15 November, 2024

Extended Range Prediction for Bhutan

Background

Extended Range Prediction (ERP) for Bhutan is prepared with the support from the Indian Meteorological Department (IMD), Government of India. The model used for the system is CFSv2 coupled model (Atmospheric and Ocean model) which runs once every week (Wednesday), with the 16 Ensemble Members at the horizontal resolution of around 25 km, and the products are made available the next day (Thursday). Therefore, the ERP products for Bhutan will be generated every Friday. ERP for Bhutan is carried out for two climate variables, rainfall and temperature.

Generally, the forecast output is produced on a weekly basis for a period of a month for both the variables. The current products available from NCHM are on pilot basis which needs further studies and validation with the ground observations until the product is fully operationalized.

Doeboom Lam, Thimthrom, Thimphu, Bhutan. P.O. Box: 207, Contact: Tel: +975 2 328280/327202, Fax No.: +975 2 327202, Email Address: Director- kdupchu@nchm.gov.bt, CSD- csd@nchm.gov.bt, HOID- hoid@nchm.gov.bt, HWRSD- hwrsd@nchm.gov.bt, WCSD- wcsd@nchm.gov.bt.

Observed weather over last week

Most of the stations across the country showed a constant maximum and minimum temperature throughout the week. Light rain was observed in the isolated northern and southern parts of the country.. The table below displays observed real time rain and temperature data from regional meteorological stations over the last week.

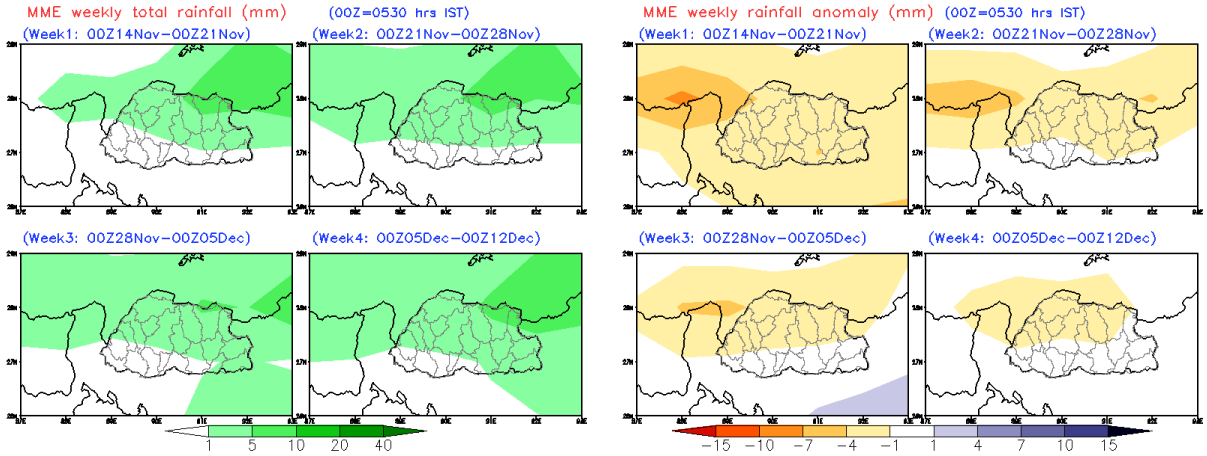
Station	Parameter	08 Nov	09 Nov	10 Nov	11 Nov	12 Nov	13 Nov	14 Nov
Babesa	Tmax (°C)	20.0	20.5	20.0	21.0	19.5	18.5	19.0
	Tmin (°C)	3.5	4.0	5.5	6.5	5.0	2.0	4.0
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dagana	Tmax (°C)	22.5	25.5	25.0	25.5	25.0	21.0	23.5
	Tmin (°C)	12.0	12.0	13.0	11.5	10.5	11.0	11.0
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chamkhar	Tmax (°C)	19.5	20.5	19.0	19.0	18.0	15.0	17.5
	Tmin (°C)	5.5	5.0	6.5	7.5	7.0	7.0	6.5
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deothang	Tmax (°C)	27.0	26.5	27.0	28.0	27.0	22.0	27.0
	Tmin (°C)	17.0	17.0	17.0	16.0	16.0	16.0	17.0
	Rain (mm)	0.0	0.0	0.0	0.0	1.2	0.0	0.0
Gasa	Tmax (°C)	18.0	19.0	18.0	17.0	15.0	0.0	17.0
	Tmin (°C)	1.0	19.0	18.0	17.0	15.0	12.0	1.0
	Rain (mm)	0.0	0.0	0.0	2.2	0.0	0.0	0.0

Doeboom Lam, Thimthrom, Thimphu, Bhutan. P.O. Box: 207, Contact: Tel: +975 2 328280/327202, Fax No.: +975 2 327202, Email Address: Director- kdupchu@nchm.gov.bt, CSD- csd@nchm.gov.bt, HOID- hoid@nchm.gov.bt, HWRSD- hwrsd@nchm.gov.bt, WCSD- wcsd@nchm.gov.bt.

ཨཪཻ། རྒྱལ་ཡོངས་ཆུ་དཔྱད་དང་གནམ་གཤིས་རིག་པའི་ལྷེ་བ།།
NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN
"Centre of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"

Weekly forecast for Bhutan

1. Rainfall Prediction

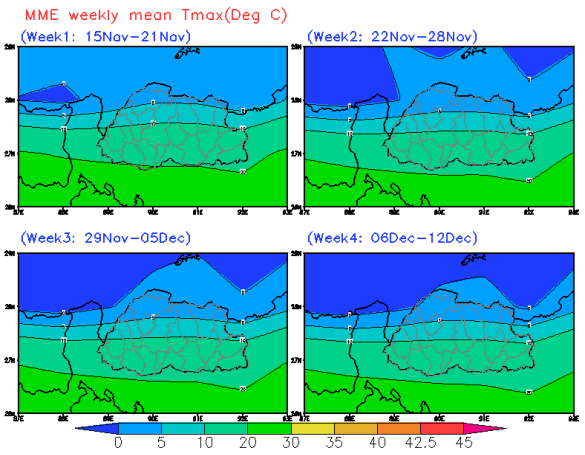


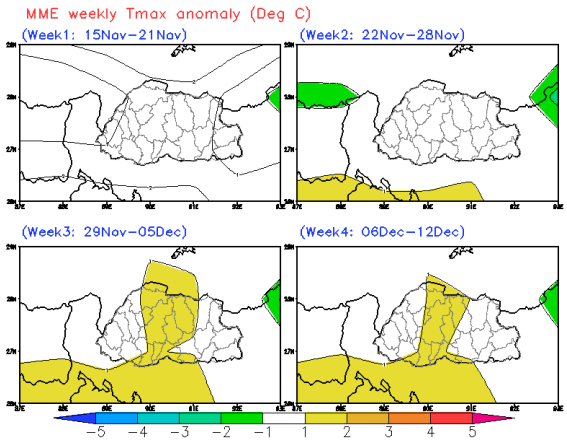
Week 1 (14 November - 21 November) and Week 2 (21 November - 28 November)
Below normal rainfall throughout the region

Week 3 (28 November - 05 December) and Week 4 (05 December - 12 December)
Normal rainfall in southern Bhutan and below normal in the northern parts.

Doeboom Lam, Thimthrom, Thimphu, Bhutan. P.O. Box: 207, Contact: Tel: +975 2 328280/327202, Fax No.: +975 2 327202, Email Address: Director- kdupchu@nchm.gov.bt, CSD- csd@nchm.gov.bt, HOID- hoid@nchm.gov.bt, HWRSD- hwrsd@nchm.gov.bt, WCSD- wcsd@nchm.gov.bt.

2. Maximum Temperature Prediction





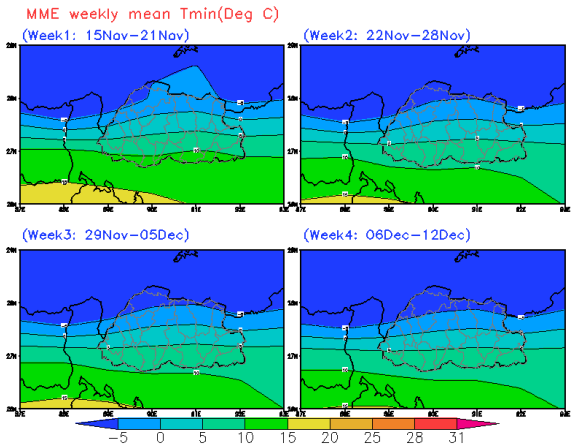
Week 1 (15 November - 21 November) and Week 2 (22 November - 28 November)

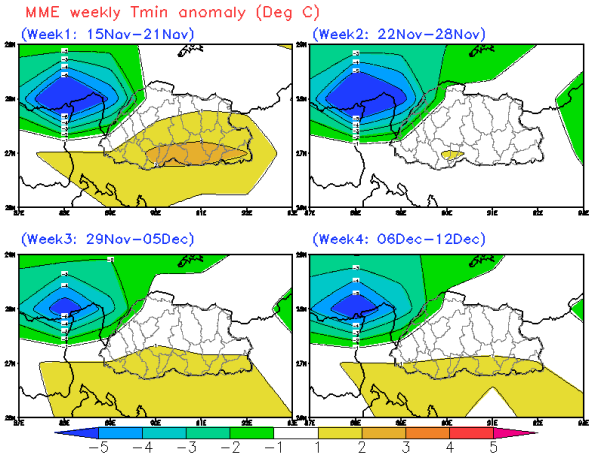
Normal maximum temperature throughout the region

Week 3 (28 November - 05 December) and Week 4 (05 December - 12 December)

Above normal maximum temperature in central and normal maximum temperature in the rest of the region.

3. Minimum Temperature Prediction





Week 1 (15 November - 21 November) and

Above normal minimum temperature in the south and normal in the north.

Week 2 (22 November - 28 November)

Normal minimum temperature throughout the region.

Week 3 (28 November - 05 December) and Week 4 (05 December - 12 December)

Above normal minimum temperature in the south and normal in the north.

Summary

- The rainfall is likely to be below normal throughout the four weeks. Normal rainfall is likely in the southern part of the country in the last two weeks.
- The maximum temperature is likely to be normal for the month except for week 3 and 4 in the central part.
- The minimum temperature is likely to be above normal in the south and normal in the north for the week1,2,and 4. It is normal in the second week.

Classification of rainfall for 24 Hours

No rainfall	0.0 mm
Very light rainfall	0.1 to 0.9 mm
Light rainfall	1.0 to 10.0 mm
Moderate rainfall	11.0 to 30.0 mm
Heavy rainfall	31.0 to 70.0 mm
Very heavy rainfall	71.0 to 150.0 mm
Extremely heavy rainfall	Equal or more than 151.0 mm

Doeboom Lam, Thimthrom, Thimphu, Bhutan. P.O. Box: 207, Contact: Tel: +975 2 328280/327202, Fax No.: +975 2 327202, Email Address: Director- kdupchu@nchm.gov.bt, CSD- csd@nchm.gov.bt, HOID- hoid@nchm.gov.bt, HWRSD- hwrsd@nchm.gov.bt, WCSD- wcsd@nchm.gov.bt.

Doeboom Lam, Thimthrom, Thimphu, Bhutan. P.O. Box: 207, Contact: Tel: +975 2 328280/327202, Fax No.: +975 2 327202, Email Address: Director- kdupchu@nchm.gov.bt, CSD- csd@nchm.gov.bt, HOID- hoid@nchm.gov.bt, HWRSD- hwrsd@nchm.gov.bt, WCSD- wcsd@nchm.gov.bt.