



**Government of India
Earth System Science Organization
Ministry of Earth Sciences
India Meteorological Department**

Press: Dated: 15 Dec, 2022

**Subject: Current Weather Status and Extended range Forecast for next two weeks
(15-28 Dec 2022)**

1. Salient Observed Features for week ending 14 Dec 2022

- **Severe Cyclonic Storm “MANDOUS” over the Bay of Bengal (6th -10th December, 2022) and its remnant(11-14 Dec):**
Last week’s Cyclonic Storm “Mandous”(pronounced as “Man-Dous”) lay over Southwest Bay of Bengal, about 300 km east-northeast of Trincomalee (Sri Lanka), 420 km east-southeast of Jaffna (Sri Lanka), 460 km east-southeast of Karaikal and about 550 km southeast of Chennai in the beginning of the week. Then, it moved nearly west-northwestwards and intensified into a severe cyclonic storm (SCS) in the evening (1730 hours IST) of 8th December. It maintained the intensity of SCS till early hours of 9th December. The peak intensity of the storm was 85-95 kmph gusting to 95 kmph during this period. Thereafter, continuing to move west-northwestwards, it entered unfavourable environment (moderate to high wind shear, interaction with land surface, relatively colder sea and lower Ocean heat content (less than 50 KJoules/second)) and weakened into a CS over southwest BoB off north Tamilnadu and Puducherry coasts in the morning (0530 hours IST) of 9th December. It then moved nearly northwestwards, weakened gradually and crossed north Tamil Nadu, Puducherry and adjoining south Andhra Pradesh coasts between Puducherry and Sriharikota, near latitude 12.60°N and longitude 80.15°E, close to Mamallapuram (Mahabalipuram) during midnight (2330 hours IST) of 9th and early hours (0230 hours IST) of 10th December as a CS with the maximum sustained wind speed (MSW) of 65-75 kmph gusting to 85 kmph. After the landfall, it moved west-northwestwards and weakened into a DD over North Tamil Nadu in the early morning (0530 hours IST) of 10th December. It then moved westsouthwestwards and weakened into a depression over North Tamil Nadu around noon (1130 hours IST), into a WML over north interior Tamil Nadu in the evening (1730 hours IST) of 10th December and into an LPA over north interior Tamil Nadu and adjoining South Interior Karnataka & north Kerala in the morning (0530 hours IST) of 11th December. It was less marked in the morning hours of the same day; **however, its remnant cyclonic circulation emerged into Arabian Sea and under its influence, a Low Pressure has formed over Southeast and adjoining Eastcentral Arabian Sea off north Kerala-Karnataka coasts in the early morning hours of 13th which has become a Well Marked Low pressure area over the same region in the evening of the same day; it concentrated into a Depression in the afternoon of the next day and**

with the same intensity, it lay at a distance of about 480 km northwest of Aminidivi (Lakshadweep), about 540 km west-southwest of Panjim (Goa) and 1660 km east-southeast of Salalah (Oman) in the evening of 14th December 2022.

- **Impact of the Severe Cyclonic Storm “MANDOUS” over the Bay of Bengal (6th -10th December, 2022) which crossed as a Cyclonic Storm north Tamil Nadu-Puducherry coasts and adjoining south Andhra Pradesh coasts and movement of its remnants across extreme south Peninsula before emerging into Arabian Sea:** There were severe weather activity over South Peninsula during the week. Under its influence, fairly widespread to widespread rainfall/thunderstorm activity had occurred over Tamil Nadu, Puducherry & Karaikkal and Rayalseema on four to five days and over remaining parts of south Peninsula (excluding Telangana) on three to four days; isolated to scattered rainfall activity also had occurred over these region on one or two days and over Telangana on four to five days whereas fairly widespread rainfall/thunderstorm activity had occurred over Lakshadweep Islands on one or two days and isolated rainfall/thunderstorm activity had occurred over parts of Maharashtra on two to three days along with; heavy rainfall had occurred over Tamil Nadu, Puducherry & Karaikkal on five to six days, over Rayalseema on three to four days, over Coastal Andhra Pradesh and Yanam on two to three days and over Kerala & Mahe and South Interior Karnataka on one or two days; very heavy rainfall also had occurred over these areas (excluding South Interior Karnataka) on one or two days whereas isolated extremely heavy rainfall had occurred over Tamil Nadu, Puducherry & Karaikkal on two days and over Rayalseema on a single day.
- No major WD impacted the weather over north India, significantly, during the week and there was not any significant cold wave conditions observed during the week over any parts of India.
- **Analysis of Weekly overall Rainfall distribution during the week ending on 14 Dec 2022 and Post monsoon Season’s Rainfall Scenario (01 Oct-14 Dec):** It shows for the country as a whole, **the weekly cumulative All India Rainfall in % departure from its long period average (LPA) till week ending on 14 Dec, was +392%, with south Peninsula India had +95% while all India Seasonal cumulative rainfall % departure during this year’s post monsoon Season Rainfall during 01 Oct-14 Dec 2022 is +24% and over south Peninsula, it is +11%.** Details of the rainfall distribution over the four broad geographical regions of India are given in **Table 1** and Meteorological sub-division-wise rainfall both for week and season are given in Annex I and II respectively.

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	08.12.2022 TO 14.12.2022			01.10.2022 TO 14.12.2022		
	Act	Normal	% Dep	Actual	Normal	% Dep

	ual					
EAST & NORTH-EAST INDIA	0	4.3	-100%	165	151.8	+9%
NORTH-WEST INDIA	1.1	5.5	-80%	80.6	40.5	+99%
CENTRAL INDIA	0.6	1.6	-61%	94.2	73.9	+28%
SOUTH PENINSULA	42.8	8.7	+392%	290.7	261.9	+11%
Country as a whole	9	4.6	+95%	140	113	+24%

2. Large scale features

- Currently La Niña conditions are prevailing over Equatorial Pacific Ocean and negative Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest global model forecasts indicate that the La Niña conditions are likely to continue during the upcoming season and negative IOD conditions are likely to weaken during the upcoming months.
- The Madden Julian Oscillation (MJO) Index is currently in Phase 2 with amplitude less than 1. It will continue in phase 2 till middle of week 1 with gradually increasing amplitude. Thereafter, it would move across phases 3 and 4 till middle of week 2 with amplitude remaining close to 1. Thereafter, it would move to phase 5 with decreasing trend in amplitude during later half of week 2. Thus, MJO will be favourable for enhancement of convective activity over the north Indian Ocean (NIO) during the forecast period.

3. Forecast for next two week: Weather systems & associated Precipitation during Week 1 (15 to 21 December, 2022) and Week 2 (22 to 28 December, 2022)

Forecast for week 1 (15 to 21 December, 2022):

(A) Deep Depression over Eastcentral Arabian Sea

A **Deep Depression** lay centered at 1130 hrs IST of today, the 15th December 2022 over Eastcentral Arabian Sea near latitude 13.9⁰N and longitude 67.5⁰E about 650 km west-northwest of Aminidivi (Lakshadweep), about 700 km west-southwest of Panjim (Goa). It is very likely to move nearly westwards over central Arabian Sea away from Indian coast, maintain intensity of **Deep Depression** till early hours of tomorrow, the 16th December and weaken gradually thereafter.

(B) Low pressure area over Southeast Bay of Bengal & adjoining East Equatorial Indian Ocean

A **Low Pressure Area** lies over Southeast Bay of Bengal & adjoining East Equatorial Indian Ocean at 1130 hours IST of today, the 15th December. It is likely to move gradually westwards and become **Well Marked Low Pressure Area** over the same region during next 12 hours. Thereafter, it would continue to move westwards and maintain its intensity over South Bay of Bengal till morning of 17th December 2022.

For all details, Warnings and their updates, associated with System (A) and (B) and fisherman warnings, pls refer https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

Other Weather systems and its associated rainfall/thunderstorm Forecast

- Light to moderate isolated/scattered rainfall activity is very likely over south Peninsular India during 2nd half of the week. Isolated **heavy rainfall** is also likely over Tamilnadu during the same period.
- **No active Western Disturbance likely to affect northwest India during the week.**
- No significant weather likely over rest parts of the country during most days of the week.

Weather System and Rainfall for week 2 (22 to 28 December, 2022):

A cyclonic circulation is likely to develop over the south Andaman Sea during first half of week 2 with west-northwestwards movement and no significant intensification. Pls refer for details over north Indian Ocean likely systems:

https://rsmcnewdelhi.imd.gov.in/uploads/archive/24/24_bf36fe_Extended%20Range%20Outlook_15122022.pdf

- Light/moderate isolated to scattered rainfall is likely over south Peninsular India during 1st half of the week.
- **No significant Western Disturbance is likely to affect northwest India during the week.**
- Overall, rainfall activity is likely to be above normal over south Peninsular and central India. It is likely to be below normal over most parts of northwest, east & northeast India.

Minimum Temperatures and its forecast during Week 1 (15 to 21 December, 2022) and Week 2 (22 to 28 December, 2022):

Minimum Temperatures for week 1 (15 to 21 December, 2022):

- **Minimum temperatures** are in the range of 6-9°C over many parts of Punjab, Haryana, North Rajasthan and North Uttar Pradesh. These are below normal by 2-3°C over some parts of Haryana, North Rajasthan and northwest Uttar Pradesh.
- Gradual fall in minimum temperatures by about 2°C very likely over Northwest India during 24 hours and no significant change thereafter.
- Gradual fall by 2-4°C in minimum temperatures very likely over Central & East India during 1st half of the week and no significant change thereafter.
- **Cold wave conditions in isolated pockets very likely over Himachal Pradesh, Punjab and north Rajasthan during 1st half of the week.**

Minimum Temperatures for week 2 (22 to 28 December, 2022):

- Gradual fall in minimum temperatures by 2-4°C are likely over northern parts of the country as compared to week 1.
- Minimum temperatures are likely to be below normal by 1-2^o C over most parts of the northern India.

- Cold wave in isolated pockets likely over northwest India during some days of the week.

Legends: Heavy Rain: 64.5 to 115.5 mm Very Heavy Rain: 115.6 to 204.4 mm, Extremely Heavy Rain > 204.4 mm

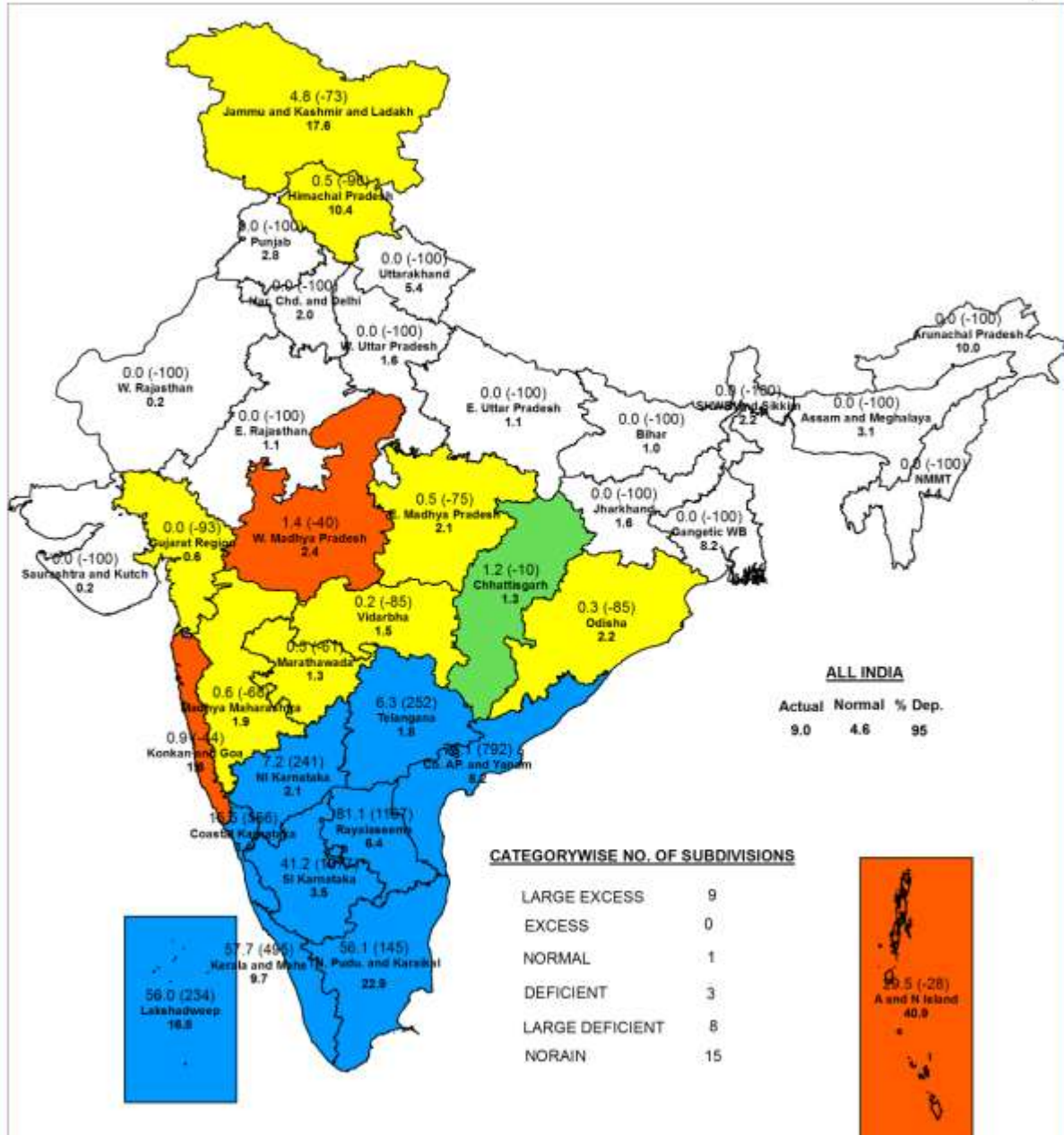
SPATIAL DISTRIBUTION (% of Stations reporting)				Probabilistic Forecast	
% Stations	Category	% Stations	Category	Terms	Probability of Occurrence (%)
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)	Unlikely	< 25
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)	Likely	25 - 50
				Very Likely	50 - 75
				Most Likely	> 75

Annex 1



SUBDIVISION RAINFALL MAP

Week : 08-12-2022 To 14-12-2022



Legend

Large Excess [80% or more] Excess [20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -40%] No Rain [-100%] No Data

NOTES :

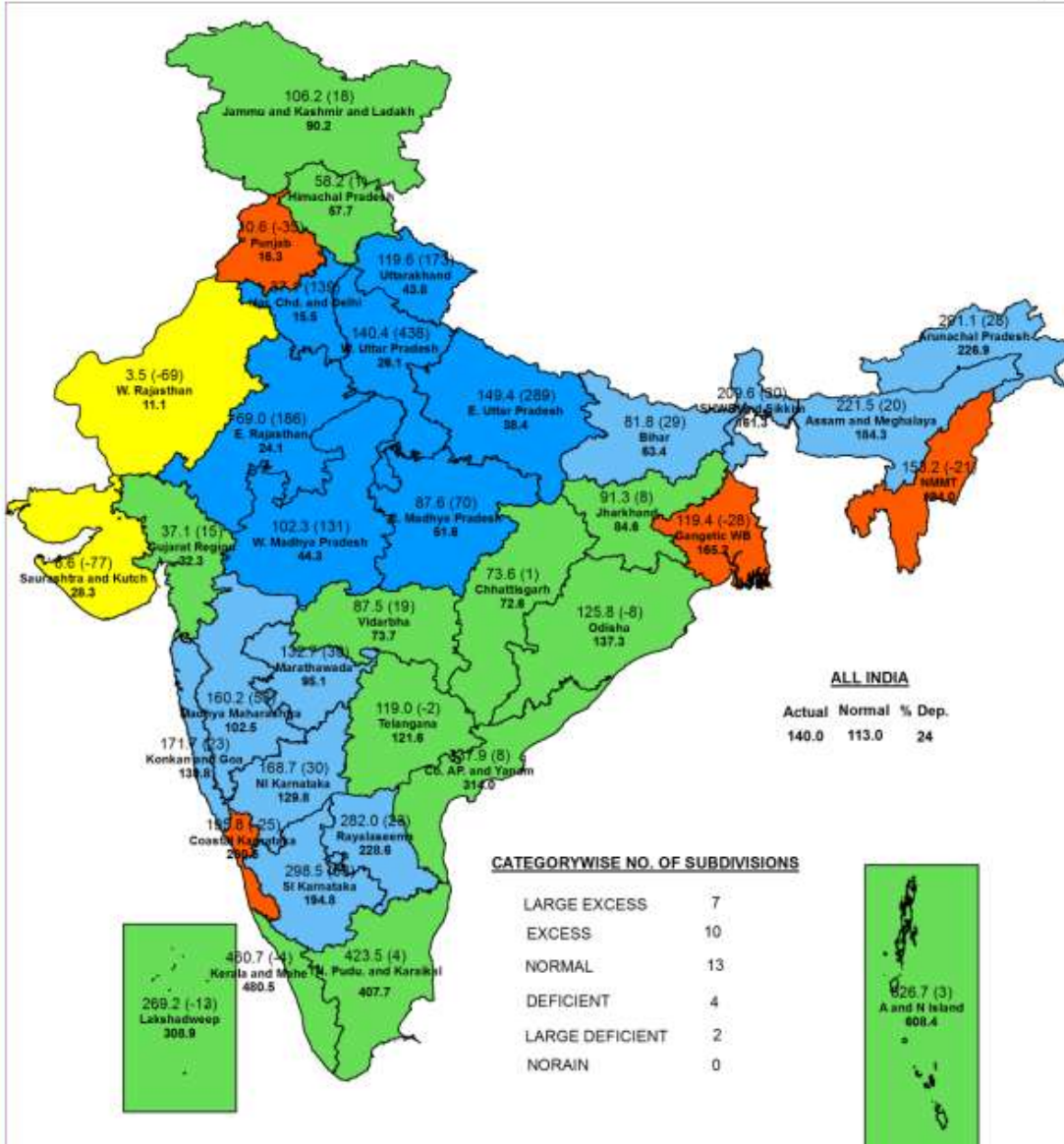
- a) RainFall figures are based on operation data.
- b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).
- c) Percentage Departures of rainfall are shown in brackets.

Annex: II



SUBDIVISION RAINFALL MAP

Period : 01-10-2022 To 14-12-2022



Legend

Large Excess [80% or more] Excess [20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -60%] No Rain [-100%] No Data

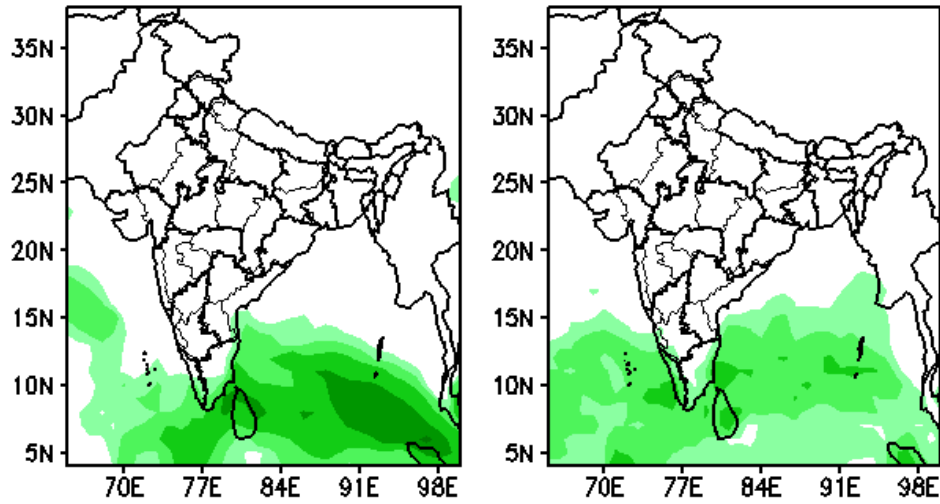
NOTES :

- a) RainFall figures are based on operation data.
- b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).
- c) Percentage Departures of rainfall are shown in brackets.

Forecast Rainfall (mm/day)

(Week1: 16Dec-22Dec)

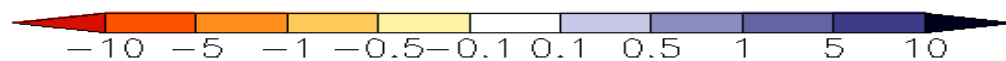
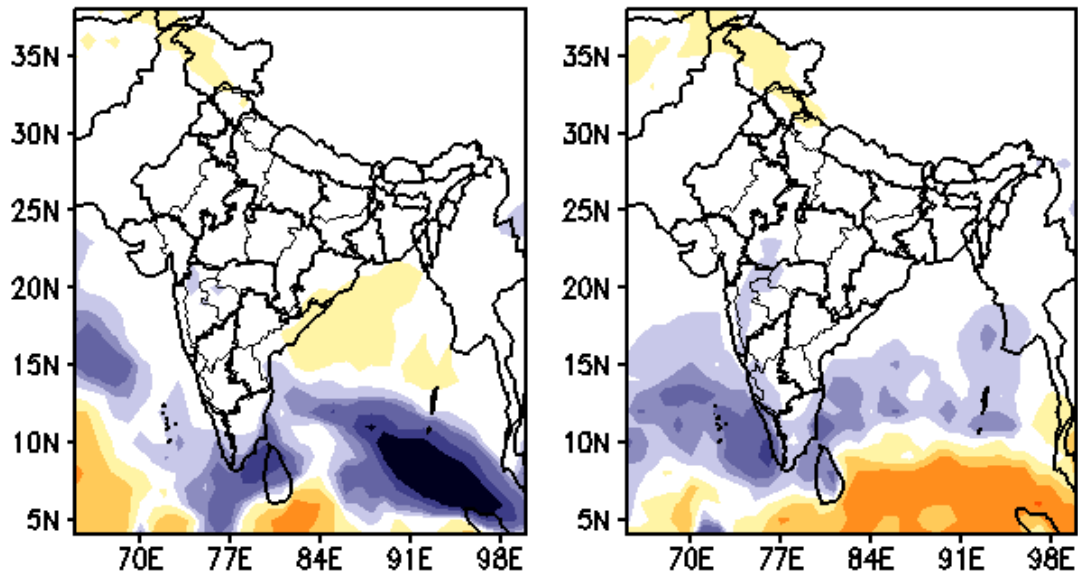
(Week2: 23Dec-29Dec)



Forecast Rainfall Anomaly (mm/day)

(Week1: 16Dec-22Dec)

(Week2: 23Dec-29Dec)

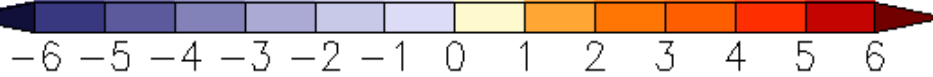
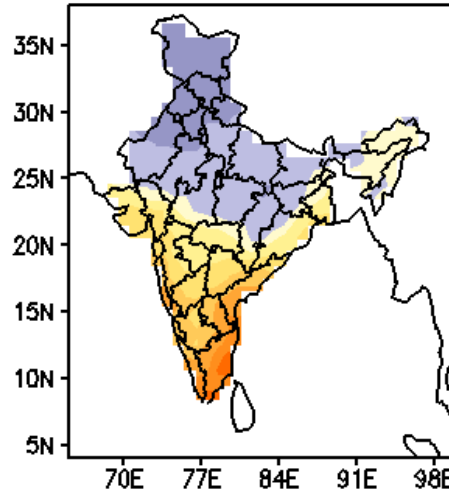
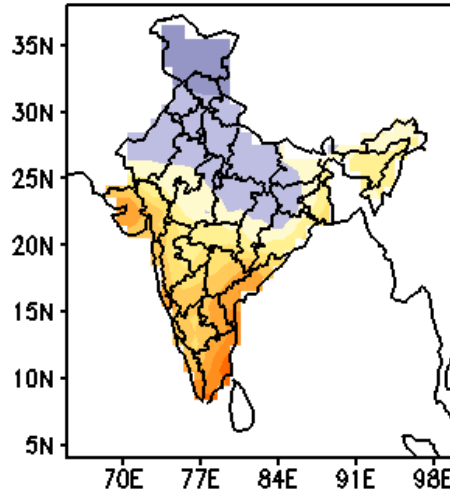


Annexure IV

MME Bias corrected forecast Tmin (Deg)

(Week1: 16Dec-22Dec)

(Week2: 23Dec-29Dec)



MME forecast Tmin anomaly (Deg C)

(Week1: 16Dec-22Dec)

(Week2: 23Dec-29Dec)

