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02 February, 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 decrease in maximum and minimum temperature in the middle of the week. No rain was observed over the country for the last week. The table below displays observed real time rain and temperature data from regional meteorological stations over the last week.

Station	Parameter	26 Jan	27 Jan	28 Jan	29 Jan	30 Jan	31 Jan	01 Feb
Babesa	Tmax (°C)	9.5	11.0	13.5	10.5	8.0	8.5	9.5
	Tmin (°C)	-4.5	-0.5	-2.0	-1.0	-1.0	-2.0	-3.5
	Rain (mm)	0	0	0	0	0	0	0
Dagana	Tmax (°C)	18.5	17.5	18.0	18.5	15.0	15.5	18.5
	Tmin (°C)	3.0	4.0	4.0	6.0	6.0	6.0	4.0
	Rain (mm)	0	0	0	0	0	0	0
Chamkhar	Tmax (°C)	7.5	9.0	12.0	9.0	6.0	6.0	8.5
	Tmin (°C)	-1.0	-1.5	-2.5	1.0	1.5	-1.5	-1.0
	Rain (mm)	0	0	0	0	0	0	0.5
Deothang	Tmax (°C)	19.0	20.0	20.0	21.0	21.0	21.0	22.0
	Tmin (°C)	10.0	3.0	9.0	11.0	11.0	11.0	11.0
	Rain (mm)	0	0	0	0	0	0	0
Gasa	Tmax (°C)	5.0	7.5	7.5	9.0	2.0	2.5	8.5
	Tmin (°C)	-3.0	-5.0	-4.0	-2.0	-2	-2.5	-2.5
	Rain (mm)	6.2	0.9	0.6	0.7	4.2	7.1	11.2



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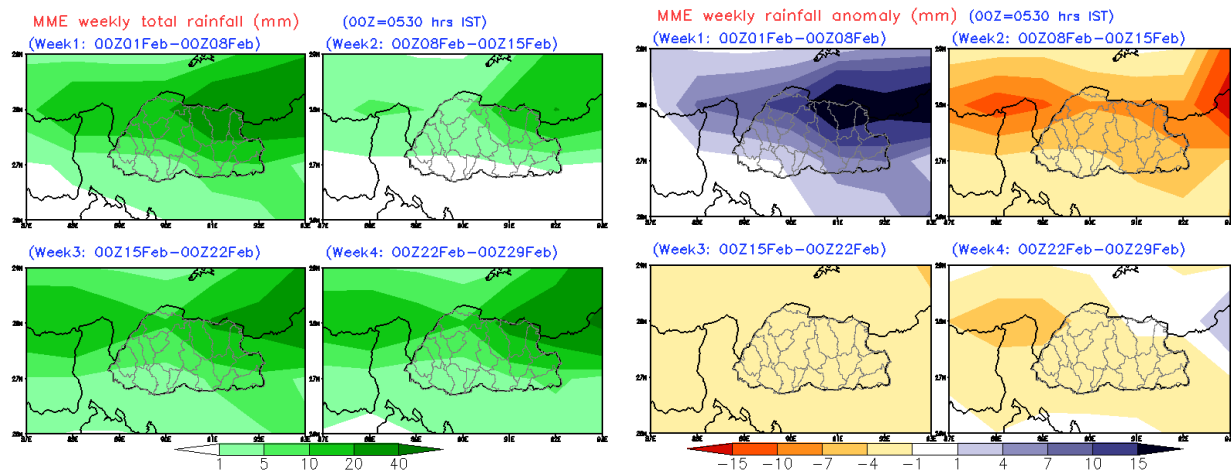
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Weekly forecast for Bhutan

1. Rainfall Prediction



Week 1 (01 February - 07 February)

Above normal rainfall is expected throughout the region.

Week 2 (08 February - 14 February)

Below normal rainfall is expected throughout the region.

Week 3 (15 February - 21 February)

Below normal rainfall is expected throughout the region.

Week 4 (22 February - 29 February)

Below normal rainfall is expected throughout the region.



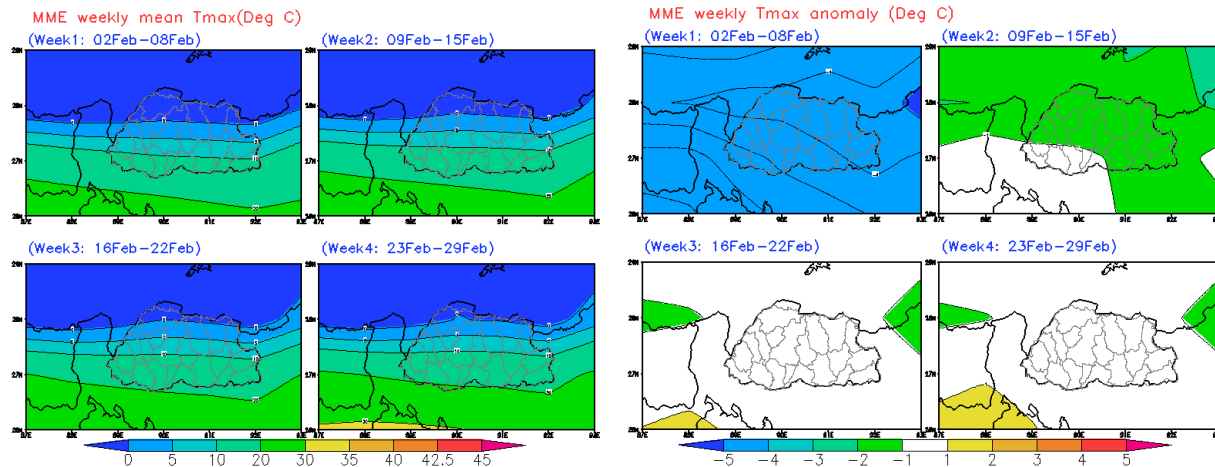
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2. Maximum Temperature Prediction



Week 1 (01 February - 07 February)

Above normal maximum temperature is expected across the region.

Week 2 (08 February - 14 February)

Above normal maximum temperature is expected across the region except in the south-western region.

Week 3 (15 February - 21 February) and Week 4 (22 February - 29 February)

Normal maximum temperature is expected throughout the region.



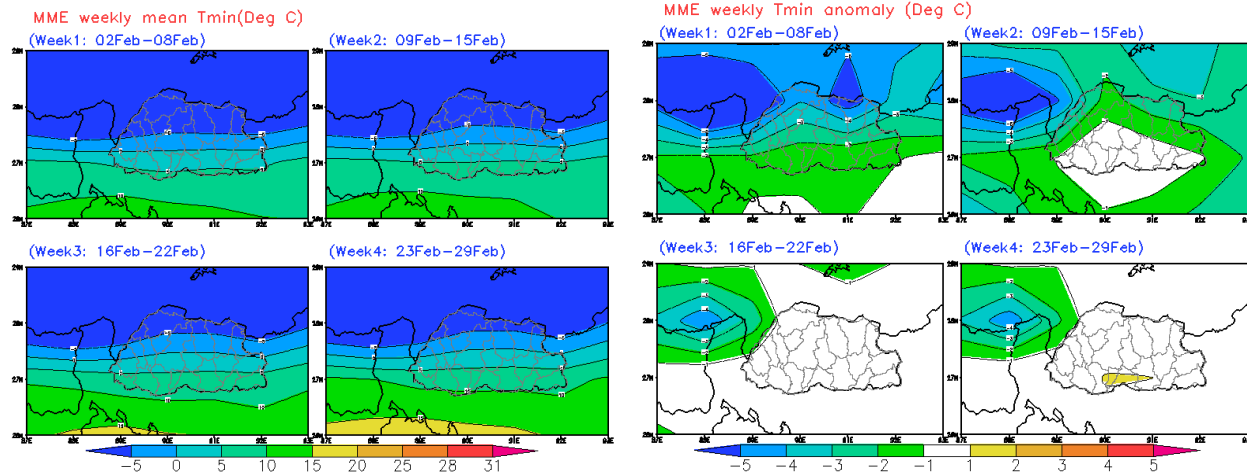
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3. Minimum Temperature Prediction



Week 1 (01 February - 07 February)

Above normal minimum temperature is expected throughout the region.

Week 2 (08 February - 14 February)

The southern region can expect normal minimum temperature and the rest of the region can observe above normal minimum temperature.

Week 3 (15 February - 21 February) and Week 4 (22 February - 29 February)

Normal minimum temperature is expected throughout the region.



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Summary

- The rainfall is likely to be above normal for the first week and below normal for the remaining weeks.
- The maximum temperature is likely to be above normal for the first two weeks and normal for the last two weeks.
- The minimum temperature is likely to be above normal for the first two weeks, and normal minimum temperature for the last two weeks.

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