



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

NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY  
THIMPHU: BHUTAN

*"Centre of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"*



29 July 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 the 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 a pilot basis which needs further studies and validation with the ground observations until the product is fully operationalized.



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

NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY  
THIMPHU: BHUTAN

*"Centre of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"*



## Observed weather over last week

Most of the stations across the country showed an increase in maximum and minimum temperature for the first half of the week. Light to very heavy rain was observed over the parts of the southern region and light to moderate rain was observed over the remaining region. The table below shows the observed rain and temperature data from the regional meteorological stations during last week.

Station	Parameter	21 July	22 July	23 July	24 July	25 July	26 July	27 July
Babesa	Tmax (°C)	25.5	25.0	23.5	26.0	23.5	25.0	24.0
	Tmin (°C)	16.0	14.5	13.0	14.0	14.0	15.0	15.5
	Rain (mm)	31.2	18.6	3.8	16.0	19.8	7.4	1.8
Dagana	Tmax (°C)	25.0	27.0	27.0	27.0	24.0	26.0	24.0
	Tmin (°C)	20.0	19.0	19.0	18.0	18.5	19.0	19.0
	Rain (mm)	5.9	7.8	12.8	1.2	9.2	0.2	4.2
Chamkhar	Tmax (°C)	20.0	21.5	23.0	22.0	22.5	21.5	22.0
	Tmin (°C)	15.0	14.0	14.5	14.0	13.0	13.5	13.5
	Rain (mm)	20.3	10.2	6.7	8.0	4.8	0.1	7.6
Deothang	Tmax (°C)	27.0	27.0	29.0	28.0	26.0	26.0	26.0
	Tmin (°C)	22.0	21.5	22.0	21.0	21.5	21.5	22.0
	Rain (mm)	55.4	2.0	31.0	6.8	47.2	1.0	0.8
Gasa	Tmax (°C)	17.0	21.5	21.0	17.5	18.0	17.5	20.0
	Tmin (°C)	11.5	11.5	11.0	11.0	11.0	11.0	11.0
	Rain (mm)	26.0	27.0	7.0	22.3	7.3	10.2	6.6



༄༅། རྒྱལ་ཡོངས་ཚུད་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་ལྷན་ཁག།

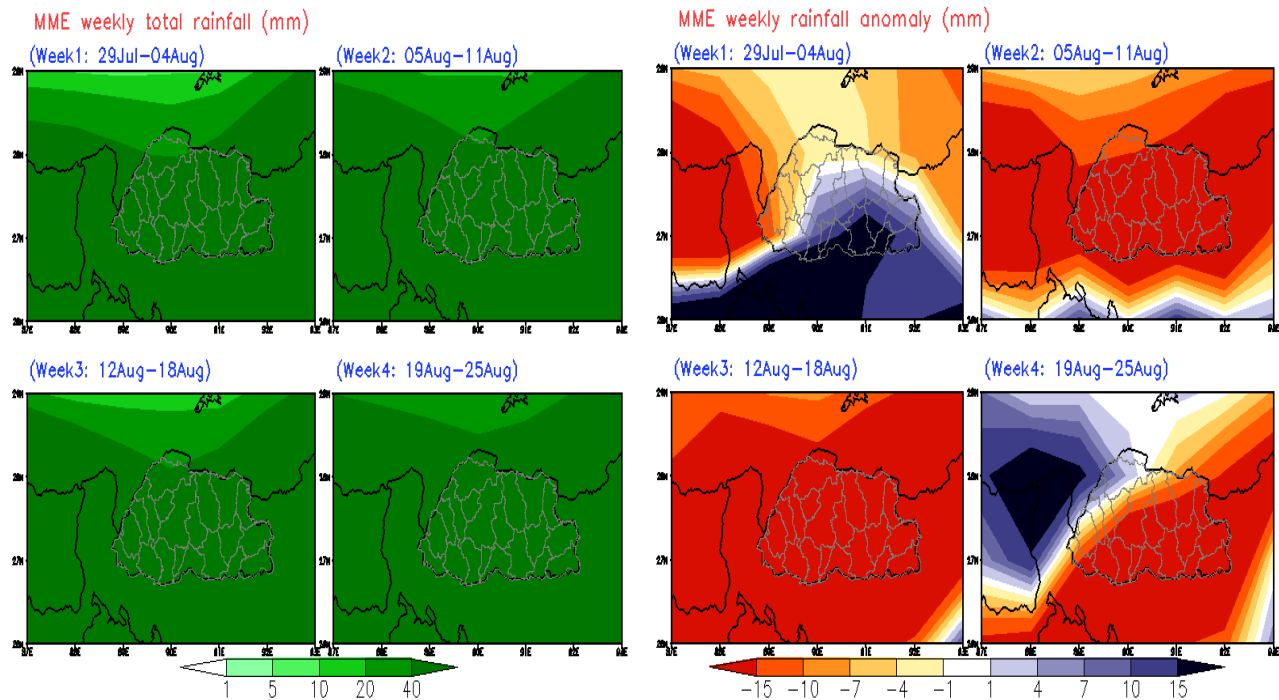
NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY  
THIMPHU: BHUTAN

*"Centre of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"*



## Weekly forecast for Bhutan

### 1. Rainfall Prediction



#### Week 1 (29 July - 04 August)

Below normal rainfall is expected across the western and northern regions and the remaining region can observe above normal rainfall.

#### Week 2 (05 August - 11 August), Week 3 (12 August - 18 August) and Week 4 (19 August - 25 August)

Below normal rainfall is expected throughout the region.



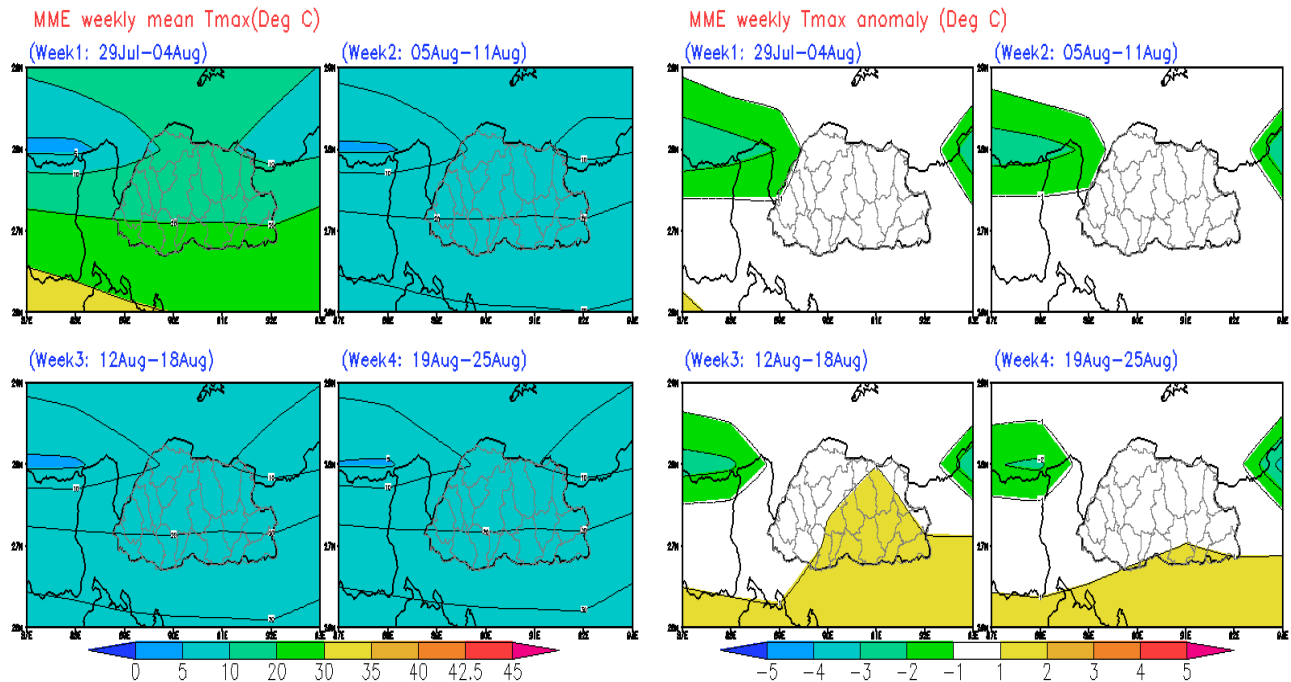
༄༅། རྒྱལ་ཡོངས་ཚུན་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་སྡེ་བ།།

NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY  
THIMPHU: BHUTAN

*"Centre of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"*



## 2. Maximum Temperature Prediction



### Week 1 (29 July - 04 August) and Week 2 (05 August - 11 August)

Normal maximum temperature is expected across the country.

### Week 3 (12 August - 18 August)

Above normal maximum temperature is expected across the parts of southern, central and eastern regions while the rest of the region can expect normal maximum temperature.

### Week 4 (19 August - 25 August)

Normal maximum temperature is expected across the country.



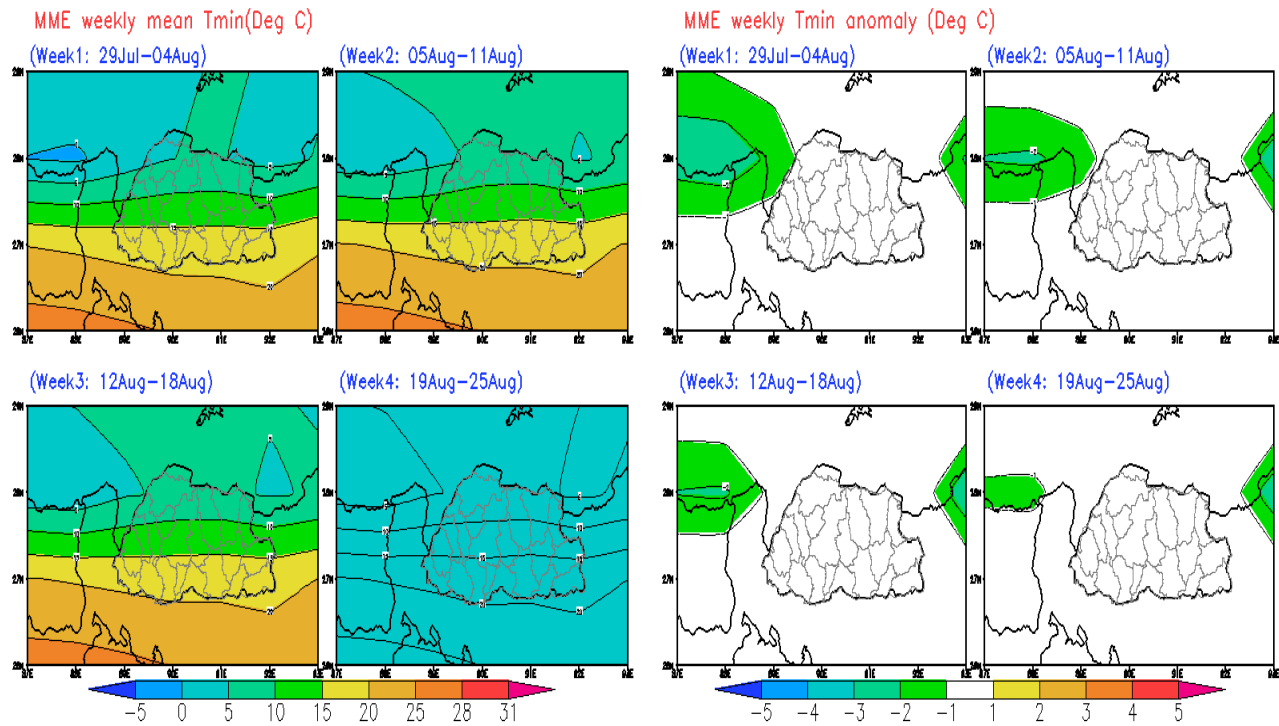
ལྷོ། རྒྱལ་ཡོངས་ཚུད་ཕྱད་དང་གནམ་གཤིས་རིག་པའི་སྡེ་བ།

NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY  
THIMPHU: BHUTAN

*"Centre of Excellence in Hydrology, Meteorology and Cryosphere Science and Services"*



### 3. Minimum Temperature Prediction



**Week 1 (29 July - 04 August), Week 2 (05 August - 11 August), Week 3 (12 August - 18 August) and Week 4 (19 August - 25 August)**

Normal minimum temperature is expected across the country.

#### 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 normal for all the weeks.
- The minimum temperature is likely to be normal for all the weeks.



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

NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY  
THIMPHU: BHUTAN

*"Centre 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