



# 2nd Third Pole Climate Forum Consensus Statement (TPCF1)

Guidance on how to interpret and use the seasonal outlook at the  
national level

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU



# Contents



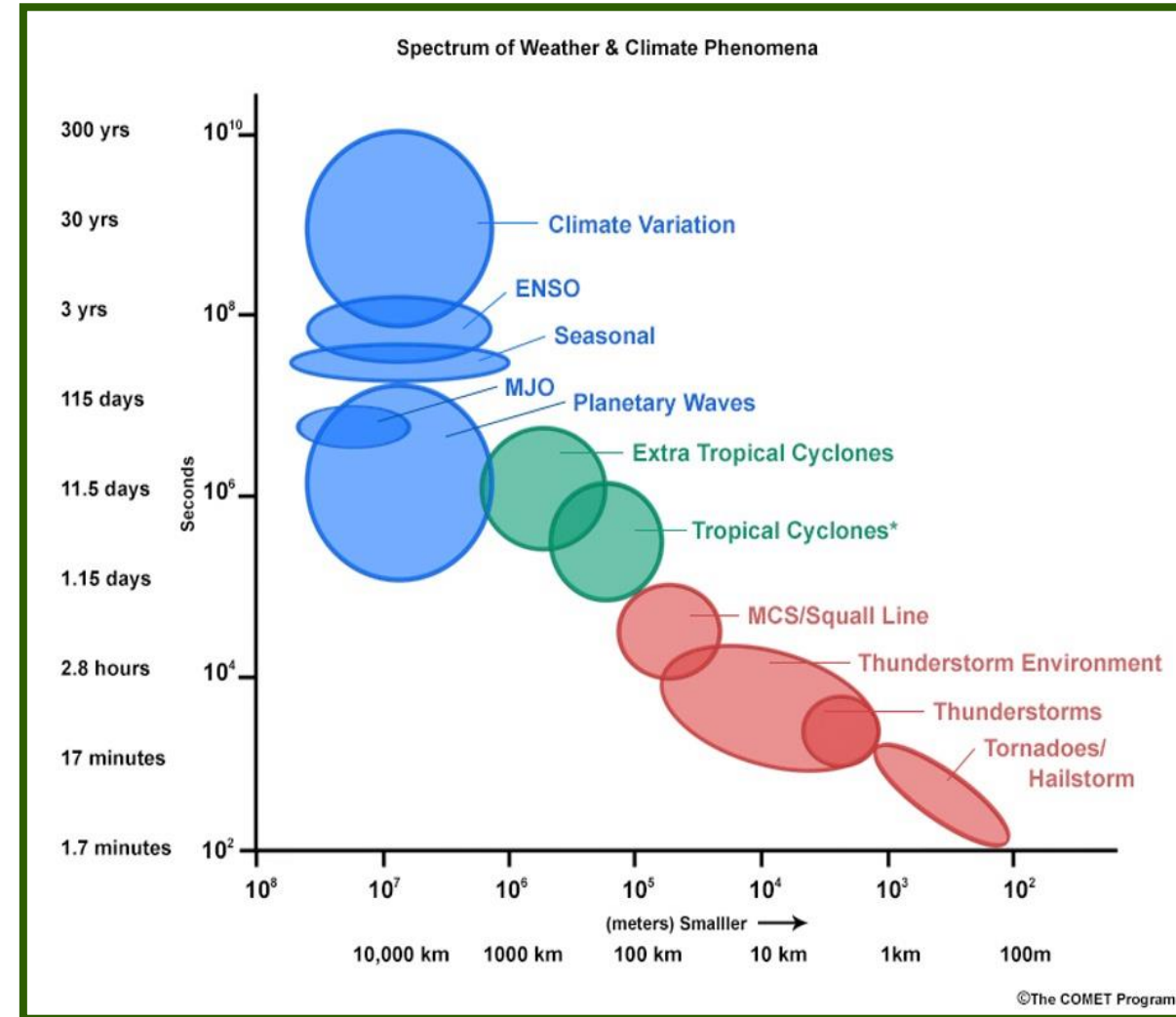
- Introduction to Seasonal Outlook
- Season Forecast Components
- Evaluation of Outlook
- Possible Impacts
- Forecast terms
- Dissemination



# Forecast Day to Month



- ✓ Weather forecast – Few days
- ✓ Detailed day-to-day changes cannot be calculated beyond two weeks
- ✓ Possible to say something about likely conditions
- ✓ Seasonal Forecast – Few months





# Seasonal Forecast



## ➤ How is Seasonal Forecast Possible?

- ✓ Atmosphere has a short memory
- ✓ Oceans have longer memory
- ✓ Slower fluctuations in the ocean's temps
- ✓ Can be predicted 6-months ahead
- ✓ Seasonal forecast is different from weather forecast
  - Forecast is condition averaged over 1-3 months
  - Forecast is stated in terms of probabilities





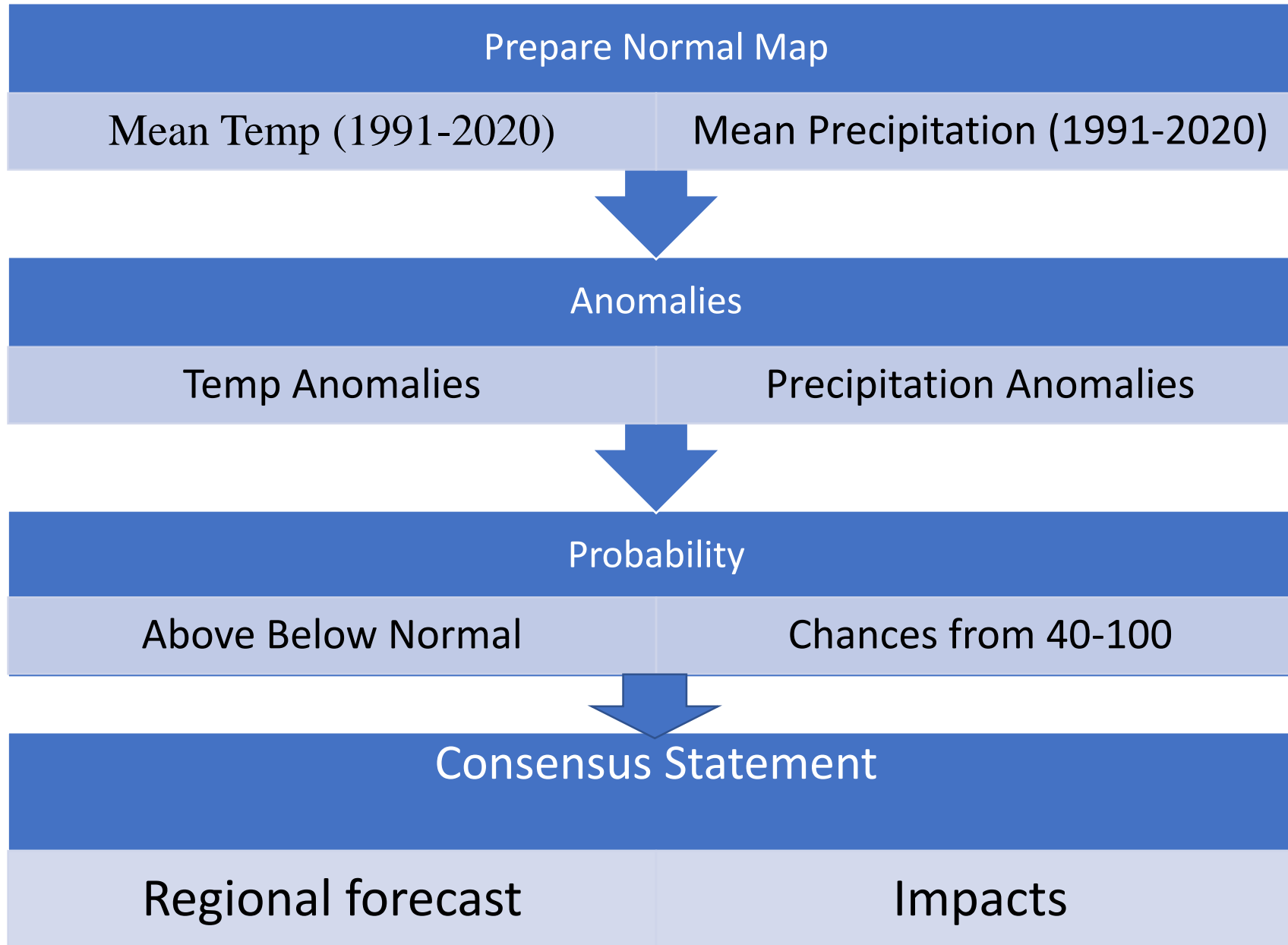
# Seasonal Forecast



WHAT A SEASONAL FORECAST IS	WHAT A SEASONAL FORECAST IS NOT
<b>Information about average seasonal conditions</b> (e.g., 'October to December rainfall is expected to be normal')	<b>Information about conditions on day-to-day variations or extreme weather</b> (e.g., 'The 23rd of November will be wet')
<b>Forecast over a large region</b> (e.g., 'The whole western part of the country may be wetter than normal')	<b>Forecasts with small-scale spatial detail</b> (e.g., 'This village will have a wetter-than-normal season, whilst that village will be drier than normal')
<b>Shifts in probabilities</b> (e.g., 'There is an increased chance of an average seasonal temperature of 25°C above normal')	<b>Definite information</b> (e.g., 'The season's average temperature will be 25°C')



# Main Components of Seasonal Forecast

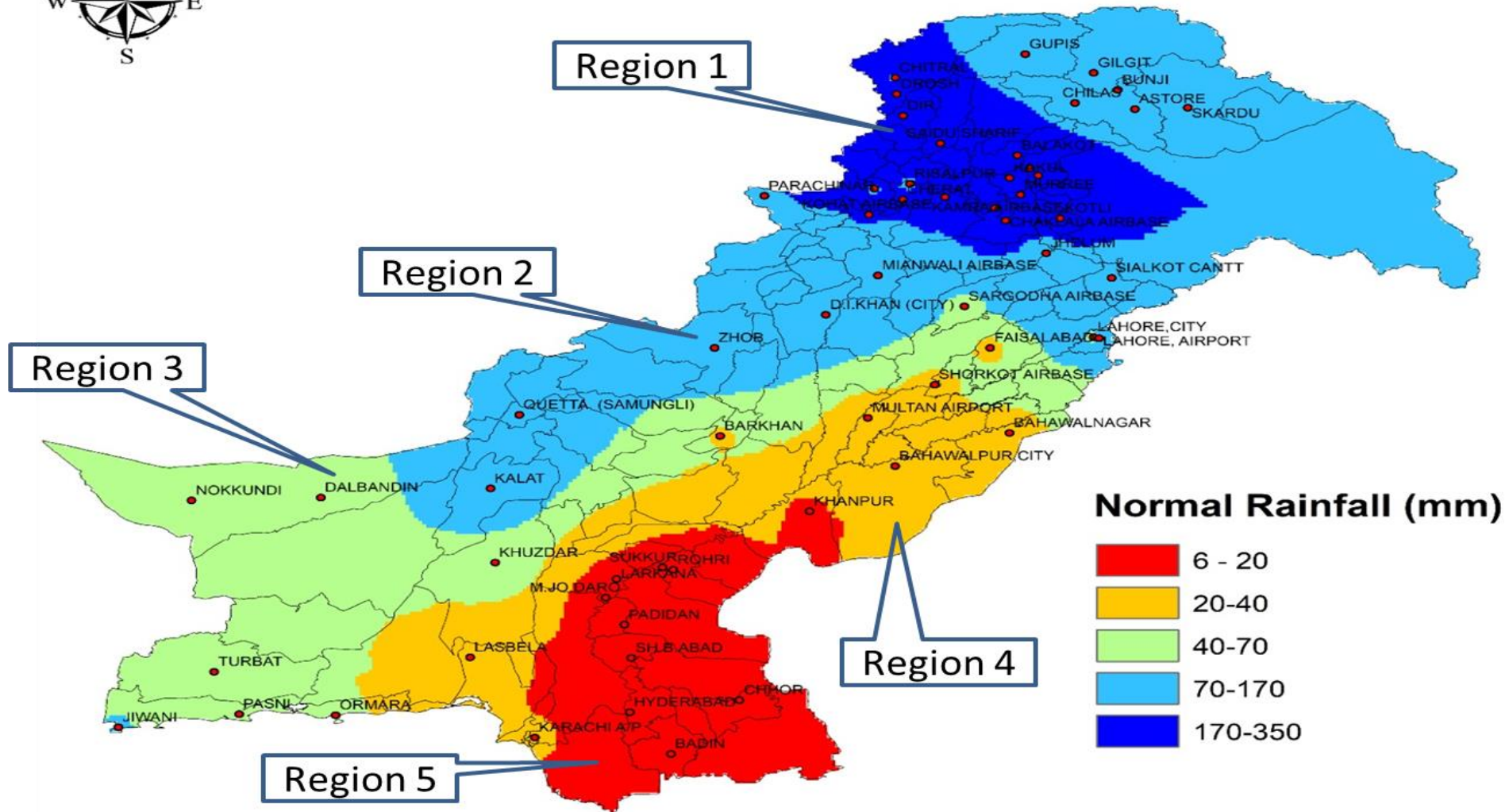




# Regional Climate



## K-Mean Cluster Classification of DJF Rainfall

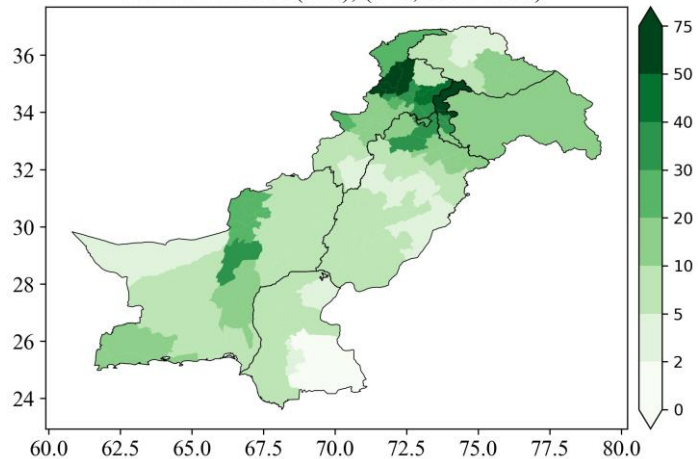




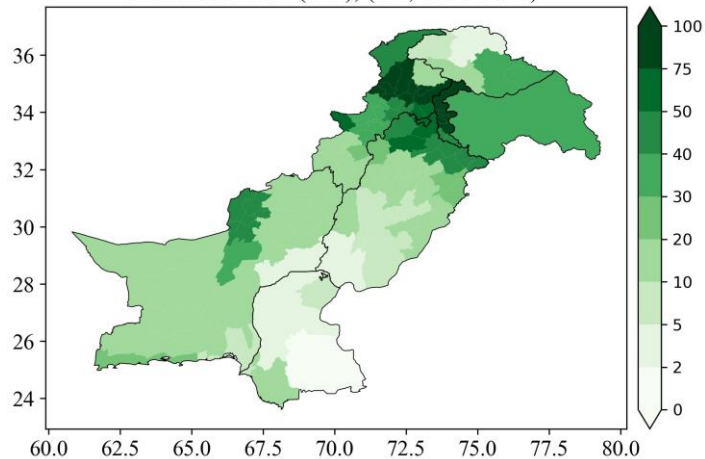
# Long Term Average for Rain and Temp



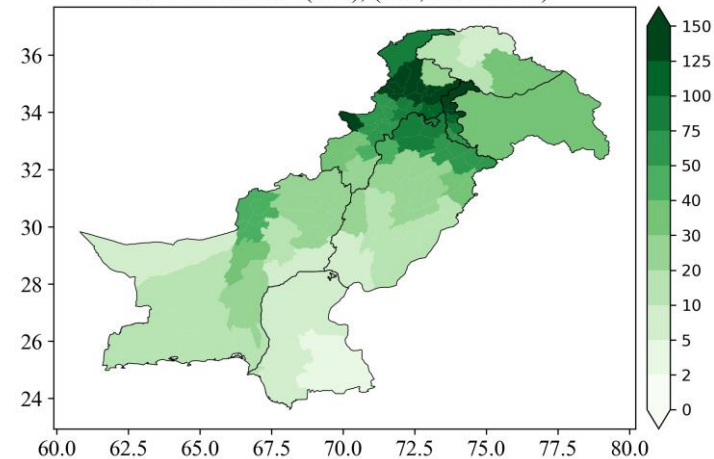
Normal Rainfall (mm), (Dec, 1991-2020)



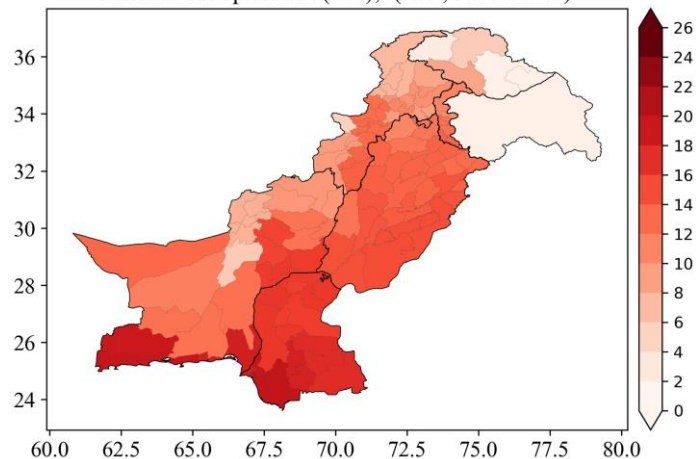
Normal Rainfall (mm), (Jan, 1991-2020)



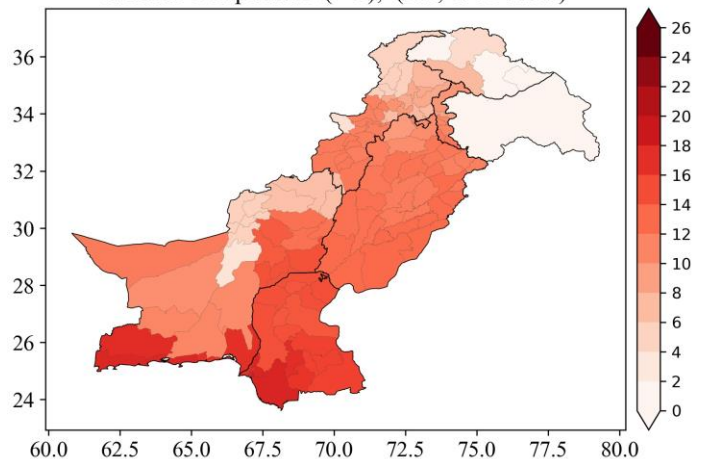
Normal Rainfall (mm), (Feb, 1991-2020)



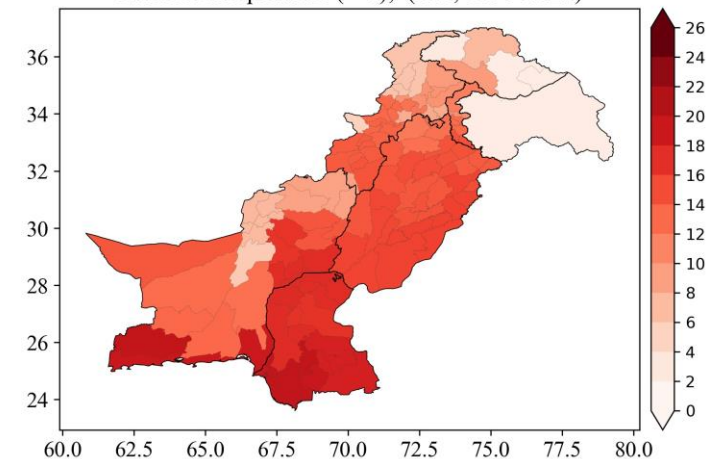
Normal Temperature (°C), (Dec, 1991-2020)



Normal Temperature (°C), (Jan, 1991-2020)



Normal Temperature (°C), (Feb, 1991-2020)



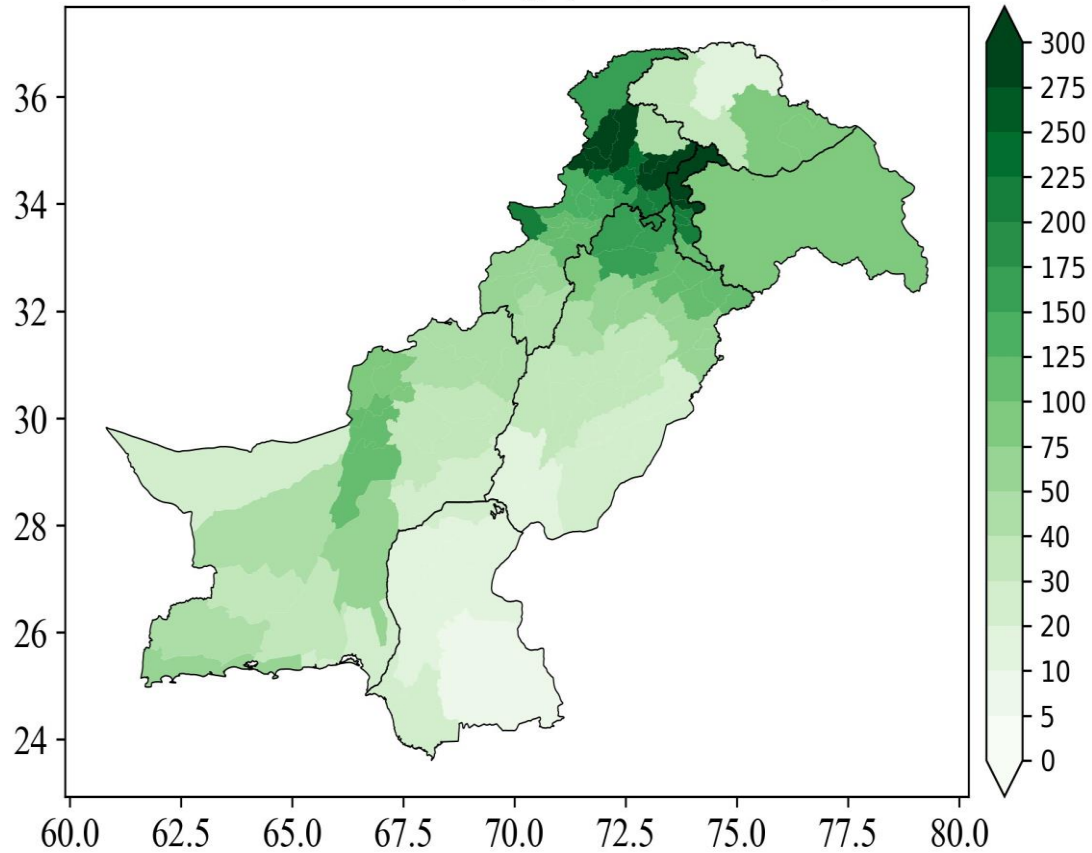




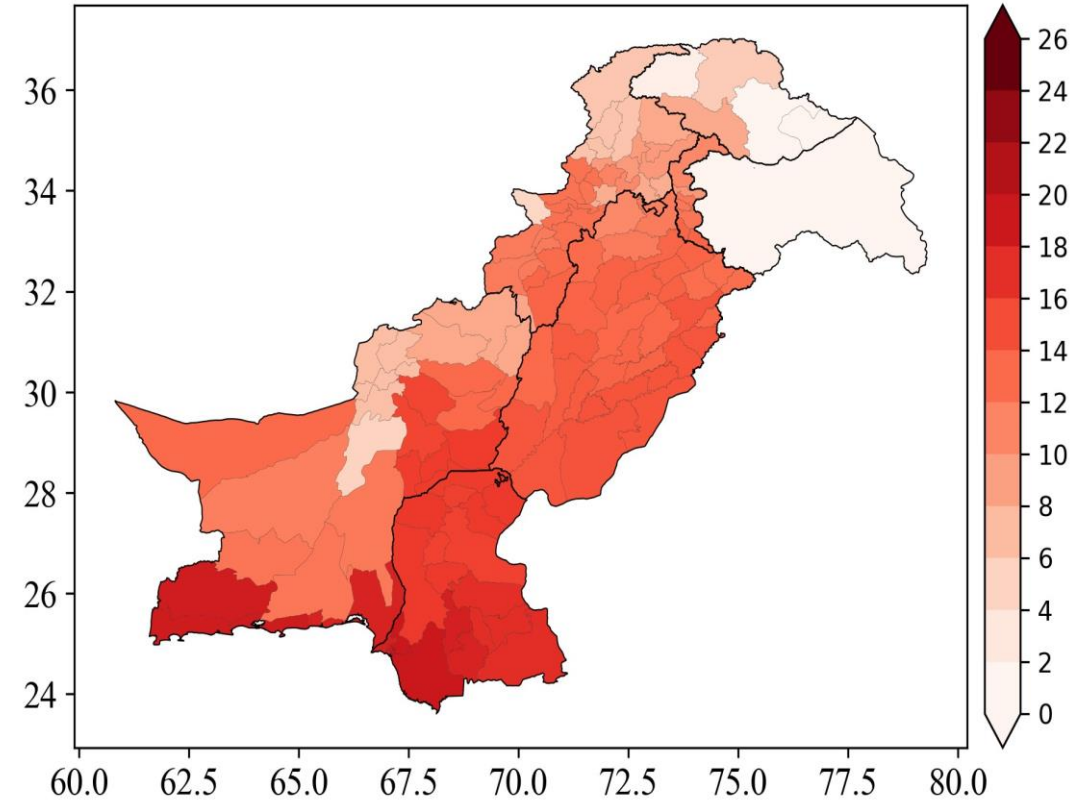
# Continue



Normal Rainfall (mm), (DJF, 1991-2020)



Normal Temperature (° C), (DJF, 1991-2020)

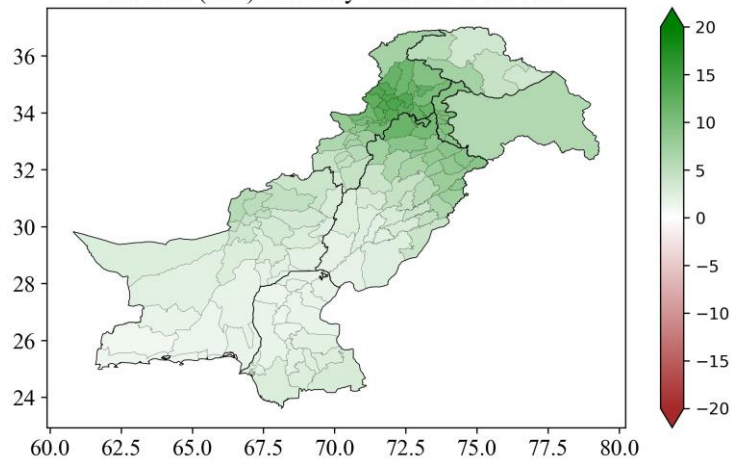




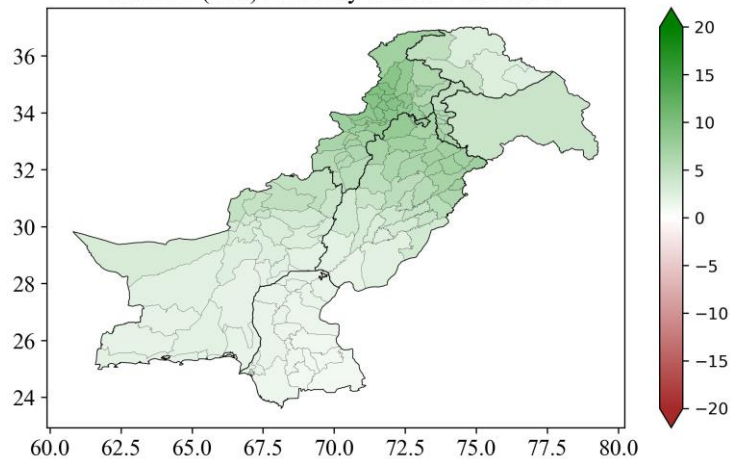
# Representation Seasonal Outlook/Anommlies



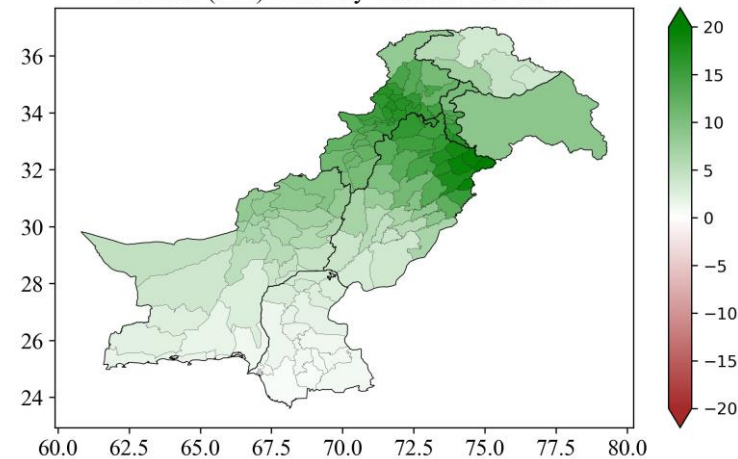
Rainfall (mm) Anomaly Outlook Dec-2023



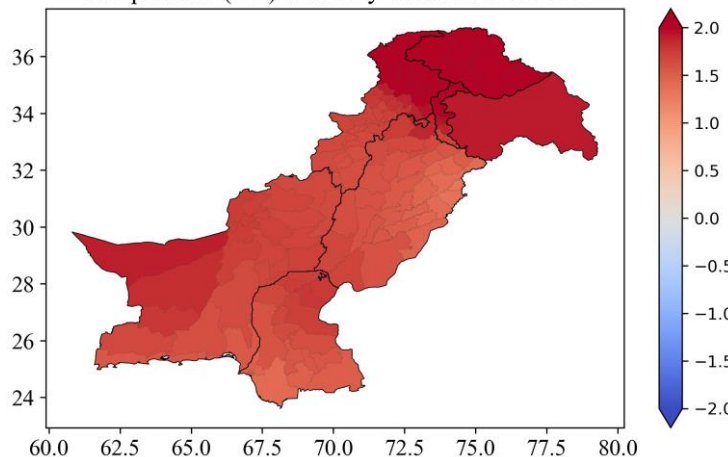
Rainfall (mm) Anomaly Outlook Jan-2024



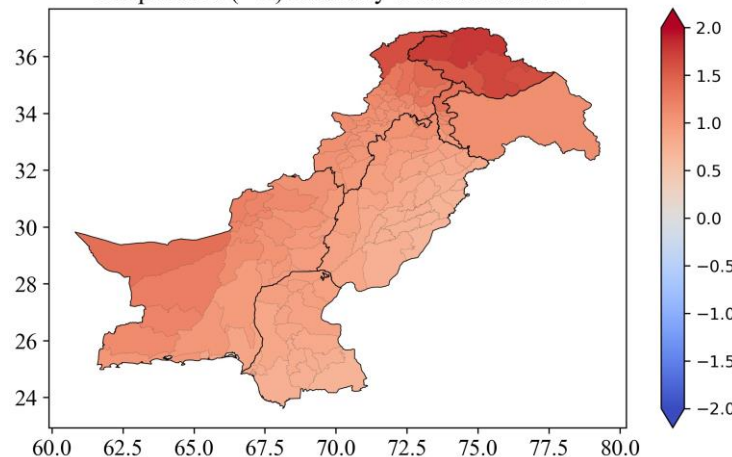
Rainfall (mm) Anomaly Outlook Feb-2024



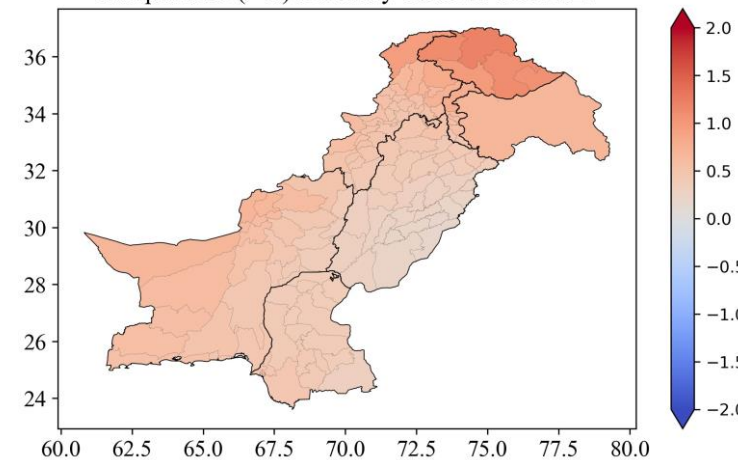
Temperature (°C) Anomaly Outlook Dec-2023



Temperature (°C) Anomaly Outlook Jan 2024



Temperature (°C) Anomaly Outlook Feb 2024

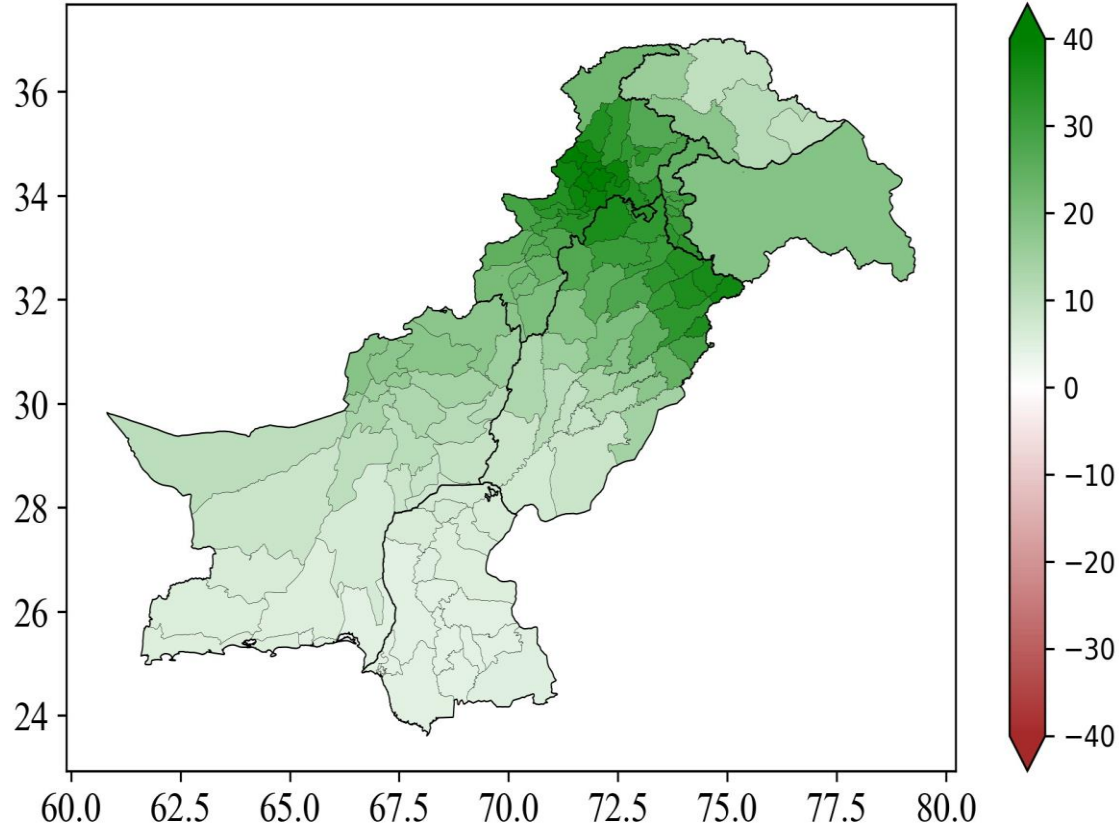




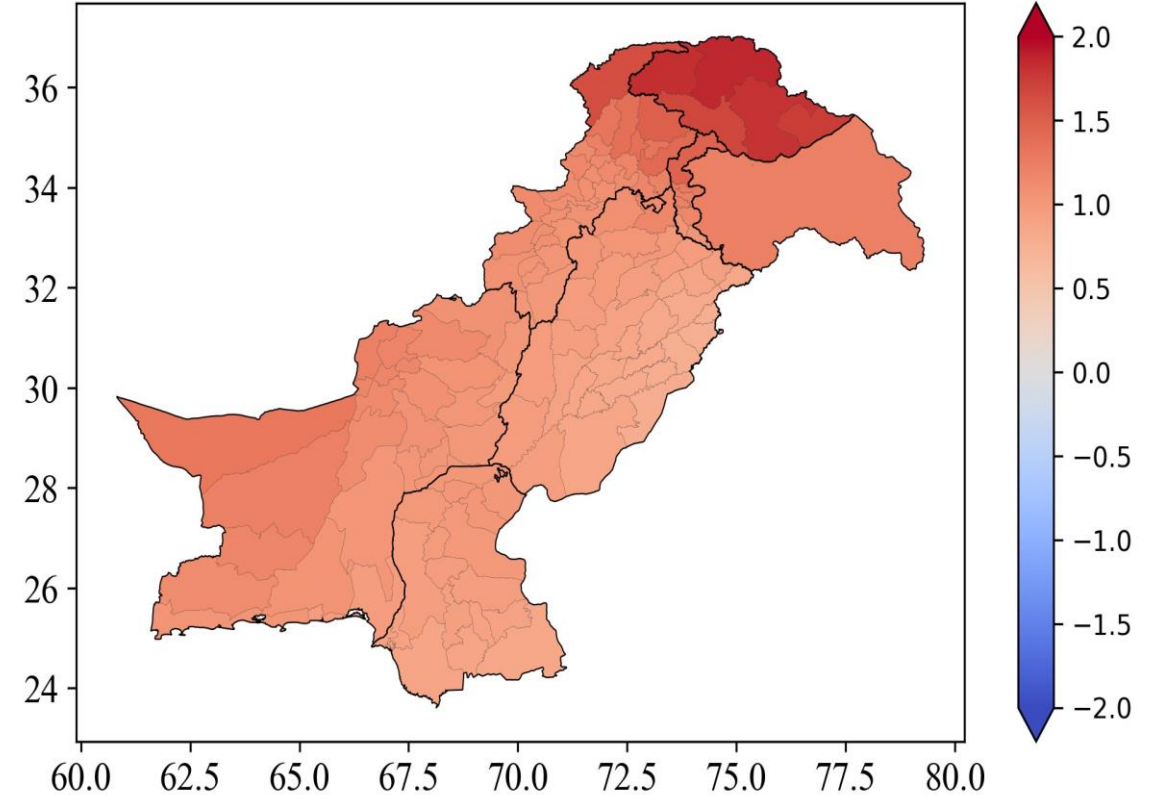
# Representation Seasonal Outlook/Anomolies



Rainfall (mm) Anomaly Outlook DJF-2023-24

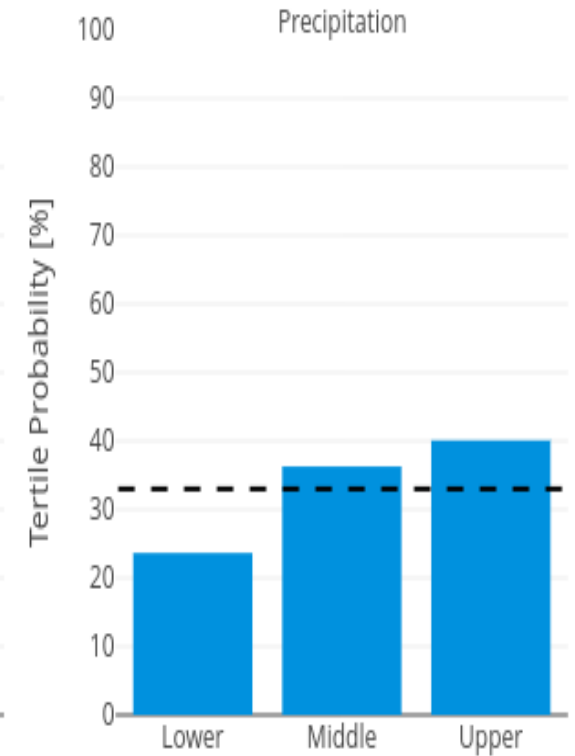
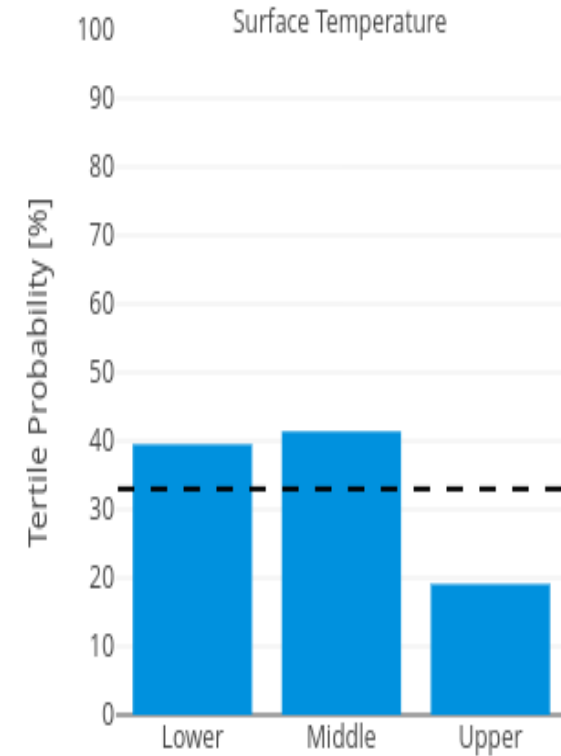
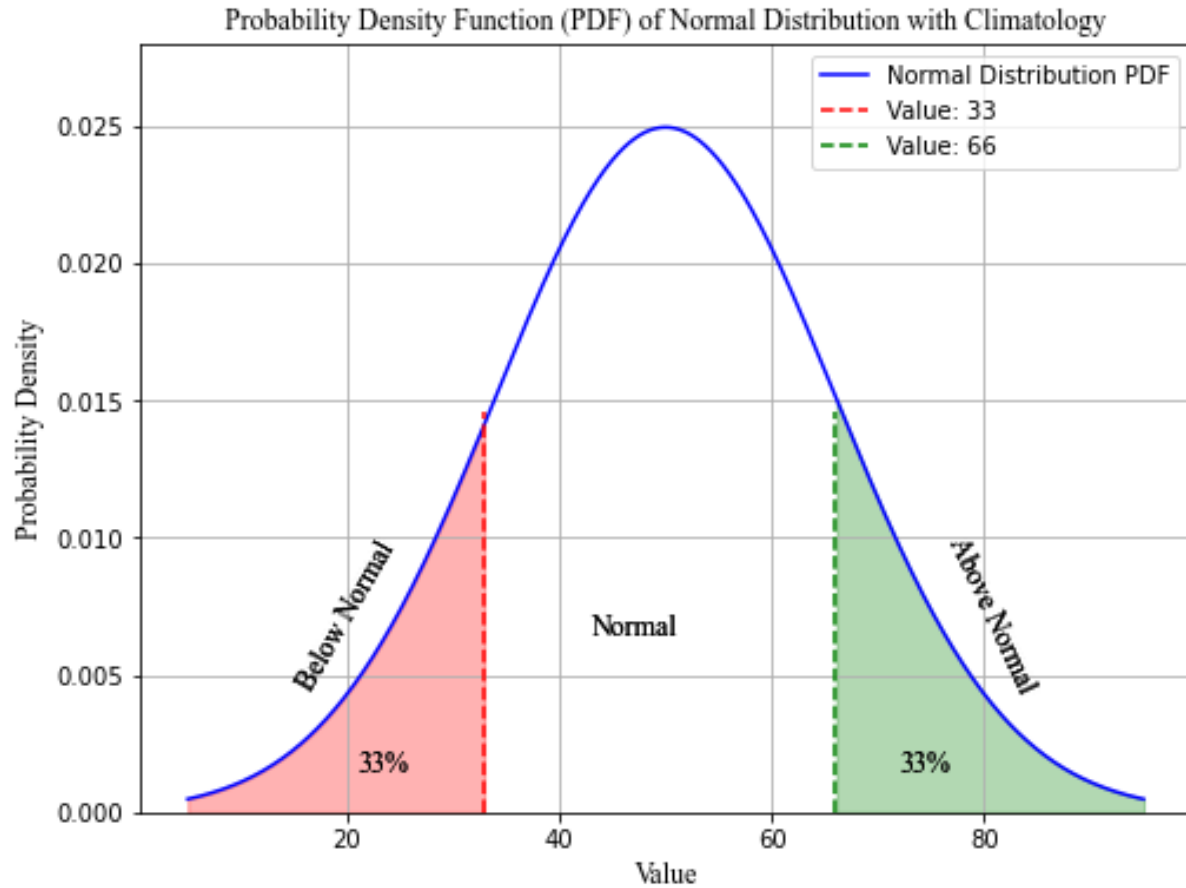


Temperature ( ° C) Anomaly Outlook DJF 2023-24





# Probabilistic Forecast



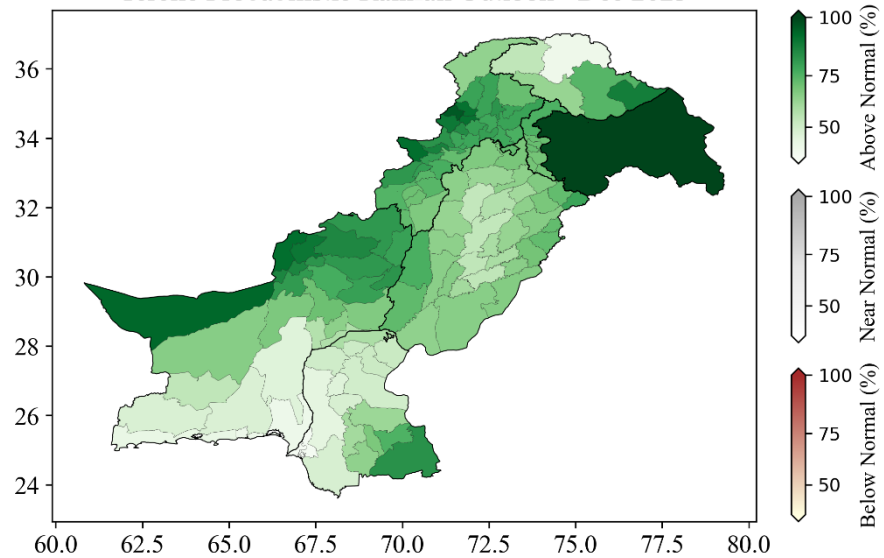




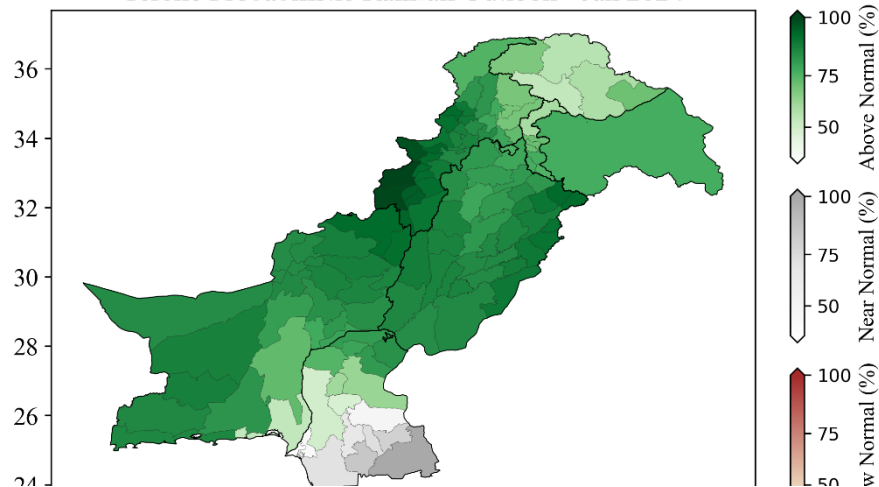
# Representation Seasonal Outlook



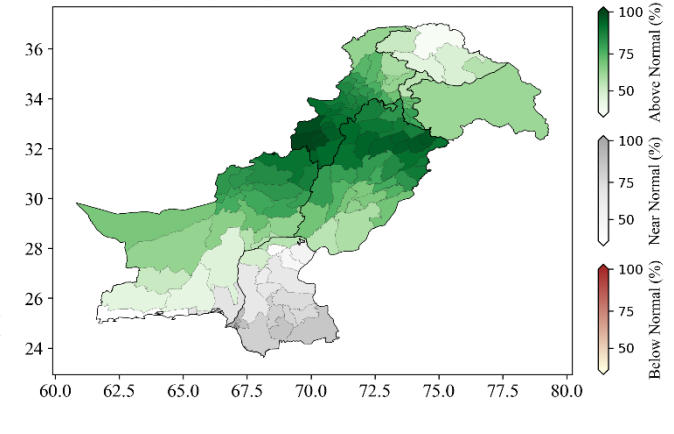
Tercile Probabilistic Rainfall Outlook - Dec 2023



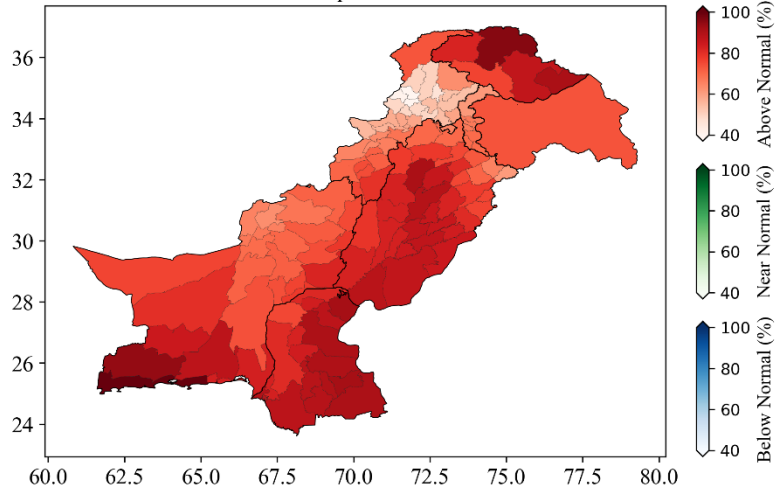
Tercile Probabilistic Rainfall Outlook - Jan 2024



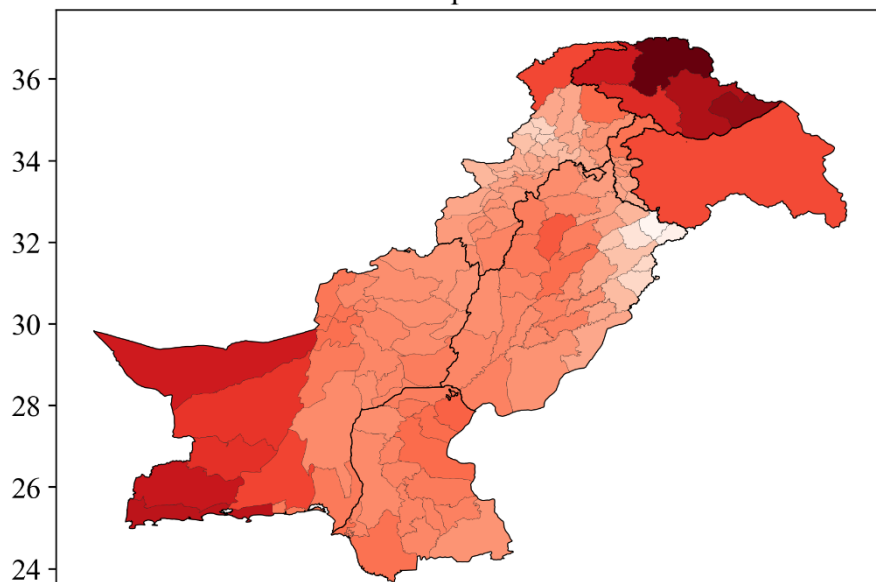
Tercile Probabilistic Rainfall Outlook - Feb 2024



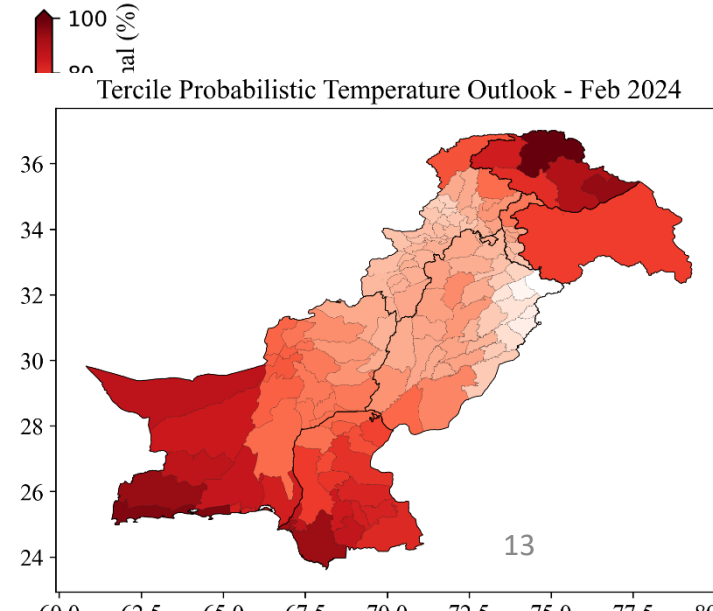
Tercile Probabilistic Temperature Outlook - Dec 2023



Tercile Probabilistic Temperature Outlook - Jan 2024



Tercile Probabilistic Temperature Outlook - Feb 2024

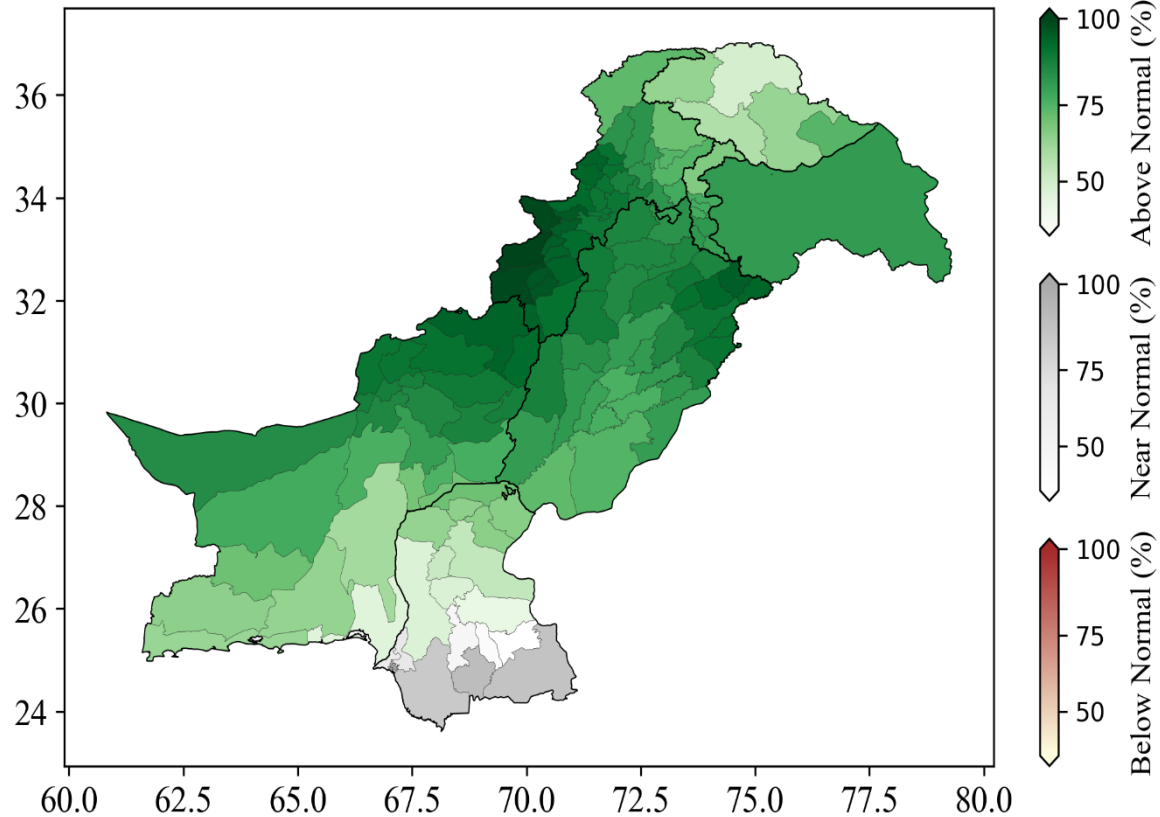




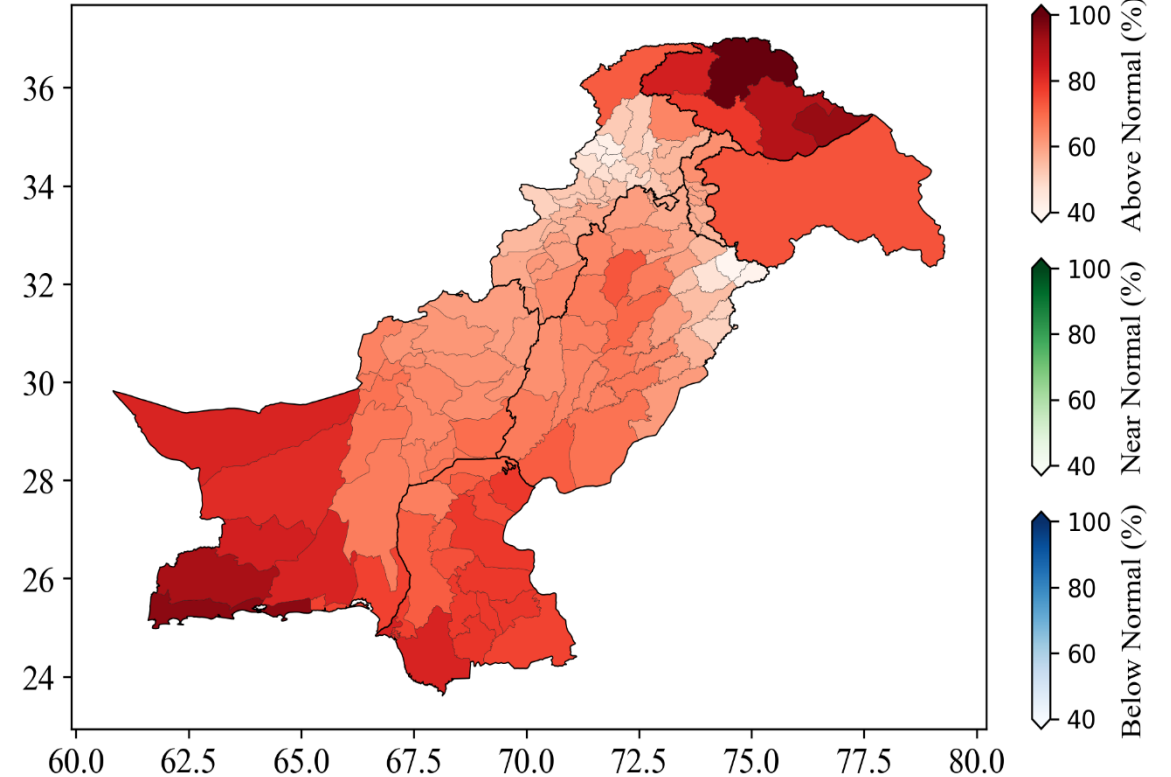
# Representation Seasonal Outlook



Tercile Probabilistic Rainfall Outlook - DJF 2023-24



Tercile Probabilistic Temperature Outlook - DJF 2023-24





# Monthly outlook



## **Monthly Rainfall Outlook:**

- A below-normal\* rainfall across the country is expected. However, near-normal rainfall is specifically anticipated in Sindh, Balochistan, and southern Punjab during the forecast month.

## **Monthly Temperature Outlook:**

- Temperatures are forecasted to remain slightly above normal\* nationwide, with maximum departure over Gilgit Baltistan and western Balochistan. Whereas eastern Sindh is expected to experience near-normal temperatures.



## Agriculture

- **Rice Harvesting:** The dry conditions with slightly above-normal temperatures will generally favor for Basmati rice harvesting, minimizing the risk of crop damage from rain.
- **Water Availability:** Below-normal rainfall may reduce water availability for irrigation in rain-fed agricultural regions, potentially impacting early Rabi season crop sowing, especially for wheat and barley.
- **Soil Moisture:** With relatively low rainfall, soil moisture levels may decline, which could hinder seed germination and early crop development for newly sown Rabi crops.

## Health

- **Smog and Air Quality:** Warmer and drier weather may contribute to stagnant air conditions, the smog will intensify during first week of the month, especially in Punjab and major urban areas. This can exacerbate respiratory illnesses, particularly affecting those with asthma or other chronic respiratory conditions.
- **Dengue:** Slightly warmer-than-normal temperatures may extend the dengue season, particularly in areas where mosquito breeding is more prevalent, such as southern Punjab, Sindh, and Balochistan. potential decline first half of November Health authorities may need to remain vigilant for vector control efforts.

## Fog/Smog conditions in plains and Highways

- **Fog Formation:** Although the weather is warmer than average, nevertheless ambient conditions are conducive for fog formation, especially in plain and low lying areas of Punjab, KP and Sindh. Reduced visibility due to fog/smog could disrupt highway travel and cause delays at major roadways and airports, particularly during night and early morning.

## Water Resources

- **Reservoirs and Dams:** The below-normal rainfall may affect reservoir replenishment levels, particularly in areas that rely on November rainfall for early water storage. Water management authorities are recommended to monitor reservoir levels and prepare for potential shortages if dry conditions persist.







# Seasonal Outlook



## Seasonal Outlook (Rainfall):

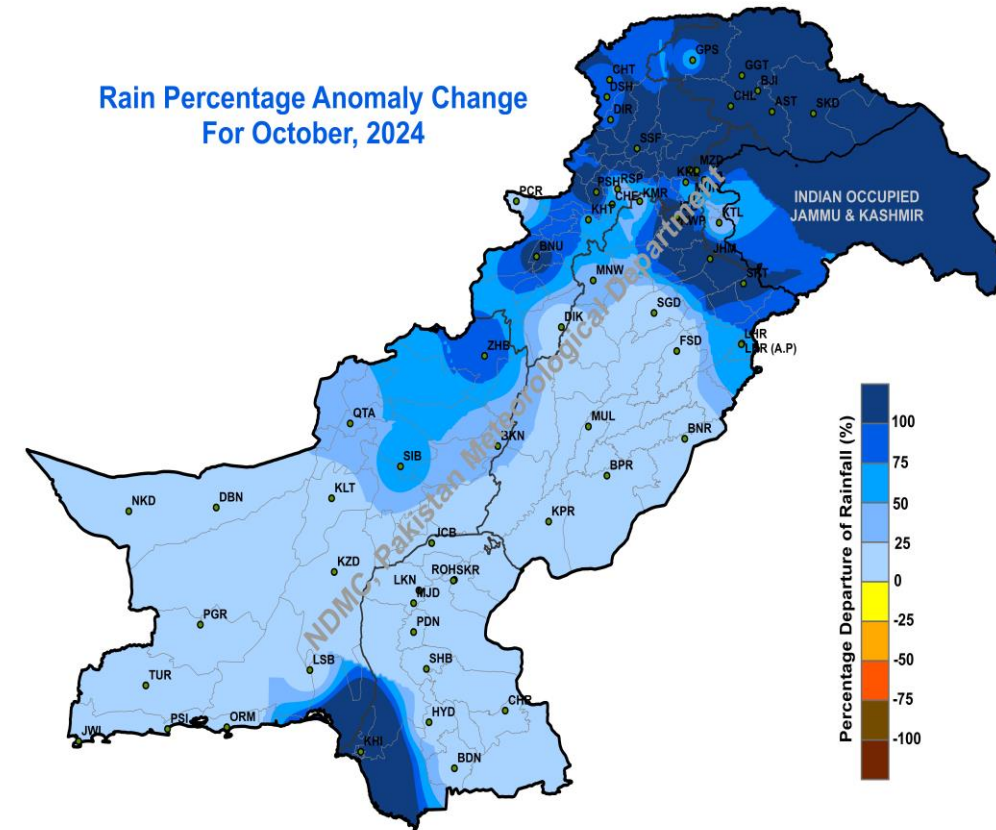
- **Below normal\*** rainfall is expected in the country with maximum negative departure over Upper Khyber Pakhtunkhwa and adjoining areas of Kashmir and GB. However, in lower parts near normal rainfall is anticipated.
- **Seasonal Temperature Outlook:**
- Temperatures are forecasted to remain **above normal\*** nationwide with maximum departure over Upper Khyber Pakhtunkhwa and Gilgit-Baltistan.



# Comparison of Seasonal Forecast w.r.t Observed



Region	Symbols	Departure Range (%)
Very Much Above Normal	WMAN	> +100
Well Above Normal	WAN	+50 to +100
Above Normal	AN	+25 to +50
Slightly Above Normal	SAN	+10 to +25
Normal or Near to Normal	N/ NN	+10 to -10
Slightly Below Normal	SBN	-10 to -25
Below Normal	BN	-25 to -50
Well Below Normal	WAN	-50 to -100
Very Much Below Normal	WMBN	< -100





## NATIONAL WEBSITE & POINT OF CONTACT DETAILS [Pakistan]

- National monsoon forum is usually held in 1<sup>st</sup> week of June.
- National climate outlook issued after consensus with regional directorates and expert scientists of PMD:
- Research and Development Division (R&D), and National Weather Forecast Centre (NWFC) Islamabad, Climate Data Processing Centre (CDPC) Karachi, Flood Forecast Division (FFD) Lahore.
- Keeping in view the rapid changes in climate system dynamics, monthly and seasonal outlook is issued during the last week of each month at:
- [http://www.pmd.gov.pk/rnd/rndweb/rnd\\_new/seasonal.php](http://www.pmd.gov.pk/rnd/rndweb/rnd_new/seasonal.php)



# National and International Dissemination



- [South Asian Climate Outlook Forum \(SASCOF\)](#)
- [Regional Integrated Multi-Hazard Early Warning System \(RIMES\)](#)
- [Food and Agriculture Department \(FAO\)](#)
- [Third Pole Regional Climate Center \(TPRCC\)](#)
  
- [Agricultural Department](#)
- [Water and Power Development Authority](#)
- [Flood Forecast Commission](#)
- [National Disaster Management Authority](#)
- [District and City Government](#)





# Seasonal Forecast



Thank  
You