30 August, 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.

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 over most parts of 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	23 Aug	24 Aug	25 Aug	26 Aug	27 Aug	28 Aug	29 Aug
Babesa	**Tmax (°C)**	24.5	27.5	28.0	26.5	24.0	26.5	26.0
	Tmin (°C)	15.0	12.5	12.0	12.5	14.0	11.0	14.0
	Rain (mm)	1.8	0	0	0.3	0.2	0.6	0
Dagana	**Tmax (°C)**	24.5	26.5	27.5	25.0	25.0	27.5	27.0
	Tmin (°C)	20.0	18.0	18.5	19.0	19.0	19.0	19.0
	Rain (mm)	8.4	0.2	0	1.2	0	0.8	0
Chamkhar	**Tmax (°C)**	24.5	24.5	24.5	23.5	24.5	24.5	25.5
	Tmin (°C)	16.5	13.5	11.5	12.5	13.5	13.5	13.5
	Rain (mm)	4.5	1.5	0	0	0.5	0.3	0
Deothang	**Tmax (°C)**	30.0	31.0	32.0	32.0	31.0	30.0	30.0
	Tmin (°C)	23.5	22.5	23.0	23.0	23.0	22.5	23.0
	Rain (mm)	0	0	24.0	10.5	0	0	0
Gasa	**Tmax (°C)**	21.0	24.0	23.0	22.5	22.0	11.0	11.0
	Tmin (°C)	13.0	10.0	10.0	10.0	12.0	11.0	11.0
	Rain (mm)	17.0	8.4	3.8	0.5	0	5.4	0

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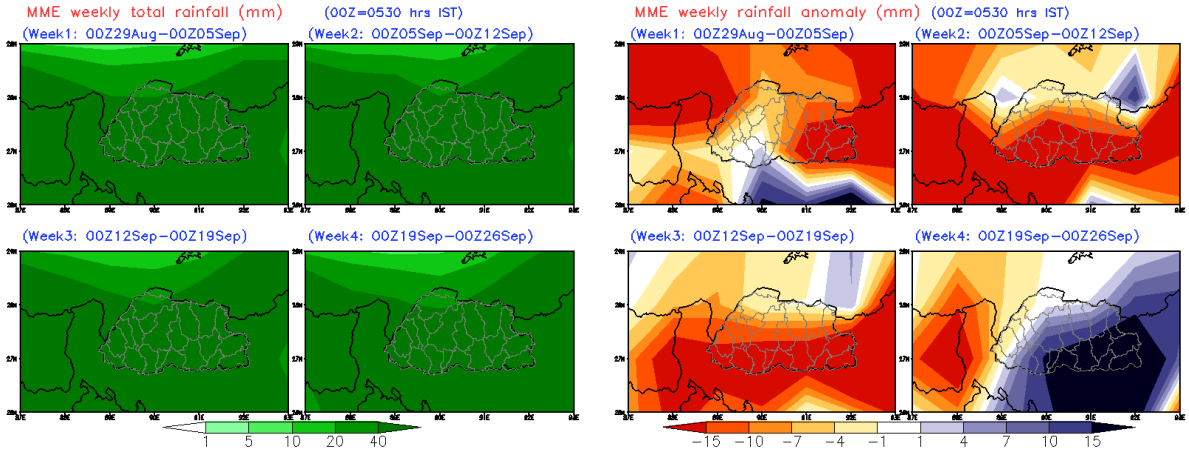
Weekly forecast for Bhutan

1. Rainfall Prediction



Week 1 (29 August - 05 September), Week 2 (05 September - 12 September) and Week 3 (12 September - 19 September)

Below normal rainfall is expected throughout the region.

Week 4 (19 September - 26 September)

Above normal rainfall is expected throughout the region

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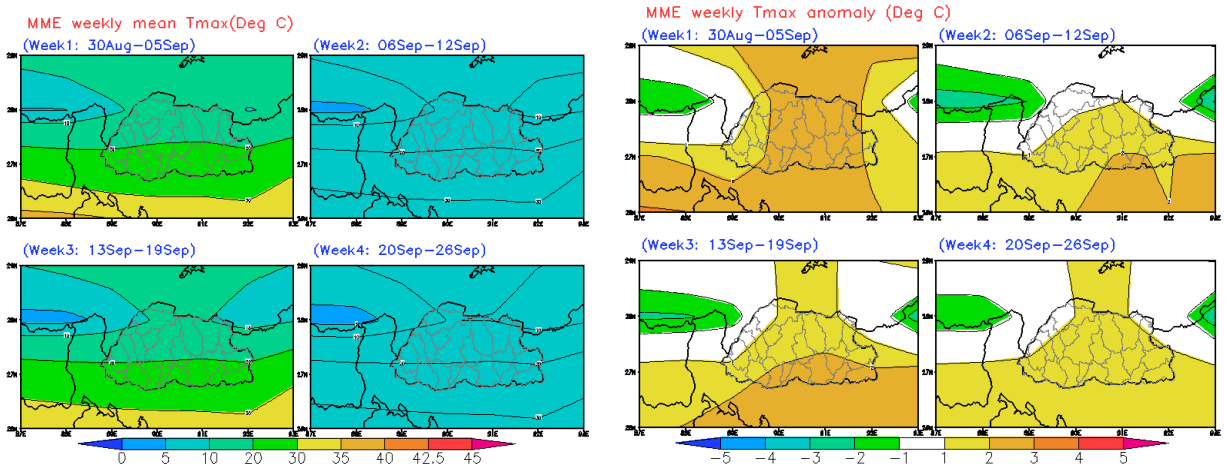
2. Maximum Temperature Prediction



Week 1 (30 August - 05 September) , Week 2 (06 September - 12 September) and Week 3 (13 September - 19 September) and Week 3 (20 September - 26 September)

Above normal maximum temperature is expected throughout the region

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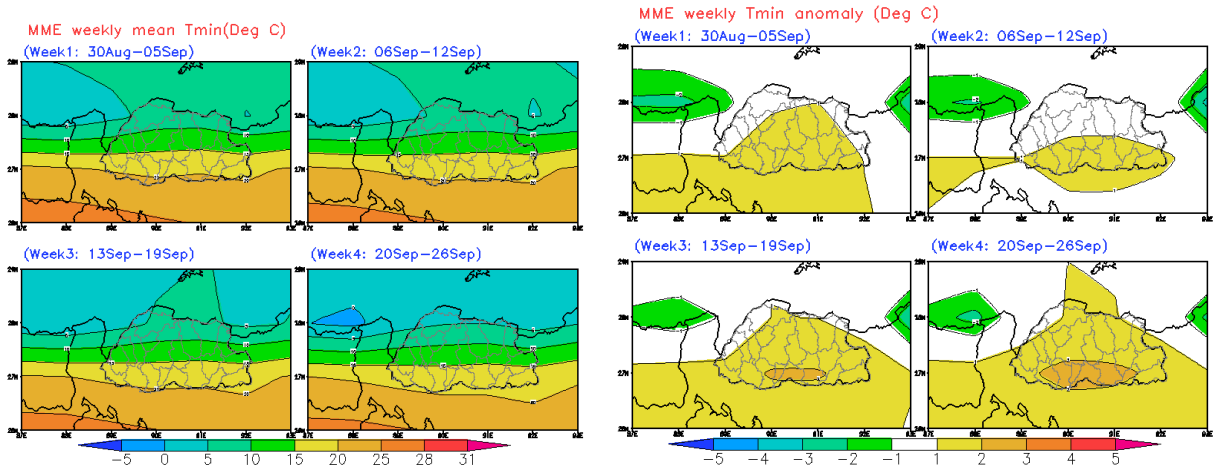
3. Minimum Temperature Prediction



Week 1 (23 August - 29 August) and Week 2 (06 September - 12 September)

Above normal minimum temperature is expected throughout the region except for the northern part.

Week 3 (13 September - 19 September) and Week 3 (20 September - 26 September)

Above normal minimum temperature is expected throughout the region

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Summary

- The rainfall is likely to be below normal for the first three weeks and then gradually be above normal for the last week of the month.
- The maximum temperature is likely to be above normal for the month.
- The minimum temperature is likely to be normal in the north, and above normal in the south for the next two weeks and gradually shift to above 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