



༄༅། རྒྱལ་ཡོངས་ཚུན་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་ལྷོ་བ།།

NATIONAL CENTER FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN

"Center of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"



21 January 2022

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.



༄། རྒྱལ་ཡོངས་ཚུད་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་ལྷོ་བ།།

NATIONAL CENTER FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN

"Center of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"



Observed weather over last week

Most of the stations across the country showed a decrease in maximum and minimum temperature for the last week. Light rain was observed over the southern regions. The continuity of the data was hampered under the blackout pandemic situation. The table below shows the observed rain and temperature data from the regional meteorological stations during last week.

Station	Parameter	13 Jan	14 Jan	15 Jan	16 Jan	17 Jan	18 Jan	19 Jan
Babesa	Tmax (°C)	12.0	14.0					
	Tmin (°C)	-1.0	-2.0	-2.0				
	Rain (mm)	0.0	0.0					
Bhur	Tmax (°C)	21.0	21.5		24.0	24.5	23.0	24.0
	Tmin (°C)	14.0	14.0	13.5		13.0	14.0	13.5
	Rain (mm)	2.4	0.0		0.0	0.0	0.0	0.0
Chamkhar	Tmax (°C)	10.0	12.5	10.0	12.0	13.0	12.5	12.0
	Tmin (°C)	0.5	-2.0	-0.5	-2.5	-9.0	-7.0	-5.0
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deothang	Tmax (°C)	15.0	15.0	20.5	21.0	21.0	20.5	
	Tmin (°C)	11.5	11.0	10.0	10.5	11.0	11.0	11.5
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	
Gasa	Tmax (°C)	9.0	10.0	10.0	11.5	11.0	10.0	10.0
	Tmin (°C)	-2.5	-2.0	-4.0	-4.0	-4.0	-5.5	-4.5
	Rain (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0



༄༅། རྒྱལ་ཡོངས་ཚུད་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་སློབ་ཁྲིམས།

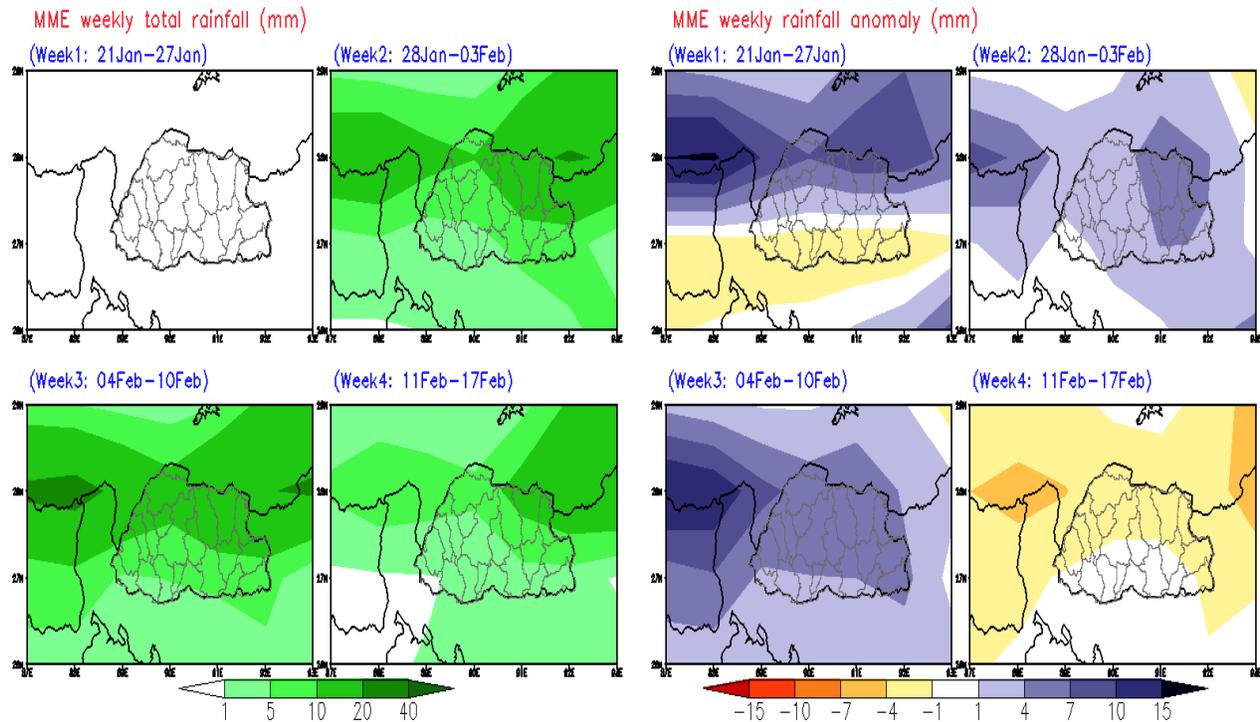
NATIONAL CENTER FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN

"Center of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"



Weekly forecast for Bhutan

1. Rainfall Prediction



Week 1 (21 January - 27 January)

The southern region can expect below normal rainfall while the remaining region can observe above normal rainfall.

Week 2 (28 January - 03 February) and Week 3 (04 February - 10 February)

Above normal rainfall is expected across the region.

Week 4 (11 February - 17 February)

Normal rainfall is expected across the southern and parts of the central region but the rest of the region can experience below normal rainfall.



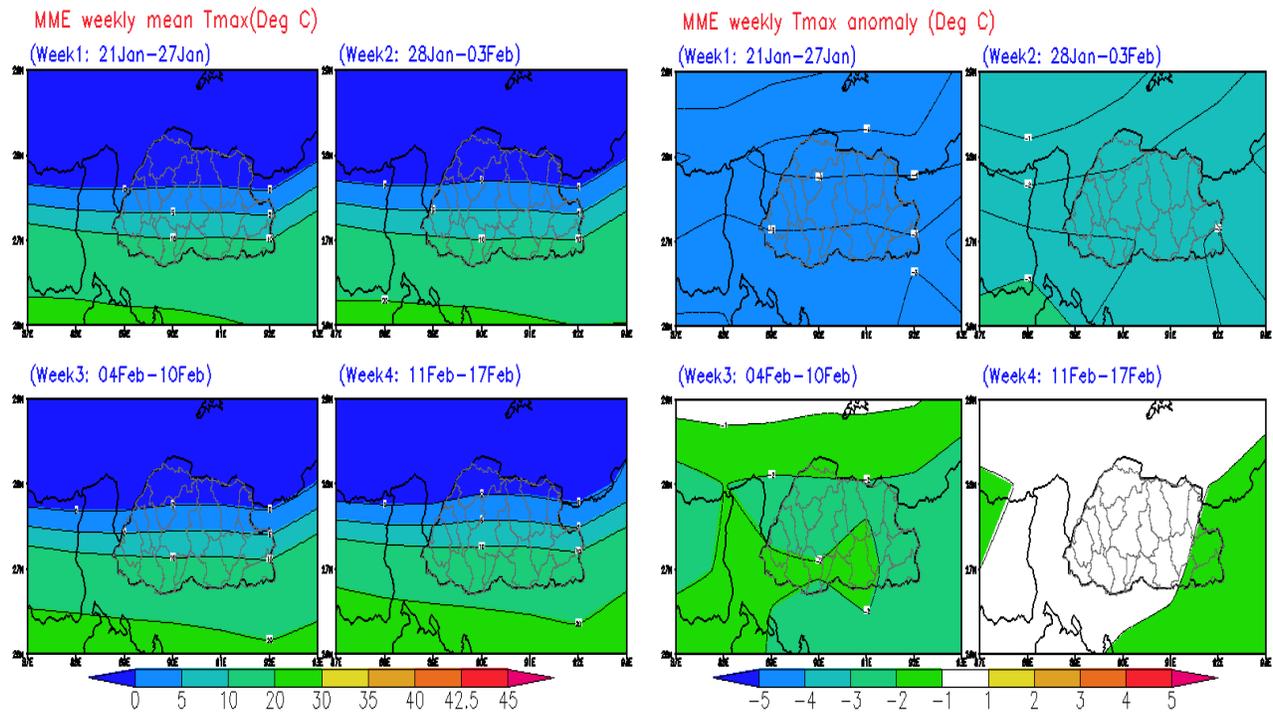
༄༅། རྒྱལ་ཡོངས་ཚུད་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་རྩེ་བ།།

NATIONAL CENTER FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN

"Center of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"



2. Maximum Temperature Prediction



Week 1 (21 January - 27 January), Week 2 (28 January - 03 February) and Week 3 (04 February - 10 February)

Below normal maximum temperature is expected across the country.

Week 4 (11 February - 17 February)

Eastern region can expect below normal maximum temperature and normal maximum temperature is expected across the remaining region.



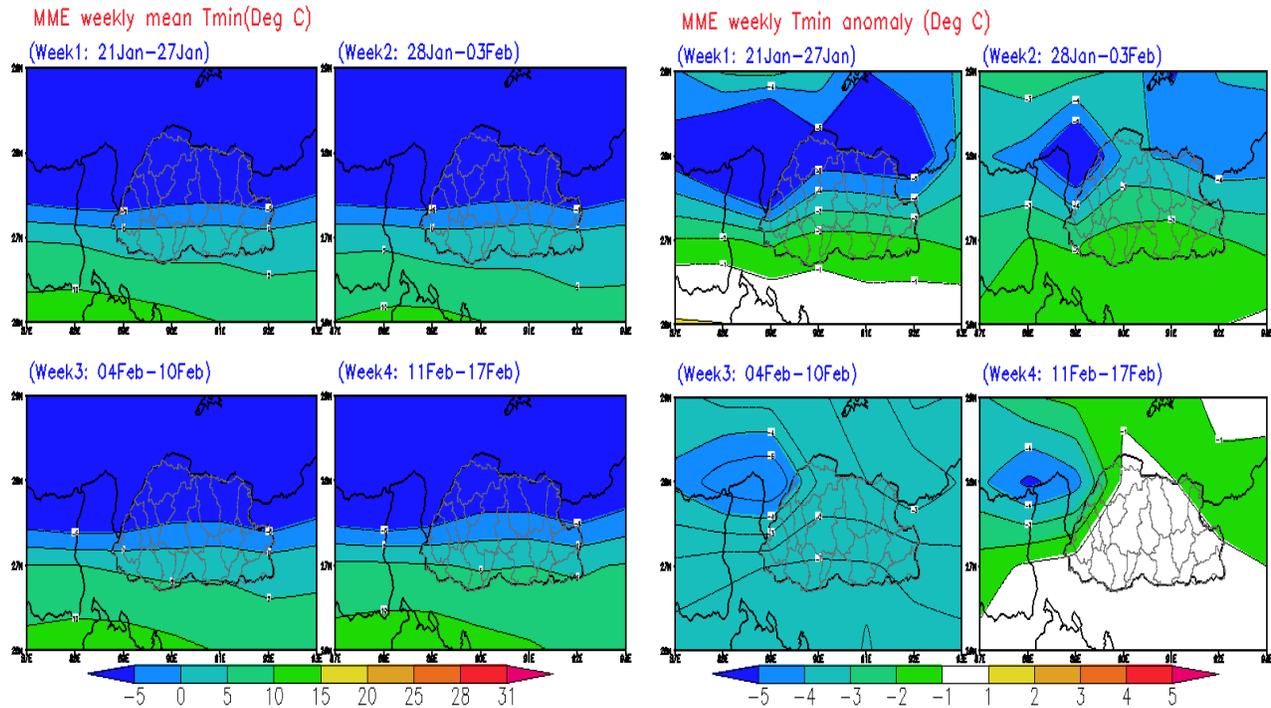
༄༅། རྒྱལ་ཡོངས་ཚུན་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་ལྷེ་བ།།

NATIONAL CENTER FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN

"Center of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"



3. Minimum Temperature Prediction



Week 1 (21 January - 27 January), Week 2 (28 January - 03 February) and Week 3 (04 February - 10 February)

Below normal minimum temperature is expected throughout the country.

Week 4 (11 February - 17 February)

Normal maximum temperature is expected across the region.

Summary

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



༄༅། རྒྱལ་ཡོངས་ཚུ་དབྱུང་དང་གནམ་གཤིས་རིག་པའི་རྩེ་བ།།

NATIONAL CENTER FOR HYDROLOGY AND METEOROLOGY
THIMPHU: BHUTAN

"Center of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"



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