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17 January, 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 | 10 Jan | 11 Jan | 12 Jan | 13 Jan | 14 Jan | 15 Jan | 16 Jan |
|----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| Babesa   | Tmax (°C) | 12.0   | 12.0   | 10.0   | 8.0    | 12.0   | 13.0   | 15.0   |
|          | Tmin (°C) | -7.0   | -6.0   | -5.0   | -2.0   | -10.0  | -7.0   | -7.0   |
|          | Rain (mm) | 0.0    | 0.0    | 0.2    | 0.0    | 0.0    | 0.0    | 0.0    |
| Dagana   | Tmax (°C) | 16.5   | 16.5   | 17.0   | 16.5   | 16.0   | 17.5   | 18.0   |
|          | Tmin (°C) | 4.0    | 4.5    | 5.5    | 6.0    | 4.0    | 5.0    | 6.0    |
|          | Rain (mm) | 0.0    | 0.0    | 0.0    | 4.6    | 0.0    | 0.0    | 0.0    |
| Chamkhar | Tmax (°C) | 22.5   | 23.0   | 22.5   | 19.5   | 21.5   | 22.0   | 22.5   |
|          | Tmin (°C) | 9.0    | 9.0    | 6.0    | 7.5    | 3.0    | 5.0    | 4.5    |
|          | Rain (mm) | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Deothang | Tmax (°C) | 22.0   | 23.5   | 23.5   | 23.0   | 23.0   | 24.0   | 23.0   |
|          | Tmin (°C) | 8.0    | 8.0    | 6.5    | 9.0    | 5.0    | 6.0    | 7.0    |
|          | Rain (mm) | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Gasa     | Tmax (°C) | 27.0   | 27.5   | 27.0   | 25.0   | 25.5   | 0.0    | 27.5   |
|          | Tmin (°C) | 7.5    | 27.5   | 27.0   | 25.0   | 25.5   | 25.0   | 5.5    |
|          | Rain (mm) | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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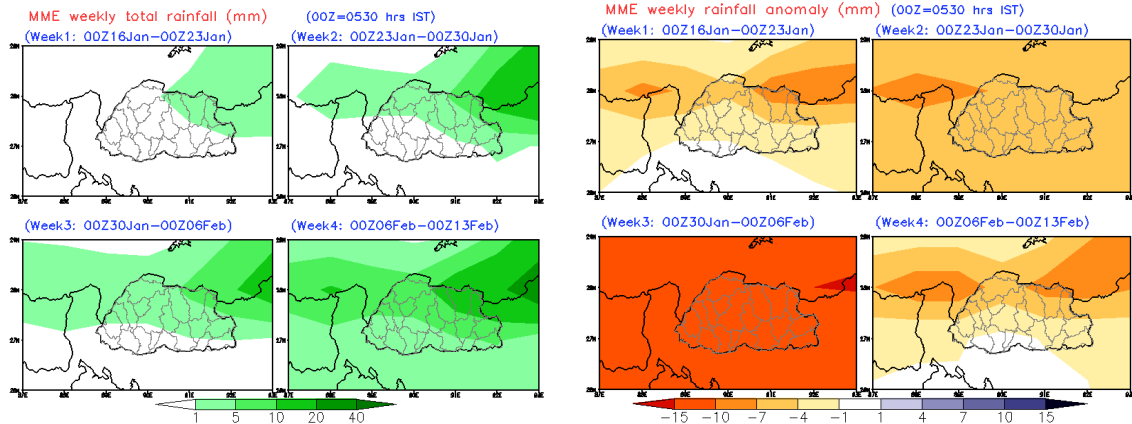
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## Weekly forecast for Bhutan

### 1. Rainfall Prediction



Week 1 (16 January - 23 January), Week 2 (23 January - 30 January) and Week 3 (30 January - 06 February) and Week 4 (06 February - 13 February)

Below normal rainfall throughout the region except for above normal in the eastern parts.



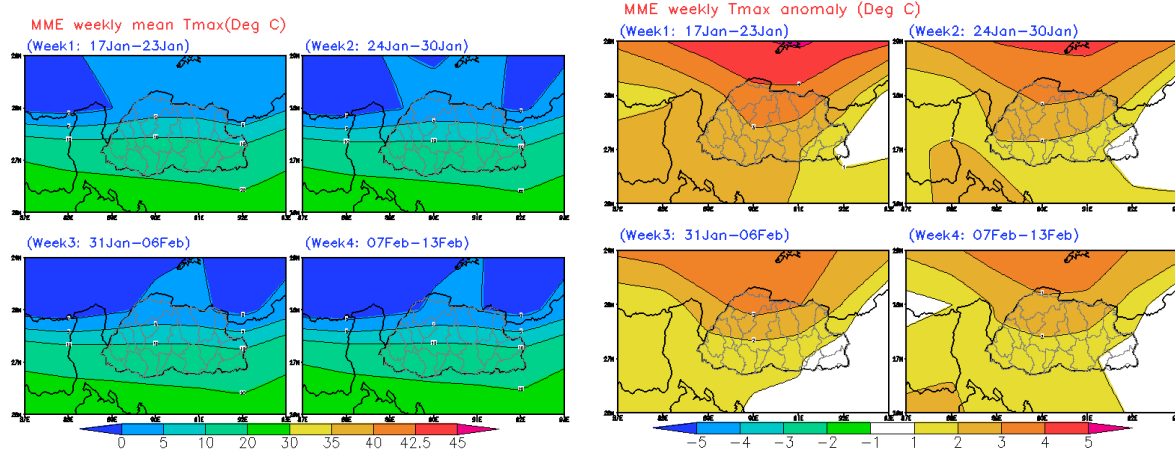
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## 2. Maximum Temperature Prediction



Week 1 (17 January - 23 January) , Week 2 (24 January - 30 January) , Week 3 (31 January - 06 February) , Week 4 (07 February - 13 February)

Above normal maximum temperature expected throughout the region.



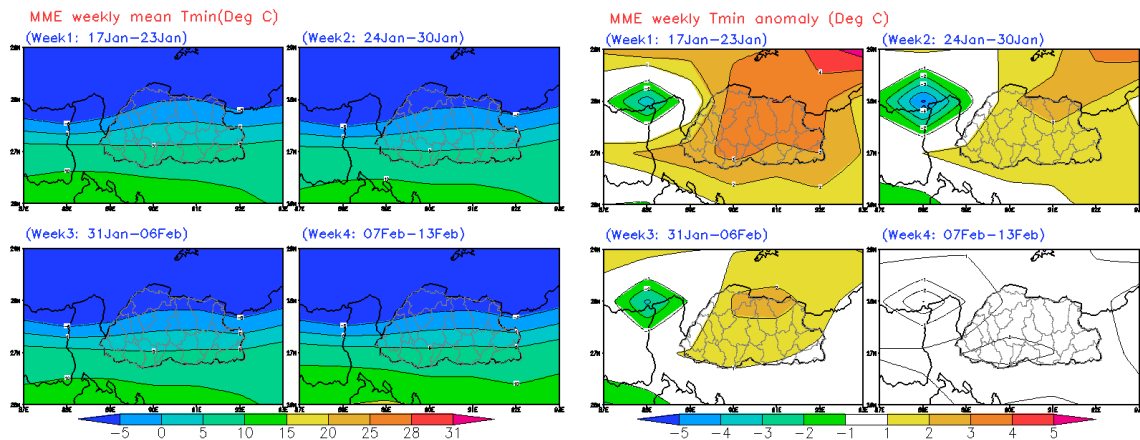
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### 3. Minimum Temperature Prediction



**Week 1 (17 January - 23 January) , Week 2 (24 January - 30 January) and Week 3 (31 January - 06 February)**

Above normal minimum temperature expected throughout the region.

**Week 4 (07 February - 13 February)**

Normal minimum temperature expected throughout the region.



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## Summary

- The rainfall is likely to be below normal for the next four weeks
- The maximum temperature is likely to be above normal for the next four weeks
- The minimum temperature is likely to be above normal for the first three weeks and then normal for the last 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 |