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14 March, 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 a decreasing maximum and minimum temperature throughout the week. No rain was observed in the country. The table below displays observed real time rain and temperature data from regional meteorological stations over the last week.

Station	Parameter	07 Mar	08 Mar	09 Mar	10 Mar	11 Mar	12 Mar	13 Mar
Babesa	Tmax (°C)	14	12	14	19	16.5	15.5	14.5
	Tmin (°C)	4	6	4.5	-2	5	6.5	6.5
	Rain (mm)	0	0	0	0	0	5.2	0
Dagana	Tmax (°C)	16.5	12	15.5	25	17.5	16	15
	Tmin (°C)	8.5	11	7.5	9	11.5	12	11
	Rain (mm)	0	2	0	0	0.4	9.4	2.8
Chamkhar	Tmax (°C)	12	10	10.5	15	13	14	14.5
	Tmin (°C)	4.5	4	4	-1	3.5	6.5	7
	Rain (mm)	0.5	0.4	0	0	0	0	3.7
Deothang	Tmax (°C)	24	24	22	24	26	19	16
	Tmin (°C)	14	16	14	15	16	16.6	15
	Rain (mm)	0	0	0	0	6.5	20	2.5
Gasa	Tmax (°C)	6	4	11	14	9	11	11
	Tmin (°C)	3	2	2	1	4	5	4
	Rain (mm)	9.4	9	0	3.4	6	4	8.2



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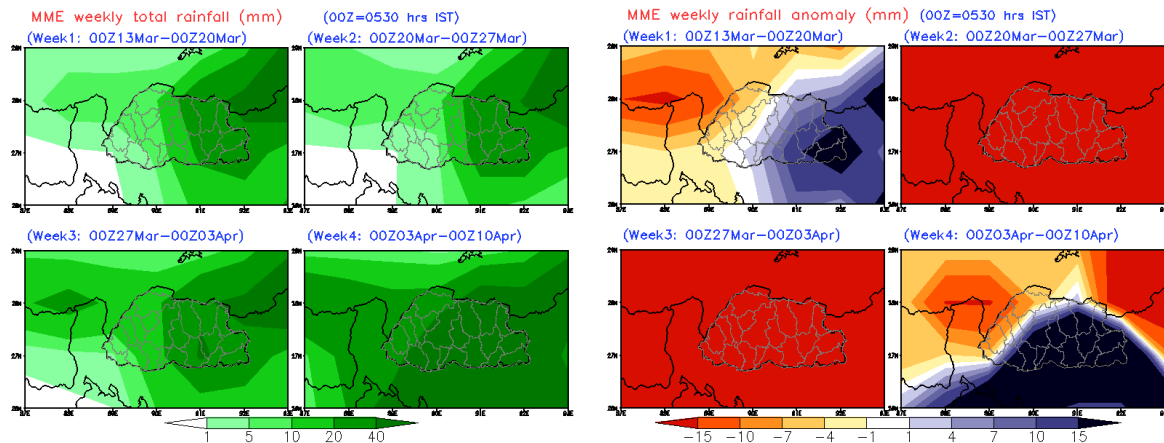
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Weekly forecast for Bhutan

1. Rainfall Prediction



Week 1 (13 March - 20 March)

Above normal rainfall in the east and below normal rainfall in the western part of the country.

Week 2 (20 March - 27 March) and Week 3 (27 March - 06 April)

Below normal rainfall throughout the region.

Week 4 (06 April - 13 April)

Below normal rainfall throughout the region except for the extreme western and northern parts.



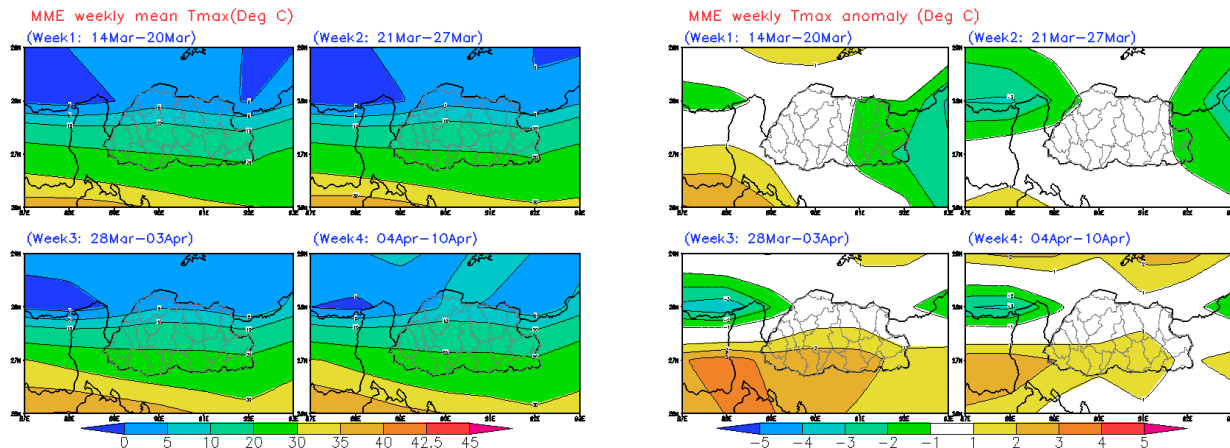
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2. Maximum Temperature Prediction



Week 1 (14 March - 20 March) and Week 2 (21 March - 27 March)

Below normal maximum temperature expected toward the eastern part of the country. The rest is normal maximum temperature.

Week 3 (28 March - 06 April) and Week 3 (07 April - 13 April)

Above normal maximum temperature expected in the southern part of the country. The rest is normal maximum temperature.



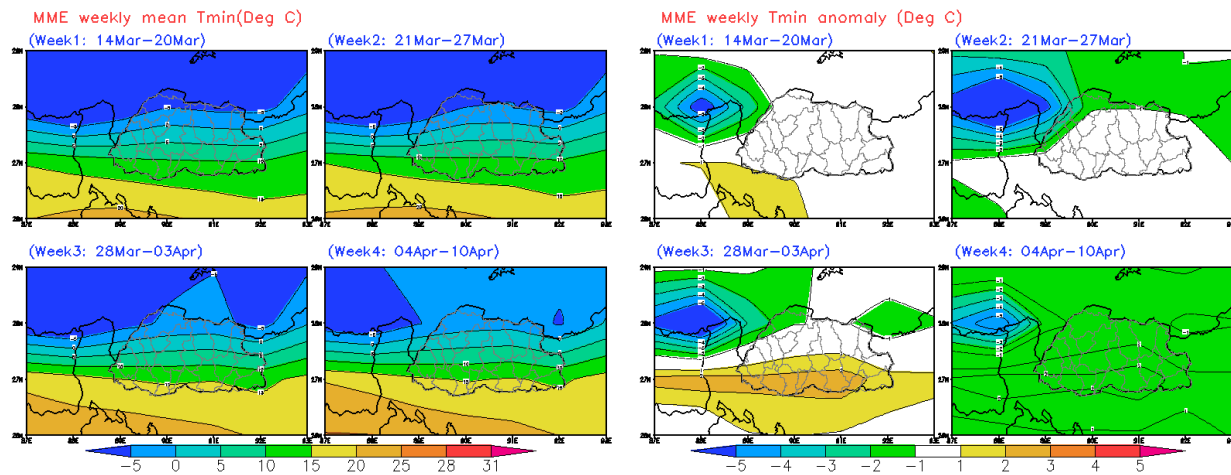
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3. Minimum Temperature Prediction



Week 1 (14 March - 20 March) and

Normal minimum temperature expected throughout the region.

Week 2 (21 March - 27 March)

Normal minimum temperature expected throughout the region except below minimum temperature in the northern parts.

Week 3 (28 March - 06 April)

Normal minimum temperature expected throughout the region except above minimum temperature in the southern parts.

Week 3 (07 April - 13 April)

Below normal minimum temperature expected throughout the region.



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Summary

- The rainfall is likely to be above normal in the east and below normal in the west for the first and fourth weeks and below normal for second and third weeks.
- The maximum temperature is likely to be normal throughout except of few eastern parts expecting below normal for the first two weeks and then few southern parts expecting above normal for the next two weeks
- The minimum temperature is likely to be normal for the first week and then gradually become below normal in the north by the second week. Then above normal in the third week and finally below normal in the final 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



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