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23 May, 2025

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.



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Observed weather over last week

Most of the stations across the country showed varied (increase in the middle of the week) maximum temperature and minimum temperature throughout the week. Light rain was observed throughout the country. The table below displays observed real time rain and temperature data from regional meteorological stations over the last week.

Station		16 May	17 May	18 May	19 May	20 May	21 May	22 May
Babesa	Tmax (°C)	17.0	16.0	16.0	16.0	18.0	19.0	17.0
	Tmin (°C)	10.0	10.0	7.0	11.0	10.0	10.0	10.0
	Rain (mm)	1.0	1.2	3.4	1.2	0.8	3.8	0.2
Dagana	Tmax (°C)	22.5	21.5	22.5	21.0	21.0	22.0	23.0
	Tmin (°C)	18.0	16.0	17.0	17.5	17.5	18.0	16.0
	Rain (mm)	28.8	16.2	2.0	2.4	0.6	30.0	0.6
Chamkhar	Tmax (°C)	28.0	28.0	29.0	29.0	30.0	31.0	30.0
	Tmin (°C)	19.0	19.0	19.0	19.0	19.0	20.0	19.0
	Rain (mm)	0.4	0.6	4.2	0.6	0.2	12.6	0.0
Deothang	Tmax (°C)	18.0	18.0	17.5	19.5	22.5	26.0	21.0
	Tmin (°C)	12.0	16.0	16.0	16.0	16.0	16.0	17.0
	Rain (mm)	1.4	5.2	3.8	0.0	0.0	15.4	0.8
Gasa	Tmax (°C)	25.0	29.5	30.0	29.0	27.0	15.4	30.5
	Tmin (°C)	20.5	29.5	30.0	29.0	27.0	31.5	19.0
	Rain (mm)	0.0	1.2	9.6	5.2	1.6	21.6	0.0



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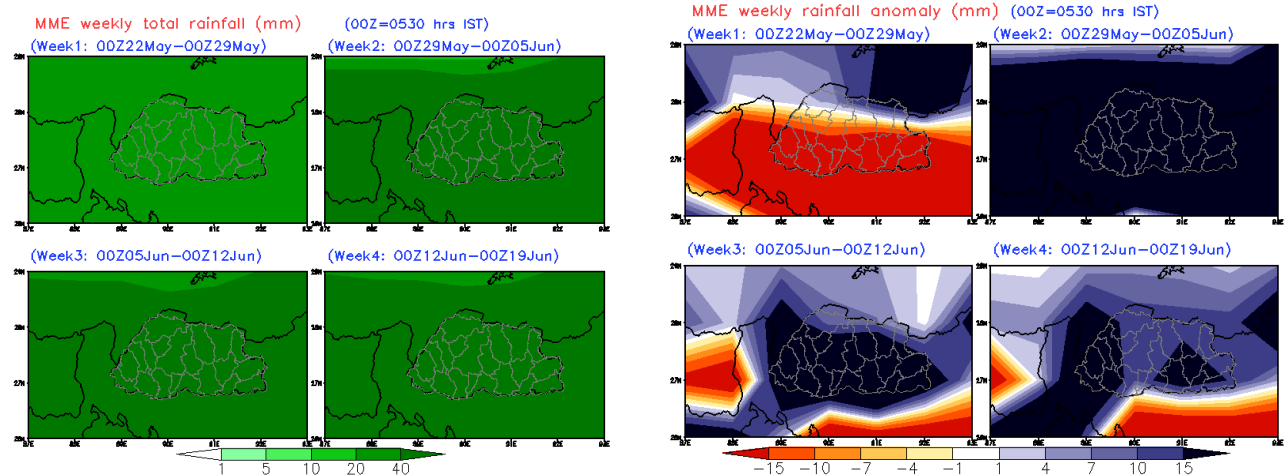
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Weekly forecast for Bhutan

1. Rainfall Prediction



Week 1 (22 May - 29 May)

Above normal rainfall in the northern part and below normal in the southern part of the country.

Week 2 (29 May - 05 June) Week 3 (05 June - 12 June) and Week 4 (12 June - 19 June)

Above normal rainfall throughout the country.



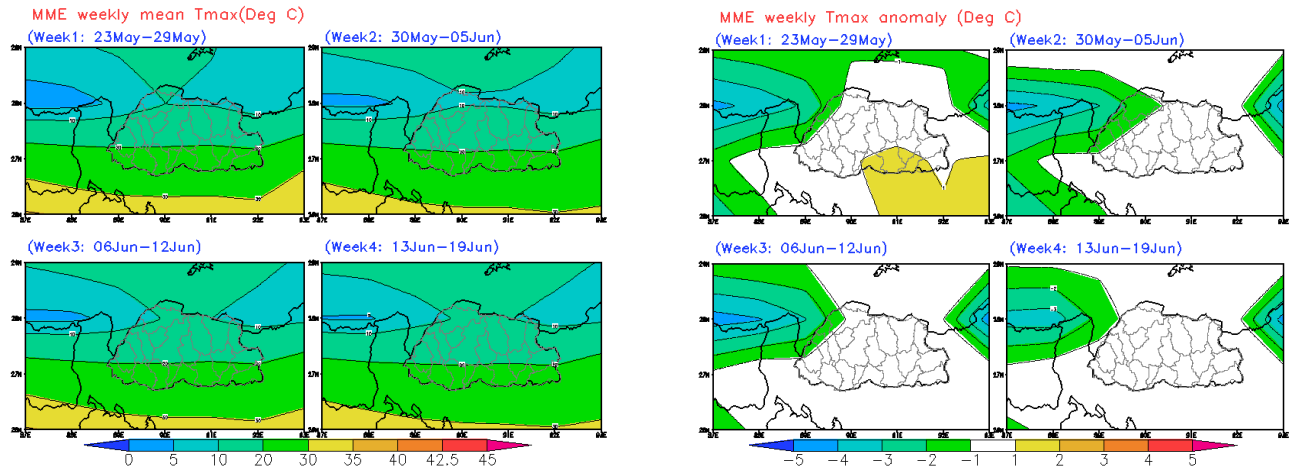
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2. Maximum Temperature Prediction



Week 1 (23 May - 29 May), Week 2 (30 May - 05 June) and Week 3 (06 June - 12 June)

Normal maximum temperature throughout the region except below normal in the northwest.

Week 4 (13 June - 19 June)

Normal maximum temperature throughout the region.



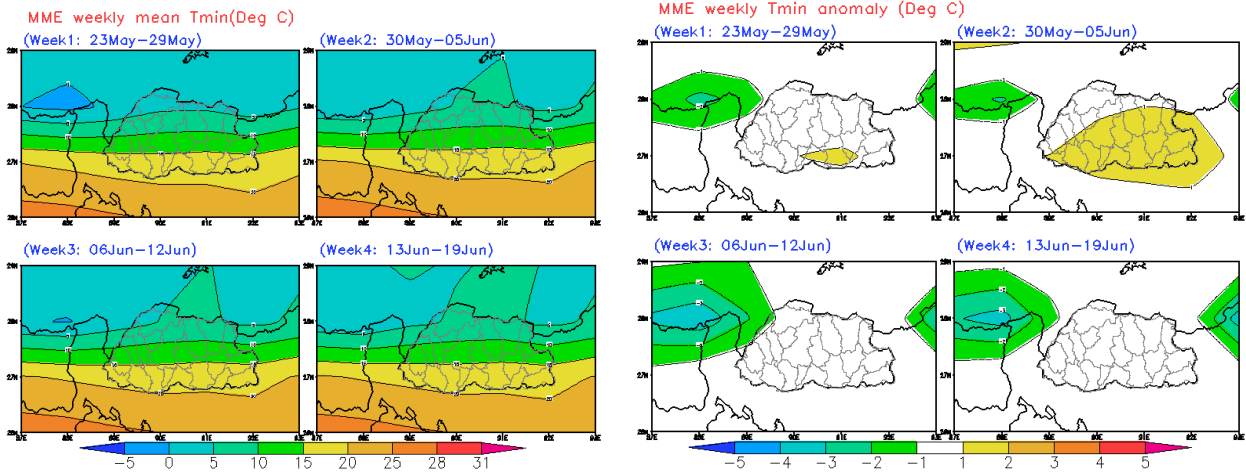
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3. Minimum Temperature Prediction



Week 1 (23 May - 29 May)

Normal minimum temperature throughout the region.

Week 2 (30 May - 05 June)

Above normal minimum temperature in most of the region.

Week 3 (06 June - 12 June) and Week 4 (13 June - 19 June)

Normal minimum temperature throughout the region.



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Summary

- The rainfall is likely to be above normal rainfall in the northern part and below normal in the southern part for week one and above normal for the rest of the month.
- The maximum temperature is likely to be normal maximum temperature throughout the region except below normal in the northwest for the first three weeks and normal for last week..
- The minimum temperature is likely to be normal for the month except for above normal in the south for week 2.

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



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