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25 October, 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.



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Observed weather over last week

Most of the stations across the country showed a constant maximum and minimum temperature throughout the week. No rain was observed over the country except in the north. The table below displays observed real time rain and temperature data from regional meteorological stations over the last week.

Station	Parameter	18 Oct	19 Oct	20 Oct	21 Oct	22 Oct	23 Oct	24 Oct
Babesa	Tmax (°C)	22.0	20.5	22.0	22.5	24.0	24.0	22.5
	Tmin (°C)	8.0	8.0	9.0	6.5	4.0	5.0	6.0
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dagana	Tmax (°C)	23.0	23.0	21.5	26.5	28.5	28.5	22.0
	Tmin (°C)	15.0	14.5	14.5	12.5	14.0	16.0	15.5
	Rain (mm)	0.4	0.0	0.0	0.0	0.0	0.0	5.0
Chamkhar	Tmax (°C)	19.5	20.0	18.0	21.5	22.5	22.5	17.5
	Tmin (°C)	11.0	9.5	9.5	7.5	5.5	6.0	7.5
	Rain (mm)	0.0	1.1	0.0	1.0	0.0	0.0	2.4
Deothang	Tmax (°C)	26.0	26.0	27.0	28.0	30.0	30.0	26.0
	Tmin (°C)	17.5	17.5	17.5	18.0	19.0	18.0	20.0
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	15.0
Gasa	Tmax (°C)	11.5	16.0	14.0	18.0	20.5	0.0	20.0
	Tmin (°C)	7.0	16.0	14.0	18.0	20.5	22.0	5.0
	Rain (mm)	15.4	7.4	19.0	0.0	0.0	0.0	0.0



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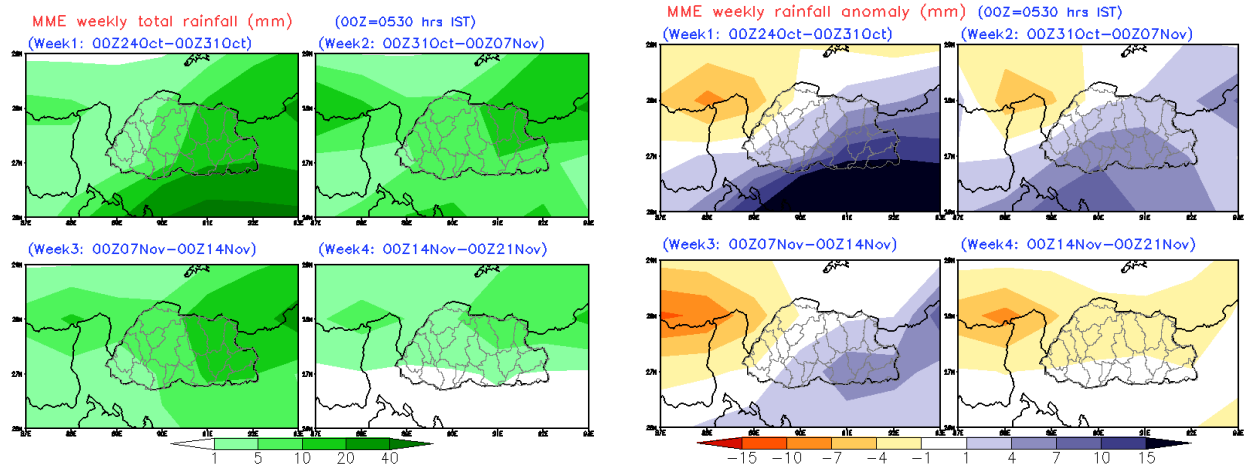
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Weekly forecast for Bhutan

1. Rainfall Prediction



Week 1 (24 October - 31 October), Week 2 (31 October - 07 November) and Week 03 (07 November - 14 November)

Above normal rainfall is expected throughout the region

Week 04 (14 November - 21 November)

Below normal rainfall is expected throughout the region



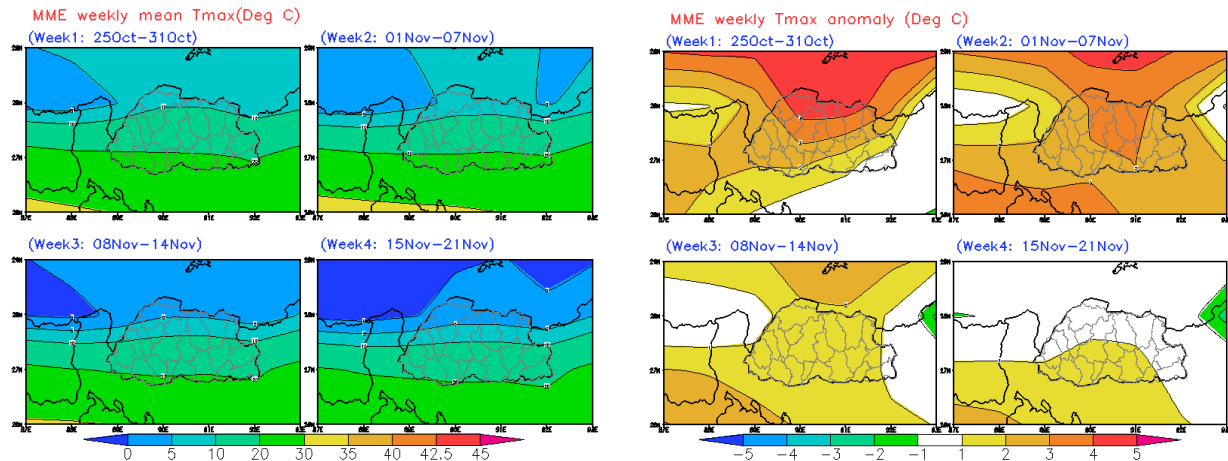
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2. Maximum Temperature Prediction



Week 1 (25 October - 31 October) , Week 2 (01 November - 07 November) and Week 3 (08 November - 14 November)

Above normal maximum temperature is expected throughout the region

Week 4 (15 November - 21 November)

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



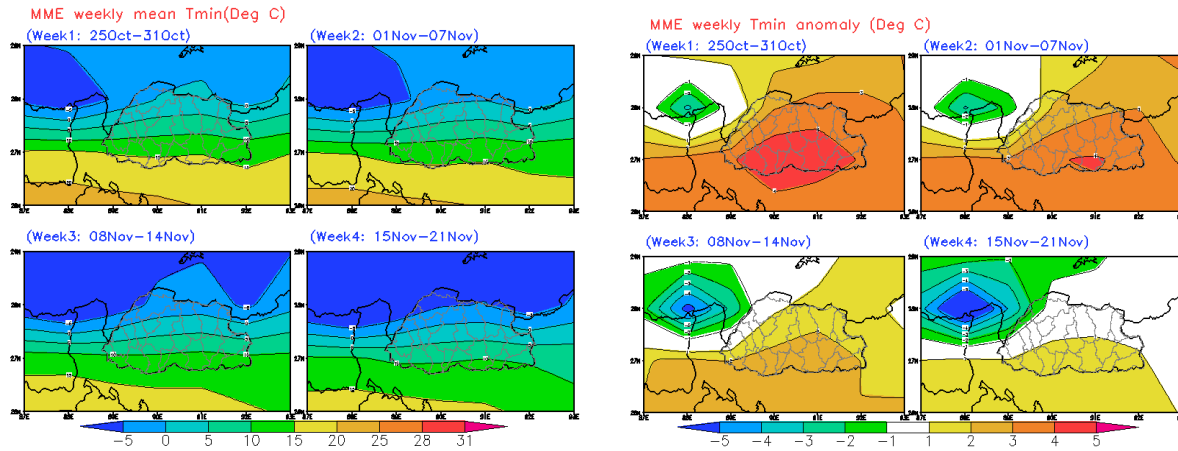
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3. Minimum Temperature Prediction



Week 1 (25 October - 31 October), Week 2 (01 November - 07 November) and Week 3 (08 November - 14 November)

Above normal minimum temperature throughout the region.

Week 4 (15 November - 21 November)

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



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Summary

- The rainfall is likely to be above normal for the next 3 weeks and then below normal in the fourth month.
- The maximum temperature is likely to be above normal for the first three weeks and slowly turn to normal.
- The minimum temperature is likely to be above normal for the first three weeks and slowly turn to normal.

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