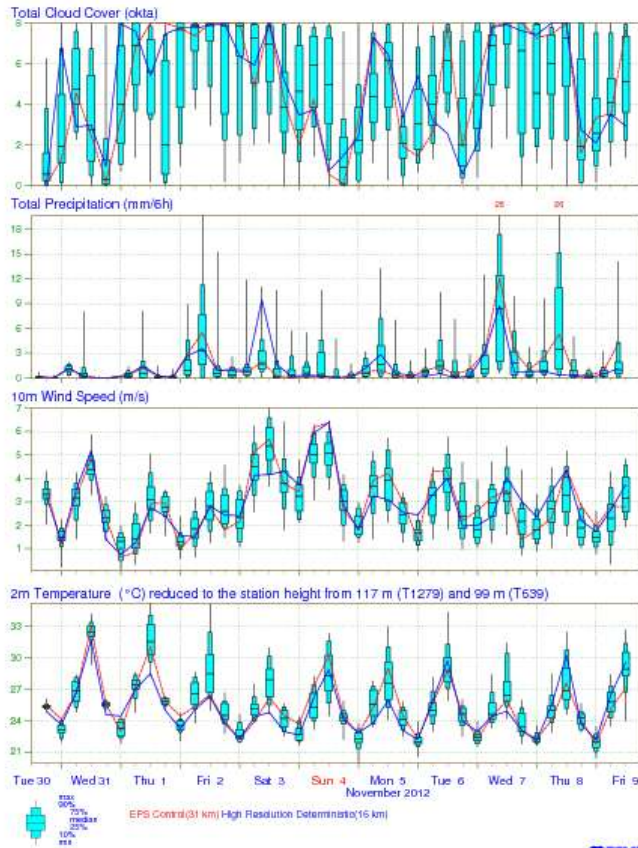


Image 4-2.2.1

CECMWF

EPS Meteogram
 Mtwara 10.54°S 40.22°E (EPS land point) 43 m (T1279)
 Deterministic Forecast and EPS Distribution Tuesday 30 October 2012 12 UTC

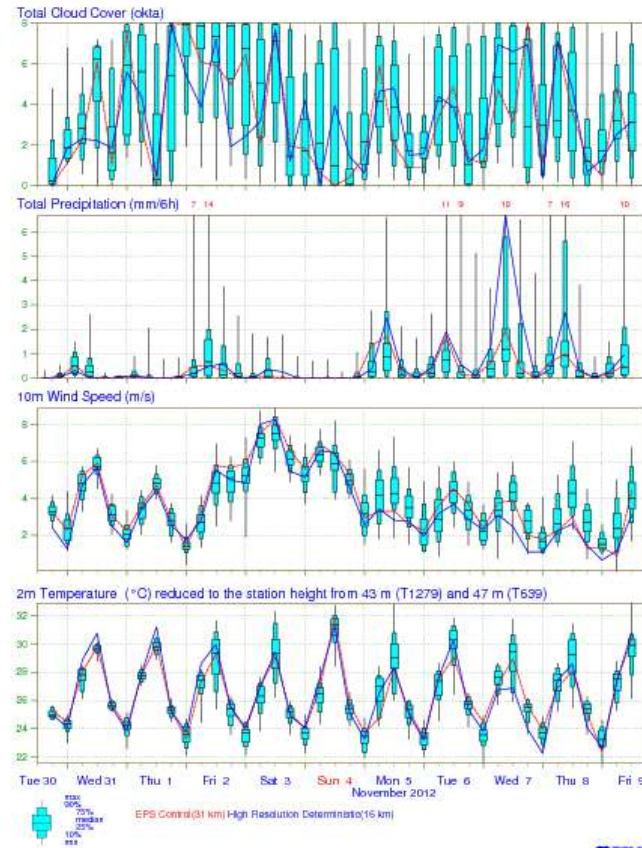


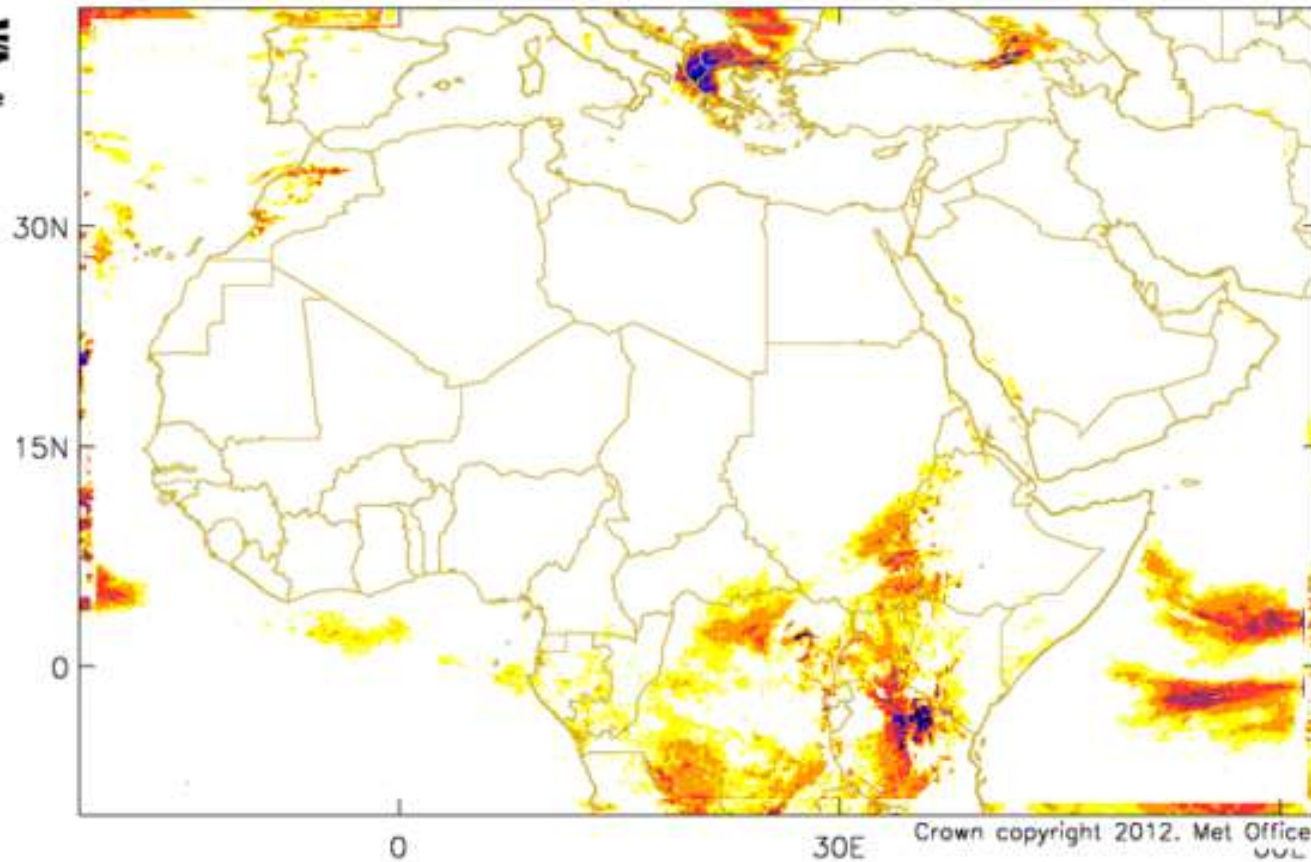
Image 4-2.2.2

CECMWF

UKMET ALAM



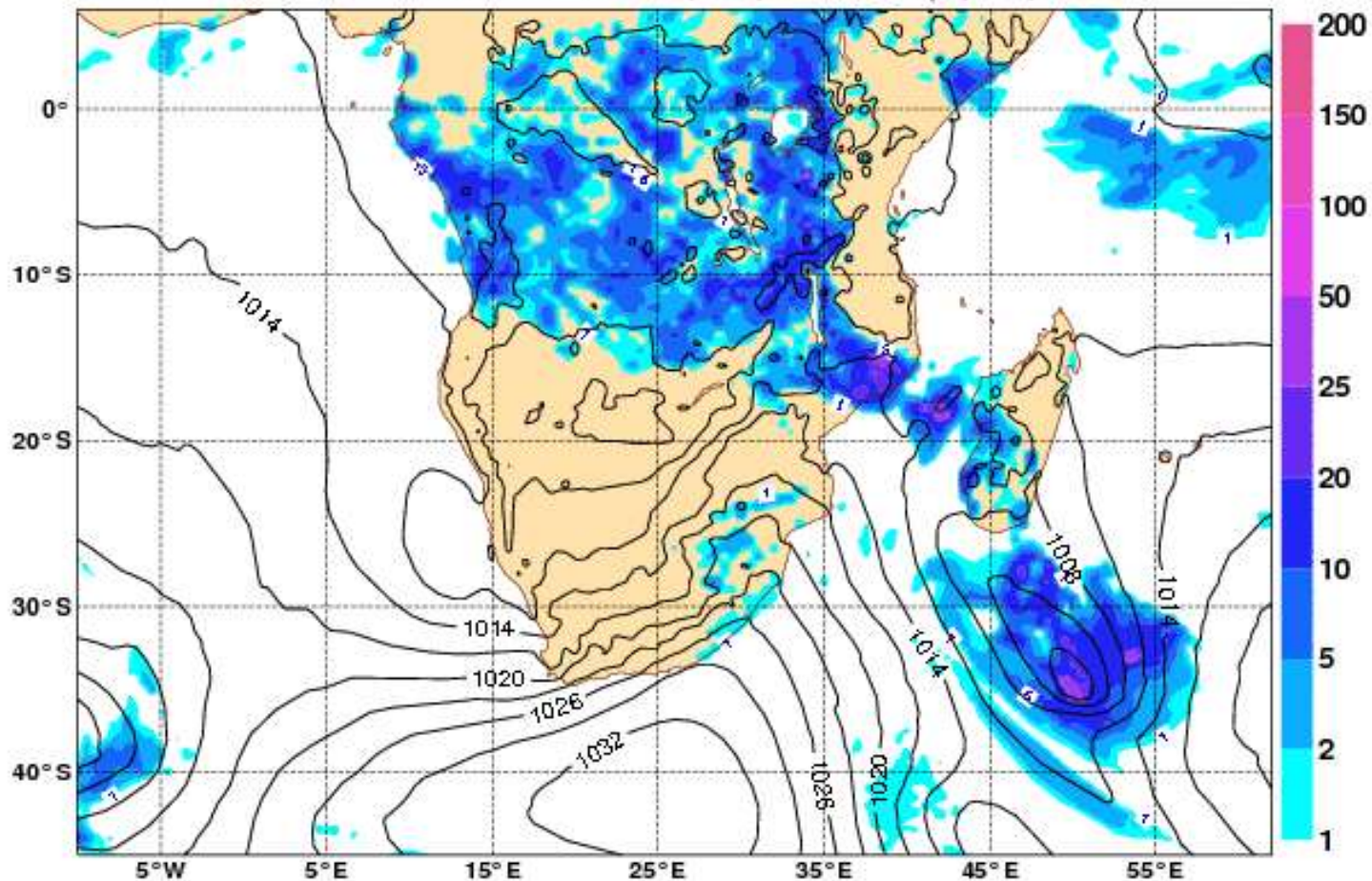
Total precipitation amount (mm)
from 0600 01/11/12 to 1200 01/11/12



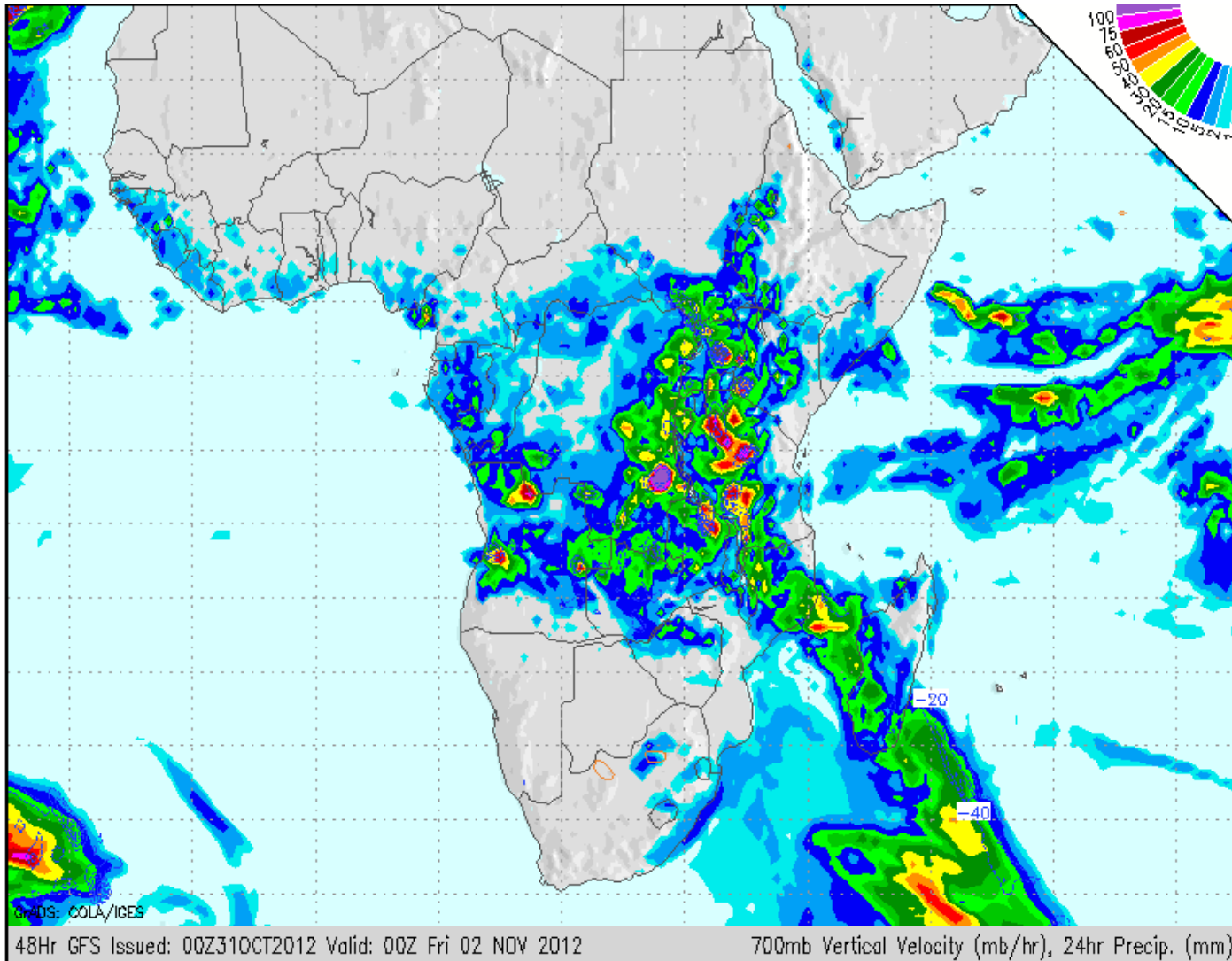
ECMWF

0600-1200Z

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



GFS COLA



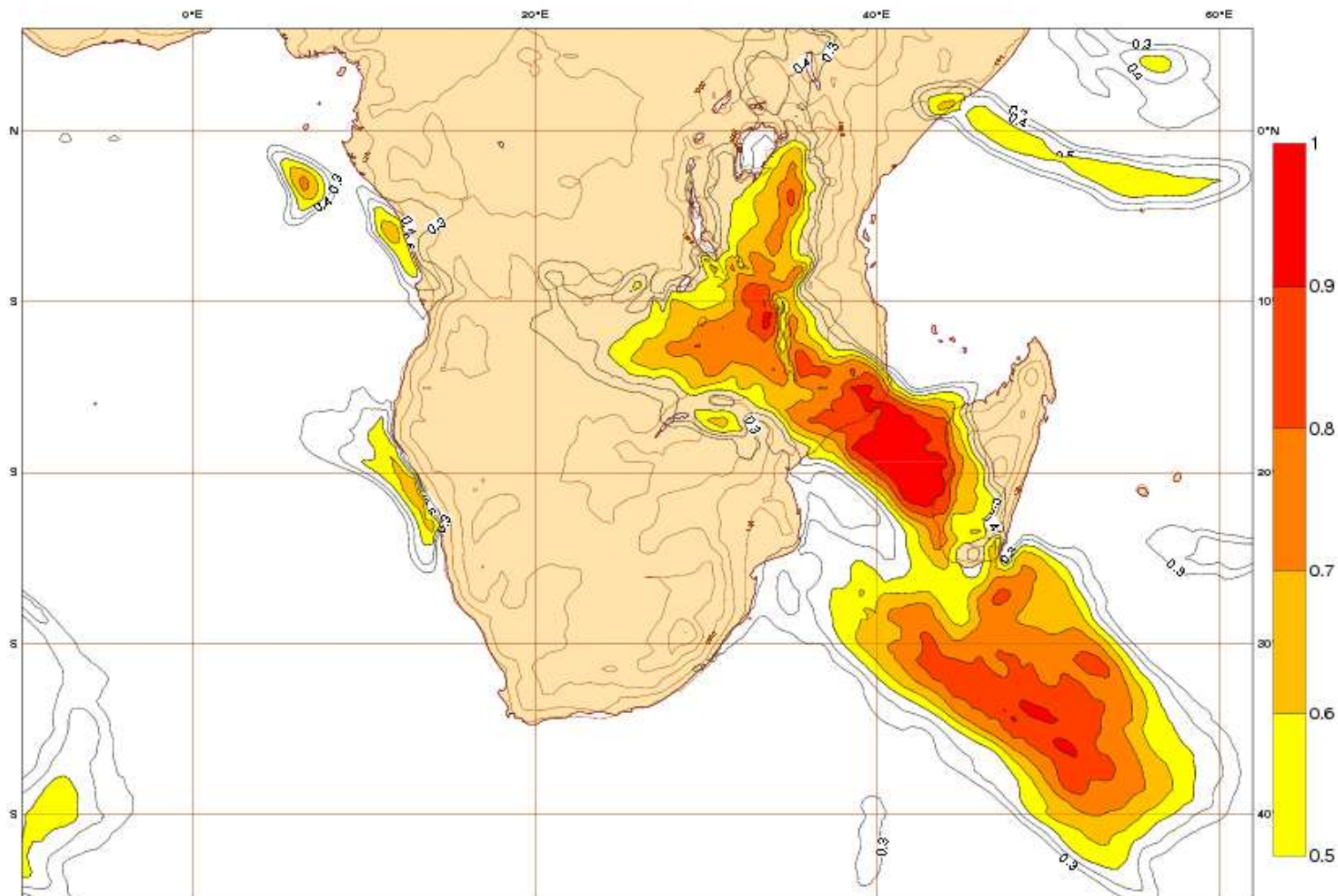
48Hr GFS Issued: 00Z31OCT2012 Valid: 00Z Fri 02 NOV 2012

700mb Vertical Velocity (mb/hr), 24hr Precip. (mm)

ECMWF EFI DAY 2



Tuesday 30 October 2012 12UTC ©ECMWF Extreme forecast index 1-036-060 VT: Thursday 1 November 2012 00UTC - Friday 2 November 2012 00UTC
Surface: Total precipitation index

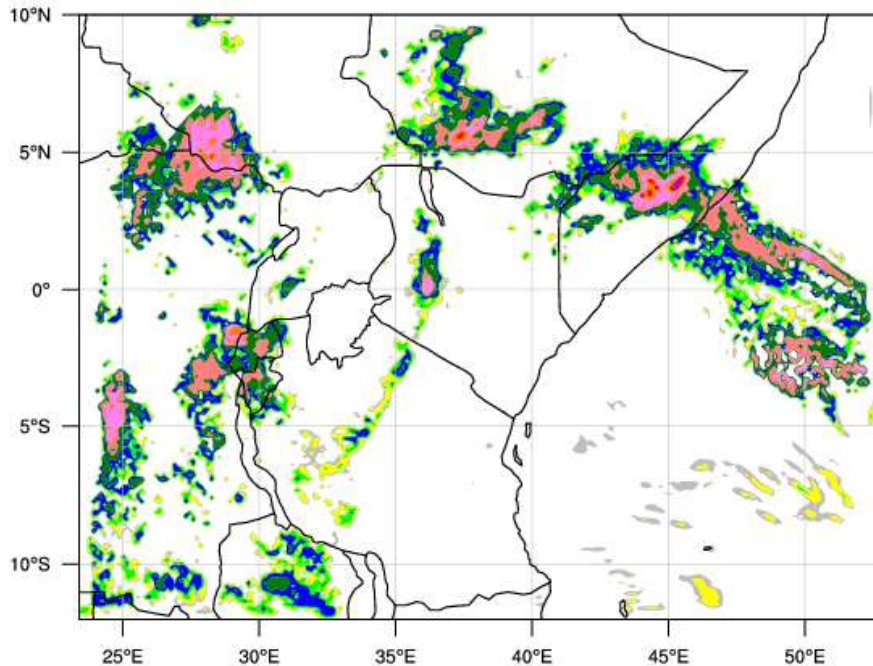


WRF - TZ

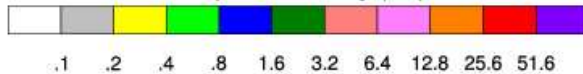
1800-2100Z

2100-0000Z

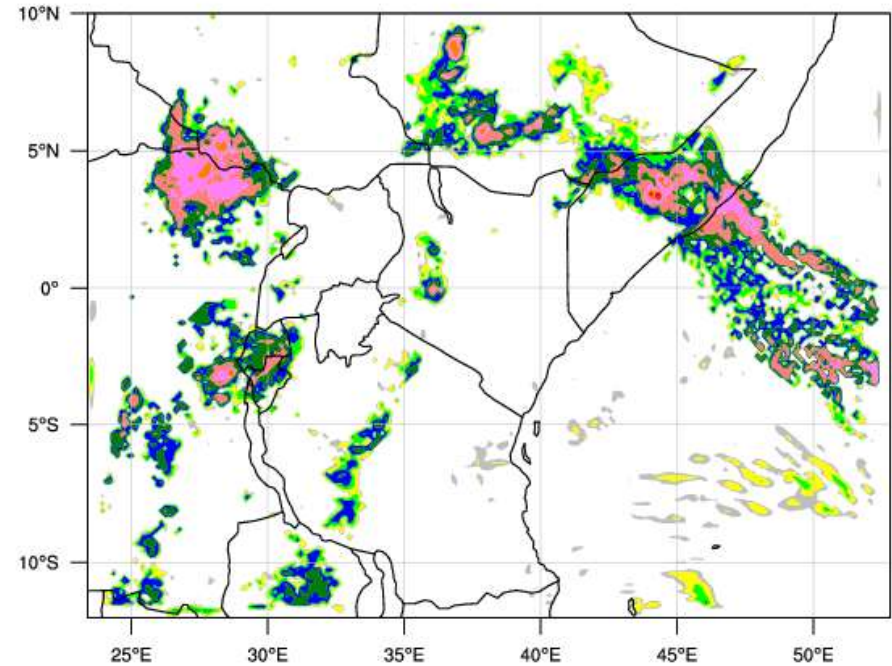
Precipitation Tendency from 2012-10-30_18:00:00 to 2012-10-30_21:00:00 (mm)



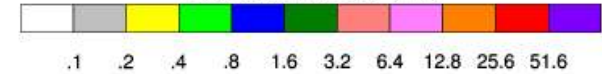
Precipitation Tendency (mm)



Precipitation Tendency from 2012-10-30_21:00:00 to 2012-10-31_00:00:00 (mm)



Precipitation Tendency (mm)



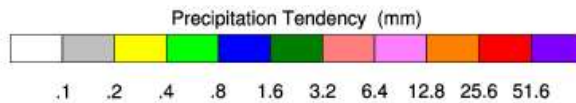
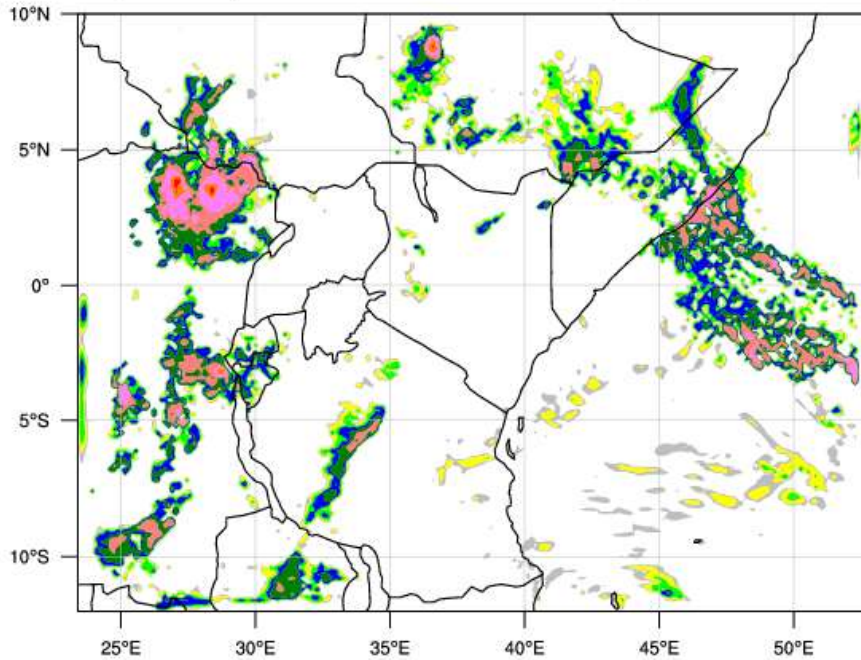


WRF

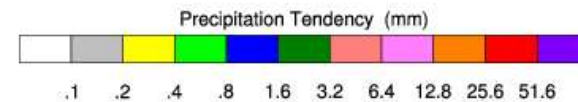
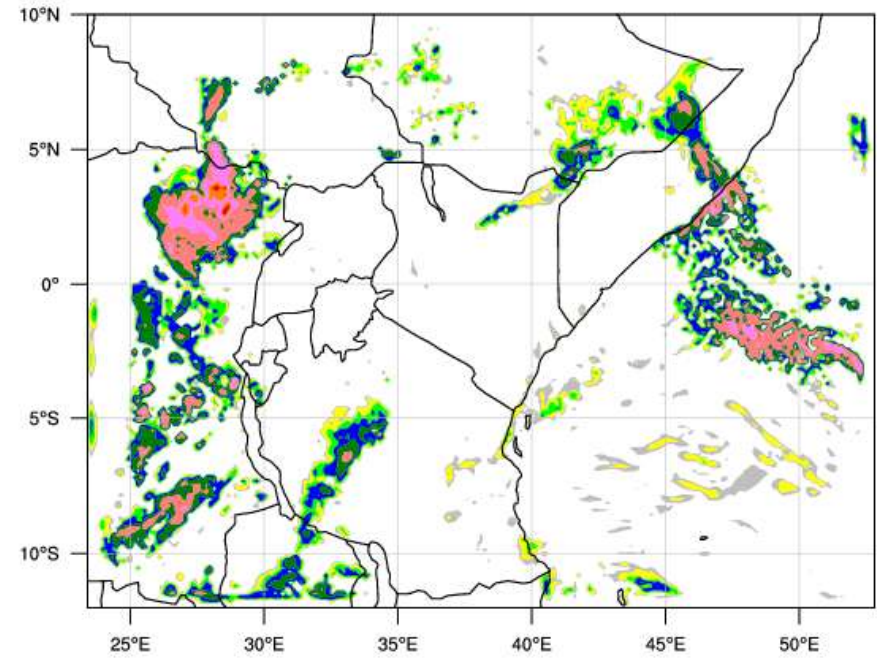
0000-0300Z

0300-0600Z

Precipitation Tendency from 2012-10-31_00:00:00 to 2012-10-31_03:00:00 (mm)



Precipitation Tendency from 2012-10-31_03:00:00 to 2012-10-31_06:00:00 (mm)



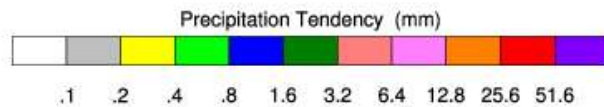
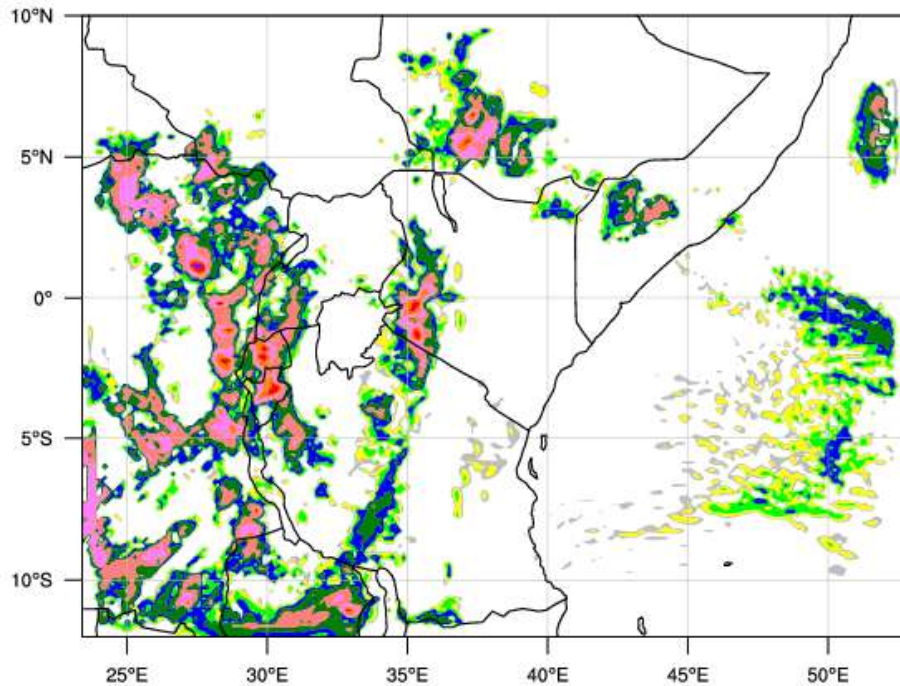


WRF

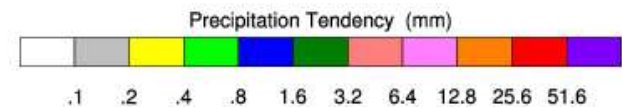
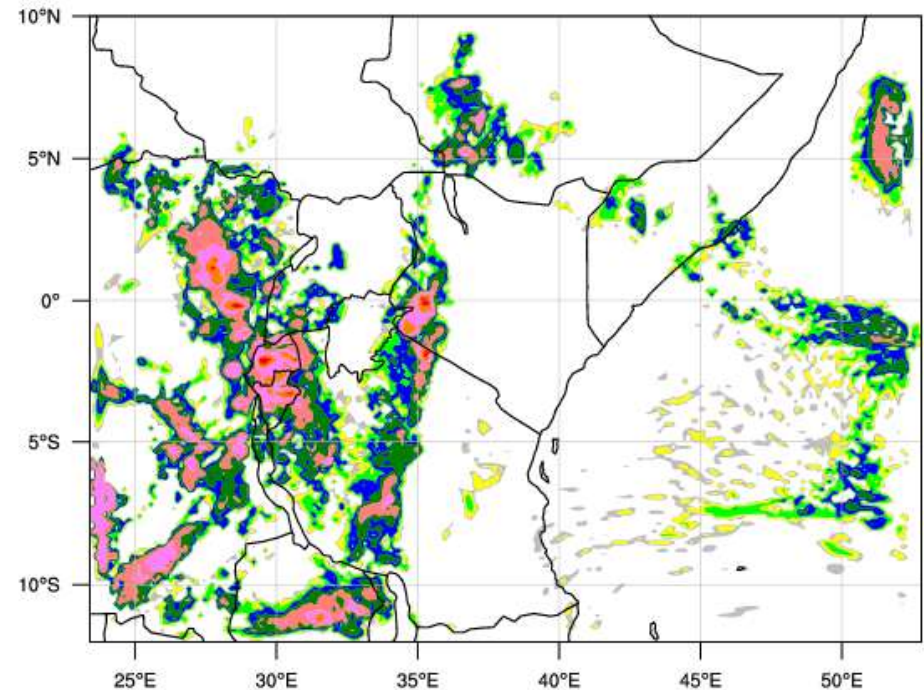
0600-0900Z

0900-1200Z

Precipitation Tendency from 2012-10-31_18:00:00 to 2012-10-31_21:00:00 (mm)



Precipitation Tendency from 2012-10-31_21:00:00 to 2012-11-01_00:00:00 (mm)



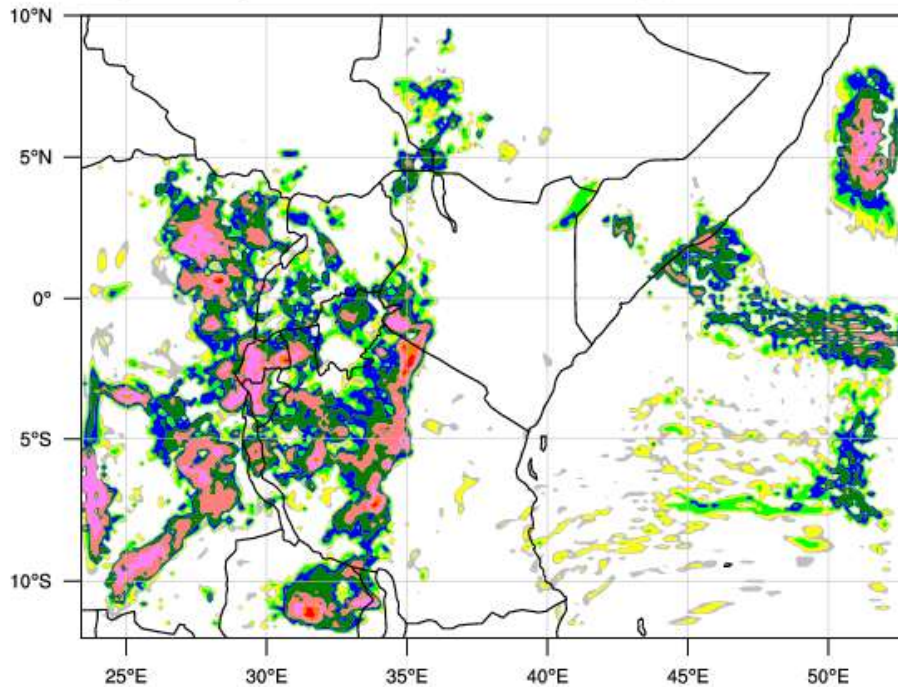


WRF

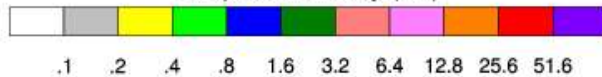
1200-1500Z

1500-1800Z

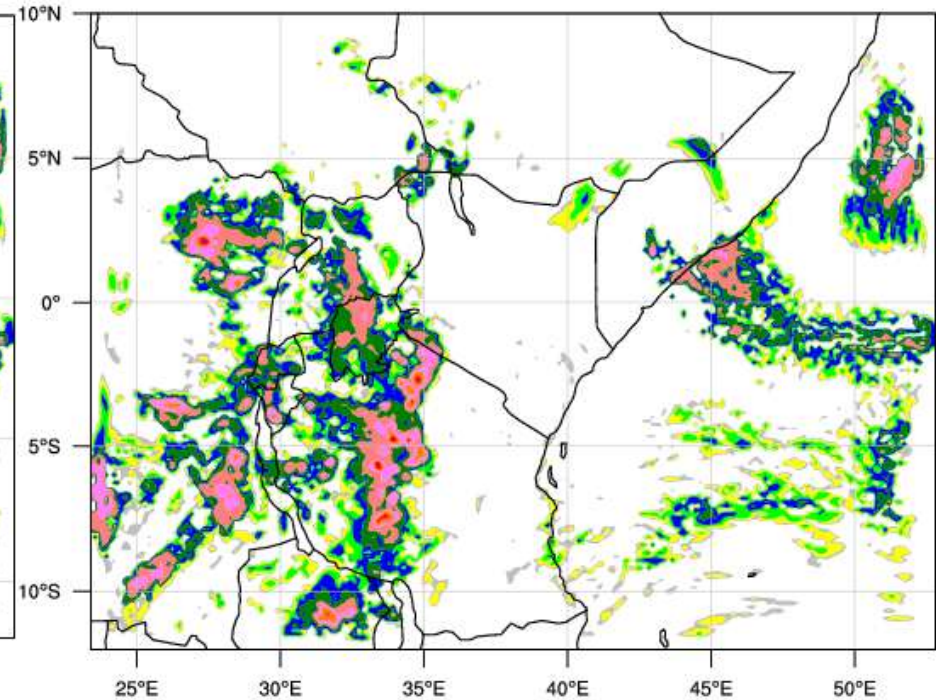
Precipitation Tendency from 2012-11-01_00:00:00 to 2012-11-01_03:00:00 (mm)



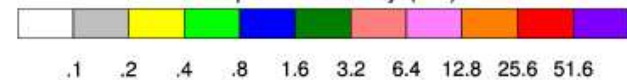
Precipitation Tendency (mm)



Precipitation Tendency from 2012-11-01_03:00:00 to 2012-11-01_06:00:00 (mm)

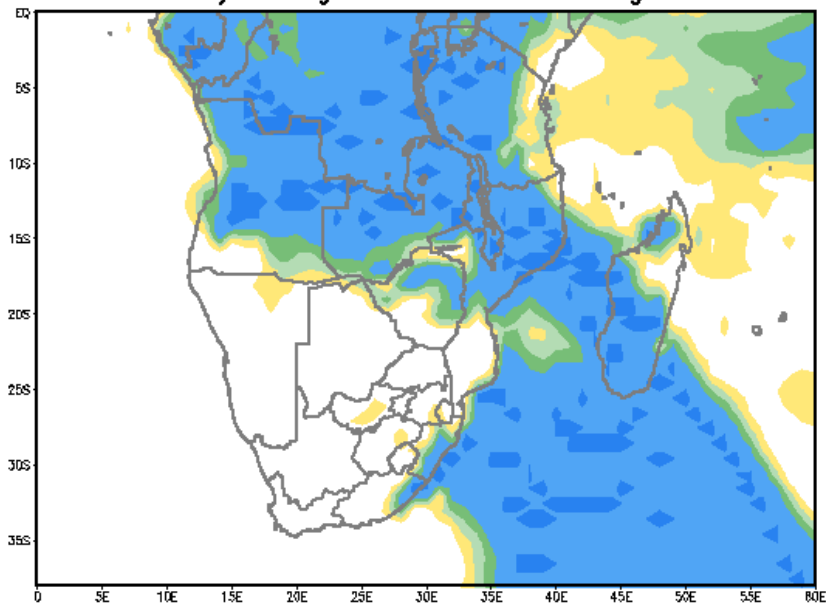


Precipitation Tendency (mm)



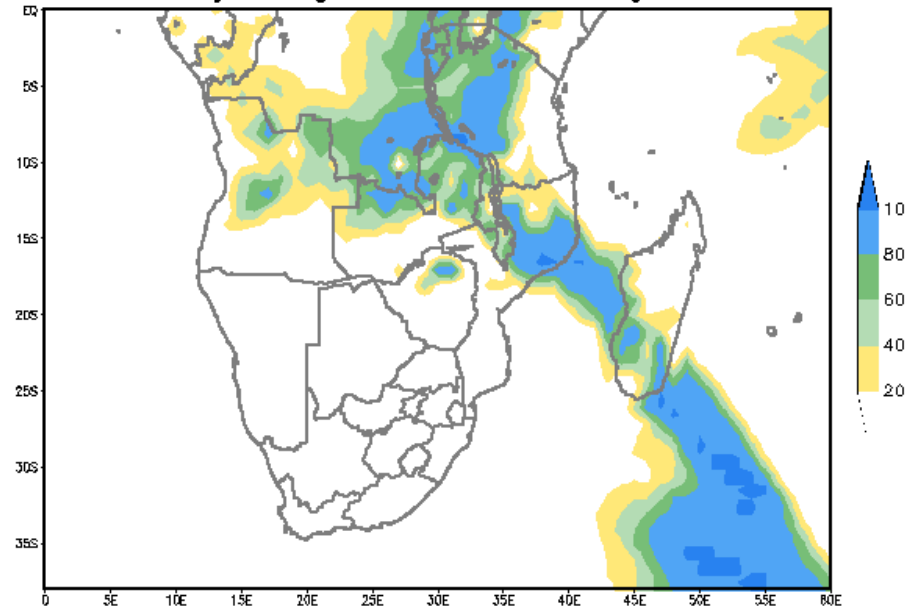
RSMC-PRETORIA

Probability of regional rainfall exceeding 1 mm



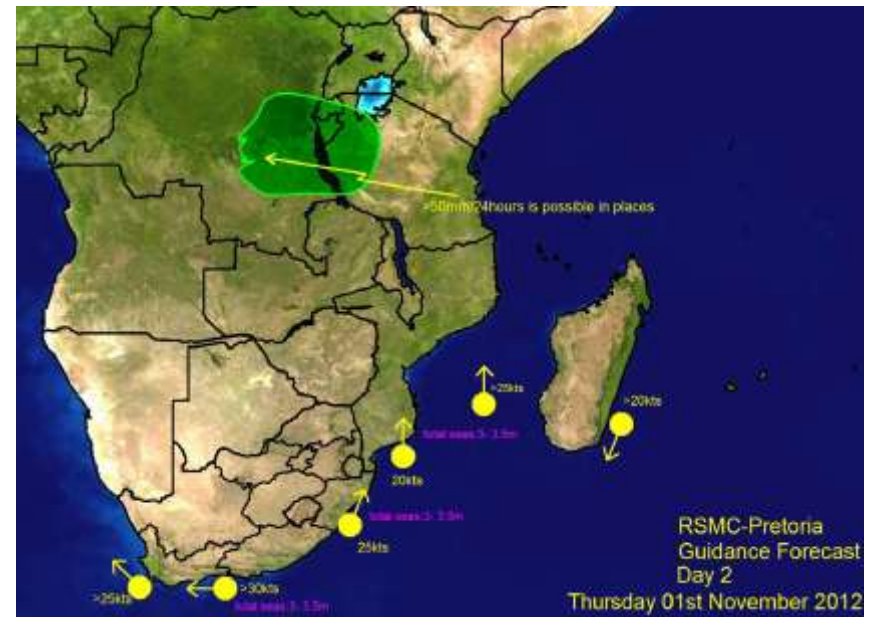
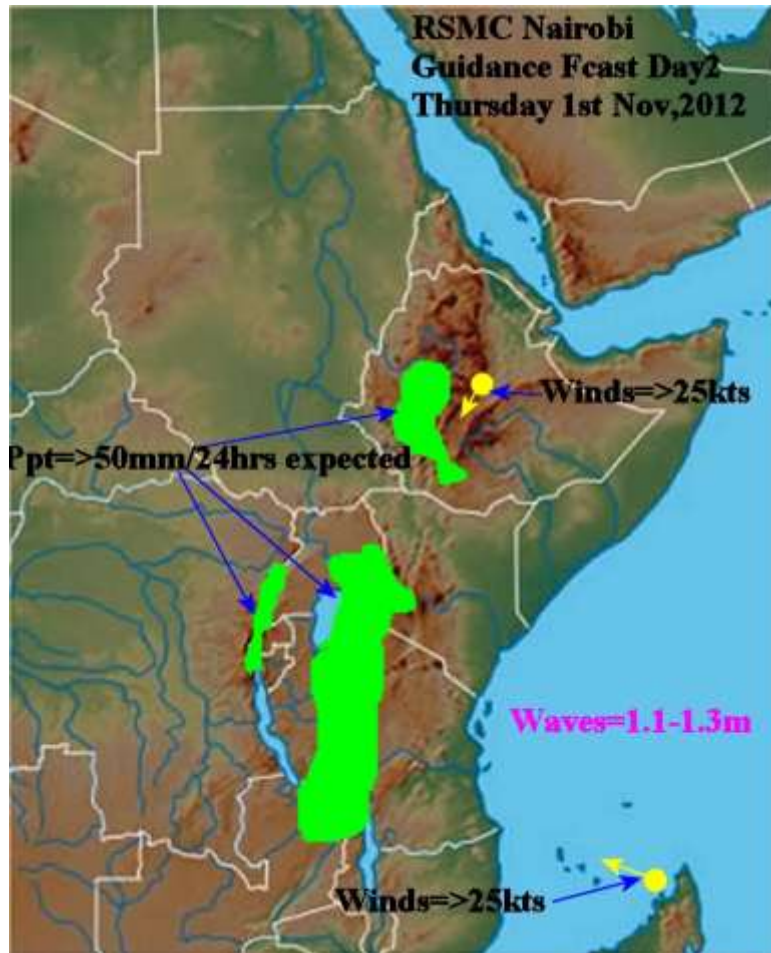
Forecast for 1 Nov 2012 – Forecast day: 2

Probability of regional rainfall exceeding 8.5 mm



Forecast for 1 Nov 2012 – Forecast day: 2

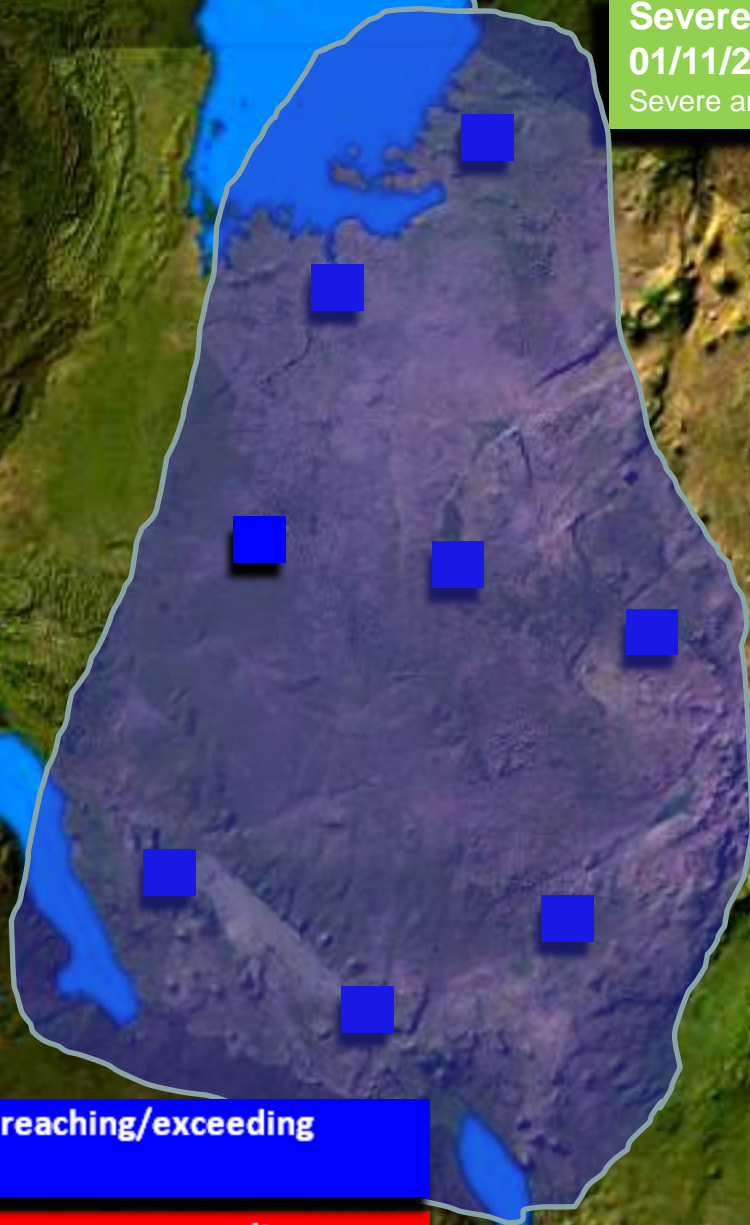
RSMC GUIDANCE FORECASTS



Severe Weather Forecast for Day 2

01/11/2012

Severe and Medium Range Weather Forecasting Desk



Heavy precipitation reaching/exceeding 50mm is expected

Strong winds and large waves exceeding 20kts and 2.0m respectively are expected

Strong winds and large waves reaching 20kts and 2.0m respectively are expected

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF INFRASTRUCTURE DEVELOPMENT
TANZANIA METEOROLOGICAL AGENCY



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 Telex: 41442 HEWA
 Telephone: 255 (0) 22 2460718
 Telefax: 255 (0) 22 2460735
 E-mail: met@meteo.go.tz



P.O. BOX 3056
 DAR ES SALAAM.

Issued: 31 October, 2012

<http://www.meteo.go.tz>

THE EXPECTED ENHANCED RAINS

Country	United Republic of Tanzania
Bulletin No.	20121031-01
Time of issue:	04:30pm
Threat Level: <i>1: Information,</i> <i>2: Advisory,</i> <i>3: Alert</i> <i>4: Warning:</i>	Information
Phenomena	Enhanced rains
Area	Some areas of Tabora, Rukwa, Mwanza, Geita, Mara, Shinyanga, Simiyu, Singida, Dodoma, Iringa, Mbeya and Njombe regions.
General remarks:	During the coming two days (1-2/11/ 2012) enhanced rains are expected over the above mentioned areas. This is due to presences of weather indicators which show a likelihood of increased moisture in the atmosphere and presence of wind convergence over those areas.
Specific remarks:	This is initial information; however, Tanzania Meteorological Agency will continue to monitor the development of the weather systems and continue to issue updates.

Issued by
TANZANIA METEOROLOGICAL AGENCY



- Warning sent to:
 - Disaster management centre (PMO)
 - Ministry of Transport
 - Ministry of Agriculture and food security
 - Surface and Maritime Transport Regulatory Authority (SUMATRA)
 - Municipal authorities
 - Social leaders
 - Media (TV, radio stations and newspapers)
 - Website www.meteo.go.tz
 - Social networks
 - www.facebook.com/tmaservices
 - www.jamiiforums.com



JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA UCHUKUZI
MAMLAKA YA HALI YA HEWA TANZANIA



Simu: 255 22 2460735/2460706
FAKSI: 255 22 2460735/2460700
Simu pepe: met@meteo.go.tz
Tovuti: www.meteo.go.tz
Unapojibu tafadhali nakili:

S.L.P. 3056
DAR ES SALAAM

Kumb. Na.: TMA/1622

Imetolewa: 05 Novemba, 2012

TAARIFA REJEO "MVUA KUBWA ZILIZOTARAJIWA"

Taarifa Na.	20121105-01
Muda wa Kutolewa Saa za Afrika Mashariki	Saa 05:30 Asubuhi
Daraja la Taarifa: 1:Taarifa	Taarifa
Aina ya Tukio Lililotarajiwa	Matukio ya Mvua kubwa
Maelezo:	Mvua kubwa zimenyesha katika kipindi cha siku tatu (1-3Novemba, 2012), katika maeneo kanda ya Kati, Ziwa Viktoria, Nyanda za juu Kusini Magharibi na Magharibi mwa Nchi, ambapo katika muda wa saa 72 kituo cha Mwanza kilipima (mm 170.9), Singida (mm 38.0), Tukuyu-Mbeya (mm 304.6), Mbambabay- Songea (107.7). Maeneo mengine yaliyopata mvua kubwa ni pamoja na Arusha (mm 142.8), Kilimanjaro (mm 97.4). Aidha maeneo mengi yalipata mvua za wastani katika kipindi hicho.
Maelezo ya Ziada:	Kutokana na mvua kubwa zilizonyesha kumekuwa na matukio ya uharibifu wa makazi katika mikoa ya Dodoma, Iringa na Mwanza na vifo katika mikoa ya Dodoma na Mwanza

Imetolewa na:

Mamlaka ya Hali ya Hewa Tanzania

Dkt. Agnes L. Kijazi
MKURUGENZI MKUU

