

NATIONAL DISASTER MANAGEMENT AUTHORITY

ISLAMABAD

POST MONSOON REPORT

2025

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ACRONYM

Acronym	Full Form
AI	Artificial Intelligence
AJ&K	Azad Jammu & Kashmir
CBDRM	Community-Based Disaster Risk Management
DDMA	District Disaster Management Authority
DHA	Defence Housing Authority
DIRA	Disaster Impact and Response Analytics
DRR	Disaster Risk Reduction
ENSO	El Niño-Southern Oscillation
FFC	Federal Flood Commission
FFD	Flood Forecasting Division
FWO	Frontier Works Organization
GB	Gilgit-Baltistan
GBDMA	Gilgit-Baltistan Disaster Management Authority
GCC	Gender & Community Cell
GDP	Gross Domestic Product
GHQ	General Headquarters
GLOF	Glacial Lake Outburst Flood
HBL	Habib Bank Limited
IA&PD	Infrastructure Advisory & Project Development
IC	International Collaboration
ICT	Islamabad Capital Territory
INGO	International Non-Governmental Organization
IOD	Indian Ocean Dipole
IWT	Indus Waters Treaty
KP	Khyber Pakhtunkhwa
KSrelief	King Salman Humanitarian Aid and Relief Centre
MoC	Ministry of Communication
MoCC	Ministry of Climate Change and Environmental Coordination
MoD	Ministry of Defence
MoI	Ministry of Interior
MoNFSR	Ministry of National Food Security & Research
MoNHS&R	Ministry of National Health Services & Regulation
MoPD&SI	Ministry of Planning, Development & Special Initiatives

Acronym	Full Form
NADRA	National Database & Registration Authority
NDMA	National Disaster Management Authority
NEOC	National Emergency Operations Centre
NGO	Non-Governmental Organization
NH&MP	National Highways & Motorway Police
NHA	National Highway Authority
NoK	Next of Kin
NR2F	National Resources and Risk Financing
PAF	Pakistan Air Force
PDMA	Provincial Disaster Management Authority
PMD	Pakistan Meteorological Department
PN	Pakistan Navy
PR	Pakistan Railways
PRCS	Pakistan Red Crescent Society
PSO	Pakistan State Oil
RM&M	Regional, Military Collaboration & Media
SAR	Search and Rescue
SDMA	State Disaster Management Authority
SITREP	Situation Report
SOPs	Standard Operating Procedures
Tech (EW)	Technical (Early Warning)
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
WAPDA	Water and Power Development Authority
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organization

INTRODUCTION

The Monsoon Season 2025 brought widespread and intense rainfall across Pakistan from **June to September 2025**, causing flash floods, urban inundation, landslides and riverine overflows that severely impacted communities, infrastructure and livelihoods. **NDMA**, in close coordination with **PDMAs/ SDMA/ GBDMA, Armed Forces, line departments** and **humanitarian partners**, spearheaded an extensive national response. Relief operations ensured the provision of essential supplies, timely evacuation of populations at risk and restoration of critical infrastructure. This report presents a comprehensive overview of **damages, response actions, logistics operations, ex-gratia assistance and lessons learnt**, highlighting key challenges and institutional performance during the monsoon 2025 season.

This document has been prepared by NDMA (Operation Wing) under the patronage of

Lieutenant General Inam Haider Malik, HI (M), Chairman NDMA

EXECUTIVE SUMMARY

The **2025 Monsoon Season** was one of the most variable and intense in recent years, spanning from **25th June to 30th September 2025**, with multiple high-intensity rainfall events across **Punjab, Sindh, KP, Balochistan, GB, AJ&K and ICT**. The season brought **above-normal rainfall (23% higher than the long-term average)**, triggering **flash floods, landslides, lightning incidents and riverine flooding and urban inundations**, resulting in severe humanitarian and economic impacts nationwide.

A total of **1,037 fatalities** and **1,067 injuries** were reported across the country. Over **229,763 houses** were damaged or destroyed, while **22,841 livestock perished** and **2,811 km of road infrastructure damages** were recorded. Agricultural land, bridges and irrigation channels also suffered significant destruction. Approximately **3 million people** were **rescued or evacuated** from high-risk areas, while **949 relief camps** provided temporary shelter to more than **152,000 displaced individuals**.

NDMA, in coordination with **PDMAs, GBDMA, SDMA** and **district administrations**, maintained continuous operations through the **NEOC**. Timely **early warnings, advisories and rainfall alerts** were issued in partnership with **PMD and FFD**, enabling pre-emptive evacuations in several high-risk zones. **Pakistan Armed Forces and Rescue 1122** played a crucial role in conducting **SAR missions**, including air operations in mountainous and flood-affected areas.

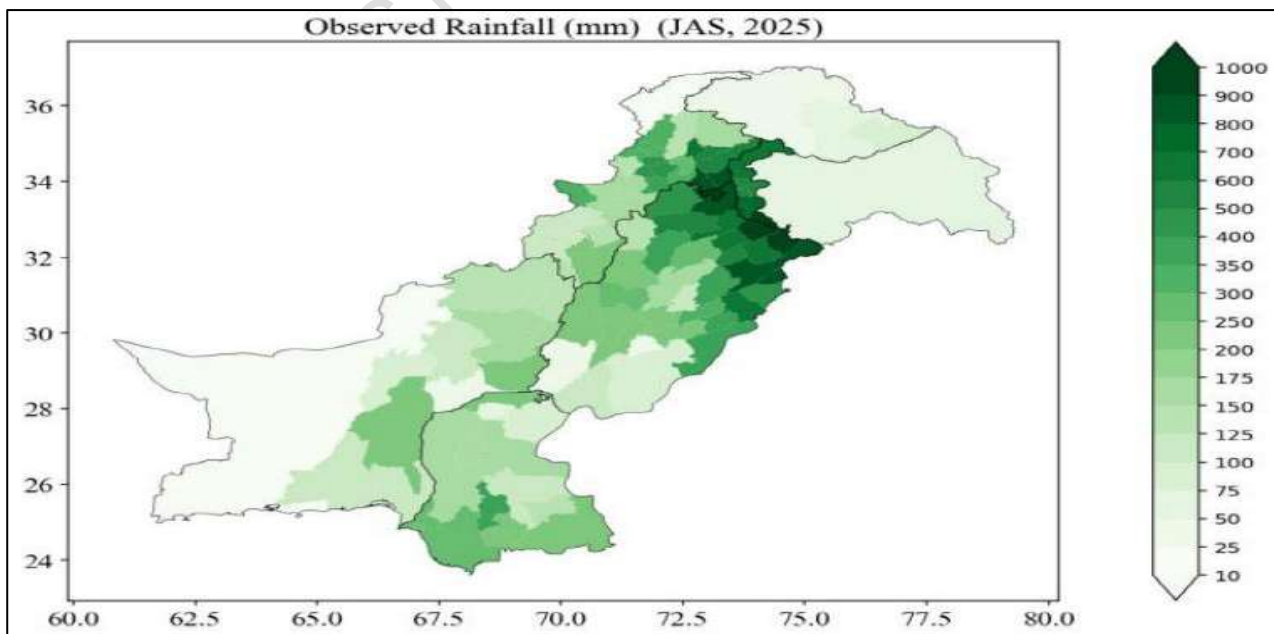
NDMA coordinated the dispatch of **over 21,865 tons of relief supplies**, including family tents, ration packs, blankets, mosquito nets, hygiene kits, food and medicines, to the affected provinces. Under the **Prime Minister's Ex-Gratia Relief Package**, **Rs. 2 million** was provided to **NoK** per deceased individual. International partners, humanitarian organizations and private sector also extended support through **food distribution, WASH interventions and health assistance**.

Despite these challenges, the national disaster management system demonstrated a **stronger operational posture** compared to previous years, benefiting from **digital reporting (DIRA), real-time mapping, proactive surveillance** and improved inter-agency coordination. The season underscored the growing **frequency of localized, high-intensity weather events**, reaffirming the need for **climate-resilient infrastructure, adaptive planning and community-based preparedness** to minimize future monsoon impacts.

CHAPTER - 1

METEOROLOGICAL OVERVIEW

1. During the July–August–September (JAS) 2025 season, **normal to above-normal rainfall** was recorded across most parts of Pakistan, reflecting an overall **active and wetter-than-average monsoon pattern**. The season was marked by the consistent penetration of monsoon currents from both the **Arabian Sea and Bay of Bengal**, supported intermittently by Westerly disturbances that enhanced precipitation over the Northern and Northeastern regions. However, **GB experienced slightly below-normal rainfall**, particularly during September 2025, owing to the early withdrawal of the monsoon system and a weakening of moisture-laden currents in the upper troposphere.
2. Since the onset of the monsoon in the **last week of June 2025**, the country experienced **around nine significant rainfall spells** of varying intensity and duration. These spells brought widespread rains to Punjab, Sindh, KP, Balochistan, GB, AJ&K and ICT. **Isolated heavy downpours led to severe urban flooding in major cities such as Lahore, Rawalpindi, Karachi and Peshawar**, while **flash floods** were reported in hilly and riverine areas of Northern Pakistan, causing localized damages to infrastructure and livelihoods. **Temperatures remained normal to slightly above normal throughout the season**, with the **highest positive temperature departures recorded over GB**, indicating the persistence of warmer conditions in the upper mountainous regions. The combination of elevated temperatures and episodic heavy rainfall highlighted the increasing **variability and intensity of the South Asian monsoon** under evolving climatic conditions.



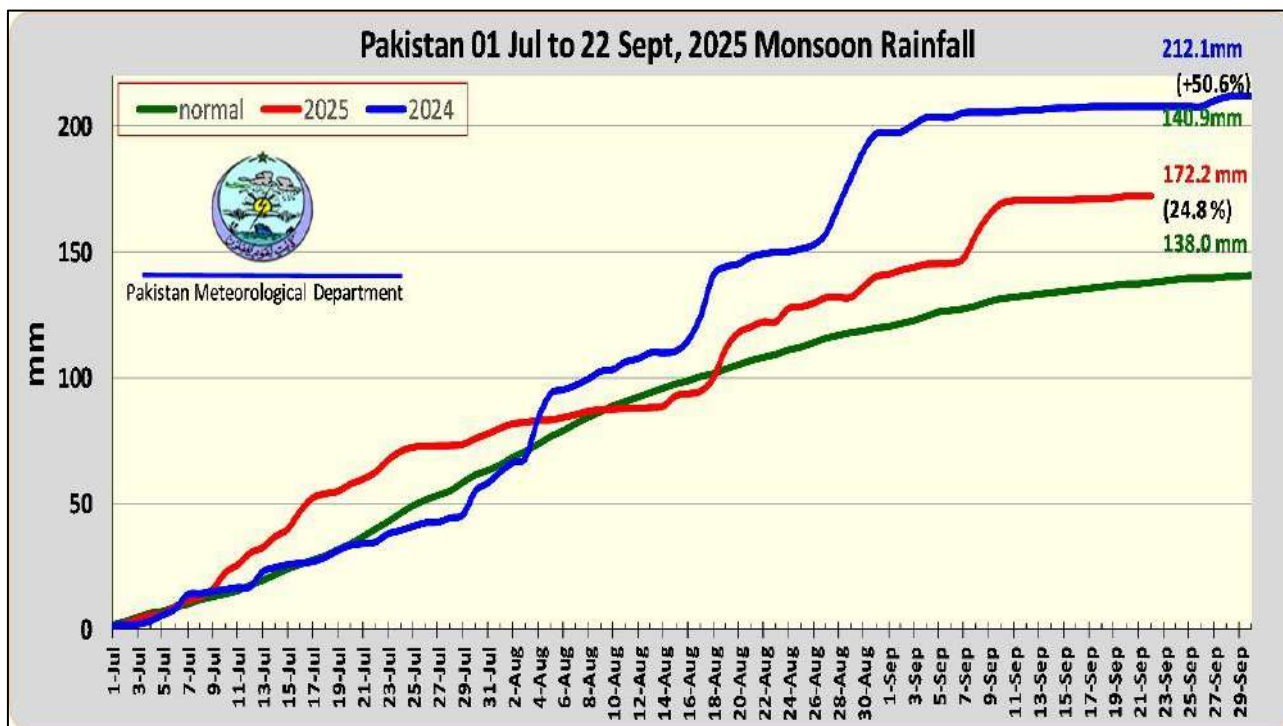


Table 1: Summary of the JAS 2025 Observed Rainfall and Temperature

Region	Total Rainfall (mm)	Normal* Rainfall (mm)	Rainfall Departure (%)	Mean Temp (°C)	Anomaly (°C)
Pakistan	266.5	224.1	+19.4	29.6	+0.5
AJK	663.6	594.1	+11.7	27.5	+0.2
Balochistan	66.1	51.7	+29.1	30.4	+0.9
Gilgit-Baltistan	50.6	56.5	-10.5	26.4	+2.3
Khyber Pakhtunkhwa	288.1	286.5	+2.0	27.8	+0.7
Punjab	518.6	402.9	+28.7	30.0	-0.3
Sindh	156.9	115.6	+35.6	32.2	0.0

* Normal Period (1991 – 2020)

PAKISTAN MONTHLY CLIMATE SUMMARY - JULY 2025

1. General

- a. **National Rainfall.** 77.7 mm, +23% anomaly, ranking above average.
- b. **Mean Temperature.** 32.45 °C, +0.1 °C anomaly, near normal.
- c. **Daytime Temperature.** 36.85 °C, -0.3 °C anomaly, slightly below average.
- d. **Nighttime Temperature.** 25.91 °C, +0.6 °C anomaly, which is slightly warmer than average night temperature.
- e. **Hottest Day.** 48.5 °C at Chilas (GB) on 5 July 2025.
- f. **Warmest Place.** Dalbandin and Nokkundi remain the warmest with a mean monthly maximum temperature of 44.5 °C.
- g. **Coldest Night.** 8.0 °C at Parachinar (KP) on 12 July 2025.
- h. **Coldest Station.** Murree (Punjab) with mean monthly minimum 15.0 °C.
- i. **Heaviest One-Day Rainfall.** 216.8 mm of rainfall recorded at Sheikhpura (Punjab) on 16 July 2025.
- j. **Wettest Station.** Islamabad (Zero Point) with 611.7 mm total rainfall.
- k. **ENSO Phase.** Neutral, SST anomaly ≈ -0.19 °C (central Pacific).
- l. **IOD.** Turning negative.

2. National Weather Extremes (July 2025)

Ser	Event	Value	Location / Date
a.	Hottest Day	48.5 °C	Chilas (GB), 5 July 2025
b.	Coldest Day	17.0 °C	Bagrote (GB), 16 - 17 July 2025
c.	Coldest Night	8.0 °C	Parachinar (KP), 12 July 2025
d.	Warmest Night	34.0 °C	Chilas (GB), 6 July 2025
e.	Wettest Day	216.8 mm	Sheikhpura (Punjab), 16 July 2025
f.	Wettest Month	611.7 mm	Islamabad (Zero Point)

3. Synoptic Summary

- a. Monsoon currents from the Arabian Sea and Bay of Bengal entered Southern and Eastern Pakistan at the start of July 2025, intensifying and spreading across upper and central regions later in the month.
- b. Westerly waves persisted over Northern Areas (KP, GB, Kashmir and Punjab), interacting with monsoon systems.
- c. A monsoon low formed over the Bay of Bengal on 11 July 2025, moved across Madhya Pradesh → North Rajasthan → South Punjab (Pakistan) by 16 July 2025 and weakened into a trough.

- d. A seasonal heat low (991 hPa) persisted over Northwest and West Balochistan, while low-pressure troughs developed over eastern Sindh (5 - 9, 14 - 20, 22 - 25 July 2025), fed by moisture from the Arabian Sea.
- e. The monsoon axis remained northward of its normal position, causing widespread heavy to very heavy rainfall in KP, GB, Kashmir, Punjab and scattered heavy rain in Sindh and Balochistan, resulting in flash floods in vulnerable areas.

4. **Rainfall Overview**

a. **Regional Distribution**

Ser	Region	Normal (mm)	Actual (mm)	Anomaly (%)	Remarks
(1)	Pakistan	63.3	77.7	+23	Above average
(2)	AJ&K	173.9	197.7	+14	Above average
(3)	Balochistan	29.7	39.3	+33	Above average
(4)	GB	13.3	20.2	+52	Above average
(5)	KP	106.7	111.5	+5	Near normal
(6)	Punjab	104.1	163.5	+57	8th wettest (244.9 mm in 1978)
(7)	Sindh	60.1	31.6	-47	Below average

b. **Heaviest One-Day Rain.** 216.8 mm at Sheikhpura on 16th July 2025.

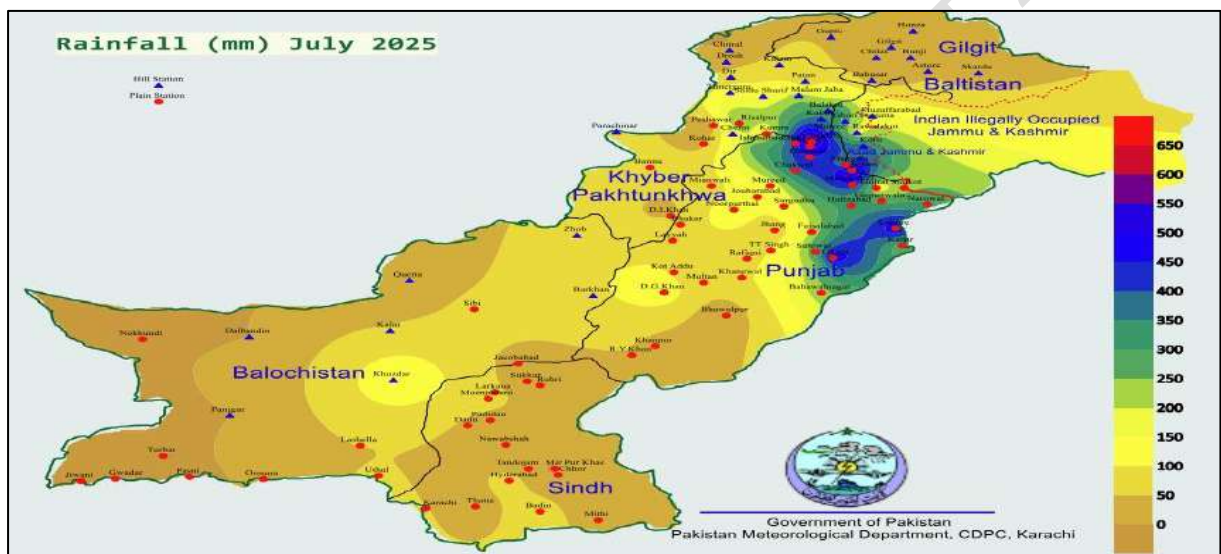
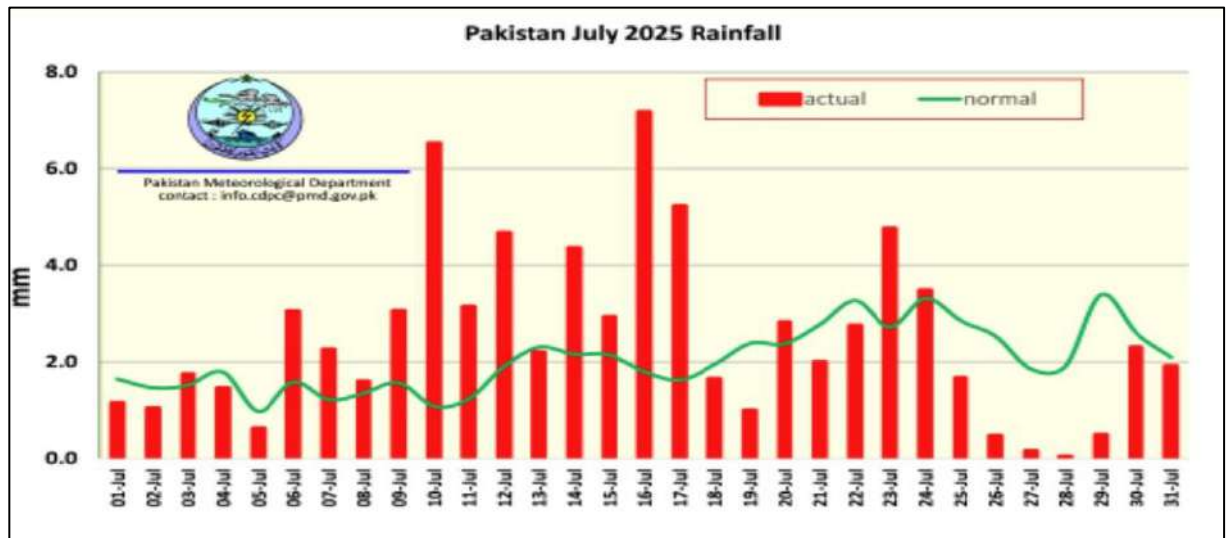
c. **Wettest Station.** Islamabad Zero Point (611.7 mm).

5. **Other Heavy Rainfall Stations.** Jhelum 594.5 mm, Chaklala 557 mm, Sheikhpura 538 mm, Lahore Airport 527.9 mm, Okara 494.8 mm, Lahore City 472.3 mm, Mandi Bahauddin 434.1 mm, Islamabad Airport 425.4 mm, Kotli 392.4 mm, Murree 364.0 mm, Muzaffarabad 346 mm, Narowal 308.2 mm, Attock 284 mm, Kasur 262.6 mm, etc.

6. **Dry Stations**

a. **No Rain.** Dalbandin, Gwadar, Jiwani, Nokkundi, Panjgur, Pasni, Turbat.

b. **Trace Rain.** Quetta (Sheikh Manda), Masroor (Karachi).



7. Temperature Overview

Ser	Region	Max Temp (°C)	Anom	Min Temp (°C)	Anom	Mean Temp (°C)	Anom
a.	Pakistan	36.85	-0.3	25.91	+0.6	31.41	+0.1
b.	AJ&K	31.36	0.0	20.81	+1.0	26.15	+0.5
c.	Balochistan	38.38	+0.1	26.08	+0.7	32.26	+0.4
d.	GB	33.74	-0.1	20.03	+0.7	26.92	+0.3
e.	KP	34.57	-0.7	23.75	+0.3	29.17	-0.2
f.	Punjab	36.51	-1.4	27.34	+0.3	31.96	-0.8
g.	Sindh	37.41	-0.2	28.29	+0.9	32.88	+0.3

8. Temperature Patterns

a. Mean Temperature

- (1) National average 31.41 °C, slightly above normal (+0.1 °C).
- (2) Warmest regions: Sindh (32.88 °C) and Balochistan (32.26 °C).
- (3) Highest anomalies (+2.7 °C) observed in Western Balochistan.

b. **Maximum Temperature**

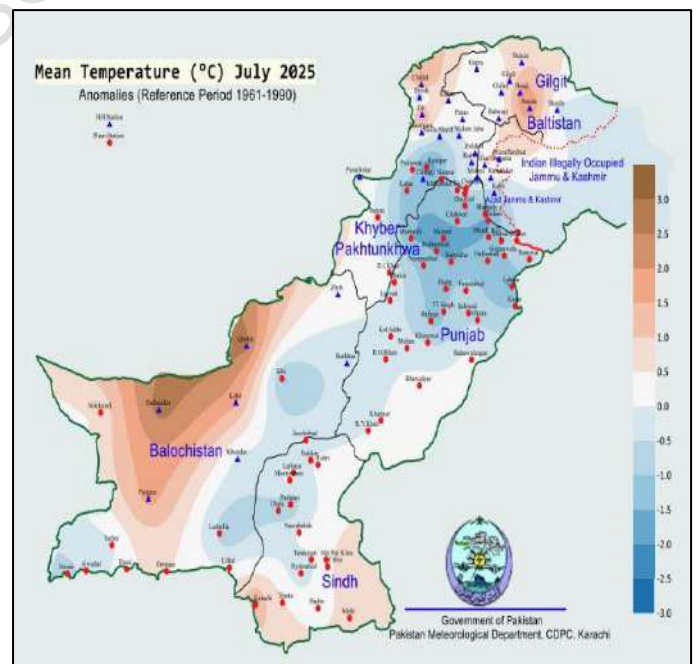
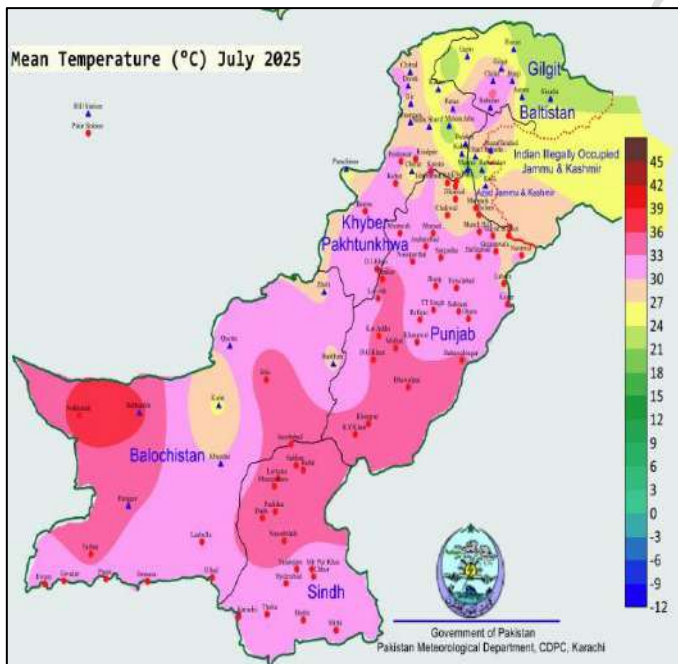
- (1) Near normal nationwide (-0.3°C anomaly).
- (2) Punjab recorded the 4th lowest max (36.51°C ; record 34.42°C in 1978).
- (3) Range: -3.5°C to $+2.3^{\circ}\text{C}$ anomalies.

c. **Minimum Temperature**

- (1) Warm nights with $+0.6^{\circ}\text{C}$ anomaly.
- (2) **Sindh**: 28.29°C ($+0.9^{\circ}\text{C}$), 4th highest in 65 years (record 29.25°C in 2024).
- (3) **Balochistan**: 26.08°C ($+0.7^{\circ}\text{C}$), 7th highest.
- (4) **AJ&K**: 20.81°C ($+1.0^{\circ}\text{C}$), 8th highest.
- (5) **GB**: 20.03°C ($+0.7^{\circ}\text{C}$), 10th highest.
- (6) Warmest anomalies centered over Western Balochistan.

d. **Extreme Temperatures**

- (1) Hottest Day: 48.5°C at Chilas (GB), 5 July 2025.
- (2) Warmest Station: Dalbandin & Nokkundi, mean max 44.5°C .
- (3) Coldest Night: 8.0°C at Parachinar (KP), 12 July 2025.
- (4) Coldest Station: Murree (Punjab), mean min 15.0°C .



PAKISTAN MONTHLY CLIMATE SUMMARY - AUGUST 2025

1. General

- a. **National Rainfall.** 62.5 mm, +11% anomaly, ranking above average.
- b. **Mean Temperature.** 30.64 °C, +0.4 °C anomaly, slightly warmer than normal.
- c. **Daytime Temperature.** 36.17 °C, +0.3 °C anomaly, near average.
- d. **Nighttime Temperature.** 25.08 °C, +0.8 °C anomaly, ranked 4th highest in 65 years.
- e. **Hottest Day.** 45.0 °C at Dalbandin (Balochistan) on 6 August 2025.
- f. **Wettest Day.** 363.5 mm at Sialkot (Punjab) on 27 August 2025.
- g. **Wettest Station.** Sialkot with a monthly total of 730.8 mm.
- h. **ENSO Phase.** Neutral, SST anomaly ≈ -0.23 °C (central Pacific).
- i. **IOD.** Turning negative.

2. National Weather Extremes (August 2025)

Ser	Event	Value	Location / Date
a.	Hottest Day	45.0 °C	Dalbandin (Balochistan), 6 August 2025
b.	Coldest Day	17.5 °C	Rawalakot (AJ&K), 23 August 2025
c.	Coldest Night	9.5 °C	Bagrote (GB), 14 August 2025
d.	Warmest Night	32.8 °C	Bunji (GB), 12 & 14 August 2025
e.	Wettest Day	363.5 mm	Sialkot (Punjab), 27 August 2025
f.	Wettest Month	730.8 mm	Sialkot (Punjab)

3. Synoptic Summary

- a. Monsoon currents from the Arabian Sea and Bay of Bengal were the dominant feature, penetrating upper and central parts of the country.
- b. A recurring Westerly trough remained active over KP, Kashmir, GB, Punjab and Balochistan.
- c. A monsoon low-pressure area developed over the Bay of Bengal on 13 August 2025, moving towards West Rajasthan and adjoining Eastern Sindh by 18 August 2025.
- d. A seasonal heat low (995 hPa) persisted over Northwest Balochistan.
- e. The interaction of these systems caused widespread torrential rains, resulting in extremely high-level floods in Punjab and flash floods/GLOF situations in KP, GB and Kashmir.

4. Rainfall Overview

a. National Rainfall. 62.5 mm (+11% anomaly) – slightly above normal.

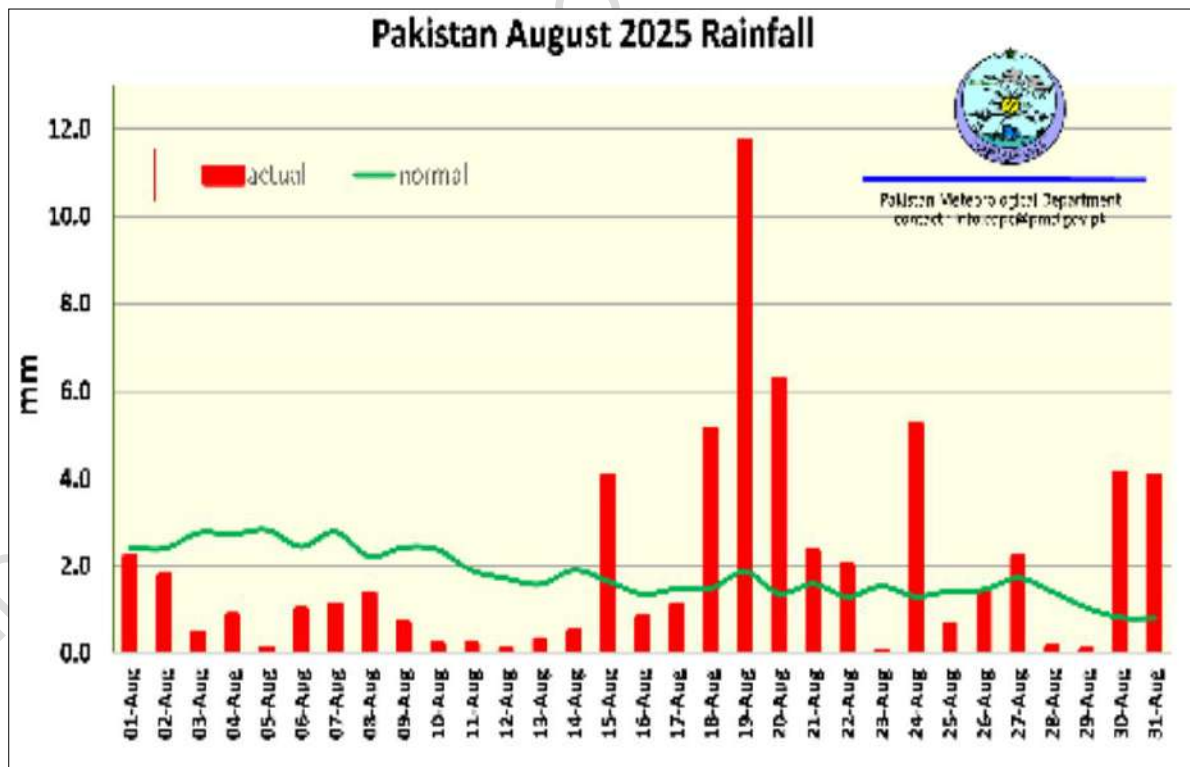
b. Regional Distribution

Ser	Region	Normal (mm)	Actual (mm)	Anomaly (%)	Remarks
(1)	Pakistan	56.2	62.5	+11	Above Average
(2)	AJ&K	150.7	167.1	+11	Above Average
(3)	Balochistan	22.5	27.8	+24	Above Average
(4)	GB	16.7	24.0	+44	Above Average
(5)	KP	103.6	111.3	+7	Near Normal
(6)	Punjab	93.5	103.3	+11	Above Average
(7)	Sindh	53.6	54.2	+1	Near Normal

5. Heaviest One-Day Rain. 363.5 mm at Sialkot (Punjab) on 27 August 2025.

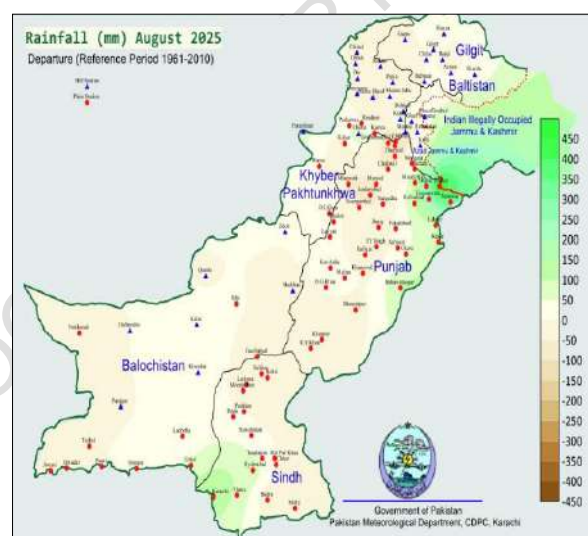
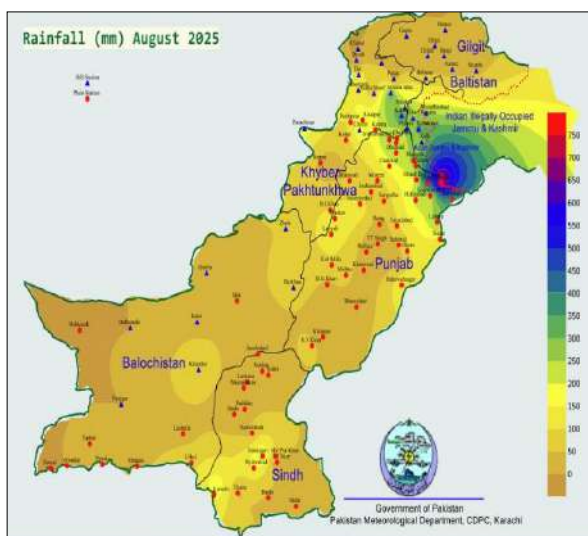
Wettest Station. Sialkot (730.8 mm).

6. Other Heavy Rainfall Stations. Sialkot Airport (481.1 mm), Gujrat (426.4 mm), Narowal (361.5 mm), Kakul (361.0 mm), Malam Jabba (327.0 mm), Rawalakot (323.4 mm), Jhelum (280.3 mm), Lahore Airport (275.2 mm).



7. Temperature Overview

Ser	Region	Max Temp (°C)	Anom	Min Temp (°C)	Anom	Mean Temp (°C)	Anom
a.	Pakistan	36.17	+0.3	25.08	+0.8	30.64	+0.4
b.	AJ&K	31.19	+0.6	20.32	+0.8	25.84	+0.8
c.	Balochistan	37.60	+0.6	24.92	+0.8	31.27	+0.6
d.	GB	33.73	+0.6	18.85	+0.1	26.33	+0.3
e.	KP	34.16	+0.3	23.32	+0.8	28.75	+0.6
f.	Punjab	35.77	-0.9	27.05	+0.7	31.43	-0.3
g.	Sindh	36.53	+0.6	27.27	+1.0	31.92	+0.7



8. Temperature Patterns

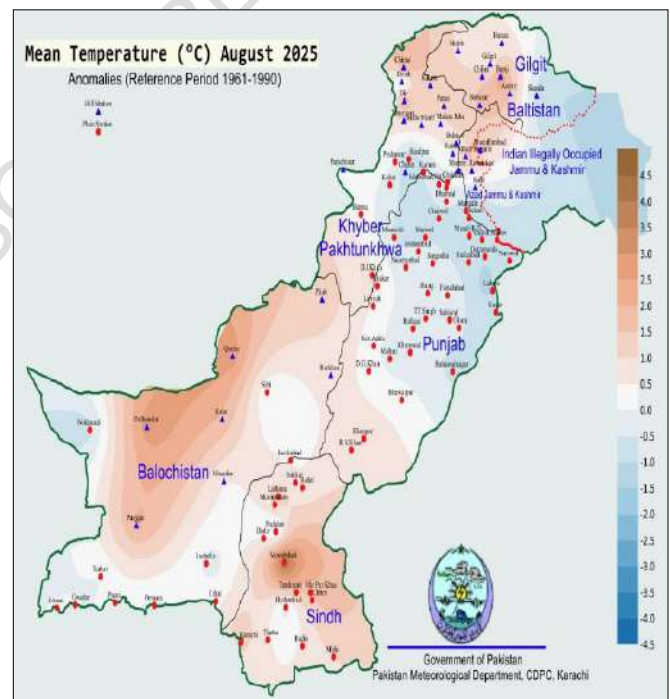
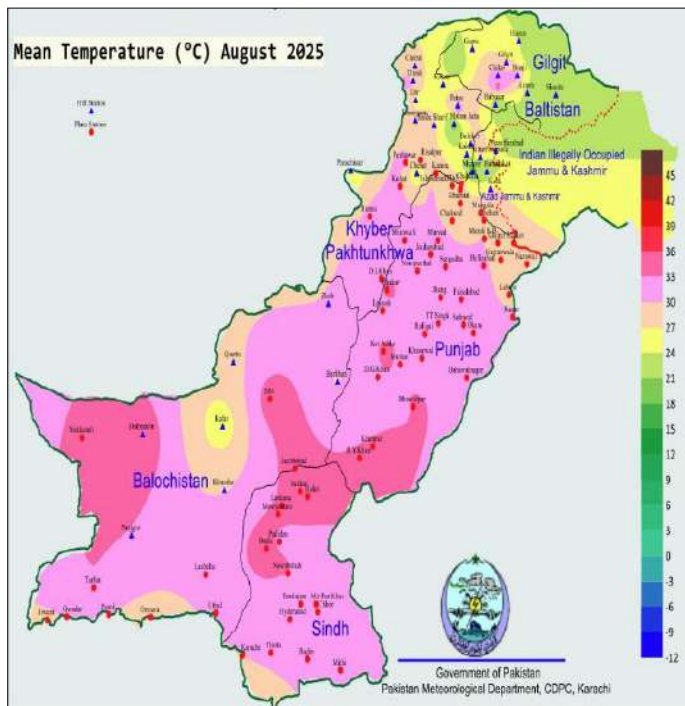
a. Mean Temperatures (Full-Day Average)

- (1) National mean temp was **30.64°C**, which is **+ 0.4°C above average**.
- (2) Almost all regions were warmer than average:
 - (a) **AJ&K: +0.8°C** (6th warmest in 65 years)
 - (b) **KP: +0.6°C** (10th warmest)
 - (c) **Balochistan, Sindh and GB** also showed significant warming.
- (3) **Punjab** was exception, with a mean temp **-0.3°C below average**.

b. Maximum Temperatures (Daytime Heat)

- (1) National daytime temperature was **36.17°C**, only **+0.3°C above average** (considered near normal).
- (2) A diverse pattern was seen regionally:-
 - (a) **Punjab** was notably cooler during the day (**-0.9°C**).
 - (b) All other regions (**Balochistan, Sindh, GB, AJ&K, KP**) were above average.

- c. **Hottest Spot.** Dalbandin (Balochistan) recorded highest temperature of the month at **45.0°C** and had the highest average daytime temperature **43.1°C**.
- d. **Minimum Temperatures (Nighttime Heat)**
- (1) The national nighttime temperature was **25.08°C**, a significant **+0.8°C above average**, ranking as the **4th highest in 65 years**.
 - (2) This warming trend was consistent across all regions:-
 - (a) **Sindh:** +1.0°C (3rd highest on record)
 - (b) **KP:** +0.8°C (4th highest)
 - (3) **AJ&K, Balochistan and Punjab** also recorded much warmer-than-average nights.
 - (4) **Coldest Spot:** The coldest night was **9.5°C** in Bagrote (GB), but the coldest station on average was Malam Jabba (KP) with a mean minimum of **14.8°C**.



PAKISTAN MONTHLY CLIMATE SUMMARY - SEPTEMBER 2025

1. General

- a. **National Rainfall.** 32.5 mm, +52% anomaly, largely above average nationally.
- b. **Mean Temperature.** 29.13 °C, +1.1 °C anomaly, ranked 5th highest mean temperature in past 65 years.
- c. **Daytime Temperature.** 35.01 °C, +0.5 °C anomaly, near average.
- d. **Nighttime Temperature.** 23.18 °C, +2.2 °C anomaly, ranked 3rd highest in past 65 years.
- e. **Hottest Day.** 46.0 °C at Turbat (Balochistan) on 29 September 2025.
- f. **Coldest Night.** 7.0 °C at Malam Jabba (KP) on 26 September 2025.
- g. **Wettest Day.** 110.0 mm at Thatta (Sindh) on 10 September.
- h. **Wettest Station.** Thatta (Sindh) with monthly total of 197 mm.
- i. **Coldest Place.** Skardu (GB) with mean monthly minimum 11.3 °C.
- j. **Warmest Place.** Sibi (Balochistan) with mean monthly maximum 28.0 °C.
- k. **ENSO Phase.** Neutral, SST anomaly ≈ -0.7 °C (central Pacific).
- l. **IOD:** Neutral phase.

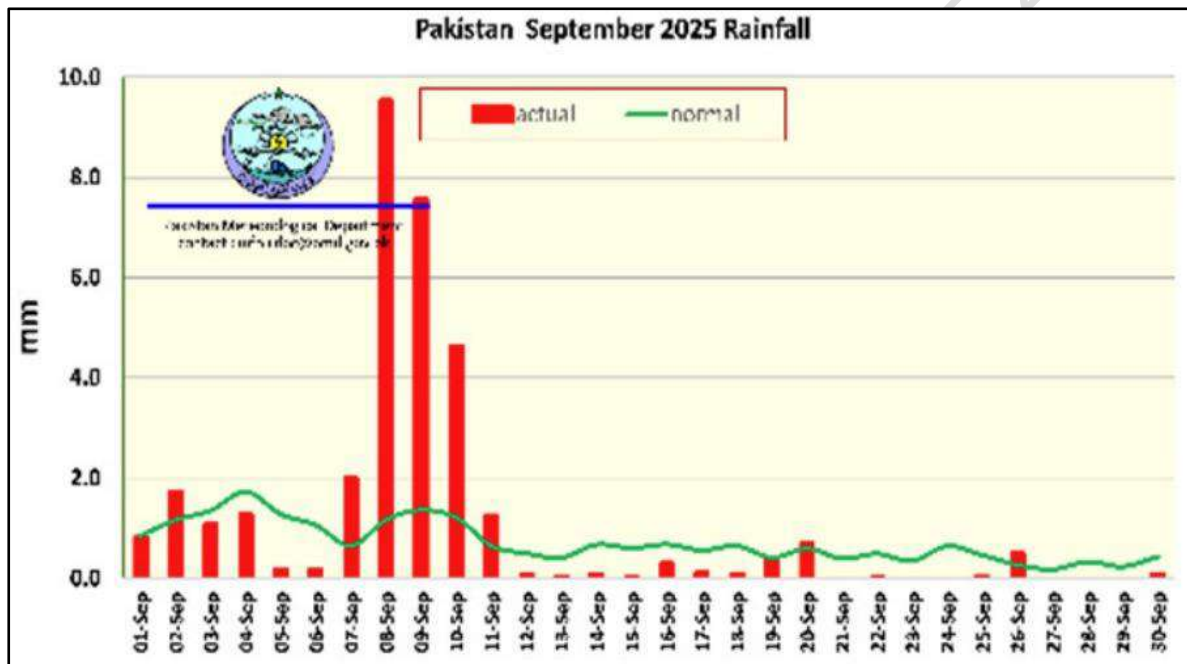
2. National Weather Extremes (September 2025)

Ser	Event	Detail
a.	Hottest Day	46.0 °C at Turbat (Balochistan) on 29 September 2025
b.	Coldest Day	16.0 °C at Malam Jabba (KP) on 18 September 2025
c.	Coldest Night	7.0 °C at Malam Jabba (KP) on 26 September 2025
d.	Warmest Night	30.5 °C at Sibi (Balochistan) on 5 September 2025
e.	Wettest Day	110 mm at Thatta (Sindh) on 10 September 2025
f.	Wettest Month	197 mm at Thatta (Sindh)
g.	Coldest Place	11.3 °C at Skardu (GB)
h.	Warmest Place	28.0 °C at Sibi (Balochistan)

3. **Synoptic Summary.** In September 2025, monsoon remained active across Pakistan, with Westerly waves affecting Upper KP, GB, Kashmir and Punjab. Strong monsoon currents from the Arabian Sea and Bay of Bengal continued to penetrate Upper, Central and Southern regions during the first half of the month. A monsoon low developed over the Bay of Bengal on the 4th September 2025, intensified into a deep depression by the 8th September 2025 and moved towards Southeast Sindh and adjoining Indian Rajasthan. It weakened over Southern Sindh and Balochistan Coast by the 12th September 2025. This deep depression was rare for September and caused widespread heavy to extremely heavy rainfall in KP, Punjab, GB, Kashmir, Sindh and moderate to heavy rainfall in Balochistan. A

low-pressure area developed again over Indian Gujarat and adjoining Kutch on 28th September 2025, affecting Southeastern Sindh till the end of the month. Monsoon started retreating on 20th September 2025 and fully withdrew by the 22nd September 2025.

4. **Rainfall Overview**. The national rainfall of 32.5 mm (+52%) was largely above average. Sindh experienced excessively above-average rainfall (82.9 mm, +317%), ranking 8th highest in 65 years (record 216.9 mm in 2011). Punjab (43.9 mm, +25%) and Balochistan (7.7 mm, +24%) also recorded above-average rainfall, whereas AJ&K (-34%), GB (-22%) and KP (-18%) observed below-average rainfall. The heaviest one-day rainfall (110.0 mm) occurred at Thatta (Sindh) on 10 September 2025, which also recorded the month's highest total (197 mm).



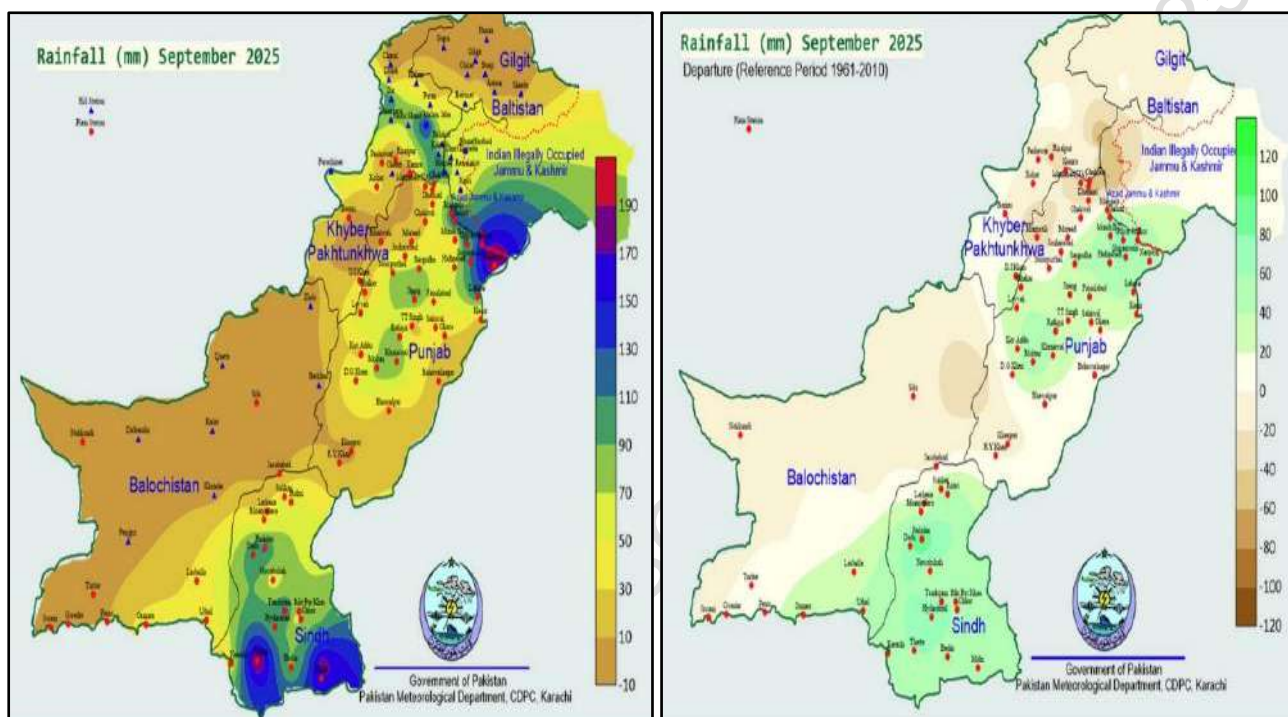
5. **September 2025 Area Weighted Rainfall**

Ser	Region	Normal (mm)	Actual (mm)	Anomaly (%)	Remarks
a.	Pakistan	21.4	32.5	+52%	Above Average
b.	AJ&K	64.9	43.1	-34%	Below Average
c.	Balochistan	6.2	7.7	+24%	Above Average
d.	GB	9.7	7.6	-22%	Below Average
e.	KP	46.0	37.9	-18%	Below Average
f.	Punjab	34.7	43.3	+25%	Above Average
g.	Sindh	19.9	82.9	+317%	8 th highest (216.9 mm in 2011)

6. **Temperature Overview**

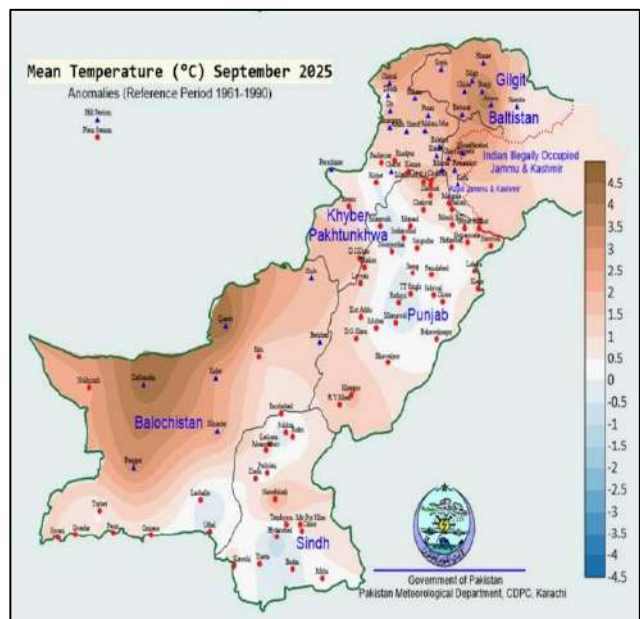
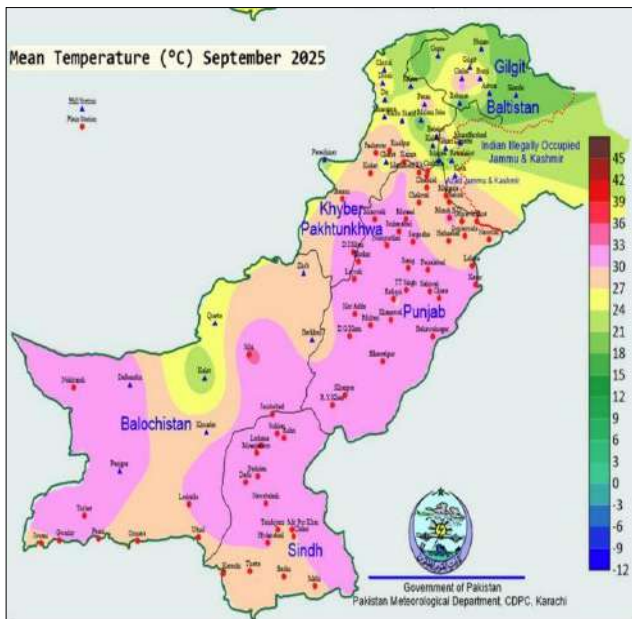
Ser	Region	Max Temp (°C)	Anom	Min Temp (°C)	Anom	Mean Temp (°C)	Anom
a.	Pakistan	35.01	+0.5	23.18	+2.2	29.13	+1.1

Ser	Region	Max Temp (°C)	Anom	Min Temp (°C)	Anom	Mean Temp (°C)	Anom
b.	AJ&K	30.99	+2.2	18.34	+2.3	24.71	+2.3
c.	Balochistan	36.11	+1.1	23.01	+2.9	29.61	+1.7
d.	GB	31.74	+2.6	15.39	+1.2	23.59	+2.1
e.	KP	33.21	+0.8	20.91	+1.7	27.07	+1.3
f.	Punjab	35.39	-0.5	25.40	+1.9	30.42	+0.4
g.	Sindh	35.07	-1.1	26.10	+1.6	30.61	+0.2



7. **Temperature Patterns.** September 2025 national mean temperature of 29.13 °C was warmer than the average of 27.98 °C, with an anomaly of +1.1 °C, ranking 5th highest in the past 65 years (record 29.79 °C in 2019). A similar trend prevailed across all regions, with AJ&K (+2.3 °C, 1st highest), GB (+2.1 °C, 2nd highest), Balochistan (+1.7 °C, 3rd highest) and KP (+1.3 °C, 6th highest) recording significant warming. Punjab (+0.4 °C) and Sindh (+0.2 °C) also remained warmer than average. National mean maximum temperature was 35.01 °C (+0.5 °C anomaly), near average overall, but AJ&K (+2.2 °C) and GB (+2.6 °C) ranked among the top five warmest on record. Sindh (-1.1 °C) and Punjab (-0.5 °C) observed cooler daytime temperatures. National mean minimum temperature of 23.18 °C was +2.2 °C above average, ranking 3rd highest in 65 years. All regions recorded warmer nights, with Balochistan (+2.9 °C) and AJ&K (+2.3 °C) ranking as the highest on record. The hottest day of the month was 46.0 °C at Turbat (Balochistan) on 29th September 2025 and the coldest night was 7.0 °C at Malam Jabba (KP) on 26th September 2025. Sibi (Balochistan) remained

the warmest station with a mean maximum of 28.0 °C, while Skardu (GB) was the coldest with a mean minimum of 11.3 °C.



HYDROLOGICAL ASSESSMENT

1. During late August to mid-September 2025, Pakistan experienced extensive flooding across major river systems, including the Chenab, Ravi, Sutlej, and Indus. The Chenab remained the principal contributor, with exceptional peak flows exceeding 800,000 cusecs expected to reach Trimmu Headworks between 31 August and 1 September and Panjnad Headworks around 3–4 September. Given the extreme magnitude, breaching at Trimmu became likely to safeguard the structure. The Ravi carried moderate peaks of 125,000–150,000 cusecs recorded at Shahdara and Balloki, converging downstream towards Panjnad, with timing that synchronized with the Chenab's flood crest. The Sutlej observed flows above 260,000 cusecs at Ganda Singh Wala, which stabilized to around 150,000–175,000 cusecs upon reaching Panjnad. The overlapping peaks from these rivers produced combined inflows of 900,000–950,000 cusecs, or 825,000–900,000 cusecs under breaching operations, placing immense hydraulic pressure on Panjnad Headworks and necessitating breaching to maintain structural safety.
2. At Guddu Barrage, inflows initially around 300,000 cusecs were expected to surge close to 1.2 million cusecs by 5–6 September as outflows from Panjnad arrived, remaining within safe operational limits if regulated properly. The flood wave then propagated through Sukkur and Kotri towards the Arabian Sea by 12–13 September, inundating vast floodplains. Compared with the 2014 event, the 2025 floods showed similar lag times but higher synchronization and intensity, with significant attenuation between river reaches but increased cumulative pressure downstream due to overlapping peaks.
3. Punjab faced the most widespread inundation along the Chenab, Ravi, and Sutlej plains, severely affecting Multan, Muzaffargarh, Lodhran, Bahawalpur, Vehari, and Rahim Yar Khan districts. Floodwaters damaged major crops, including cotton, sugarcane, and rice, and submerged low-lying settlements, causing extensive infrastructure loss and transport disruption. In Sindh, prolonged downstream flooding through Guddu, Sukkur, and Kotri submerged large tracts in Kashmore, Shikarpur, Ghotki, Khairpur, Dadu, Thatta, Badin, and Jamshoro, leading to waterlogging and livelihood disruptions. In Khyber Pakhtunkhwa, intense rainfall and flash floods particularly devastated Buner District, where over 100 lives were lost due to house collapses and rapid hill torrents. The 2025 flood sequence underscored the compounding impact of synchronized riverine peaks, inadequate drainage, and localized flash flood events, highlighting the urgent need for improved floodplain management and early warning systems.

Note: Detailed Report on Monsoon Floods 2025 will be issued by Flood Forecasting Division

CHAPTER - 2

OVERVIEW OF MONSOON 2025 SPELLS

1. **General.** 2025 monsoon season in Pakistan (June - September) was marked by **nine distinct rainfall spells**, varying from moderate to high intensity. The season brought widespread **urban and riverine flooding, flash floods, landslides** and **glacial outburst events**, impacting almost all provinces and regions, including Punjab, Sindh, KP, Balochistan, GB, AJ&K and ICT. The cumulative impacts resulted in significant human, infrastructural and economic losses.

- a. **Spell 1 (26th June - 2nd July 2025).** First monsoon spell, from **26th June to 2nd July 2025**, brought **high-intensity rainfall** across **Northern and Central Pakistan**, particularly affecting **GB, parts of Punjab, Sindh, AJ&K, KP & Islamabad**. The most severe impacts were reported in **Swat and Swat Valley (KP)**, where **flash floods caused 22 deaths and 17 fatalities in Sakhi Sarwar and Islamabad**. In Swat, **intense downpours** triggered the **first casualty reports of the season** and prompted **tourist rescue operations**. The spell was characterized by **early, heavy rainfall in upper catchments areas**, resulting in **flash floods, downstream flows and localized inundation** in vulnerable riverine areas - effectively **setting the tone for the 2025 monsoon season**.
- b. **Spell 2 (4th - 11th July 2025).** Second monsoon spell, from **4th to 11th July 2025**, was categorized as **High to Medium intensity**, leading to **urban flooding and flash floods** across several districts of **Punjab, KP, GB & AJ&K** with impacts extending to **neighbouring regions**. In **Layyah (Punjab)**, a **severe flash flood** caused extensive **land erosion** and damage to nearby settlements. In **Chitral and Dir (KP)**, **flash floods** resulted in **seven fatalities**, while in **GB**, a **GLOF** occurred near the **Shisper Glacier**. Additionally, **heavy rainfall in Leepa Valley (AJ&K)** triggered localized flooding and landslides. **Alerts for heavy downpours** were issued, warning of **urban and stream flooding risks** and **early evacuations and rescue operations** were conducted to protect vulnerable populations in high-risk areas.
- c. **Spell 3 (12th - 18th July 2025).** Third monsoon spell, from **12th to 18th July 2025**, was categorized as **High intensity**, marked by **cloudbursts, flash floods and landslides** across **Punjab (Lahore, Rawalpindi, Murree, Attock, Chakwal, Faisalabad, Sargodha and Jhelum)**, the **Islamabad–Rawalpindi region** and parts of **KP** and the **Northern areas**. During this period, **multiple intense rain events and cloudbursts** triggered **widespread flooding and**

landslides, resulting in **several fatalities and injuries** across country. **Punjab declared a flood emergency** as heavy rainfall intensified and **Nullah Leh in Rawalpindi** surged beyond the **danger level**. The spell caused **significant casualties**, with **84 deaths reported in Rawalpindi, Chakwal, Jhelum and upper Punjab** due to **cloudburst-induced flooding**. **Mass evacuations, road closures and urban inundation** were reported across affected districts. **Helicopter-assisted rescue operations** were launched, while **large-scale search, relief and recovery efforts** were mobilized to assist displaced populations and restore connectivity in **high-risk flood-affected areas**.

- d. **Spell 4 (21st - 26th July 2025)**. Fourth monsoon spell, from **21st to 26th July 2025**, brought **widespread heavy rainfall** across **Punjab, Islamabad, Sindh, GB, hilly areas of KP and AJ&K**. Several **tragic incidents** were reported during this period; including **Islamabad tragedy**, where the **daughter and a retired army officer drowned** in a flash flood, prompting a large-scale **SAR operation**. In **Babusar**, a **flash flood** caused **seven deaths**, with **several others reported injured or missing**. In **GB**, **major flash floods** struck **Bullan Nullah, Danyore Nullah and Husnabad Lake**, resulting in **significant infrastructure damage, house collapses and landslides** in multiple areas. Overall, the spell led to **dozens of fatalities, mass evacuations, road closures and severe urban flooding**. Situation triggered **heightened emergency response measures**, as **disaster management authorities** launched **comprehensive rescue and relief operations** across all severely affected regions.
- e. **Spell 5 (28th July - 31st July 2025)**. Fifth monsoon spell, from **28th to 31st July 2025**, was categorized as **Medium to High intensity**, featuring **sustained heavy rainfall and flash flooding** across **Northern and North-Eastern regions**, including **AJ&K, upper Punjab** and parts of **KP and GB**, along with **scattered plains districts**. **Fresh warnings** were issued for the new spell as **localized heavy showers** persisted, leading to **further inundation in already saturated catchments** and compounding the ongoing flood situation in vulnerable areas.
- f. **Spell 6 (3rd - 11th August 2025)**. Sixth monsoon spell, from **3rd to 11th August 2025**, was of **medium intensity**, marked by **riverine and urban flooding and infrastructure damage** across several regions of **Northern**

Pakistan; including **GB** and **AJ&K** - as well as **Punjab** and the **upper plains**, with **peripheral impacts** also reported in parts of **Sindh** and **Balochistan**.

- (1) **Major incidents** during this spell included **heavy rainfall** in **Islamabad**, particularly in the **Chatta Bakhtawar and Park Road areas**, where **floodwater entered residential buildings**, prompting **SAR operations** to evacuate trapped residents. In **Bahrain (KP)**, a **landslide and flash flood** near a **hotel area** affected several **tourists and local communities**. In **Husnabad Nullah (GB)** and **Morkhoon, Gojal Upper Hunza**, **flash floods triggered by glacier melting** caused **severe land erosion and localized destruction**.
- (2) Additionally, **flash floods** were reported in **Supulter Nullah (Nagar/Hopper)**, **Baltabar Nullah (Hunza)**, **Khunjerab River**, **Gulmit Hunza and Horchus Nullah**, further intensifying the situation across **GB**, where **torrential rains and glacial runoff** caused multiple hazards. This spell also **triggered renewed flood alerts** due to **rising dam levels and torrent inflows**, leading to **additional evacuations** and **widespread damage to crops, roads and infrastructure** across the affected regions.

g. **Spell 7 (15th - 22nd August 2025)**. Seventh monsoon spell was categorized as **High intensity**, characterized by **hill torrents, landslides and flash floods** across **Punjab, KP, GB, AJ&K**, with **isolated impacts** in **Sindh and Balochistan**.

- (1) **NDMA** issued **high alerts for upper Punjab** as **intense downpours** triggered landslides in hilly regions and displacement in low-lying villages. In **Bagh and Neelum (AJ&K)**, heavy rainfall caused **flash floods and landslides**, while **KP districts including Buner, Bajaur, Battagram, Swat, Mansehra, Dir and Shangla** were severely affected by cloudburst-induced flooding. Buner region alone reported **256 fatalities and damage to 971 houses**.
- (2) In **GB, Shigar, Ghizer, Haramosh–Khaltaro, Kohistan and Hunza** experienced **flash floods**, including **Uchar Nullah, Hanochal Haramosh, Hopper Nullah, Astak Nullah**, while **Skardu** suffered mudslides. **Balochistan's Awaran and Harnai** received heavy rainfall, contributing to localized flooding. **AJ&K districts Rawalakot, Poonch, Haveli and Kotli** and **Karachi (Sindh)** also faced urban inundation, prompting **search and rescue operations**.

- (3) Overall, the persistent heavy rains during this spell caused **significant flooding, property damage and disruption of daily life**, necessitating **coordinated emergency response operations** across multiple provinces.
- h. **Spell 8 (23rd – 27th August 2025).** **Eighth monsoon spell**, from 23 to 27 August 2025, was categorized as **High intensity**, causing **widespread riverine and urban flooding** across **upper Punjab** and the **central plains**, particularly impacting **low-lying and river-adjacent areas**. **Heavy downpours** led to **massive inundation**, with **dozens of villages submerged** following **increased water releases from Indian dams** amid **extreme rainfall in Northern India**.
- (1) **Water levels at Tarbela and Mangla Dams** remained **critically high**, substantially increasing the **risk of major flooding**. In response, **evacuations and emergency operations** were **intensified**, with the **Pakistan Army and law enforcement agencies** deployed to assist in **rescue and relief efforts**. **FFD and NDMA** continued to issue **daily updates on river water levels and forecasts** to ensure **timely coordination** among response agencies.
- (2) In addition to Punjab, **disaster conditions were also reported in other regions**. In **GB**, **flash floods and mudslides** occurred in **Roushan (Gupis)**, while **AJ&K** and **Balochistan** also experienced **heavy rainfall and localized flooding**. Overall, the situation in **Punjab** remained **critical**, prompting **round-the-clock search and rescue operations** and **full-scale mobilization of disaster management authorities** across the affected regions.
- i. **Spell 9 (29th August - 10th September 2025).** **Ninth monsoon spell**, from 29th August to 10th September 2025, was among the **most severe phases of the season**, heavily impacting **Punjab**, where several districts experienced their **worst flooding of the year**. Due to extremely high river levels, **controlled breaches** were carried out to divert floodwaters and protect critical infrastructure. Approximately **2.9 million people were evacuated in Punjab** and **0.2 million in Sindh** as large-scale inundation spread across vast areas.
- (1) Flooding severely disrupted **transport and connectivity**, particularly along the **M-5 Motorway**, where high water levels also threatened the **gas pipeline corridor**. **Pakistan Army, Navy and Air Force**, alongside **civil defense and disaster management authorities**,

actively participated in **rescue, evacuation and logistics operations**, focusing efforts in **Southern Punjab**, the most severely affected region.

- (2) **Continuing flood impacts** were also reported in **Sindh, KP and GB**, while **Islamabad** faced episodes of **urban flooding** due to intense rainfall. In **AJ&K and GB**, **flash floods and landslides** caused **significant loss of life, property and infrastructure damage**, with several major roads in GB repeatedly blocked by landslides.
- (3) Overall, **relentless rainfall** during this spell triggered **mass evacuations and large-scale displacement** across the country. According to **UN, WHO and NDMA flash updates**, this spell **significantly increased national casualty figures** and caused **widespread health and infrastructure impacts**, placing immense strain on **emergency response and relief operations nationwide**.

2. **Monsoon 2025 in a Nutshell.** 2025 monsoon season, which began slightly earlier than usual on **26th June 2025**, was characterized by **nine rainfall spells of medium to high intensity**, resulting in **widespread flooding, landslides and glacial outburst** events across Pakistan. The most severe spells; **third (11 - 18 July 2025), eighth (23 - 27 August 2025) and ninth (29 August - 2 September 2025)**; brought the **heaviest rainfall, causing severe flooding**, large-scale displacement and significant disruption to infrastructure and livelihoods. Primary hazards included **riverine floods, flash floods and urban inundation**, while **landslides and GLOFs** were predominant in the Northern and mountainous regions. **Punjab** emerged as the most affected province, experiencing extensive **riverine and urban flooding** during the later spells. **Punjab, KP and GB** faced **cloudburst events** that intensified flash flooding and caused severe damage to settlements and critical infrastructure. **KP and GB** witnessed repeated flash floods, hill torrents and landslides, with GB particularly suffering **road blockages and isolation due to landslides, mudslides and road erosion** in high-altitude areas. **Sindh** and **Balochistan** were affected by downstream inundation and urban flooding, while **AJ&K** saw flash floods and landslides disrupting communication and transport networks. Among all hazards, **riverine flooding** was the most destructive, resulting in large-scale inundation, infrastructure damage and prolonged disruption to agriculture, transport and essential services.

CHAPTER - 3

PREPARATORY MEASURES

1. As per Section 9 (a) of the National Disaster Management (NDM) Act 2010; **NDMA is mandated to 'Act as implementing, coordinating and monitoring body for National Plan and National Policy with reference to Disaster Management'**. The fundamental **responsibility** to manage the disasters with all allied activities **rests** with respective **Provincial and Districts Departments**, while **NDMA acts as National backup support** at Federal level. Pakistan's Disaster Management System is structured in a **three-tier devolved system** with the **primary onus at District and Provincial level**. However, NDMA does support in disaster related activities when these are beyond the capacities of Provincial / District Governments during emergency on the directions of Federal Government. Apart from routine coordination/ monitoring for Monsoon 2025, following activities have been undertaken as part of **national preparations for Monsoon 2025 by NDMA at federal level:-**

- a. Issuance of 7x Guidelines, 45x Advisories, 13x Alerts (Weather, heatwave, Flood, GLOF, Land slide) to all Federal departments and provinces from January to September 2025.
- b. Organized Operational coordination Session with all PDMAs on 25 February 2025.
- c. Stocktaking of all relief items Ware Houses in March and April 2025.
- d. Conduct of Logistics Conference on Emergency Procurement Framework on 29 April 25 with all stakeholders.
- e. Organisation of 1st Monsoon Coordination conference on 20 May 2025 with all Federal departments and provinces.
- f. Conduct of Simulation Exercise (Floods and GLOF) on 20 May 2025 all Federal departments and provinces.
- g. Conduct of Private Sector conference on 21 May 2025 for preparation for Monsoon 2025 with all provinces.
- h. Organisation of National Disaster Coordination Conference (NDMCF) on 29 May 2025.
- i. Conduct of Comprehensive International Simulation Exercise (Flood & GLOF) with international partners on 22 May 2025 for coordination in case of any assistance required during disasters.
- j. Issuance of Monsoon Contingency Plan 2025 on 4 June 2025 incorporating input of all Federal departments and provinces.

- k. Liaison/ coordination with PDMA KP/ federal departments for safe/ efficient drainage of Thalu 1 & 2 Lakes Kumrat Upper Dir from October 2024 till to date in coordination.
- l. Issuance of monsoon 2025 flood projections with vulnerability maps for preparedness and response to all PDMA's on 23 June 2025.
- m. Conduct of mobilization simulation exercise on 27 June 2025 with all provinces for preparation of monsoon.
- n. Monitoring and compilation of PDMA's response since onset of monsoon and issuance of daily situation report from 25 Jun 2025 during Monsoon Season.
- o. Organisation of 40x **Daily National Monsoon Coordination Conference** at NEOC from 25 June 2025 onwards during monsoon season.
- p. Several visits and briefings by high-level delegations were conducted at the NEOC including visit of Prime Minister, Speaker of the National Assembly along with several members, and delegations from UN/ INGOs/ NGOs/ Industries & Armed Forces.
- q. Activation of WhatsApp groups of all federal and provincial stakeholders and continuous updating of situation in coordination with all Federal level departments.
- r. Effective risk communication through continuous disaster alerts using all available media including NDMA Application.
- s. All information related to seeking help/ alerts are communicated through NDMA website and mobile app.
- t. Preparation/ compilation and dissemination of **Daily SITREPs** to all stakeholders including Govt Organization, NGO, UN Agencies, Armed Forces, National and International media.
- u. Several field visits were carried-out by NDMA officers/ officials during monsoon in flood affected areas.

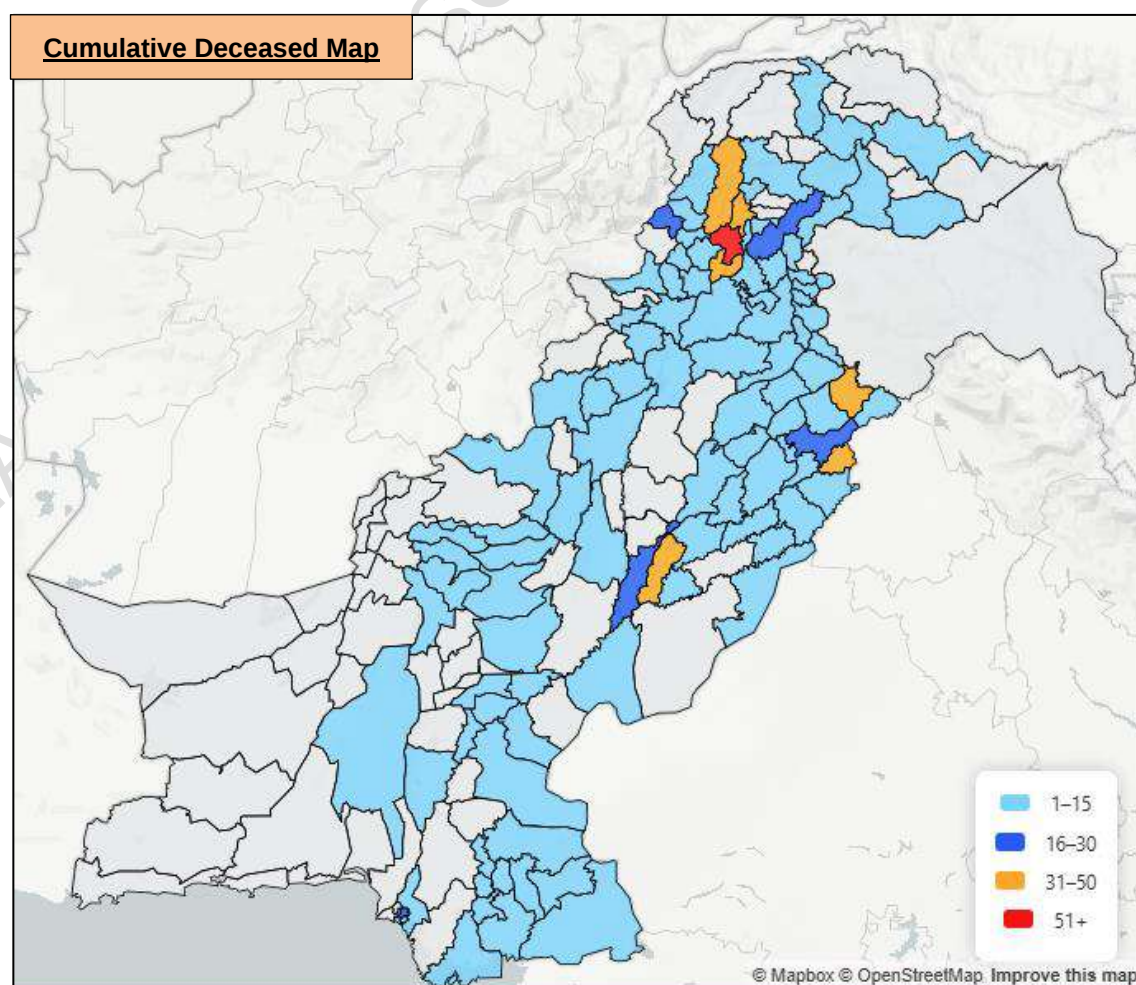
CHAPTER - 4

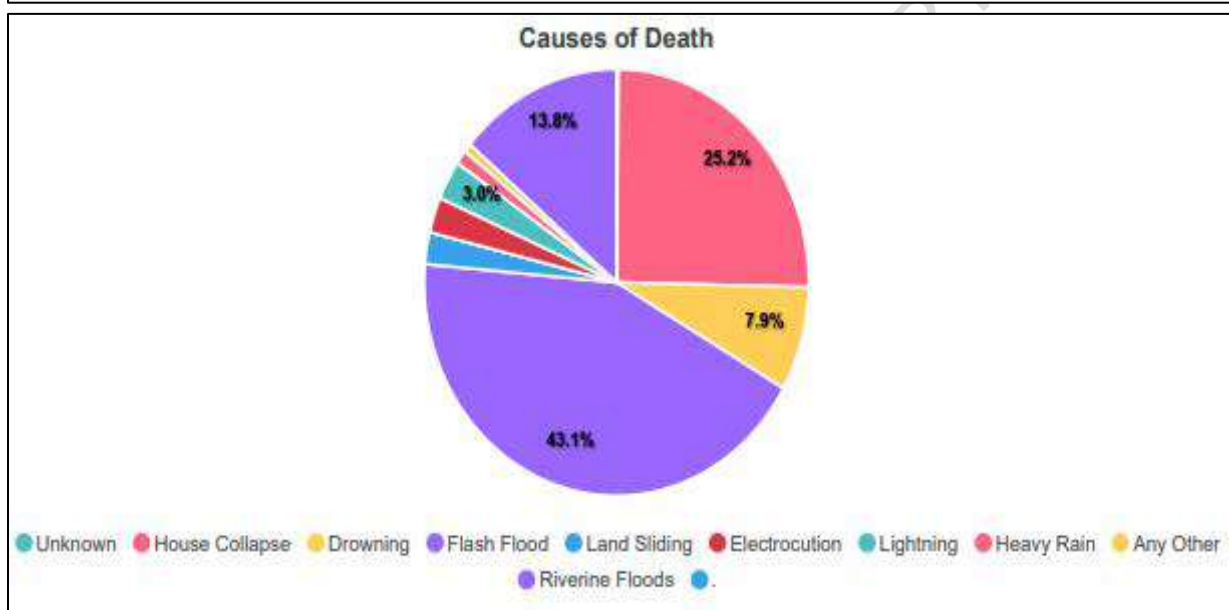
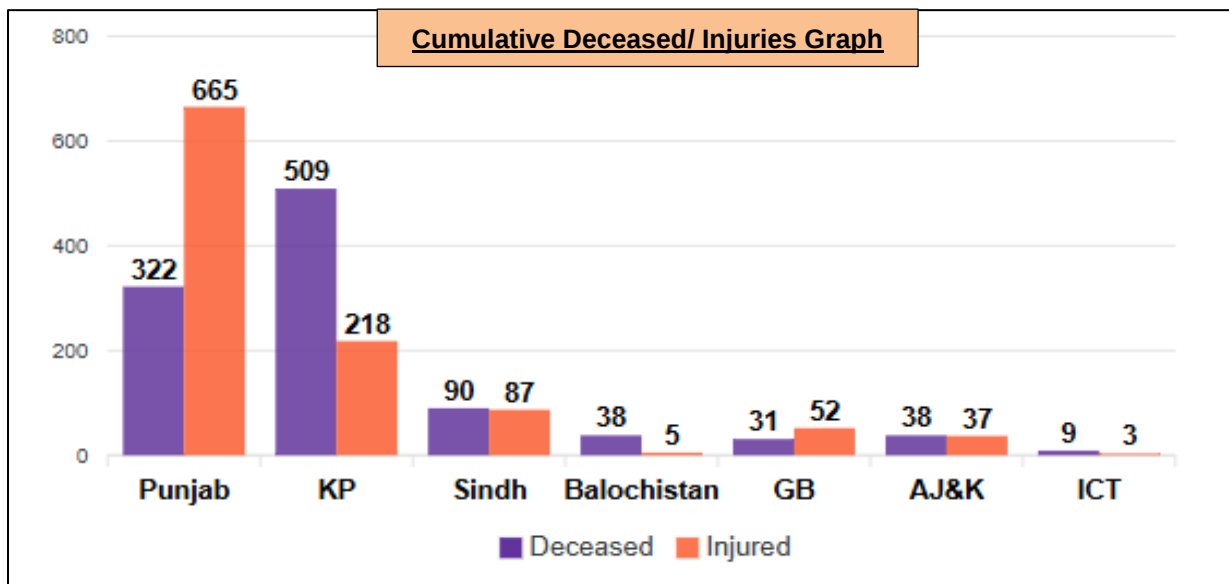
LOSSES & DAMAGES MONSOON 2025

1. Detail of losses/ damages occurred (deaths, injured, infrastructure damages, livestock, agricultural land etc). Detail is as under:-

a. **Losses**

Ser	Province	Deceased				Injured			
		Male	Female	Children	Total	Male	Female	Children	Total
(1)	Punjab	155	53	114	322	262	203	200	665
(2)	KP	341	77	91	509	99	49	70	218
(3)	Sindh	37	14	39	90	29	19	39	87
(4)	Balochistan	11	6	21	38	2	1	2	5
(5)	GB	20	7	4	31	42	6	4	52
(6)	AJ&K	17	12	9	38	20	13	4	37
(7)	ICT	3	1	5	9	0	1	2	3
Grand Total		584	170	283	1,037	454	292	321	1067



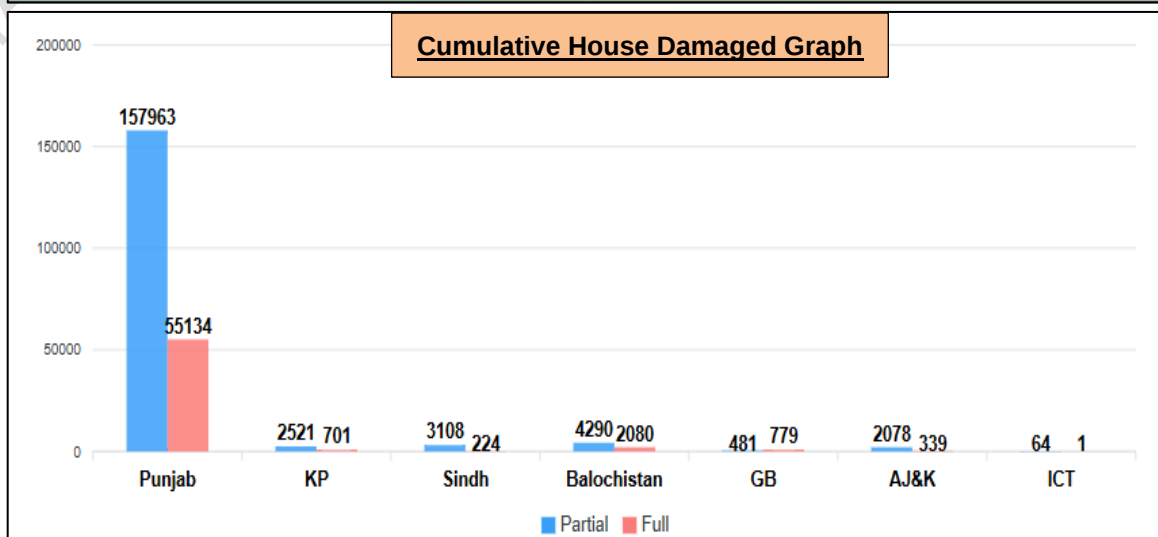
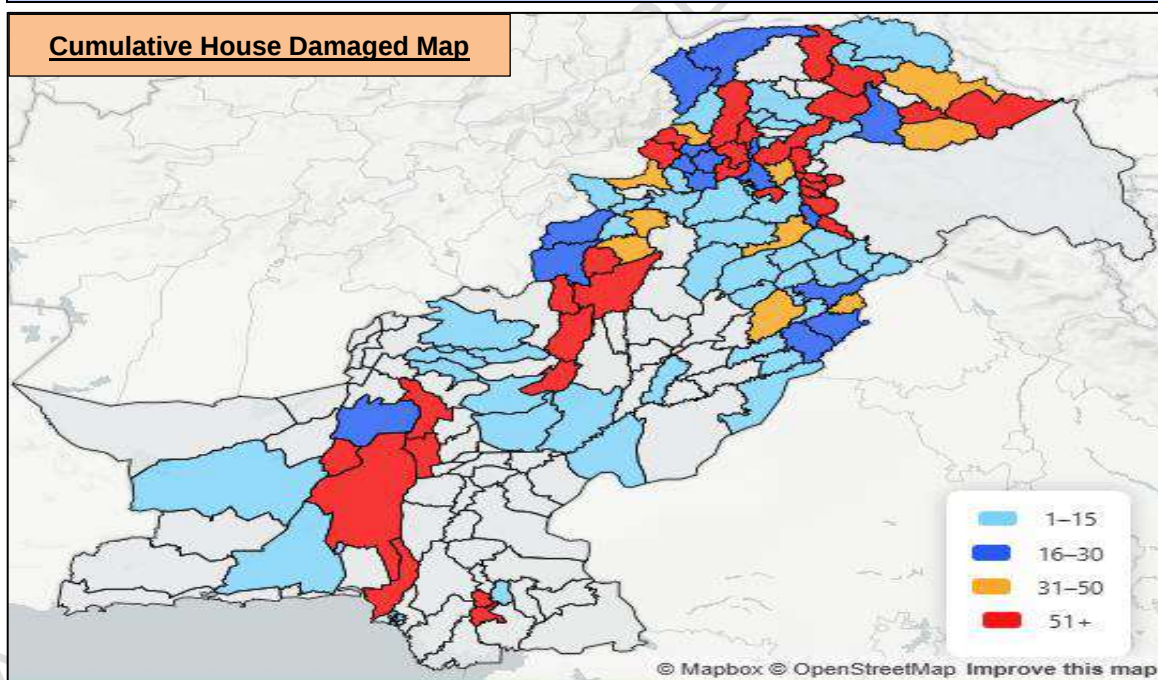


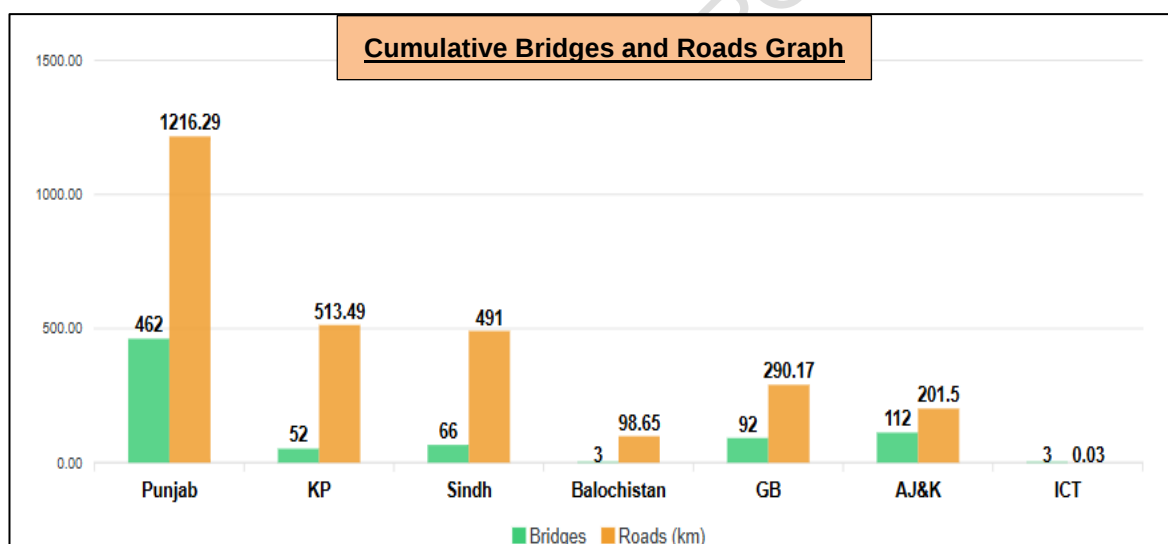
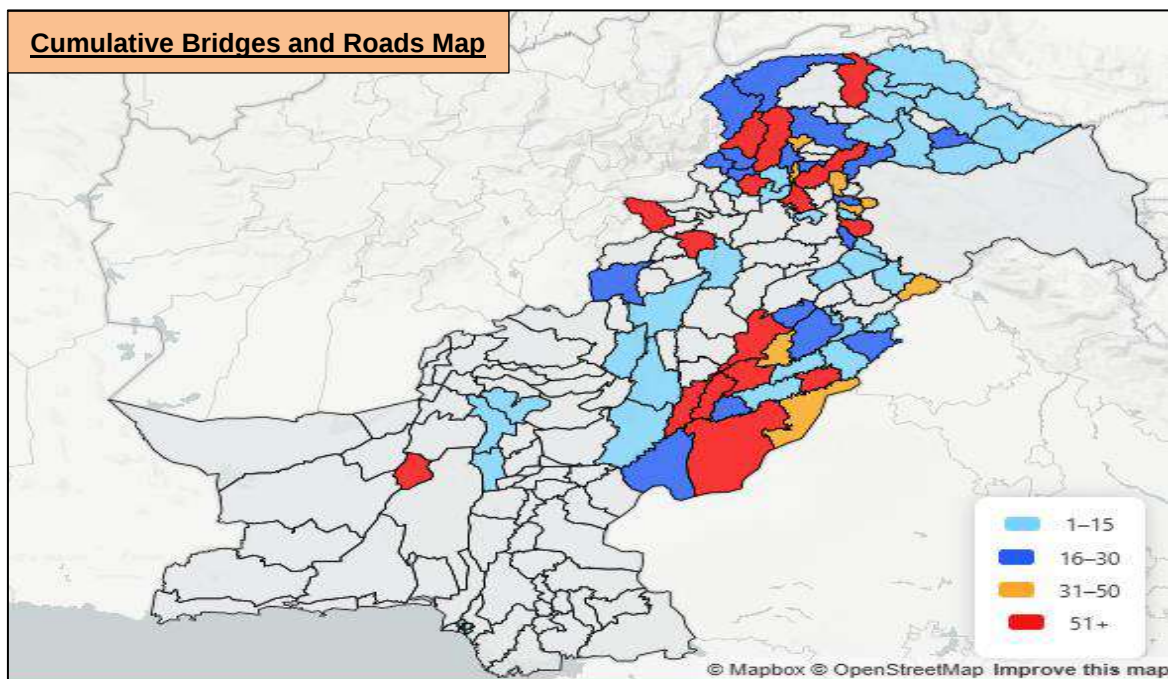
Pie chart illustrates the percentage distribution of causes of death during the 2025 monsoon season in Pakistan, based on NDMA situation reports. Flash floods accounted for the highest share at about 43.2%, followed by house collapses (25.2%), which together caused nearly two-thirds of the total fatalities. Drowning (7.9%), landslides (3.0%), electrocution, lightning, and heavy rain contributed smaller proportions, while riverine floods and other causes made up around 13.8%. According to NDMA situation report, most deaths occurred due to structural collapses and sudden flash flooding triggered by intense rainfall, particularly in vulnerable and mountainous regions. Secondary causes such as electrocution, lightning strikes, and landslides were also reported, emphasizing the widespread nature of monsoon-related hazards. The data highlights the urgent need to improve infrastructure resilience, enhance early warning systems, and strengthen community preparedness to reduce future casualties.

b. **Damages**

Ser	Province	House Damage			Livestock	Roads (km)	Bridges
		Partial	Full	Total			
(1)	Punjab	157,963	55,134	213,097	3,992	1216.29	462
(2)	KP	2,521	701	3,222	5,467	513.49	52
(3)	Sindh	3,108	224	3,332	577	491	66
(4)	Balochistan	4,290	2,080	6,370	4,585	98.65	3
(5)	GB	481	779	1,260	7,981	290.17	92
(6)	AJ&K	2,078	339	2,417	239	201.5	112
(7)	ICT	64	1	65	0	0.03	3
Grand Total		170,505	59,258	229,763	22,841	2811.13	790

*Note:- **Damage Need Assessment:** Detailed survey is being conducted by respective province. Preliminary Damage Assessment is being conducted by MoPD&SI.*





Preliminary Damage Assessment by MoPD&SI

2. A preliminary assessment of flood damages was carried out by **MoPD&SI** in coordination with NDMA, all key ministries and provincial governments. Key highlights are as under :-

- a. **Financial Impacts.** The table provides estimated financial damages by province and regions along with percentage share in total damages.

Ser	Region / Provinces	Damages (Rs. Billion)	Damages (%)
(1)	Punjab	631.0	76.8
(2)	KP	51.3	6.2
(3)	Sindh	32.2	3.9
(4)	GB	13.0	1.6
(5)	AJ&K	9.3	1.1

(6)	Balochistan	7.0	0.9
(7)	Other*	78.1	9.5
Total		822.0	100.0
<i>Note:- These damages are estimated based on available information by 30th September 2025 and are subject to changes with the availability of the updated data from the stakeholders.</i> <i>*: Other includes damages reported by federal ministries, ICT, DISCOs and other departments / organizations.</i> <i>Total damages across all provinces and regions are estimated at Rs. 822 billion (\$ 2.9 billion). Majority of the financial impact is concentrated in Punjab, highlighting the vulnerability of province to the disaster. Other provinces/regions experienced relatively minor damages in comparison, but still significant in the context of local economies and infrastructure.</i>			

- b. **Sectoral Damages.** According to preliminary estimates, overall damages to the GDP is estimated at 0.3-0.7 percent, reducing the FY2026 growth outlook to 3.9-3.5 percent from the target of 4.2%. Consequently, the level of unemployed workers could increase by almost 0.22 million in FY 2026.

Ser	Sector	Sub-Sectors	Damages (Rs. Billion)
(1)	Population	Displaced	3.70
		Affected	0.02
(2)	Food & Agriculture	Crops	422.65
		Livestock	1.95
		Fisheries	1.04
		Forestry	0.16
		Other Agriculture sector related damages	2.18
(3)	Industry	SMEs	0.01
		Mineral / Mines	0.26
		Large Scale Manufacturing	1.25
(4)	Physical & Social Infrastructure	Housing Infrastructure	91.20
		Road Infrastructure	187.75
		Railway Network	6.78
		Water Sector (Dams, Canals & Reservoirs)	17.68
		Bridges & Culverts	10.77
		Energy related infra (Elec, Gas, Petrol Pumps)	7.44
		Educational Institutions	5.11

Ser	Sector	Sub-Sectors	Damages (Rs. Billion)
		Public Buildings/Offices	1.15
		IT & Telecommunication Infrastructure	1.46
		Hospitals/BHUs/RHCs etc.	1.86
		Other Infrastructure (Shops, Community & Religious Places)	6.00
(5)	Any Other Damage	-	51.64
Grand Total		-	822.06
Note: These damages are estimated based on available information by 30 th September 2025 and are subject to change with the availability of updated data from the stakeholders.			

- c. **Agriculture**. 2025 floods have caused extensive damage to Pakistan's agriculture sector, with rice, cotton, sugarcane, maize, fodder and vegetables fields bearing the brunt of inundation. According to the provincial governments, vast cultivated land remains submerged, raising concerns for food security, export earnings and rural livelihoods. Due to the crops damages, agriculture sector is projected at 3.0 - 3.8 percent against the target of 4.5 percent. Production Loss of Important Crops:-

Ser	Crops (Mn Tons)	Pre-Flood Estimates	Post-Flood Estimates	Estimated Damage
(1)	Cotton (Mn Bales)	-	-	3.0-3.4
(2)	Rice	9.5	8.3-8.9	0.6-1.2
(3)	Sugarcane	-	77.0-79.0	-
(4)	Maize	9.8	8.5-9.2	0.6-1.3
According to Provincial Crop Reporting Service and SUPARCO, vast cultivated land remains submerged, raising concerns for food security, export earnings and rural livelihoods.				
Source: Provincial CRS & SUPARCO				

CHAPTER - 5

MAJOR EVENTS - MONSOON 2025

1. 2025 monsoon season in Pakistan was marked by a series of severe hydro-meteorological events causing widespread devastation across multiple provinces. Intense rainfall, flash floods, landslides and riverine flooding affected large parts of KP, Punjab, Sindh, Balochistan and GB resulting in significant loss of life, property damage and displacement of communities. Northern KP witnessed destructive cloudbursts and hill torrents, while Southern Punjab and Sindh experienced extensive riverine flooding as major rivers overflowed their banks. Urban centers in all provinces faced serious urban flooding, paralyzing daily life and damaging infrastructure. Additionally, tragic operational incidents including Bajaur relief helicopter crash and boat capsizes during rescue operations underscored the challenges faced by responders. Overall, the 2025 monsoon emerged as one of the most destructive in recent years.

- a. **Swat Incident.** 2025 monsoon season commenced with a devastating flash flood in Swat on 27th June 2025, when sudden surges in the Swat River swept

away families and tourists gathered along the riverbanks. The incident claimed 13 lives out of 17 stranded tourists, while 4 were successfully rescued. Additionally, 107 individuals were saved from various locations along the river on the same day. Intense monsoon rains, coupled with the steep



topography of Northern KP, triggered further localized flash floods, landslides and sudden inundations in multiple districts. In the aftermath, the district administration undertook prompt actions, including the suspension of concerned officials and a comprehensive crackdown on riverbed encroachments, to mitigate risks and prevent the recurrence of such tragic incidents.

- b. **Babusar Incident.** On 21 July 2025, a severe cloudburst struck the Babusar Top area in Diamer District, GB, intense rainfall triggered flash floods along the Babusar Road. Several vehicles carrying tourists were swept away by the rapidly rising waters, resulting in 9 x fatalities, 1 x injury and multiple missing persons. Pakistan Army and rescue departments in coordination with local authorities, promptly initiated extensive search and rescue operations under challenging

weather and terrain conditions to recover the victims, rescue stranded individuals and restore access along the affected route.



- c. **Flash Flooding KP.** Between **15 and 25 August 2025**, widespread **flash floods and landslides** affected much of northern **KP**, including the districts of **Swabi, Shangla, Mansehra, Bajaur, Swat and Battagram**. Intense **cloudbursts** triggered severe flash flooding, resulting in extensive destruction of **homes, roads and bridges** across the region. Among the affected districts **Buner, Swabi and Shangla** were the hardest hit, suffering heavy **human and infrastructure losses**. According to NDMA SITREPs, **Swabi recorded (43) casualties**, followed by **Shangla (37), Mansehra (28), Bajaur (22), Swat (20) and Battagram (15)**. Given the scale of devastation, these districts were designated as **high-priority zones for humanitarian assistance and relief operations**.



- d. **Buner Incident.** Buner incident during mid-August 2025 was among the most catastrophic events of the monsoon season. Intense **cloudbursts and flash floods** struck multiple areas of **District Buner**, causing large-scale destruction of **houses, roads, bridges and local infrastructure**. Sudden surge of floodwaters swept through several villages, leaving communities cut off and severely affecting communication and access routes. According to official reports, **252 people lost their lives** in Buner alone, making it the **worst-affected district in the country** during monsoon 2025. Extensive rescue and relief operations were launched by the **Pakistan Army, NDMA, PDMA KP**, rescue 1122 and some NGOs & INGOs focusing on search and recovery efforts, provision of emergency shelter and restoration of critical road links. Scale of the disaster placed Buner among the **highest-priority districts** for humanitarian assistance and post-flood rehabilitation.



- e. **Swabi Incident.** In mid-August 2025, a severe **cloudburst** in the **Gadoon area of District Swabi** triggered sudden **flash floods**, causing extensive destruction. Torrential downpour **completely destroyed several houses**, sweeping away structures and belongings within minutes. According to official reports, **over 20 people lost their lives** in this tragic incident. Rescue teams, supported by **district administration, PDMA KP and local volunteers**, immediately launched **search and relief operations**, evacuating affected families and providing emergency assistance to the survivors. The event underscored the district's growing vulnerability to **intense localized weather phenomena** during the monsoon season.



- f. **Riverine Flooding Punjab.** Between late August and early September 2025, massive riverine floods inundated vast areas of Punjab Province as the Ravi, Chenab and Sutlej Rivers overflowed their banks. Flooding was intensified by heavy upstream rainfall and reported cross-border dam releases, resulting in the submergence of thousands of villages and the displacement of millions. Agricultural Sector suffered devastating losses as large areas of cropland were completely submerged. More than 140+ deaths were recorded across country due to the riverine flooding. District-wise fatalities included Multan (34), Sialkot (31), Muzaffargarh (17), Rahim Yar Khan (11) and over 60 deaths collectively reported from Lahore, Mandi Bahauddin, Toba Tek Singh, Chiniot, Lodhran, Narowal, Kasur, Sheikhpura, Sargodha, Hafizabad, Nankana Sahib, Bahawalnagar and Jhang. Extensive evacuation and rescue operations were conducted across affected regions. In Punjab, 4,608 operations were carried out, resulting in the evacuation of approximately 2,817,991 people from high-risk zones.



- g. **Sialkot Incident.** During the **2025 monsoon season**, **Sialkot District** in Punjab experienced **prolonged heavy rainfall** and severe **riverine flooding**, primarily due to the overflow of the **Chenab and Jammu Rivers**. Continuous downpours, combined with increased water inflows from upstream catchments and reported cross-border dam releases, caused widespread inundation across low-lying and river-adjacent settlements. Several villages were **completely submerged**, leading to extensive **damage to houses, crops and livestock**, while major road links and bridges were rendered impassable. **31 people lost their lives** in Sialkot due to flood induced incidents, including **house collapses, electrocution and drowning**. Thousands of families were displaced, prompting the **evacuation of residents** from high-risk areas by the **Punjab Rescue 1122 teams and Pakistan Army**. Floods also inflicted heavy losses on the **agricultural sector**, particularly affecting rice and maize fields and disrupted local industry and trade. Relief efforts included the establishment of **temporary shelters, food distribution points and medical camps**, as authorities worked to restore essential services and assist affected communities. Sialkot received about **363.5 mm of rainfall in a 24-hour period**, marking its heaviest downpour since 1976. Some reports suggest up to **405 mm in 24 hours** in parts of the city, further emphasising the extreme nature of the event. Heavy rains overwhelmed municipal drainage and urban infrastructure. Many main roads, residential neighbourhoods and markets in low-lying sectors (e.g., Rangpura, Shahab Pura, Defence Road) were submerged under several feet of water. Simultaneously, river and canal flows rose sharply: for instance, the Head Marala barrage on the Chenab River recorded inflows around **902,000 cusecs**, approaching its 1.1 million cusecs capacity. Local nullahs such as Nullah Aik, which is designed for about 25,000 cusecs, overflowed when they received almost double that capacity in a short span, compounding flooding in urban areas. As a result of the flooding, local authorities declared a **district-wide emergency**, section 144 was imposed to restrict access to rivers/streams/bridges and a public holiday was declared to limit movement due to unsafe conditions. Surrounding rural areas also suffered, more than **85 villages** in the “Tawi belt” near Sialkot were cut off when floodwaters submerged access roads and farmland. The incident led to widespread infrastructure damage and communication systems were disrupted.



- h. **Jalalpur Pirwala.** In early September 2025, the Chenab River swelled beyond safe limits, reaching over 600,000 cusecs at Head Panjnad. The immense pressure caused embankments to give way in the Jalalpur Pirwala area, leading to widespread flooding across surrounding communities and agricultural lands. Dozens of villages around Jalalpur Pirwala were inundated after the collapse of protective works (for example, the Shah Rasool and Bett Wahi embankments). Homes were submerged, crops destroyed and many residents were forced to seek refuge on rooftops. Evacuation operations in Multan District were carried out on a large scale. Over 350,000 residents and about 300,000 livestock were moved to safer locations. Rescue teams used all available resources to support the evacuation and relief work. Several weeks after the initial flood surge, large parts of Jalalpur Pirwala Tehsil were still under



water. Many houses were damaged and fields of wheat and rice were destroyed. Displaced families remained in relief camps for shelter and food. Major roads were washed away and the breach of embankments also damaged nearby M-5 Motorway and its transport links.

- i. **Riverine Flooding Sindh.** By September 2025, as floodwaters progressed downstream into Sindh, the rising Indus River levels caused extensive flooding across multiple districts of the province. The worsening situation necessitated large-scale evacuations, with thousands of residents relocated from vulnerable and low-lying areas. In close coordination with the NDMA and district administrations, provincial authorities implemented comprehensive emergency response measures, including timely evacuations, the establishment of relief camps and continuous river monitoring to mitigate damage and prevent further casualties. In total, more than 700 evacuation and rescue operations were conducted across Sindh, through which approximately 183,958 people were safely evacuated from the flood-affected regions.



- j. **Urban Flooding Karachi.** In monsoon 2025, Karachi was struck by intense monsoon rainfall, with some areas recording 163.5 mm near the airport (the highest there since 1979) and 178 mm in northeast portions of the city. Precipitation departure was well above city's drainage designed infrastructure. The intense downpour caused **severe urban flooding**, inundating major roads and low-lying areas such as **Korangi, Malir, Gulshan-e-Hadeed and Liaquatabad**, leading to **traffic paralysis** and widespread **power outages**.

Authorities declared a **rain emergency**, as the **Lyari and Malir Rivers** overflowed, forcing the **evacuation of over 300 residents**. At least **seven fatalities** were reported due to **wall collapses and electrocution**, underscoring Karachi's continued vulnerability to **urban flooding and inadequate drainage infrastructure**. These conditions led authorities to declare a rain emergency, with rescue teams, municipal services and utility companies placed on high alert. At least seven deaths were reported in Karachi due to rain-related accidents, including wall collapses and electric shocks. Compounding the crisis were power outages (with many feeders tripping), disruptions to telecommunication and transport networks and serious concerns over infrastructure capacity, given widespread encroachments and inadequate stormwater drainage.



- k. **Tali Das Incident.** A **significant mud-flow** occurred in the Tali Das Nullah area of District Ghizer, GB on 22 August 2025. Mud-flow blocked the course of the Ghizer River, formed a temporary natural dam and raised the risk of a **sudden outburst flood downstream**. Obstruction left the settlement of about 3,000 people cut off from the main highway as the Dain Bridge in the area collapsed under conditions caused by heavy rainfall and associated runoff. Mudflow buried dozens of houses under thick layers of debris and swept away most of the remaining ones, leaving the entire settlement almost destroyed. Farmland, fruit orchards, livestock and roads were engulfed, isolating nearby villages such as Raushan and displacing hundreds of families. Amid this crisis, a **local herdsman who witnessed the glacier burst from a mountain ridge immediately warned**

residents downstream, urging them to vacate their homes. His timely action saved many lives that would have otherwise been lost in the catastrophe. In recognition of his courage and alertness, the **Prime Minister of Pakistan awarded the herdsman for issuing an early warning that prevented large-scale casualties**. Natural dam created by the landslide remains unstable, posing ongoing risk to downstream settlements if it collapses. Rescue teams from the GB government and Pakistan Army launched emergency operations, conducting evacuations and establishing temporary shelters for displaced families. Authorities later announced plans to build a new settlement for the affected population, as the original Tali Das site is now considered unsafe for habitation. The incident serves as a stark reminder of the **increasing threat of glacial and debris flow disasters** in Northern Pakistan, driven by rising temperatures, rapid glacier melts and unstable mountainous terrain intensified by climate change.



- I. **Tharparkar Incident.** During the 2025 monsoon season, multiple lightning strikes in Tharparkar District, caused severe losses to livestock and livelihoods. In one major incident, 47 cattle perished at once when lightning struck a grazing field near Islamkot. Around the same period, 52 more animals died in separate incidents near Shahmeer Vekiya, Tagusar and Lanja Colony, while overall over 190 cattle deaths were reported across the district since June. The desert's open terrain and lack of protective shelters make both herders and animals highly vulnerable during thunderstorms. These recurring events have devastated pastoral livelihoods, leading to calls for installing lightning arresters, establishing storm shelters and raising community awareness to reduce future losses.



- m. **Neelum Valley Flash Flooding.** On 14 August 2025, a severe flash flood struck the Kundal Shahi area of Neelum Valley (AJ&K), following intense rainfall and a sudden cloudburst over the Jagran Nullah catchment. The floodwaters rapidly surged through the narrow valley, sweeping away a pedestrian bridge, several small shops and a portion of the Ibex Hotel, a popular tourist spot near the Kundal Shahi Waterfall. Flood occurred within minutes after the downpour began, leaving little time for tourists and residents to evacuate. The main access road to upper Neelum



was also partially damaged, temporarily stranding visitors in the surrounding areas. Although no major human casualties were officially confirmed, the incident caused significant infrastructure and economic losses in this key tourism zone.

- n. **Lexus Hotel Incident.** On **25 June 2025**, a sudden **flash flood** triggered by intense rainfall struck the **Ainabad area in Hunza**, causing serious damage to the **Lexus Hotel**, a well-known tourist facility in the region. Floodwaters surged rapidly through the valley, breaching the protective walls of the hotel and inundating its lower floors. Tourists and staff were immediately evacuated as the water level rose sharply within minutes. Torrents of muddy water swept through the hotel premises, carrying away furniture, vehicles and debris. Fortunately, no human casualties were reported, but the incident resulted in **significant structural and economic losses** for the hospitality sector in the area.



- o. **Bajaur Incident.** On 15 August 2025, a provincial government MI-17 helicopter of KP, dispatched to deliver relief goods to rain and flood affected areas of Bajaur, crashed in the Mohmand District while en-route to the Salarzai region of Bajaur. The crash occurred in the Pandiyali/Sokkai area near Chengai Banda and was attributed to severe weather conditions. Tragically, all five crew members on board were killed in the accident including two pilots and three other personnel. In response, the KP government declared a day of mourning, ordered flags at half-mast and announced compensation for the families of the martyrs. The Bajaur helicopter crash underscored the extreme operational



challenges faced by rescue and relief teams during the 2025 monsoon season, particularly in the rugged mountainous terrain where persistent rainfall and flooding had already disrupted mobility, access routes and communication networks.

- p. **Chakwal Incident.** During the 2025 monsoon season, a distressing incident occurred in Chakwal District, Punjab, where a team of rescue workers became trapped while conducting relief operations amid torrential rainfall and flash flooding. The rescuers were engaged in assisting residents stranded in low-lying areas when sudden water surges and landslides cut off access routes, leaving them isolated for several hours. Continuous heavy rainfall and blocked roads further hampered recovery efforts. Fortunately, coordinated actions by Rescue 1122, district administration and local volunteers enabled their eventual evacuation once conditions stabilized. The incident highlighted the high-risk conditions faced by first responders and the operational challenges encountered during intense monsoon emergencies in hilly terrain.
- q. **Rescue Boat capsized.** During August and September 2025, several incidents occurred amid ongoing relief and rescue operations, reflecting the difficult conditions faced by response teams. In September, two separate boat capsize incidents were reported - one in Multan, where eight people lost their lives and another in Rahim Yar Khan, resulting in seven fatalities during evacuation operations. These events highlighted the operational challenges and the heavy strain on emergency response mechanisms during one of Pakistan's most devastating monsoon seasons in recent years.
- r. **M-5 Motorway Damage.** During the 2025 monsoon season, sections of the M-5 Motorway (Multan - Sukkur Motorway) sustained significant damage due to persistent riverine flooding and heavy rainfall across Southern Punjab and upper Sindh. Continuous downpours between late August and early September 2025 led to waterlogging and embankment erosion along multiple stretches of the motorway, particularly near Multan, Bahawalpur and Rahim Yar Khan. The overflow of nearby canals and drainage nullahs, coupled with poor surface drainage and prolonged standing water, undermined the road base and caused partial collapses and cracks in the pavement. In several locations, floodwaters from the Chenab and Sutlej Rivers breached protective embankments and inundated adjacent sections of the M-5, forcing authorities to temporarily suspend traffic for safety reasons. National Highways and Motorway Police (NHMP), in coordination with NHA and NDMA, initiated immediate repair and clearance

operations, deploying heavy machinery to drain accumulated water and restore connectivity. The incident highlighted the vulnerability of critical transport infrastructure to extreme weather events and underscored the need for improved drainage design, flood-resilient road construction and regular maintenance along major highway corridors.



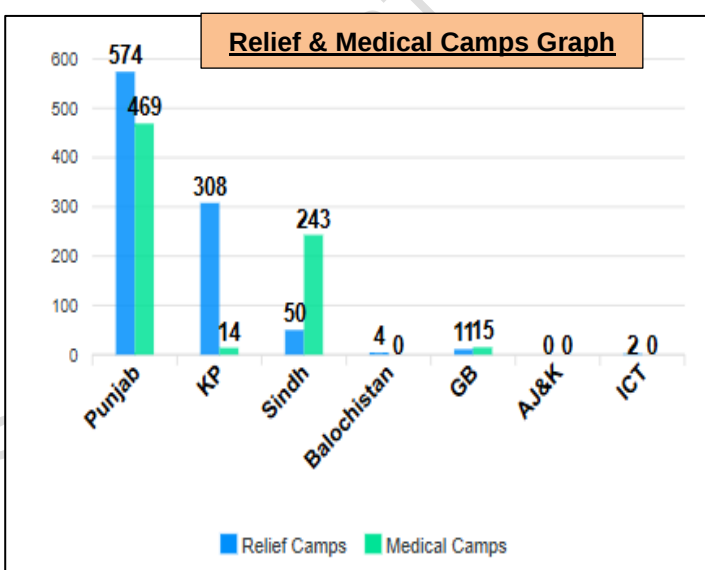
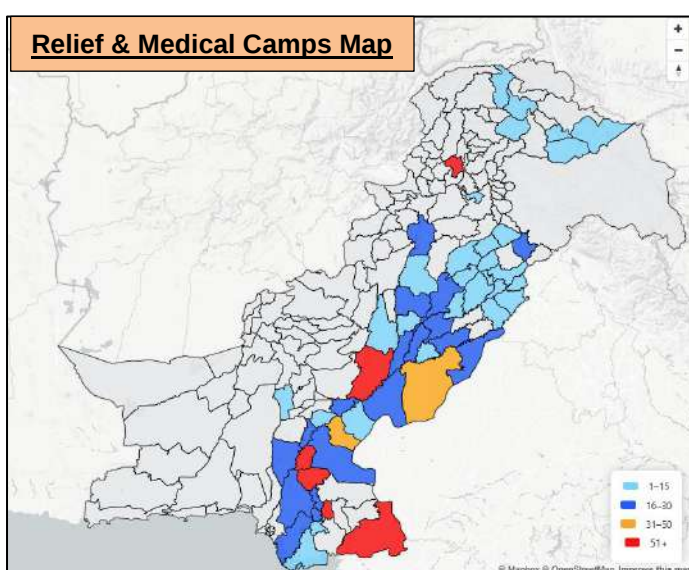
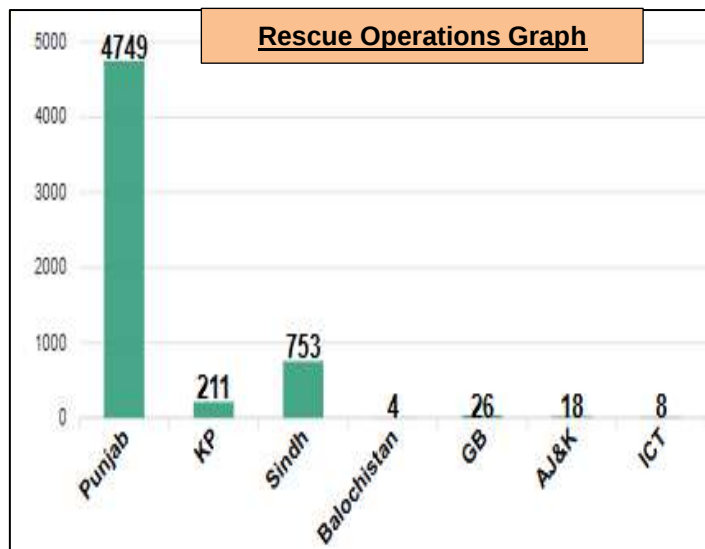
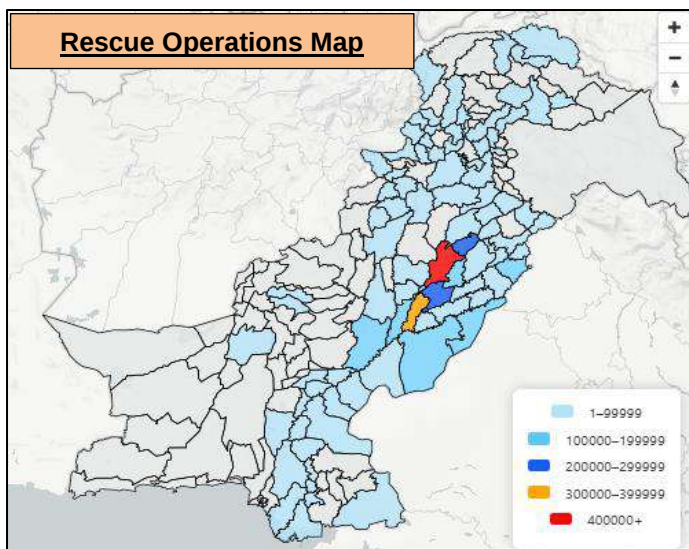
CHAPTER - 6

RESPONSE / RELIEF OPERATIONS, RECOVERY AND REHABILITATION

Rescue / Evacuation Operations

1. During monsoon season 2025, a total of **5,769 rescue and evacuation operations** were conducted across Pakistan, resulting in the safe evacuation of approximately **3,029,091 individuals**, as reported by NDMA. Majority of operations were carried out in Punjab, where **4,749 operations** led to the rescue of **2,819,767 people**, reflecting province's extensive flood impacts and large-scale response mobilization. In Sindh, **753 operations** were conducted, rescuing **184,011 persons**, primarily from flood-affected districts. KP reported **211 operations** with **14,317 people** rescued, while GB recorded **26 operations** and **9,988** rescues. AJ&K undertook **18 operations** to rescue **940 individuals** and ICT managed **8 operations** rescuing **49 persons**. Balochistan reported minimal activity, with **4 operations** and **19 rescues**. Detail of population evacuated/ rescued is as under:-

Ser	Province	No. of Rescue Operation	No. of Persons Rescued/Evacuated	No. of Relief Camps	No. of Persons in Relief Camp	No. of Medical Camps	No. of Persons Treated
a.	Punjab	4,749	2,819,767	574	118,074	469	551,860
b.	KP	211	14,317	308	25,927	14	2,300
c.	Sindh	753	184,011	50	5,111	243	107,011
d.	Balochistan	4	19	4	0	0	0
e.	GB	26	9,988	11	3,140	15	927
f.	AJ&K	18	940	0	0	0	0
g.	ICT	8	49	2	0	0	0
Grand Total		5,769	3,029,091	949	152,252	741	662,098



Logistics Support

1. **General.** Monsoon Season 2025 witnessed widespread rains, flash floods and urban inundations across several regions of Pakistan, impacting lives, infrastructure and livelihoods. NDMA, in coordination with PDMAs, Armed Forces, civil institutions, NGOs and humanitarian partners, undertook extensive logistics operations to ensure timely delivery of relief goods to affected populations. NEOC remained fully functional round-the-clock throughout the monsoon period, serving as the national coordination and information hub for response activities, including logistics tracking, situation monitoring and inter-agency coordination. This report summarizes logistics-related actions and relief efforts undertaken during Monsoon 2025 by NDMA, partner organizations and national institutions.

2. Situation Overview

- Duration.** June to September 2025.
- Impacted Areas.** Punjab, KP, GB, Sindh, Balochistan and AJ&K.

- c. **Major Impacts.** Flash floods in low-lying and riverine areas, partial damage to road networks, temporary disruption of supply lines and damage to housing and crops.
- d. **Response Objective.** To ensure uninterrupted humanitarian supply chain and effective relief delivery to affected communities.

3. **NDMA Relief and Logistics Operations.** NDMA activated its Logistics Supply chains and provincial coordination channels at the onset of monsoon activity. Logistics Directorate of Operation Wing of NDMA ensured timely provision and replenishment of relief stocks and effective coordination with PDMAs and humanitarian partners.

- a. Detail of relief effort provided at National Level (overall summary) is as under:-

Province	NDMA Log Support	PM Relief Package	PDMA	Armed Forces Ration Sup		NGOs	National Resource					Grand Total (Tons)
				Army	PAF/ PN		Pvt	Govt Corp	Industry	Donation	Total	
GB	20	-	233	13	7	896	45	118	50	250	463	1,632
KP	259	45	354	130	51	4,066	118	395	150	16	679	6,232
AJ&K	-	-	8	8	-	-	-	233	15	-	248	264
Pb	2,124	147	1,353	382	23	6,170	259	1,282	331	15	1,887	12,086
Sdh	-	-	1,150	-	5	999	-	119	-	-	119	2,273
Bln	-	-	21	-	-	-	-	-	-	-	0	21
ICT	-	-	5	-	-	-	-	-	-	-	0	5
Total (Tons)	2,403	192	3,124	533	86	12,131	422	2,147	546	281	3,396	21,865
	2,595		3,124	619		15,527						

- b. Details of Federal relief effort provided by NDMA is as under:-

Ser	Relief Items	GB (20 Tons)	KP (304 Tons)	Punjab (2,271 Tons)	Total Quantity
(1)	Generators	-	50	-	50
(2)	D. Pumps	-	50	-	50
(3)	Water Tanks	-	5	-	5
(4)	Blankets	1,000	13,120	20,000	34,120
(5)	Shelter Tents	-	10	0	10
(6)	Family Tents	200	2,000	36,000	38,200
(7)	Ration Packs	-	900	3,200	4,100
(8)	Boats	-	0	17	17
(9)	Mosquito Nets	-	0	10,000	10,000
(10)	Medicine (Kgs)	-	3,855	3,450	7,305
(11)	Water Filtration Plant	-	-	36	36
(12)	Quilts	-	-	4,000	4,000
(13)	Folding Bed	-	-	3,000	3,000
(14)	Kerosene Heaters	-	-	3,000	3,000
(15)	Jerry Can	-	-	5,000	5,000
Accumulated Tons					2,595



4. **Coordination Through NEOC**. Key functions performed by Logistics Directorate during Monsoon 2025 included:-

- a. Continuous situation tracking and identification of affected areas.
- b. Synchronization with other wings of NDMA for rapid dispatch of relief consignments.
- c. Coordination with PDMA, Pakistan Armed Forces and line departments for prioritization of affected areas.
- d. Integration of partner updates and field data into the national dashboard.

5. **PDMA Punjab**. PDMA Punjab efficiently managed flood response operations in Sialkot, Narowal, Multan, Rahim Yar Khan, Lahore, Mandi Bahauddin, Toba Tak Singh, Chiniot, Lodhran, Kasur, Sheikhupura, Sargodha, Hafizabad, Jhang, Bahawalnagar Nankana Sahib, Rajanpur, DG Khan and Muzaffargarh districts. PDMA Punjab distributed relief items from its own warehouses and effectively coordinated the receipt and delivery of additional supplies from NDMA and other national resources. It also facilitated rescue operations and ensured the early restoration of essential services across the affected areas.



6. **PDMA Sindh.** PDMA Sindh distributed relief items from its own reserves and coordinated additional assistance received from national resources, including contributions from various NGOs. These efforts ensured comprehensive coverage and timely support to affected populations.
7. **PDMA KP.** PDMA KP responded proactively to flash floods and landslides in Swat, Bajour, Swabi, Buner, Shangla, Manshera and Battagram districts. PDMA KP utilized its regional warehouses to deliver relief items and coordinated the movement and distribution of supplies received from NDMA and other national partners. They also extended support to rescue activities and took measures for the swift reinstatement of essential services in impacted areas.
8. **PDMA Balochistan.** PDMA Balochistan provided relief assistance utilizing its own resources and stocks to support affected communities across the province. They ensured timely delivery of essential supplies through its established distribution network. NDMA, NGOs and Armed Forces remained on standby but did not deploy large-scale operations. Balochistan remained relatively stable with effective preparedness and preemptive coordination.
9. **SDMA.** SDMA provided relief items from its own reserves while also coordinating supplementary assistance extended by Government Corporations. They ensured effective delivery of relief support to the impacted areas.
10. **GBDMA.** GBDMA effectively managed localized flooding and landslides in Ghizer, Diamer, Gilgit, Skardu, Ghanche and Nagar districts. They provided relief goods, facilitated restoration of blocked roads and maintained coordination with local government and NDMA for sustained recovery operations. GBDMA mobilized relief stocks from its own warehouses and efficiently coordinated the dispatch and distribution of additional assistance received from NDMA and other national sources. It further supported rescue operations and ensured the prompt restoration of essential services in the affected regions.
11. **Relief Efforts by NGOs, INGOs and Humanitarian Partners.** Multiple national and international organizations complemented NDMA's efforts through independent and joint relief initiatives: -
- a. Al Khidmat.
 - b. Helping Hand.
 - c. KSrelief.
 - d. Muslim Hands.
 - e. Minhaj Foundation.
 - f. Islamic relief Pakistan.
 - g. Agha Khan Foundation.

- h. Penny Appeal.
- i. Human Appeal.
- j. Moawin.
- k. Youth Social AMB.
- l. Action for Humanity.
- m. Hands.
- n. Muslim Aid.
- o. Qatar Charity.
- p. Sukh Development.
- q. Jafariya Disaster Management Cell.
- r. PRCS.
- s. Saylani Welfare Trust.
- t. UN Agencies (WFP, UNICEF, WHO).

12. **Support by Other National Institutions**. Various state institutions and departments contributed resources and operational support during the monsoon response:-

- a. Armed Forces.
- b. Government Corporation (Pakistan Poverty Alleviation Fund, PSO).
- c. Private Sector (HBL, Serena Hotels, Meezan Bank, Allied Bank and Jazz).
- d. Industry (NESTLE, Unilever, Dawn Bread and Fauji Foods).
- e. Philanthropist (DHA, Pharmaceutical, Hashoo Foundation).

13. **Key Achievements**

- a. Timely mobilization and delivery of relief goods nationwide.
- b. Strengthened coordination through NEOC.
- c. Improved tracking and data reporting through digital dashboards.
- d. Effective utilization of national and partner logistics capacities.
- e. Enhanced synergy between NDMA, PDMA and humanitarian partners.

EX-GRATIA ASSISTANCE

1. **General.** Monsoon season 2025 resulted in heavy rains and severe flooding across Pakistan, causing widespread loss of life, large-scale displacement, damage to homes, infrastructure and livelihoods. Disaster posed significant humanitarian and public health challenges, requiring coordinated national and provincial response efforts to provide relief and financial assistance to affected families. In line with the Federal Government's commitment to provide immediate financial support to disaster-affected families, the Honourable Prime Minister directed NDMA to issue Ex-Gratia assistance of Rs. 2 million to the NoK of each deceased person in addition to provincial financial assistance for rehabilitation. A total of 1,037 death cases were reported across the country during monsoon 2025. Compensation is being processed upon receipt of claims from respective PDMAs/ SDMA/ GBMA.

2. **Applications for Redressal of Grievance.** A total of **46** grievance applications were submitted to NDMA by affected individuals. To ensure the prompt provision of relief and timely redressal of grievance, NDMA referred these applications to concerned PDMAs and relevant departments for necessary action as per policy/ rules.

3. **Lesson Learnt.** However, during the implementation of Ex-Gratia Assistance, several procedural challenges were faced that impeded efficient disbursement of funds to the affectees. The major issues are appended below:-

a. **Ineligible Claimants.** Claims were forwarded by ineligible claimants and mismatched family records, which created verification issues. As per guidelines already available with all PDMAs/DDMAs, NoKs eligible for claiming Ex-Gratia Assistance are clearly defined. However, due to negligence while verifying the proforma these issues are overlooked. In order to resolve this issue, following is recommended: -

- (1) PDMAs/DDMAs should strictly adhere to Ex-Gratia Assistance guidelines, ensuring that all NoKs are verified as per defined criteria.
- (2) Integrate NADRA's database for family-tree and CNIC verification at the application stage, ensuring only legitimate NoK submit claims.

b. **Improper Scrutiny & Documentation Errors.** Number of cases were received with incorrect NoK information, or contained errors such as misspelled names, incorrect CNIC numbers, leading to multiple re-submissions resulting in hindrance during verifications. To address this issue accurate documentation through proper scrutiny by local district staff must be ensured.

- c. **Delays in Forwarding Claims.** Despite repeated requests and coordination with PDMAs for processing of cases on priority; it was observed that initiation of several cases was delayed considerably. Such delays are against the spirit of Ex-Gratia assistance and must be addressed. It should be ensured that each district must forward all its cases after thorough verification within 5 - 7 working days to PDMA for further submission to NDMA.
- d. **Submission of Proformas/ Missing Documents.** In some cases when the cheques are required to be issued on urgent basis such as visit of PM to the affected areas; Ex-Gratia Assistance cheques are issued according to the lists received from PDMAs/ DDMA. However, after issuance of cheques, response of PDMAs/ SDMA/ GBDMA towards completion of required documents and submission of proforma is observed to be very slow. This reluctance in submitting proformas creates audit issues and also contributes to unnecessary correspondence. It is recommended that deadlines for submission of proforma and other necessary documents be followed in true letter of spirit to avoid audit issues and maintain transparency of the system.

CHAPTER - 7

EVENT BASED LESSONS LEARNT AND WAY FORWARD

1. Transforming SITREPs

a. Lesson Learnt

- (1) Transformation of manual Word SITREPs to the DIRA platform was found to be very effective. DIRA revolutionized a slow and error-ridden process into a systematic, database-based workflow that compressed compilation and dissemination time to within 24 - 48 hours. The digital process enhanced consistency, traceability and transparency, each entry is stamped with a time and date and attributable, eliminating duplication and facilitating quicker decision-making. Reception by federal, provincial and district stakeholders has been extremely positive, reflecting good ownership and readiness to implement digital reporting.
- (2) Operational exposure has also highlighted critical gaps that need to be filled. Periodic connectivity in rural areas introduces delays, underlining the requirement for offline-enabled data capture and stable sync mechanisms. Secondly, while speed improves through centralized reporting, automated quality-control and geospatial validation are still weak and need to be enhanced to decrease errors and enhance situational accuracy.

- b. Way Forward (Recommended Actions). To build on DIRA's success and make SITREPs a robust, multi-hazard national system, targeted, phased approach is proposed:-

(1) Decentralize with Guardrails

- (a) Allow provincial users to author and submit reports directly; provide for district-level draft entries with required PDMA approval workflows prior to national publication.
- (b) Enforce role-based access control and an approval audit trail to ensure data integrity.

(2) Make Field Reporting Robust

- (a) Create a mobile-first reporting application with offline data capture and sync upon restoration of connectivity.
- (b) Offer light forms and dropdowns to enforce standard entries and minimize free-text errors.

- (3) **Enhance Data Quality & Geospatial Validations**
 - (a) Implement automated validation rules (consistency checks, range checks, duplicate detection) and GIS-based sanity checks (e.g., check that reported flood areas overlap known river basins or administrative boundaries).
 - (b) Integrate satellite flood footprints and real-time rainfalls/ hydrological feeds to cross-validate reported damages.
- (4) **Capacity Building & SOPs**
 - (a) Establish regular training, refresher courses and e-learning modules for provincial and district staff.
 - (b) Make SOPs of clear reporting timelines (e.g., first report in 6 - 12 hours of incident, SITREP in 24 - 48 hours), data standards and escalation routes available for publication.
- (5) **Increase Use Cases - SITREPs Multi-hazard**. Modify DIRA schemas and forms to accommodate earthquakes, cyclones, droughts, industrial accidents and public-health emergencies so the platform is the one national disaster reporting backbone.
- (6) **Analytics, Dashboards & Transparency**
 - (a) **Construct Role-Specific Dashboards**. Operational (response routing, stock allocation), strategic (trend analysis, resource planning) and public summaries (situational transparency for donors/ partners).
 - (b) Partners and GIS analysts should be provided with exportable datasets and CSV/ GeoJSON endpoints.

2. **Tourist Safety and Awareness**

a. **Lessons Learnt**

- (1) During the 2025 monsoon season, **three major tourist-related incidents** were reported - in **Swat, Zhob and Babusar** - resulting in multiple fatalities and injuries.
- (2) In addition, several **tourist-stranding events** occurred across northern regions including **Chilas (GB), Mansehra, Swat and AJ&K**, primarily due to sudden flash floods, landslides and cloudbursts.
- (3) These tragic events occurred largely because **tourists were unaware of local hazard profiles** and **did not check or heed weather alerts** prior to travel or during their stay in vulnerable areas.

- (4) The absence of **standardized tourist safety guidelines, on-site hazard information** and **adequate enforcement of precautionary measures** by local administrations further contributed to these losses.
 - (5) While early warnings were timely at the national and provincial levels, **risk communication to transient populations (tourists, travelers, drivers)** remained weak and non-targeted.
 - (6) Limited coordination between **Tourism Departments, DDMA, Rescue 1122, LEAs and local administrations** constrained the effectiveness of preventive measures and timely evacuations.
- b. **Way Forward.** To mitigate such incidents in future monsoon and winter seasons, the following actions are recommended:-
- (1) **District-Specific Tourist Safety Guidelines**
 - (a) Develop and notify **hazard-specific safety protocols** for each tourism district (e.g., flash floods, landslides, avalanches).
 - (b) Display these guidelines prominently at entry points, hotels and public places in collaboration with **Tourism Departments, PDMA and DDMA.**
 - (2) **Installation of Awareness Signage and Information Kiosks**
 - (a) Place **bilingual/multilingual signboards** and **digital displays** at all major tourist entry points, rest areas and check posts.
 - (b) Distribute **information leaflets and QR codes** linked to real-time PMD weather advisories.
 - (3) **Control of Tourist Flux in Hazard-Prone Zones**
 - (a) Implement **controlled entry mechanisms** in high-risk zones during adverse weather or official red alerts.
 - (b) Temporary suspension of tourist movement may be enforced based on **PMD / NDMA advisories.**
 - (4) **Integration of Real-Time Weather Alerts.** Establish a system where **PMD and NDMA warnings** are automatically shared with **tourism offices, hotels and transport operators** through SMS, WhatsApp, or other alert systems.
 - (5) **Engagement of Hospitality and Transport Sector**
 - (a) Mandate hotels, guest houses and transport operators to **brief tourists at check-in** regarding local hazards and evacuation procedures.

- (b) Encourage use of **NDMA's Disaster Alert App** and ensure access to emergency helplines.
- (6) **Tourist Registration and Tracking Mechanism**. Introduce **voluntary online or on-site registration** for tourists visiting high-risk mountain or riverine areas, facilitating accountability and rapid coordination during emergencies.
- (7) **Community and Volunteer Capacity Building**
 - (a) Train **local guides, volunteers and rescue teams** in basic search & rescue, first aid and hazard interpretation.
 - (b) Establish **Community Response Teams** in popular tourist destinations.
- (8) **Strengthening Institutional Coordination**. Form a **District Tourist Safety Coordination Committee (DTSCC)** comprising DDMA, Tourism Department, LEAs, Rescue 1122 and civil society representatives for continuous monitoring during hazard seasons.

c. **Good Practice Note (for Inclusion)**. **Example from Himachal Pradesh (India)**. The state government enforces "*Weather-Based Travel Advisories*" issued daily during monsoon season. Tourist entry to certain valleys is automatically restricted upon red alert issuance. Similarly, *Nepal's Annapurna region* uses digital signage and trekking permit systems linked with real-time meteorological warnings. ***These examples may be adapted in Pakistan's high-risk tourism zones (Swat, Naran, Babusar, Hunza) to ensure proactive safety management.***

3. **Shift in Fatality Patterns During 2025 Monsoon Season**

- a. **Lesson Learnt**. NDMA's situational reporting and field data from the 2025 monsoon season indicate a **notable shift in the primary causes of disaster-related fatalities** compared to previous years. Historically, **roof and house collapses** were the predominant causes of death during monsoon events. However, in 2025, a significant share of casualties resulted from **flash floods, cloudbursts and sudden river surges**, particularly in **mountainous and riverbank regions** of KP, GB, northern Punjab and AJ&K. This trend highlights the **increasing frequency and intensity of localized flash flood events**, likely linked to **climate variability and changes in precipitation patterns**, as well as **inadequate risk awareness and preparedness in high-risk catchment zones**. The lesson underscores the urgent need to

strengthen early warning dissemination, rapid evacuation systems and community-level preparedness in vulnerable valleys and riverine belts.

b. **Way Forward**

(1) **Enhanced Flash Flood Early Warning Systems**

- (a) Expand and modernize **automated river level and rainfall monitoring stations** in high-risk catchments.
- (b) Improve integration between **PMD, FFD, SUPARCO and NEOC** for real-time forecasting and cross-agency alerts.

(2) **Community-Based Alert and Evacuation Mechanisms**

- (a) Establish **community flood focal points** and train **local volunteers** for rapid information relay and evacuation.
- (b) Conduct **mock drills** before the onset of monsoon season in vulnerable districts.

(3) **Localized Risk Mapping and Early Action Protocols**

- (a) Develop **micro-level flash flood hazard maps** identifying danger zones along streams, nullahs and riverbanks.
- (b) Define **district-specific evacuation thresholds** (e.g., rainfall intensity or river gauge levels) to trigger preemptive evacuations.

(4) **Infrastructure and Land Use Regulation**

- (a) Enforce **strict construction controls** along riverbanks and in flood-prone areas, particularly for hotels, markets and informal settlements.
- (b) Promote **flood-resilient housing design** and elevate key community structures above flood levels.

(5) **Public Awareness and Communication**

- (a) Conduct **targeted awareness campaigns** focusing on residents and tourists in flood-prone valleys.
- (b) Encourage communities to **subscribe to NDMA's Disaster Alert App** and follow PMD advisories through radio, SMS and social media.

(6) **Inter-Agency Coordination and Data Integration**

- (a) Institutionalize **pre-season coordination between NDMA, PDMAs, PMD and FWO/NHA** to identify vulnerable routes and issue timely travel advisories.
- (b) Use **real-time data dashboards** to enhance decision-making during flood onset.

4. Boat Safety and Life-Saving Measures

a. Lesson Learnt

- (1) Multiple **boat capsize incidents** occurred during rescue and evacuation operations in the 2025 monsoon season, particularly in **Southern Punjab and Sindh**, resulting in **several fatalities**.
- (2) Main causes included **overcrowding, lack of life-jackets, poor boat maintenance, untrained operators** and **absence of safety checks**.
- (3) These incidents highlight the need for **enforcing safety protocols** and **ensuring minimum equipment standards** for all rescue and community boats.

b. Way Forward

- (1) **Mandate life-jackets** for every operational rescue and evacuation boat, with **verification before deployment**.
- (2) Issue **SOPs** on boat capacity, weather limits and safety requirements.
- (3) Conduct **basic training for boat operators and volunteers** in navigation and emergency response.
- (4) **Pre-position life-jackets and safety kits** in flood-prone union councils before monsoon onset.
- (5) Enforce **operational clearance** by a district rescue officer prior to launch and promote **public awareness** on boat safety.

5. Use of Drone Technology and Helicopter Operations

a. Lesson Learnt

- (1) During the 2025 monsoon season, **17 tourists were stranded in the Swat River**, with similar incidents in **Northern KP, GB and AJ&K**, where people remained isolated due to flash floods and blocked access routes.
- (2) In several of these incidents, **limited availability of helicopters** - caused by poor visibility, mechanical constraints and safety risks - delayed timely rescue.
- (3) A **helicopter belonging to the KP Government crashed in Bajaur** while heading for a rescue operation during adverse weather, highlighting the vulnerability of air operations in monsoon conditions.
- (4) **Drones**, on the other hand, proved highly effective for **locating stranded people, mapping inundated areas and supporting rescue coordination**. Modern drone technology now includes heavy-lift

variants capable of carrying or airlifting a single person, offering an innovative tool for rescue in areas inaccessible to ground or air crews.

- (5) Experience of 2025 shows that **integrating drone-based reconnaissance and rescue support** into district-level disaster operations could significantly enhance response speed, safety and efficiency.

b. **Way Forward**

- (1) **Integrate Drone Technology into Disaster Response Systems.** Institutionalize drone use under NDMA and PDMA frameworks for **search, reconnaissance and emergency evacuation** in high-risk districts.
- (2) **Develop SOPs and Coordination Mechanisms.** Formulate **SOPs** for drone operations, covering safety, data sharing and coordination with the **CAA and security agencies**.
- (3) **Establish District Drone Units.** Equip **EOCs or Rescue 1122 stations** in hazard-prone districts with drones and trained operators for immediate deployment during floods or landslides.
- (4) **Adopt Heavy-Lift and Hybrid Drones.** Pilot the use of **next-generation drones capable of airlifting one person or essential relief supplies** where helicopter access is unsafe or delayed.
- (5) **Partnerships and Training.** Collaborate with **universities, private drone companies and humanitarian organizations** for operator training, imagery analysis and research on drone-based disaster response.
- (6) **Pre-Monsoon Readiness.** Conduct **drone-based pre-season mapping** of floodplains, roads and critical infrastructure to facilitate rapid impact assessment and situational awareness.

6. **Human-Based Early Warning: Tali Das, GB Success Story**

- a. **Lessons Learnt.** The events confirms a significant **surge in flash floods, debris flows and GLOFs in GB and Upper KP**. This is directly correlated with the consistent **above-average temperature anomalies** recorded in these regions, which accelerate glacial melt and destabilize slopes.

b. **Way Forward: A Multi-Pronged Strategy**

- (1) Install more weather and river gauges in high-risk areas like GB and Upper KP.
- (2) Adopt impact-based forecasting (e.g., "Flash flood likely in Nallah X").

- (3) Train community volunteers and use sirens, phones and radio for timely alerts.
- (4) Deploy “Human Weather Spotters” in remote areas to relay warnings where technology is lacking.
- (5) Use SMS and local radio for alerts in local languages.
- (6) Map vulnerable valleys using satellites and field surveys.
- (7) Build protective structures like debris dams and retention walls.
- (8) Promote afforestation to stabilize slopes and control erosion.

7. **Institutional Lessons and Way Forward (Departmental Inputs)**

a. **NDMA**

- (1) **Operational Preparedness & Evacuation.** Issue early warnings through all channels:-
 - (a) Conduct community drills and awareness sessions.
 - (b) PDMA/ DDMA to evacuate people promptly on NDMA’s alerts.
 - (c) Enforce Section 144 in danger zones.
 - (d) Mark evacuation routes and shelters in advance.
 - (e) Display warning boards at key points.
 - (f) Ensure readiness and forward placement of resources.
 - (g) Out of 1,037 deaths, 25% were from roof collapses - identify unsafe houses and move residents to shelters during rains.
- (2) **Urban Flood & Waterway Management**
 - (a) Clear drains and nullahs before monsoon.
 - (b) Promote rainwater harvesting and recharge projects.
 - (c) Install smart gauges and sensors in key rivers.
 - (d) Prepare urban flood plans for major cities.
 - (e) Strengthen municipal monitoring.
- (3) **Land Use & Construction Control**
 - (a) Ban construction on riverbanks and flood channels.
 - (b) Enforce zoning and flood-risk mapping.
 - (c) Apply resilient building codes and retrofit unsafe structures.
 - (d) Relocate utilities and use underground cabling in flood zones.
- (4) **Tourism Regulation & Public Safety**
 - (a) Control entry to high-risk tourist areas.
 - (b) Conduct yearly safety audits.
 - (c) Launch a National Tourist Safety App linked with NDMA and provinces.

- (5) **Water Management & Nature-Based Solutions**
- (a) Build small and medium dams for storage.
 - (b) Expand forestation and urban greenery.
 - (c) Enforce anti-deforestation laws.
 - (d) Plant fruit trees along highways.
- (6) **Logistics & Response**
- (a) Maintain pre-positioned stocks as per NDMA guidelines.
 - (b) Deploy boats, vehicles, and rescue tools in advance.
 - (c) Submit Sitreps and data on time.
- (7) **Rescue & Emergency Services**
- (a) Expand Rescue 1122 in all risk-prone areas.
 - (b) Establish K9 and USAR teams in every province.
 - (c) Strengthen manpower, gear, and training.
 - (d) Create mountain and swift-water rescue units.
- (8) **Technology Integration**
- (a) Use AI, drones, GIS, and satellite imagery.
 - (b) Fully utilize NDMA mobile applications.
- (9) **NGO Coordination**
- (a) Follow the NGO Framework: Pre-disaster (awareness), During (relief), Post (rehabilitation).
 - (b) Maintain NGO database and assign areas to avoid overlap.
 - (c) **Capacity Building & Community Engagement.**
 - (d) Train PDMA, DDMA, and Rescue 1122 teams.
 - i. Form local disaster committees and volunteers.
 - ii. Ensure gender-inclusive evacuation and relief.
- (10) **Infrastructure Protection**
- (a) Build and extend protective bunds and canals.
 - (b) Climate-proof critical infrastructure.
- (11) **Administrative Coordination**
- (a) Strengthen coordination among NDMA, PDMAs, Ministries, and Forces.
 - (b) Ensure timely release of funds and logistics.
- (12) Introduce **bylaws for rainwater harvesting** at household and institutional levels.
- (13) Construct **hill ponds and recharge basins** to store runoff and reduce flash flooding.

(14) **Logistics**

(a) **Lessons Learned**

- i. As per the National Stocking Policy, NDMA is required to maintain national reserves of key relief and rescue items such as tents, blankets, boats, and generators. It is highlighted that NDMA maintained its stock levels at over 100% before the monsoon season. However, the stock levels of PDMAs remained significantly below the required levels, despite clear guidelines and repeated instructions to ensure adequate maintenance of reserves as per the National Stocking Policy.
- ii. Access issues due to road damage and weather disruptions.
- iii. Limited storage capacity in certain regions.
- iv. Data gaps in NGO reporting and field verification.
- v. Need for pre-positioned stocks and improved digital integration.

(b) **Way Forward**

- i. PDMAs to maintain relief stocks as per National Logistics policy.
- ii. Establish Regional Logistics Hubs in disaster-prone areas.
- iii. Strengthen coordination mechanisms under NEOC.
- iv. Enhance partnership frameworks with national NGOs and private sector.

(15) **Recovery and Rehabilitation**

(a) **Lesson Learnt**

- i. Claims were forwarded by ineligible claimants and mismatched family records, which created verification issues.
- ii. Number of cases were received with incorrect NoK information, or contained errors such as misspelled names, incorrect CNIC numbers.
- iii. Despite repeated requests and coordination with PDMAs for processing of cases on priority; it was observed that initiation of several cases was delayed considerably.

- iv. Ex-Gratia Assistance cheques are issued according to the lists received from PDMAs/ DDMA. However, after issuance of cheques, response of PDMAs/ SDMA/ GBDMA towards completion of required documents and submission of proforma is observed to be very slow.

(b) **Way Forward**

- i. PDMAs/DDMA should strictly adhere to Ex-Gratia Assistance guidelines, ensuring that all NoKs are verified as per defined criteria.
- ii. Integrate NADRA's database for family-tree and CNIC verification at the application stage, ensuring only legitimate NoK submit claims.
- iii. Accurate documentation through proper scrutiny by local district staff must be ensured.
- iv. Each district must forward all its cases after thorough verification within 5 - 7 working days to PDMA for further submission to NDMA.
- v. Deadlines for submission of proforma and other necessary documents be followed in true letter of spirit to avoid audit issues and maintain transparency of the system.

(c) **PDMA KP**

- (1) **Pre-stock modular bridges** for early restoration of connectivity.
- (2) Remove **encroachments from waterways**.
- (3) Strengthen **public response to early warnings**.
- (4) Enforce **building codes** and slope protection measures.
- (5) Equip DDMA with **AI-based flood detection tools**.
- (6) Continue **physical patrolling of riverbeds** during rain spells.

(d) **GBDMA**

- (1) Clearly define **departmental roles and responsibilities**.
- (2) Divide valleys into **operational clusters** for better coordination.
- (3) Use GBDMA as the **central coordination platform** to avoid duplication.
- (4) Ensure **information sharing and joint assessments** with NDMA.
- (5) Promote **volunteerism and CBDRM teams** in villages.
- (6) **Pre-position essential goods** and medicines in remote valleys.

- (7) Conduct **capacity building** for all stakeholders.
- (e) **ICT.** Develop and train a **Specialized Water Rescue Team** equipped for urban and flash flood response.
- (f) **MoNFSR**
- (1) Utilize **satellite imagery and drones** for rapid mapping of flood extents and crop losses.
 - (2) Empower **local communities and farmers** to interpret early warnings and support recovery.
- (g) **MoNHS&R**
- (1) Strengthen **emergency coordination** with full-time liaison officers at all levels.
 - (2) Establish a **seed fund** for immediate activation of health emergency operations.
- (h) **NH&MP.** Conduct **safety audits** of vulnerable highway sections for preventive action.
- (i) **NHA**
- (1) Redesign **culverts and bridges** in mountainous areas to ensure sufficient clearance for debris flow.
 - (2) Conduct **pre-monsoon structural inspections** annually.
- (j) **Pakistan Railways**
- (1) **Recalibrate lag times** for major rivers.
 - (2) **Re-survey floodplain morphology** using bridge bed levels as reference.
 - (3) Design **breaching sections** to minimize urban impact.
 - (4) Improve **floodwater estimation** and revise bridge/embankment capacities.
- (k) **GHQ (Engineering Directorate)**
- (1) Station **qualified operators** at breaching sites during the monsoon.
 - (2) Review **efficacy and readiness** of breaching points regularly.
- (l) **FFC**
- (1) **Review lag times** and improve coordination between control structures.
 - (2) Seek **resumption of upstream data sharing** under IWT.
 - (3) Plan **new bunds and embankments** along eastern rivers.

- (4) Enforce the **Floodplain Management Act** and strengthen **urban flood management**.
- (5) Reassess **bridge and embankment capacities** for major road and rail networks.

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CHAPTER - 8

CHALLENGES & CONSTRAINTS

While the overall response was timely and well-coordinated, several **operational, logistical, institutional and environmental challenges** hindered optimal performance across various stages of preparedness, response and relief:-

- a. **Accessibility and Terrain Constraints.** Flash floods, landslides and washed-out bridges severely restricted access in mountainous regions of **AJ&K, GB, KP** and remote areas of **Balochistan**, delaying delivery of relief and evacuation efforts. Some valleys remained inaccessible for several days, requiring aerial operations.
- b. **Communication and Power Disruptions.** Heavy rainfall and infrastructure damage led to prolonged outages in electricity and telecommunication networks, particularly in Northern Pakistan, disrupting coordination between field teams and emergency control centers.
- c. **Data Collection and Verification Gaps.** Delays in submission and inconsistencies in field data affected timely loss assessment and **ex-gratia payment processing**. Manual verification of district-level data extended reporting timelines.
- d. **Limited Last-Mile Early Warning Dissemination.** Although NDMA and PMD issued timely advisories, their dissemination to communities in remote or low-literacy areas remained limited, reflecting a need for **localized alert systems** and **community-based awareness mechanisms**.
- e. **Financial and Resource Constraints.** Absence of contingency funds at the district level and delays in resource allocation reduced the speed of localized response actions.
- f. **Institutional Coordination Gaps.** Variability in response capacity and information flow among PDMAAs, district administrations and local governments led to fragmented coordination during peak monsoon events.
- g. **Climate-Induced Secondary Hazards.** Lightning incidents in **Tharparkar**, **GLOF threats** in **GB** and **mudflows** in **KP** complicated rescue operations, highlighting the growing influence of **climate variability** on monsoon hazards.
- h. **Community Reluctance in Evacuation.** Many residents, particularly in rural Sindh and Southern Punjab, resisted evacuation orders due to attachment to property and livestock, delaying rescue operations and increasing exposure to hazards.

- i. **Damage to Critical Infrastructure.** Floods disrupted operations of hospitals, schools and government offices, reducing institutional functionality in disaster-affected districts.
- j. **Environmental Degradation and Poor Land Use.** Encroachments along riverbanks and nullahs, unregulated construction in floodplains and deforestation aggravated flood impacts and erosion hazards.
- k. **Limited Technical Capacity and Equipment.** Several local authorities lacked specialized machinery and technical expertise for debris clearance, slope stabilization and drainage restoration immediately after flood events.

CHAPTER - 9

DAILY RAINFALL AND TEMPERATURES JULY 2025 MONTHLY AVERAGES & NORMALS

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	843.6	1396.4	29.1	36.6	21.5	17.0	22.9	6.0
	844.3	1404.2	30.1	36.9	23.3	14.9	22.1	5.4
Peshawar	962.0	997.8	31.5	36.5	26.5	33.7	20.5	4.0
	956.5	995.3	32.1	37.7	26.5	27.9	46.1	6.9
Parachinar	822.5	1436.6	25.2	31.9	18.4	15.7	80.0	5.0
	821.2	1424.4	24.0	29.8	18.2	17.6	99.4	11.9
Rawalpindi	943.4	998.5	29.1	33.0	25.1	29.3	557.0	17.0
	941.9	996.9	28.8	34.8	24.2	27.3	305.3	15.6
Sargodha	976.4	996.5	31.9	36.2	27.6	34.2	155.7	8.0
	976.7	996.7	32.5	37.9	27.2	30.3	113.6	9.5
Jhelum	971.6	997.4	29.3	33.0	25.5	34.7	594.5	16.0
	971.1	996.8	30.7	35.6	25.9	30.1	263.2	15.3
Sialkot	969.7	997.8	29.7	33.5	25.7	33.8	230.7	18.0
	969.4	997.4	29.8	34.4	25.2	30.6	304.1	15.1
Zhob	847.3	1376.2	29.8	36.2	23.3	20.1	77.0	10.0
	848.3	1395.1	29.5	35.9	23.1	17.5	61.1	5.1
D.I. Khan	977.1	996.0	32.8	37.9	27.7	33.6	53.6	5.0
	976.7	995.5	32.5	38.4	26.6	30.6	60.5	5.9
Lahore	974.0	997.6	29.9	34.0	25.7	34.2	472.3	15.0
	973.2	996.6	31.3	35.7	26.8	30.7	212.1	13.1
Quetta	833.6	1415.4	30.6	37.0	24.2	12.3	1.0	1.0
	832.6	1408.0	28.0	36.1	20.3	14.3	16.3	1.9
Multan	982.7	996.1	33.7	38.2	29.1	33.3	64.7	4.0
	982.3	995.7	33.8	39.0	28.7	30.4	60.3	4.4
Barkhan	880.3	1406.3	29.3	34.7	23.8	24.1	92.0	7.0
	880.7	1410.9	29.7	35.5	23.8	22.2	109.3	7.7
Nokkundi	919.2	989.3	36.4	44.5	28.1	7.3	0.0	0.0
	921.5	992.2	35.1	43.1	28.6	13.4	2.0	0.2
Dalbandin	903.8	1404.1	36.9	44.5	29.2	10.6	0.0	0.0
	904.7	1397.2	34.3	42.1	24.9	10.4	7.2	0.2
Jacobabad	989.7	995.8	34.7	40.3	29.0	34.7	34.0	3.0
	989.2	995.2	34.6	40.2	29.1	31.4	42.8	2.1
Khanpur	986.7	996.4	33.6	38.6	28.5	34.1	33.5	2.0
	985.9	995.7	33.3	39.6	27.0	29.9	25.8	2.6
Panjgur	891.5	1406.4	33.4	39.9	26.9	17.5	0.0	0.0
	893.6	1419.9	31.8	38.9	24.8	10.7	21.2	1.7
Khuzdar	867.2	1408.9	30.2	36.4	23.9	10.1	141.4	11.0
	863.3	1394.2	30.3	36.5	24.1	8.9	60.5	5.0
Sh. Benazirabad	993.3	996.5	34.1	39.5	28.7	35.0	34.0	1.0
	992.6	996.3	34.0	40.5	27.4	33.0	50.9	1.3
Jiwani	992.0	998.3	29.3	33.3	25.3	32.6	0.0	0.0
	991.9	998.2	29.5	32.4	26.8	31.1	8.6	0.2
Pasni	997.6	998.1	30.6	34.2	26.9	34.1	0.0	0.0
	997.1	997.7	29.2	33.3	27.2	31.0	5.0	0.5
Hyderabad	992.7	997.4	32.3	36.5	28.1	32.4	75.6	2.0
	993.3	996.8	32.5	37.3	27.7	30.2	45.5	2.0
Chhor	997.5	998.2	32.4	36.5	28.2	35.0	9.0	4.0
	996.8	997.4	31.4	36.4	26.4	31.1	79.3	3.3
Karachi	995.9	998.6	31.6	34.2	28.9	32.7	2.0	1.0
	996.2	998.9	30.3	33.1	27.5	31.3	66.3	3.4

JULY 2025 EXTREME VALUES

STATION	Mean Temperature (°C)				Temperature (°C)				Highest (mm & knots)			
	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	32.2	03*	22.3	14	40.0	03	16.5	14	8.0	26	15.0	07
Peshawar	35.3	05	27.4	23	40.5	5*	23.3	11	10.0	07	15.0	21
Parachinar	29.0	27*	19.0	12	36.2	30	8.0	12	25.0	22	8.0	21
Rawalpindi	32.7	28	24.4	17	37.0	28	22.1	01	146.0	17	30.0	06
Sargodha	36.3	05	27.8	10*	42.3	05	23.2	10	68.9	24	8.0	6*
Jhelum	32.9	05	25.5	16	37.0	27	22.7	2*	120.2	23	8.0	6*
Sialkot	32.5	26	26.5	10	38.0	27	23.7	10*	48.4	10	6.0	13*
Zhob	32.5	28	27.8	17	40.0	28	21.0	16*	15.0	13	10.0	31
D.I.Khan	36.9	05	27.0	15	43.5	05	23.5	14	18.0	07	14.0	30
Lahore	33.4	05	26.4	10	38.0	04	21.5	23	115.2	10	10.0	10
Quetta	32.5	02	28.3	15	40.0	02	22.5	16	1.0	05	26.0	03
Multan	37.0	05	27.0	15	42.2	05	24.0	12	27.6	12	18.0	06
Barkhan	33.3	29	25.0	14	39.5	29	20.5	14	29.0	24	8.0	06
Nokkundi	39.8	06	33.5	17	47.5	2*	23.5	31	0.0	00	22.0	27
Dalbandin	39.3	03	32.5	14	47.5	03	26.0	14*	0.0	00	8.0	3*
Jacobabad	38.3	05	31.0	20	45.0	05	25.0	10	22.0	10	6.0	3*
Khanpur	36.0	06	29.3	14	41.2	5*	24.0	12	20.4	12	8.0	10*
Panjgur	35.3	29	31.3	09	42.5	26*	25.0	15	0.0	00	12.0	30
Khuzdar	32.3	02	27.5	20	40.5	02	22.5	7*	23.0	11	8.0	1*
Sh. Benazirabad	36.0	29	29.3	20	42.5	13*	26.0	20	34.0	20	16.0	1*
Jiwani	30.5	09	28.8	04*	35.0	09	24.5	3*	0.0	00	14.0	10*
Pasni	31.8	15	29.5	04*	35.5	13*	25.5	30	0.0	00	6.0	14*
Hyderabad	34.9	14	29.1	20	40.5	14	23.4	15	57.0	15	40.0	19
Chhor	34.0	15	29.5	20	39.0	5*	25.0	20	5.0	20	16.0	29
Karachi	32.5	12	30.2	29*	35.8	08	27.5	03	2.0	20	14.0	23*

* Means value occurred multiple times.

AUGUST 2025 MONTHLY AVERAGES & NORMALS

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	845.4	1415.8	28.6	36.3	21.0	17.3	0.4	0.0
	845.9	1420.8	29.0	35.9	22.3	15.8	20.0	4.7
Peshawar	965.0	1000.9	30.9	36.3	25.6	33.0	102.0	6.0
	958.9	997.9	30.8	36.0	25.7	29.2	72.6	7.7
Parachinar	-----	-----	23.9	29.4	18.3	-----	177.0	6.0
	822.4	1437.8	23.0	28.8	17.2	18.4	97.4	12.5
Rawalpindi	946.9	1002.4	28.5	32.5	24.5	28.6	216.5	15.0
	944.0	999.2	27.9	33.4	23.6	28.5	348.1	16.7
Sargodha	979.9	1000.0	32.2	36.6	27.6	32.9	58.2	4.0
	978.6	999.3	31.6	36.5	26.6	31.4	131.7	8.9
Jhelum	975.0	1000.9	28.9	32.8	24.8	33.7	280.3	12.0
	973.8	999.0	29.9	34.4	25.3	31.1	251.6	14.8
Sialkot	973.1	1001.4	28.3	31.8	24.8	32.8	730.8	21.0
	971.6	999.6	29.0	33.2	24.8	31.8	323.5	14.2
Zhob	850.4	1409.4	30.2	36.5	23.9	19.6	52.0	5.0
	850.5	1410.3	28.9	35.4	22.4	17.7	49.7	3.7
D.I.Khan	980.5	999.4	32.6	37.8	27.5	33.9	101.0	7.0
	979.4	997.4	31.6	37.3	26.0	31.3	61.7	5.6
Lahore	977.4	1001.1	29.4	33.3	25.5	33.1	253.1	12.0
	975.5	999.1	30.7	34.9	26.5	31.5	194.5	12.7
Quetta	836.7	1448.6	29.2	36.0	22.3	9.9	4.0	1.0
	834.3	1423.2	26.6	35.0	18.3	12.5	13.2	1.5
Multan	986.0	999.6	32.8	36.9	28.7	32.3	64.6	4.0
	984.6	998.3	32.4	37.6	27.9	30.8	36.4	3.5
Barkhan	882.7	1431.6	29.7	35.0	24.3	23.6	67.0	5.0
	882.8	1428.6	28.9	34.5	23.2	22.2	87.7	4.8
Nokkundi	922.8	993.7	33.4	42.8	24.0	6.7	0.0	0.0
	923.7	995.1	33.5	41.7	26.7	11.7	0.4	0.1
Dalbandin	907.2	1435.6	35.3	43.1	27.4	9.7	0.0	0.0
	907.0	1433.4	32.4	40.8	22.4	9.3	0.3	0.1
Jacobabad	993.0	999.2	33.6	38.6	28.6	36.4	8.0	1.0
	991.8	997.9	33.0	37.8	28.2	32.2	35.4	1.3
Khanpur	989.8	999.5	33.2	37.8	28.5	33.9	5.4	1.0
	988.3	998.2	32.0	38.1	25.9	30.4	17.4	1.8
Panjgur	895.1	1441.2	32.8	39.5	26.0	16.3	0.0	0.0
	895.9	1437.3	30.7	38.1	23.4	10.1	7.4	0.5
Khuzdar	870.0	1437.2	29.8	36.2	23.4	11.3	98.4	4.0
	868.5	1411.7	30.4	35.7	22.9	9.0	57.4	3.4
Sh. Benazirabad	996.6	999.9	33.1	38.9	27.3	35.0	62.0	3.0
	995.1	998.9	32.3	38.6	26.0	31.8	46.3	1.6
Jiwani	995.5	1001.8	28.7	32.1	25.2	31.4	0.0	0.0
	994.5	1000.8	28.3	31.0	25.6	29.2	2.1	0.5
Pasni	1001.2	1001.7	29.1	33.1	25.1	31.7	6.0	1.0
	1000.0	1000.8	28.2	32.2	25.9	30.1	11.5	0.2
Hyderabad	995.8	1000.6	31.3	35.6	27.0	31.3	147.0	4.0
	995.6	999.6	31.3	36.0	26.6	29.1	63.1	2.4
Chhor	1000.2	1000.9	31.9	36.3	27.4	33.5	42.0	6.0
	999.1	992.1	30.0	34.7	25.4	30.2	69.3	3.2
Karachi	999.3	1002.0	30.2	33.0	27.3	31.2	205.1	3.0
	998.6	1001.2	29.0	31.9	26.2	29.8	60.1	2.8

AUGUST 2025 EXTREME VALUES

STATION	Mean Temperature (°C)				Temperature (°C)					Highest (mm & knots)		
	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	30.3	12	25.4	19	31.2	12	25.6	19	0.4	06	14.0	24*
Peshawar	33.4	20	27.0	18	33.7	11	26.0	18	52.0	18	6.0	2*
Parachinar	-----	--	-----	--	28.4	01	20.0	20	----	--	----	--
Rawalpindi	31.6	11	25.6	30	31.3	11	26.1	17	52.5	17	24.0	23
Sargodha	35.0	11	26.9	19	35.8	11	27.7	31	53.8	20	8.0	17
Jhelum	32.6	11	24.9	24	32.6	11	24.0	30	61.6	24	8.0	1*
Sialkot	32.4	11	21.8	26	32.4	11	22.4	26	363.5	27	8.0	26*
Zhob	32.6	11	27.4	18*	32.8	12	27.3	31	24.0	01	12.0	02
D.I.Khan	35.3	8*	27.5	24	35.8	11	26.8	24	51.0	24	20.0	23
Lahore	33.6	11	24.8	25*	33.2	08	24.4	31	74.6	31	10.0	24
Quetta	30.5	3*	27.1	19	30.5	13	28.0	29	4.0	19	26.0	19
Multan	36.5	17	27.9	30	36.3	17	28.3	31	42.2	31	18.0	05
Barkhan	32.3	11*	24.9	30	32.8	12	26.5	31	30.0	18	4.0	9*
Nokkundi	38.8	22	35.6	19	34.8	22	32.3	17*	0.0	00	18.0	29
Dalbandin	37.5	12	34.3	26	37.0	13	33.3	26	0.0	00	10.0	31
Jacobabad	34.8	17	31.0	31	35.8	17	30.8	19	8.0	19	8.0	24
Khanpur	34.8	29	30.5	24	35.6	17	31.0	19*	5.4	19	8.0	12*
Panjgur	35.4	13	31.1	24	34.8	14	31.5	24	0.0	00	10.0	13*
Khuzdar	32.3	12	25.6	20	32.8	12	26.5	21	60.4	19	6.0	7*
Sh.Benazira bad	34.3	15	29.4	21	35.1	16	30.1	21	51.0	20	16.0	1*
Jiwani	30.3	21	27.6	11	30.5	21	27.5	05*	0.0	00	14.0	14
Pasni	31.3	18	27.0	13	31.8	18	27.5	07*	6.0	22	8.0	8*
Hyderabad	33.0	17	28.6	21	33.3	16*	28.7	22	58.0	20	28.0	10
Chhor	33.1	15	30.0	22	34.0	15	30.0	22	16.0	18	14.0	5*
Karachi	32.3	18	27.9	21	33.7	18	28.5	23	163.4	20	14.0	7*

SEPTEMBER 2025 MONTHLY AVERAGES & NORMALS

Station	Pressure (mb)		Mean	Temperature (°C)		Vapour (mb) Pressure	Precipitation	
	Station Level	Sea Level		Maximum	Minimum		Total (mm)	Days
Drosh	849.2	1455.6	25.8	33.7	18.0	14.9	4.4	2.0
	850.3	1466.6	25.6	33.1	18.2	11.4	21.8	4.8
Peshawar	968.0	1004.2	30.1	36.2	23.9	29.6	9.0	1.0
	963.7	1003.3	29.0	35.2	22.7	24.0	22.2	4.4
Parachinar	----	----	21.8	28.3	15.2	----	80.0	5.0
	825.6	1473.5	20.7	27.2	14.3	13.1	55.4	8.4
Rawalpindi	949.4	1004.9	28.9	33.8	24.1	25.1	35.0	3.0
	948.3	1004.3	26.6	33.5	20.7	23.1	113.2	8.7
Sargodha	983.0	1003.3	31.1	36.5	25.8	30.2	85.2	2.0
	983.3	1004.1	30.3	36.3	24.2	26.2	27.7	4.3
Jhelum	977.7	1003.6	29.6	34.2	24.9	31.7	136.2	2.0
	978.0	1004.0	28.9	34.7	23.1	26.3	74.5	7.1
Sialkot	975.7	1004.1	29.2	33.5	24.9	31.2	157.0	4.0
	976.1	1004.4	27.9	33.2	22.6	27.4	90.7	6.8
Zhob	853.6	1441.7	27.8	34.2	21.4	14.6	4.0	1.0
	854.6	1451.4	26.1	33.2	19.1	12.9	11.5	1.2
D.I.Khan	984.0	1003.0	31.8	37.2	26.3	31.7	62.0	2.0
	983.9	1003.0	30.1	36.5	23.6	26.4	20.8	2.1
Lahore	980.4	1004.2	29.8	34.5	25.0	29.3	111.4	8.0
	980.0	1003.8	29.8	35.0	24.6	26.4	65.1	6.4
Quetta	839.7	1482.2	25.6	33.0	18.1	6.7	0.0	0.0
	838.5	1469.6	21.6	31.6	11.7	9.0	2.5	0.4
Multan	989.5	1003.2	31.2	35.4	27.0	29.9	79.9	4.0
	989.8	1003.4	30.9	36.9	24.9	26.4	24.9	1.7
Barkhan	885.6	1458.9	28.4	34.2	22.5	20.3	2.0	1.0
	886.4	1465.7	27.1	33.6	20.6	16.5	44.5	3.0
Nokkundi	926.7	998.4	32.4	41.2	23.5	6.9	0.0	0.0
	929.4	1002.0	30.1	38.6	22.2	9.4	0.0	0.0
Dalbandin	911.9	1475.1	32.1	40.6	23.4	7.9	0.0	0.0
	912.6	1474.4	28.0	37.2	16.5	6.3	0.0	0.1
Jacobabad	996.9	1003.1	32.0	37.0	27.0	34.5	0.0	0.0
	996.3	1003.2	31.4	36.8	26.0	28.2	11.0	0.4
Khanpur	993.5	1003.3	31.8	37.2	26.3	32.1	7.0	2.0
	993.4	1003.3	29.8	36.7	22.9	26.7	14.6	1.2
Panjgur	898.4	1469.8	30.6	37.5	23.6	13.8	0.0	0.0
	899.7	1476.7	27.4	35.4	19.3	8.3	2.5	0.4
Khuzdar	872.2	1459.1	29.4	35.3	23.5	11.9	4.0	1.0
	872.5	1451.4	26.7	34.2	20.0	6.1	7.9	1.5
Sh.	1000.2	1003.5	31.3	37.0	25.5	31.6	56.0	3.0
Benazirabad	1000.3	1004.0	31.2	38.6	23.7	28.1	16.2	1.0
Jiwani	998.9	1005.2	28.9	32.2	25.5	30.3	0.0	0.0
	999.3	1005.7	27.8	31.5	24.3	28.2	0.3	0.1
Pasni	1004.2	1004.7	29.0	33.3	24.7	30.8	11.0	1.0
	1004.2	1004.8	27.4	32.6	23.6	27.5	1.2	0.2
Hyderabad	998.8	1003.6	30.2	34.4	26.1	30.3	92.0	4.0
	1000.6	1004.2	31.0	36.4	25.3	26.8	12.6	0.8
Chhor	1002.9	1003.6	30.7	35.0	26.3	32.4	87.0	5.0
	1003.8	996.9	29.8	36.0	23.7	27.3	37.3	1.4
Karachi	1002.2	1004.9	29.6	32.6	26.6	30.4	72.3	6.0
	1003.2	1005.9	29.1	32.8	25.4	27.8	10.2	0.8

SEPTEMBER 2025 EXTREME VALUES

STATION	Mean Temperature (°C)				Highest	Temperature (°C)			Rain	Highest (mm & knots)		
	Highest	Date	Lowest	Date		Date	Lowest	Date		Date	Wind Speed	Date
Drosh	28.6	14*	20.3	25	36.8	12	15.4	28*	2.2	18*	14.0	03
Peshawar	32.5	15	27.2	03	38.5	10	20.0	26	9.0	02	8.0	2*
Parachinar	23.5	12	20.5	27	30.5	12	13.0	27	40.0	04	-	--
Rawalpindi	31.0	15	25.3	07*	35.7	17	21.5	27*	23.0	08	24.0	1*
Sargodha	33.8	15	27.2	08	39.3	15	23.7	4*	70.2	20	6.0	02
Jhelum	32.0	16	24.5	07	36.5	16*	22.0	27	95.6	08	6.0	1*
Sialkot	31.3	15	21.7	03	37.0	28	21.2	03	87.4	03	4.0	10*
Zhob	29.5	16	24.8	09	37.0	23	19.5	27	4.0	10	4.0	12*
D.I.Khan	33.3	14	28.0	08	38.5	6*	24.5	8*	60.0	08	4.0	2*
Lahore	31.8	15*	23.8	02	37.0	15*	21.3	03	65.7	09	8.0	03
Quetta	28.0	13*	22.5	29	35.5	11*	13.5	29	0.0	00	32.0	09
Multan	33.6	30	25.8	08	38.2	30	23.8	09	58.4	09	16.0	11
Barkhan	29.8	15	25.5	08	36.5	27	20.0	11	2.0	04	6.0	16

DISTRICT WISE LOSSES AND DAMAGES

DECEASED

Ser	Province	District	Male	Female	Child	Total
1.	Punjab	Attock	0	6	4	10
		Bahawalnagar	2	0	4	6
		Chakwal	3	1	1	5
		Chiniot	6	2	3	11
		Dera Ghazi Khan	0	0	1	1
		Faisalabad	3	5	7	15
		Gujranwala	4	1	0	5
		Gujrat	1	0	5	6
		Hafizabad	4	0	1	5
		Jhang	0	1	0	1
		Jhelum	7	0	2	9
		Kasur	1	0	9	10
		Khanewal	2	0	0	2
		Lodhran	5	0	0	5
		Lahore	19	10	11	40
		Mandi Bahauddin	5	0	3	8
		Mianwali	2	0	0	2
		Multan	14	8	12	34
		Muzaffargarh	13	0	4	17
		Nankana Sahib	1	1	2	4
		Narowal	4	1	0	5
		Okara	5	2	8	15
		Pakpattan	5	2	4	11
		Rawalpindi	7	0	6	13
		Rahim Yar Khan	3	4	4	11
		Sahiwal	2	1	2	5
		Sargodha	6	0	1	7
		Sheikhupura	5	4	8	17
		Sialkot	20	2	9	31
		TT Singh	5	1	1	7
		Wazirabad	1	1	2	4
		Total	155	53	114	322
2.	Sindh	Badin	7	1	0	8
		Central Karachi	2	0	0	2
		Dadu	0	3	1	4
		East Karachi	9	2	5	16
		Hyderabad	2	0	3	5
		Jacobabad	0	0	7	7
		Karachi	0	0	0	0
		Kashmore	0	2	1	3
		Khairpur	1	0	0	1
		Korangi	4	0	0	4
		Larkana	0	2	0	2
		Malir	5	1	2	8

Ser	Province	District	Male	Female	Child	Total
		Matari	0	0	1	1
		Mirpur Khas	3	0	0	3
		Qambar Shahdadkot	0	0	0	0
		Sanghar	0	0	1	1
		South Karachi	1	0	3	4
		Sujawal	0	0	1	1
		Shikarpur	0	0	2	2
		Sukkur	1	0	4	5
		Tando Allahyar	0	0	1	1
		Tando Muhammad Khan	0	1	0	1
		Tharparkar	4	3	1	8
		Umer Kot	0	0	3	3
		Total	39	15	36	90
Note:- PDMA Sindh reported revised district wise state of 93 x deceased case. Data is being verified.						
3.	KP	Abbottabad	1	1	6	8
		Bajaur	12	3	10	25
		Batagram	4	0	1	5
		Buner	203	30	23	256
		Charsadda	1	0	2	3
		Dera Ismail Khan	4	2	2	8
		Hangu	1	1	0	2
		Haripur	0	0	1	1
		Karak	0	0	1	1
		Khyber	3	0	2	5
		Kohat	1	0	0	1
		Lakki Marwat	0	2	1	3
		Lower Dir	5	0	0	5
		Lower Kohistan	2	0	0	2
		Malakand	1	1	6	8
		Mansehra	16	9	3	28
		Mardan	4	1	1	6
		Nowshera	1	1	1	3
		Peshawar	0	0	2	2
		Shangla	36	2	1	39
		South Waziristan	0	2	2	4
		Swabi	19	15	9	43
		Swat	25	5	12	42
		Tor Ghar	1	1	1	3
		Upper Dir	0	0	3	3
		Upper Kohistan	0	1	1	2
		Tank	1	0	0	1
		Total	341	77	91	509
4.	Bln	Zhob	2	3	1	6
		Ziarat	0	1	0	1
		Lasbella	0	0	1	1
		Kohlu	0	0	5	5

Ser	Province	District	Male	Female	Child	Total
		Musakhel	2	1	1	4
		Loralai	1	0	0	1
		Khuzdar	3	0	3	6
		Duki	0	0	4	4
		Harnai	0	0	3	3
		Sibi	1	0	0	1
		Kachhi	0	0	1	1
		Dera Bugti	2	1	2	5
		Total	11	6	21	38
5.	AJ&K	Bagh	2	1	0	3
		Bhimber	0	1	1	2
		Haveli	3	1	2	6
		Jhelum Valley	1	0	0	1
		Kotli	2	0	1	3
		Mirpur	2	0	0	2
		Muzaffarabad	2	5	5	12
		Neelum Valley	5	1	0	6
		Poonch	0	1	0	1
		Sudhnoti	0	2	0	2
		Total	17	12	9	38
6.	GB	Astore	1	0	0	1
		Diamir	4	3	0	7
		Ghizer	6	2	3	11
		Gilgit	8	0	1	9
		Kharmang	0	2	0	2
		Shigar	1	0	0	1
		Total	20	7	4	31
7.	Islamabad	Islamabad	3	1	5	9
		Total	3	1	5	9
G-Total			584	170	283	1037

INJURED

Ser	Province	District	Male	Female	Child	Total
1.	Punjab	Attock	1	0	0	1
		Bahawalnagar	7	7	18	32
		Bhakkar	1	0	0	1
		Chakwal	3	1	0	4
		Chiniot	7	1	4	12
		Faisalabad	33	27	18	78
		Gujranwala	6	4	1	11
		Gujrat	2	1	1	4
		Jhang	1	0	0	1
		Jhelum	3	0	1	4
		Kasur	18	20	25	63
		Khanewal	1	0	0	1
		Lahore	31	23	21	75

Ser	Province	District	Male	Female	Child	Total
		Mandi Bahauddin	3	4	8	15
		Mianwali	0	1	0	1
		Multan	6	6	10	22
		Muzaffargarh	5	1	2	8
		Nankana Sahib	9	5	3	17
		Narowal	3	4	8	15
		Okara	60	42	22	124
		Pakpattan	13	19	19	51
		Rahim Yar Khan	0	0	2	2
		Rajanpur	1	0	2	3
		Rawalpindi	4	2	2	8
		Sahiwal	9	9	10	28
		Sargodha	1	2	4	7
		Sheikhupura	31	23	15	69
		Sialkot	0	0	3	3
		Wazirabad	3	1	1	5
		Total	262	203	200	665
2.	Sindh	Badin	2	0	1	3
		East Karachi	1	0	4	5
		Hyderabad	5	0	13	18
		Korangi	4	0	6	10
		Malir	2	0	0	2
		Mirpur Khas	2	4	0	6
		Sanghar	1	1	2	4
		South Karachi	1	4	7	12
		Sukkur	0	0	2	2
		Tando Allahyar	5	2	0	7
		Tando Muhammad Khan	1	0	0	1
		Tharparkar	3	6	2	11
		Umer Kot	0	2	2	4
		West Karachi	2	0	0	2
		Total	29	19	39	87
3.	KP	Abbottabad	0	1	1	2
		Buner	22	10	19	53
		Bajaur	2	5	0	7
		Charsadda	3	0	4	7
		Dera Ismail Khan	8	2	4	14
		Hangu	3	1	0	4
		Haripur	1	2	0	3
		Karak	0	0	4	4
		Khyber	2	0	1	3
		Lower Dir	2	0	0	2
		Lower Kohistan	1	0	0	1
		Malakand	1	1	3	5
		Mansehra	8	5	0	13
		Mardan	7	1	6	14

Ser	Province	District	Male	Female	Child	Total
		Mohmand	2	1	0	3
		North Waziristan	7	0	4	11
		Nowshera	1	0	1	2
		Peshawar	1	1	3	5
		Shangla	11	7	12	30
		Swabi	2	0	1	3
		Swat	8	8	3	19
		Tank	1	0	0	1
		Tor Ghar	4	0	1	5
		Upper Dir	1	1	2	4
		Upper Kohistan	1	1	1	3
		Total	99	49	70	218
4.	Bln	Zhob	1	1	0	2
		Kohlu	0	0	1	1
		Khuzdar	1	0	0	1
		Harnai	0	0	1	1
		Total	2	1	2	5
5.	GB	Diamir	10	0	0	10
		Ghanche	0	1	2	3
		Ghizer	7	1	1	9
		Gilgit	9	4	1	14
		Kharmang	1	0	0	1
		Shigar	14	0	0	14
		Skardu	1	0	0	1
		Total	42	6	4	52
6.	AJ&K	Bagh	2	0	1	3
		Bhimber	2	2	0	4
		Haveli	1	1	0	2
		Jhelum Valley	1	3	0	4
		Kotli	3	2	0	5
		Muzaffarabad	1	0	0	1
		Neelum Valley	3	0	0	3
		Poonch	6	0	0	6
		Sudhnoti	1	5	3	9
		Total	20	13	4	37
7.	Islamabad	Islamabad	0	1	2	3
		Total	0	1	2	3

HOUSE DAMAGE AND LIVESTOCK

Ser	Province	District	Partially	Fully	Total	Livestock
1.	Punjab	Attock	1	0	1	1
		Bahawalnagar	4	0	4	26
		Chakwal	2	0	2	0
		Chiniot	5	0	5	0
		Faisalabad	41	0	41	0
		Gujranwala	7	0	7	0
		Gujrat	2	0	2	0

Ser	Province	District	Partially	Fully	Total	Livestock		
		Hafizabad	1	0	1	0		
		Jhelum	34	0	34	86		
		Kasur	20	0	20	0		
		Khushab	0	3	3	0		
		Lahore	31	1	32	0		
		Layyah	0	0	0	0		
		Mandi Bahauddin	1	0	1	0		
		Multan	3	0	3	0		
		Murree	6	0	6	0		
		Nankana Sahib	3	0	3	0		
		Narowal	4	0	4	0		
		Okara	20	0	20	1		
		Pakpattan	5	0	5	0		
		Rahim Yar Khan	1	0	1	1		
		Rajanpur	1	0	1	0		
		Rawalpindi	2	0	2	0		
		Sahiwal	11	0	11	0		
		Sargodha	2	0	2	0		
		Sheikhupura	25	0	25	6		
		Sialkot	1	0	1	0		
		Wazirabad	1	0	1	0		
				Total	157963	55134	213097	3992
		Note:- Damage Need Assessment: Detailed survey is underway District wise detail of house damage is awaited from PDMA Punjab.						
2.	Sindh	East Karachi	2	0	2	0		
		Hyderabad	50	33	83	0		
		Mirpur Khas	0	0	0	10		
		South Karachi	1	0	1	0		
		Sukkur	0	0	0	1		
		Tando Allahyar	2	1	3	13		
		Tando Muhammad Khan	4	190	194	0		
		Tharparkar	0	0	0	217		
		Central Karachi	1	0	1	0		
		Korangi	0	0	0	45		
		West Karachi	1	0	1	0		
		NA	3047	0	3047	291		
				Total	3108	224	3332	577
		3.	KP	Abbottabad	38	3	41	7
Bajaur	74			11	85	89		
Bannu	6			1	7	1		
Batagram	12			1	13	36		
Buner	769			202	971	3922		
Charsadda	14			2	16	0		
Chitral Lower	12			5	17	0		
Chitral Upper	10			9	19	3		
Dera Ismail Khan	169			37	206	0		
Hangu	12			1	13	0		

Ser	Province	District	Partially	Fully	Total	Livestock
		Haripur	20	3	23	9
		Karak	40	0	40	6
		Khyber	35	12	47	0
		Kohat	9	0	9	0
		Kolai Palas	0	1	1	0
		Kurram	9	5	14	0
		Lakki Marwat	35	5	40	8
		Lower Dir	46	3	49	100
		Lower Kohistan	1	0	1	0
		Malakand	16	2	18	0
		Mansehra	87	30	117	0
		Mardan	22	3	25	30
		Mohmand	75	24	99	1
		North Waziristan	17	8	25	0
		Nowshera	18	2	20	0
		Peshawar	2	2	4	0
		Shangla	223	185	408	226
		South Waziristan	9	15	24	3
		Swabi	143	47	190	49
		Swat	510	60	570	974
		Tank	59	15	74	1
		Tor Ghar	24	1	25	0
		Upper Dir	4	5	9	2
		Upper Kohistan	1	1	2	0
		Total	2521	701	3222	5467
4.	Bln	Awaran	15	0	15	65
		Barkhan	455	41	496	0
		Dera Bugti	12	0	12	147
		Harnai	0	1	1	5
		Hub	1091	740	1831	414
		Jhal Magsi	1029	979	2008	402
		Kachhi	80	30	110	84
		Kalat	19	0	19	0
		Khuzdar	143	66	209	583
		Killa Saifullah	3	3	6	29
		Kohlu	0	1	1	27
		Lasbella	5	78	83	205
		Loralai	0	1	1	0
		Musakhel	877	3	880	367
		Qilla Saifullah	4	0	4	0
		Sherani	147	0	147	55
		Sibi	0	0	0	87
		Surab	393	131	524	60
		Washuk	8	5	13	36
		Zhob	0	0	0	2009
		Ziarat	9	1	10	10

Ser	Province	District	Partially	Fully	Total	Livestock
		Total	4290	2080	6370	4585
5.	GB	Astore	19	5	24	25
		Diamir	81	396	477	0
		Ghanche	15	42	57	0
		Ghizer	277	217	494	36
		Gilgit	27	32	59	6
		Hunza	1	14	15	0
		Kharmang	12	20	32	0
		Nagar	1	3	4	0
		Shigar	20	22	42	0
		Skardu	28	28	56	0
		NA	0	0	0	7914
		Total	481	779	1260	7981
6.	AJ&K	Bagh	109	28	137	13
		Bhimber	90	5	95	14
		Haveli	456	34	490	15
		Jhelum Valley	124	21	145	2
		Kotli	320	26	346	2
		Mirpur	14	6	20	0
		Muzaffarabad	82	43	125	1
		Neelam Valley	8	3	11	180
		Poonch	403	103	506	7
		Rawalakot	0	0	0	0
		Sudhnoti	472	70	542	5
		Total	2078	339	2417	239
7.	Islamabad	Islamabad	64	1	65	0
		Total	64	1	65	0

NDMA - ADVISORIES AND ALERTS

Ser	Description	Spell	Issuance Date
1.	Flood Advisory - Major Rivers and its Tributaries	<u>Spell 1</u> (26 June - 2 July 2025)	27 June 2025
2.	Monsoon Rains Are Likely to enhance from the Weekend		2 July 2025
3.	GLOF ALERT dated 4 July 2025	<u>Spell 2</u> (4 - 11 July 2025)	4 July 2025
4.	NDMA Weather Advisory on 10 July 2025 (from 11 to 17 July 2025)		10 July 2025
5.	Torrential Rains with Wind-Thundershower	<u>Spell 3</u> (12 - 18 July 2025)	14 July 2025
6.	Significant Flood Warning in River Jhelum at Mangla		16 July 2025
7.	NDMA Weather Advisory dated 18 July 2025	<u>Spell 4</u> (21 - 26 July 2025)	18 July 2025
8.	NDMA Weather Advisory dated 25 July 2025		25 July 2025
9.	NDMA Weather Advisory dated 2 August 2025 (4-7 August 2025)	<u>Spell 5</u> (28 - 31 July 2025)	2 July 2025
10.	NDMA Weather Advisory dated 12 August 2025		12 August 2025
11.	GLOF ALERT - GB & KP		12 August 2025
12.	NDMA Flood Advisory - River Kabul and Indus (Medium to High Flood)	<u>Spell 6</u> (3 - 11 August 2025)	15 August 2025
13.	NDMA Weather Advisory dated 16 August 2025		16 August 2025
14.	NDMA Weather Advisory dated 21 August 2025		21 August 2025
15.	GLOF ALERT - GB & KP		22 August 2025
16.	Flood Advisory - River Sutlej Exceptionally High Flood Level		25 August 2025
17.	Significant Flood Warning for River Ravi	<u>Spell 7</u> (15 - 22 August 2025)	26 August 2025
18.	Flood Advisory - River Indus		27 August 2025
19.	More Rain with Wind/Thundershower Predicted in Upper and Central Parts from 29 August to 2 September 2025 with Occasional Gaps		27 August 2025
20.	Flood Advisory - Significant Flood Warning for River Chenab		26 August 2025
21.	Significant Flood Warning for Eastern Rivers & Associated Nullahs		31 August 2025
22.	Significant Flood Warning for River Chenab	<u>Spell 8</u> (23 - 27 August 2025)	2 September 2025
23.	NDMA Weather Advisory 4 September 2025		4 September 2025
24.	Torrential Rain predicted in Sindh & other parts of the Country from 7 to 9 September 2025 with Occasional Gaps		7 September 2025
25.	NDMA Weather Advisory dated 14 September 2025		14 September 2025
		<u>Spell 9</u> (9 August - 10 September 2025)	

ANNEXES

1.	Met and Hydro Analytics - NEOC Tech EW NDMA	Annex - A
2.	Risk Communication - RM&M Wing NDMA	Annex - B
3.	Gender and Community Cell - DRR Wing NDMA	Annex - C

Metrological overview of Pakistan 2025 Monsoon

Executive Summary

The 2025 monsoon season in Pakistan was significantly above normal, marked by multiple intense rainfall episodes, rare synoptic developments, and wide-ranging hydrometeorological impacts. According to the Pakistan Meteorological Department (PMD), national monsoon rainfall from July to September 2025 was **23 percent above average**, totalling **172.8 mm**. Punjab, Gilgit-Baltistan, Balochistan, and Sindh all recorded above-average rainfall, while Azad Jammu and Kashmir and Khyber Pakhtunkhwa received near-normal totals. The season was also characterized by warmer-than-average temperatures, ranking as the **ninth hottest monsoon in the past 64 years**.

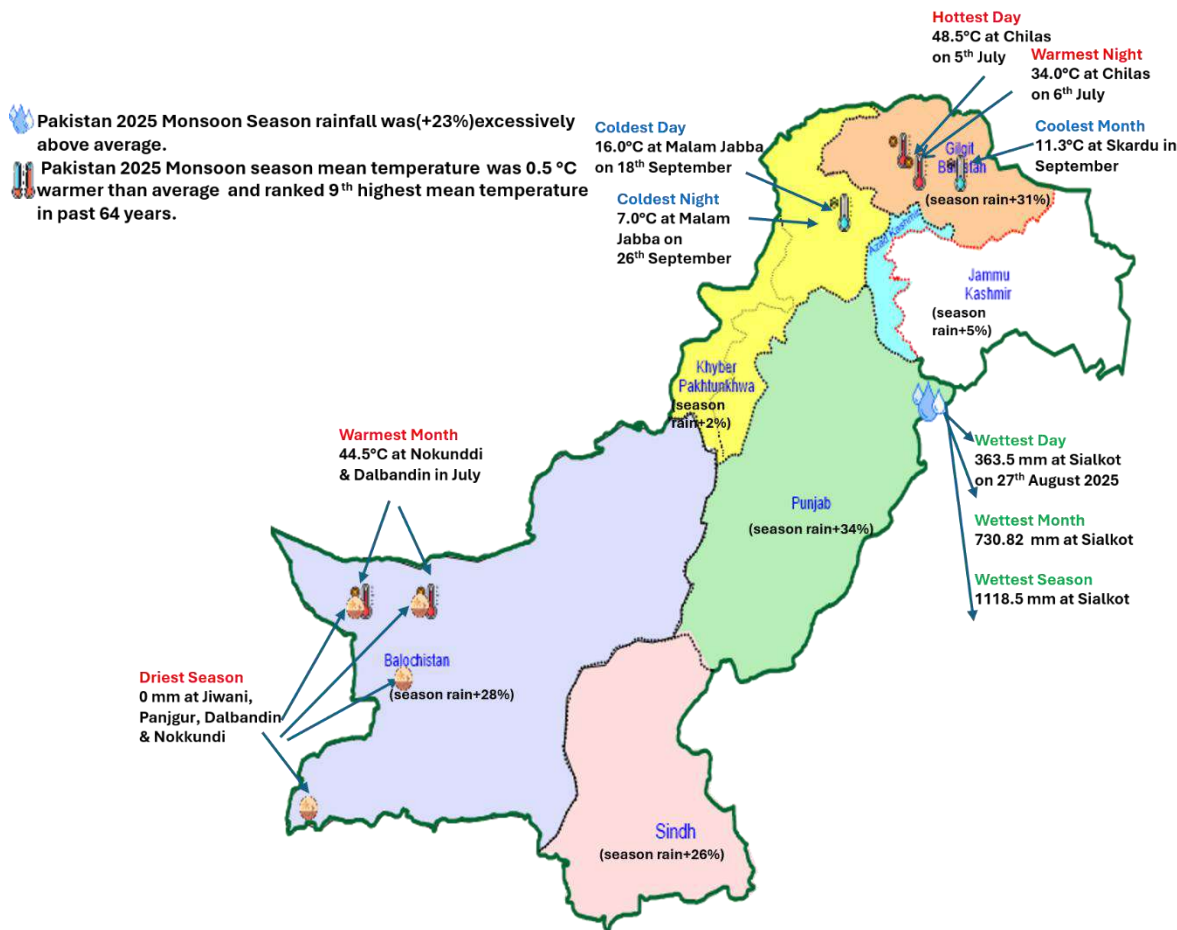
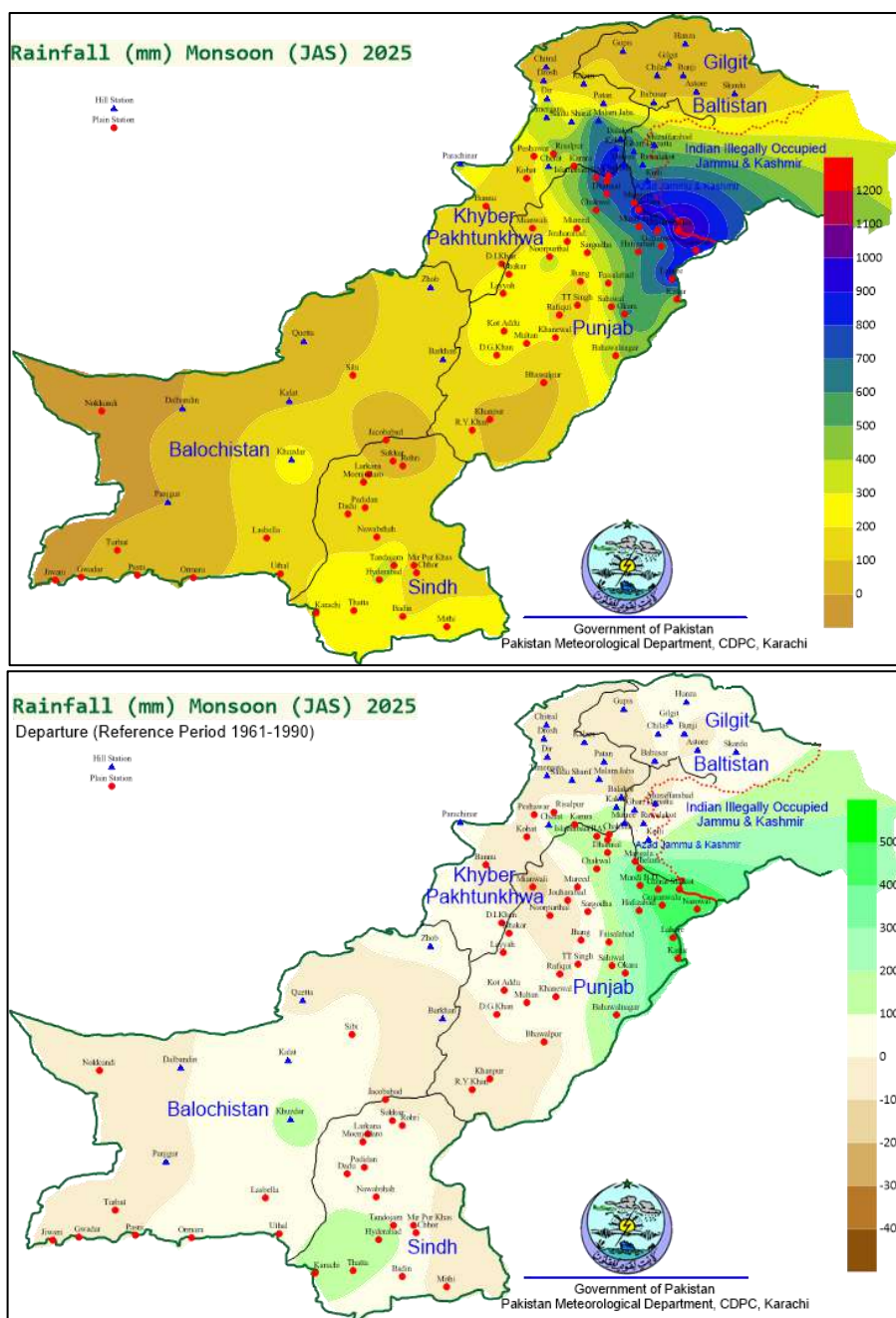


Figure Source: PMD Report on Monsoon 2025

Seasonal Onset and Progression

The 2025 monsoon began early on 26 June, **four days** ahead of the normal onset. July brought moderately **above-average rainfall** and several flash-flood incidents across Kashmir, Khyber Pakhtunkhwa, Punjab,

and the low-lying districts of Balochistan and Sindh. August witnessed widespread rainfall driven by **two active low-pressure systems** that produced extremely heavy downpours and major flooding in Punjab, along with glacial lake outburst floods (GLOF) and flash floods in KP, Gilgit-Baltistan, and AJK. The most exceptional single-day event occurred at **Sialkot Cantt**, where **363.5 mm** of rain fell on **27 August**, setting a new national rainfall record. September was unusually wet, with a deep depression forming over the Bay of Bengal, crossing Rajasthan into Sindh and reaching the Balochistan coast. This rare phenomenon for September resulted in widespread heavy to very heavy rainfall across Sindh, Punjab, KP, GB, and Balochistan. Sindh alone recorded **315 percent** above-normal rainfall, including a new local record of **110 mm** in a single day at Thatta.



Hydro-Meteorological Analysis

PUNJAB

Pre-Monsoon Projections by NEOC

Pre-seasonal meteorological assessments conducted by NDMA for the 2025 monsoon in May indicated that Punjab would be among the most significantly affected provinces. Northern, north-eastern, and central districts were projected to experience above-average rainfall, particularly **Sialkot, Narowal, Gujrat, Lahore, Rawalpindi, Gujranwala, Sargodha, Faisalabad, Jhelum, Chakwal, and Murree**.

Similarly, the southern districts located along the foothills of the Sulaiman Range including **Rajanpur, Dera Ghazi Khan, Muzaffargarh, Layyah, and Lodhran** were also expected to receive higher-than-normal rainfall. These hill torrents areas were identified as especially vulnerable to **flash flooding and hill torrents activation**, particularly in late July and August, due to their geographic and hydrological characteristics.

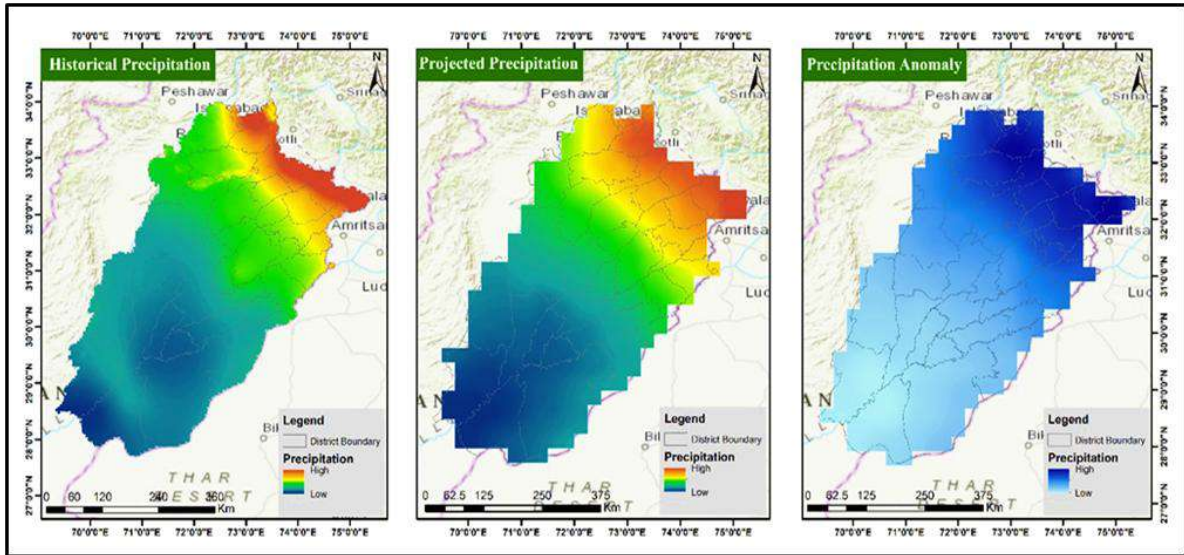
Overall, Punjab's risk outlook highlighted the likelihood of:

- **Localized flash floods** in hill torrent zones
- **Riverine floods due to higher rainfall projections and transboundary water issues**
- **Waterlogging/Urban inundations** in low-lying areas

The projected increase in rainfall was expected to intensify the risk of rain-related emergencies in northern and central Punjab. These conditions were also projected to damage standing crops, exacerbate flooding in low-lying urban areas, and place considerable strain on infrastructure in densely populated centres, particularly within the Faisalabad, Gujranwala and Lahore Divisions.

In the north-eastern districts of Punjab, situated along the Pir Panjal Range, nullahs and streams were projected to overflow with high flows in response to the anticipated rainfall anomaly across the region.

In the southwestern districts of Punjab, particularly Rajanpur and Dera Ghazi Khan along the foothills of the Sulaiman Range, above-normal precipitation was forecast for the 2025 monsoon season. This elevated the risk of significant hill torrent activity, with major torrents expected to reach medium to high levels, particularly during late July and August. The combined effect of the Sulaiman Range's orographic influence and intensified monsoonal incursions further increased the likelihood of persistent rainfall episodes. The NEOC pre monsoon projection is given below

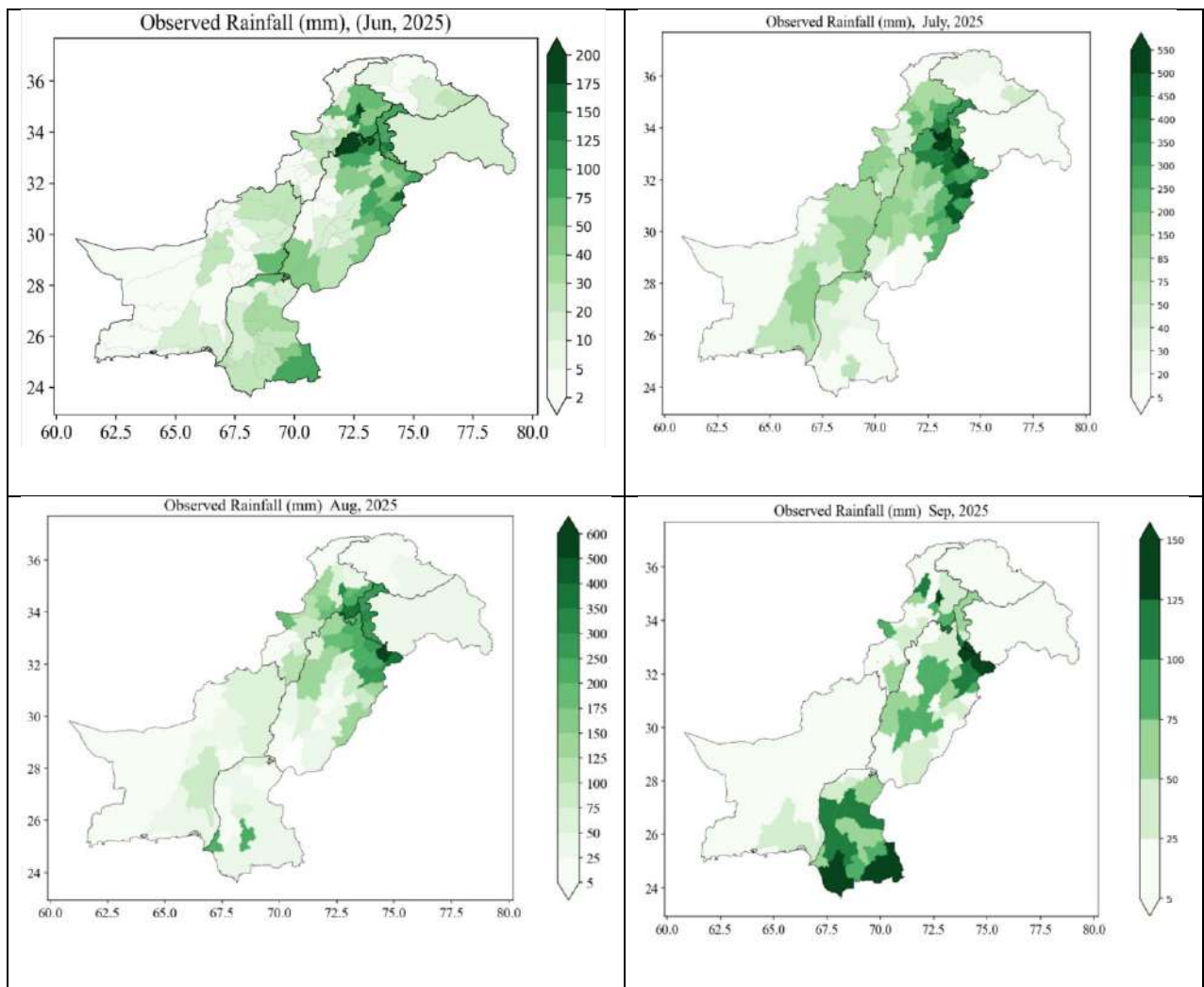


Punjab Meteorological Outlook

NDMA's Monsoon 2025 projections proved largely accurate, particularly for northern, north-eastern, and central Punjab, where above-normal rainfall and associated flash, urban and riverine flooding risks were observed during monsoon 2025. The detailed flood extents for Punjab are given in **Appendix 1**.

Punjab experienced the most significant rainfall anomalies of the season, recording **310.1 mm (+34%)** above normal. The province faced multiple high-intensity rainfall spells that triggered **severe flooding**, particularly in August when **Sialkot Cantt received 363.5 mm in a single day (27 August 2025)**, setting a new record. Heavy rains caused **urban flooding and riverine overflow** along the Chenab, Ravi, and Sutlej systems. The convergence of transboundary and local flows led to high flood levels in major rivers, resulting in large-scale inundations of agricultural lands and displacement of rural populations. Overall, Punjab's rainfall during July (+57%) and August (+11%) was above average, while September (+25%) maintained strong wet anomalies.

In July Punjab was main monsoon hotspot area, with severe impacts in Lahore, Rawalpindi, and Gujranwala Divisions, while an evolving risk profile emerged in the foothill districts of the Sulaiman Range in southwestern Punjab in the form of hill torrent activations. The trend continued through August and September, as most districts experienced rainfall patterns consistent with forecasts, especially heavy precipitation in the northern, north-eastern and Potohar parts of the province as shown.



Figures Source: Pakistan Meteorological Department (PMD) 2025 Monsoon Report

Figure: Projection of Precipitation over Punjab Monsoon 2025 (NEOC)

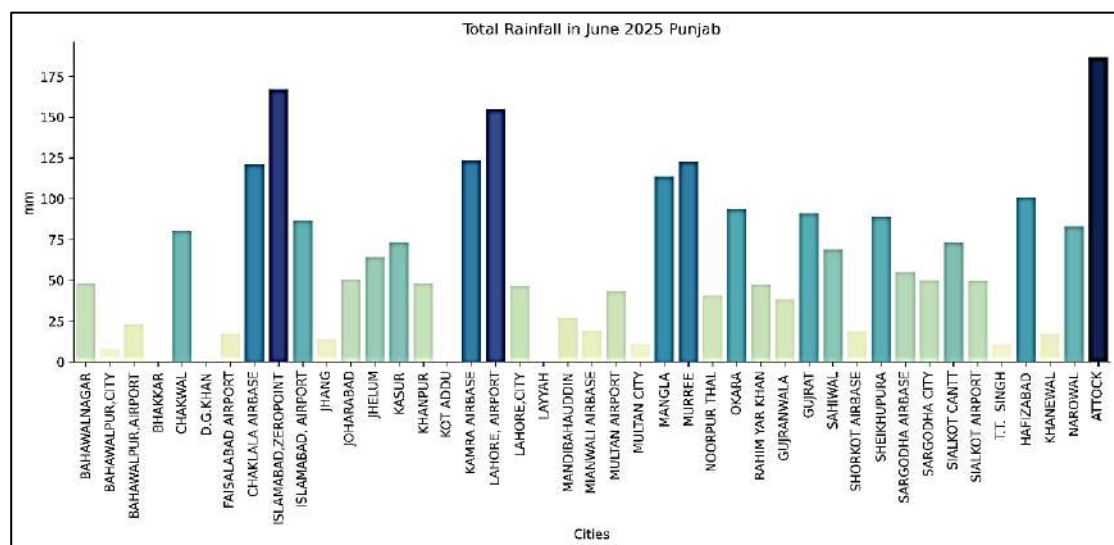


Figure: Actual rainfall June 2025 (PMD data)

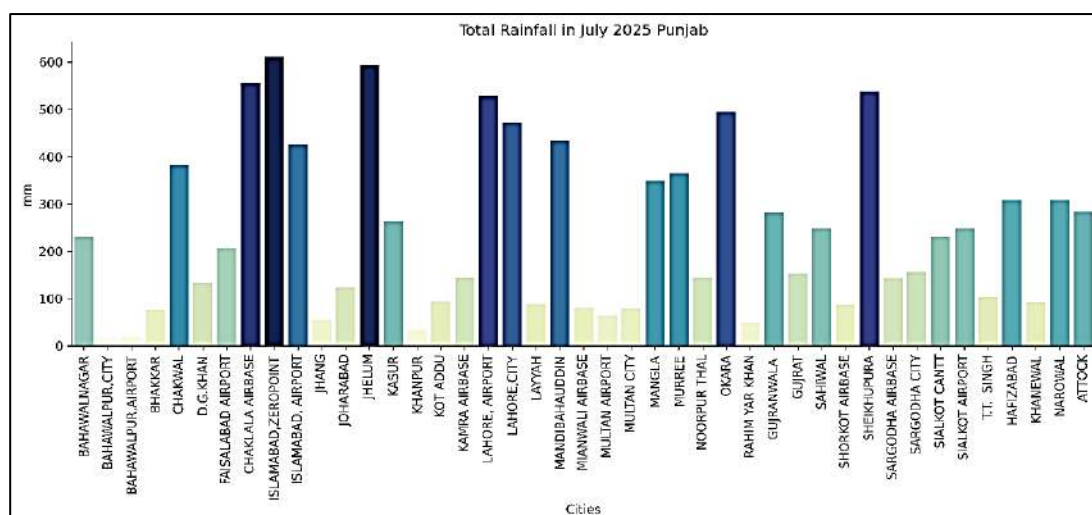


Figure: Actual rainfall July 2025 (PMD data)

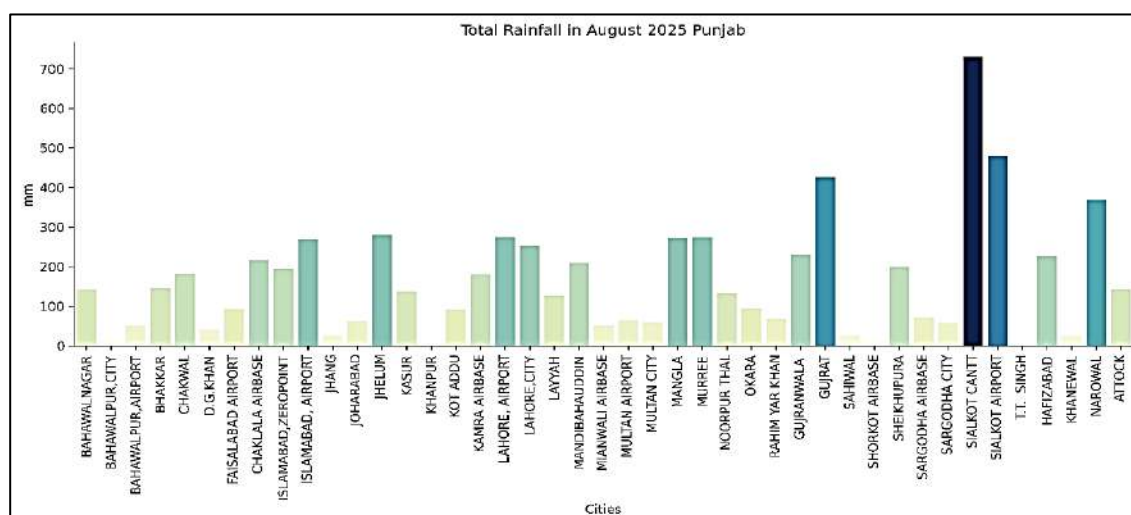


Figure: Actual rainfall August 2025 (PMD data)

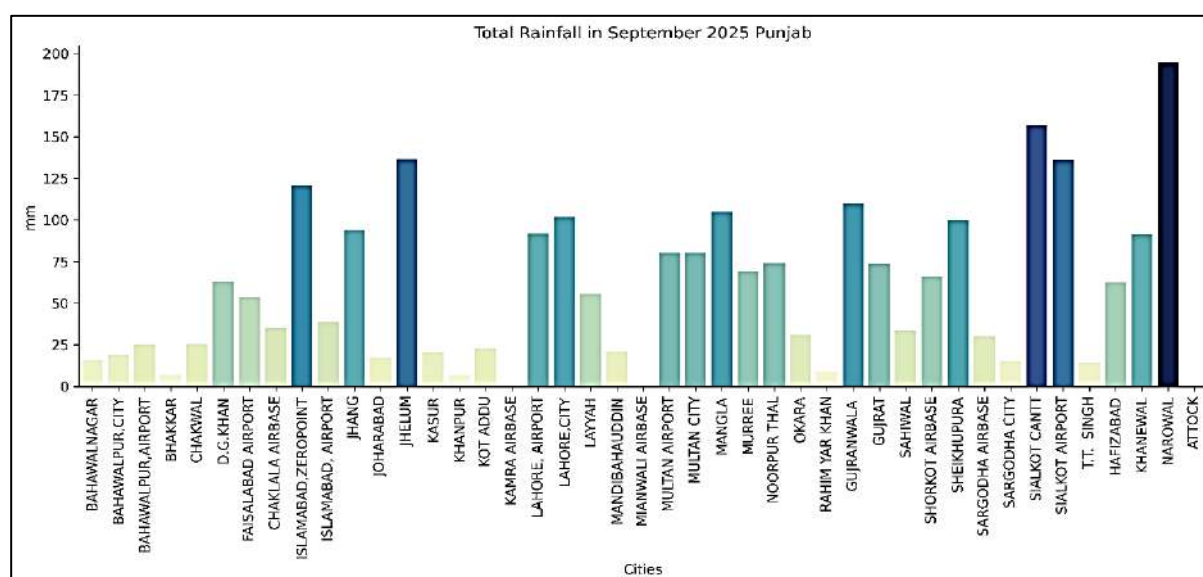
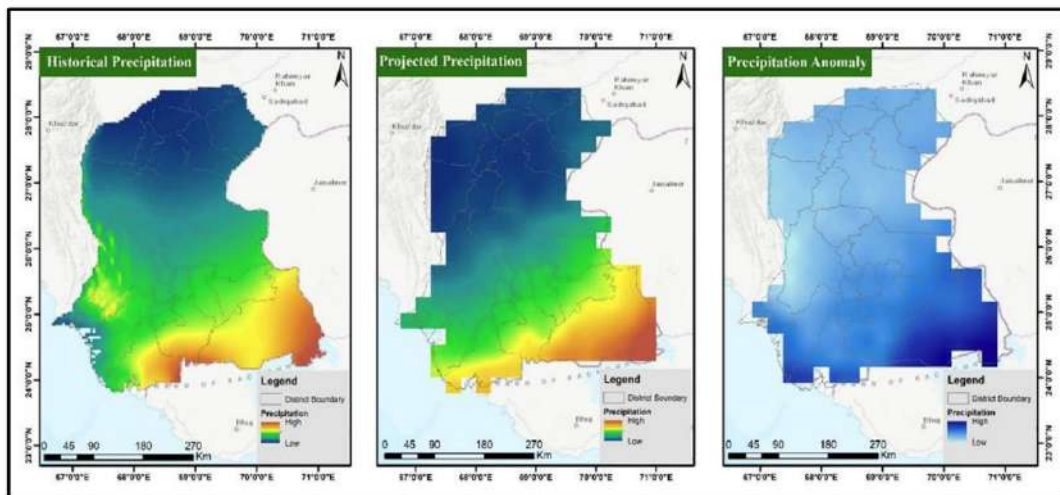


Figure: Actual rainfall September 2025

Sindh:

Pre-Monsoon Projection by NEOC

Sindh is expected to experience a **mixed monsoon pattern** in 2025. **Upper Sindh** (Sukkur, Larkana, Jacobabad, Kashmore, Dadu) will likely receive **near- to above-normal rainfall**, mainly in late July, improving water availability but posing a **flash-flood risk** in low-lying areas. **Lower Sindh** (Karachi, Hyderabad, Thatta, Badin, Mirpurkhas) is projected to have **slightly above-normal rainfall**, with potential **urban flooding**, especially in **Karachi** due to drainage limitations. Early-season **heatwaves** are expected before monsoon onset, stressing **energy and water resources**. Overall, rainfall will bring relief from dry conditions but requires **preparedness for short-duration intense storms** and **urban waterlogging**. Below Figure shows the NEOC team Projection of rainfall for monsoon 2025.



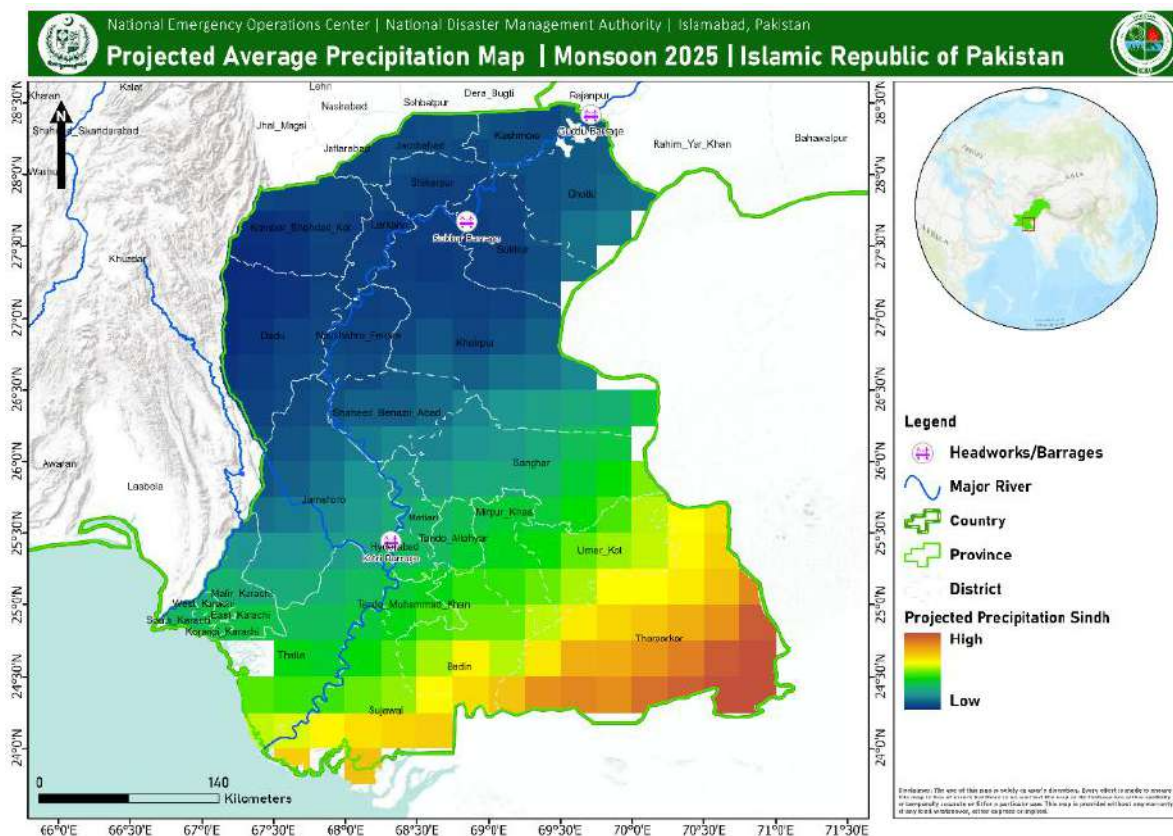
Meteorological Outlook 2025

Sindh recorded **168.8 mm rainfall (+26%)**, with a major concentration of rainfall activity during **September 2025**, when it received an extraordinary **315% above-average rainfall** due to a **rare deep depression system** that crossed from India into southern Sindh and further into the Balochistan coast. Heavy downpours between **1–12 September** caused **widespread urban flooding** in Karachi, Hyderabad, and Thatta. **Thatta recorded 197 mm rainfall during September** and **110 mm in a single day on 10th September 2025**, breaking local records during the Monsoon Season 2025. The season also brought **coastal impacts** along the Sindh–Makran belt, with wind squalls, localized storm surges, and waterlogging in the LBOD and adjoining lowlands. Despite below-normal rainfall in July (-47.5%), the late monsoon activity compensated strongly in September, resulting in an overall above-average seasonal total.

During the 2025 monsoon season, Sindh experienced **markedly variable precipitation patterns**, characterized by short-lived but intense downpours across both upper and lower parts of the province. The heavy rainfall episodes, often concentrated within a few days, placed significant stress on districts located along the Indus River and in

surrounding low-lying areas. In many cases, the intensity of rainfall exceeded the natural absorption capacity of soils and drainage networks, leading to prolonged waterlogging and localized inundation. Seasonal precipitation also coincided with upstream inflows from the Indus, further amplifying risks in flood-prone zones where saturated ground conditions reduced resilience to additional rainfall.

Urban centers in Sindh, particularly **Karachi, Hyderabad, and Sukkur**, were disproportionately affected by **extreme rainfall events**. Here, intense cloudbursts and high hourly rainfall rates quickly overwhelmed existing drainage systems, resulting in recurrent episodes of urban flooding. A geospatial analysis carried out by the Technical Team at NEOC, NDMA compared historical flood records from 2010 to 2022 with the 2025 precipitation-driven flood extents, confirming that the same districts repeatedly intersect with high-rainfall zones. This consistency underscores that heavy monsoon precipitation remains the primary driver of flooding in Sindh, reinforcing the province's recurring vulnerability to intense rainfall events.



Sindh Monsoon Records (Monthly Graphs – Observed Monsoon 2025)

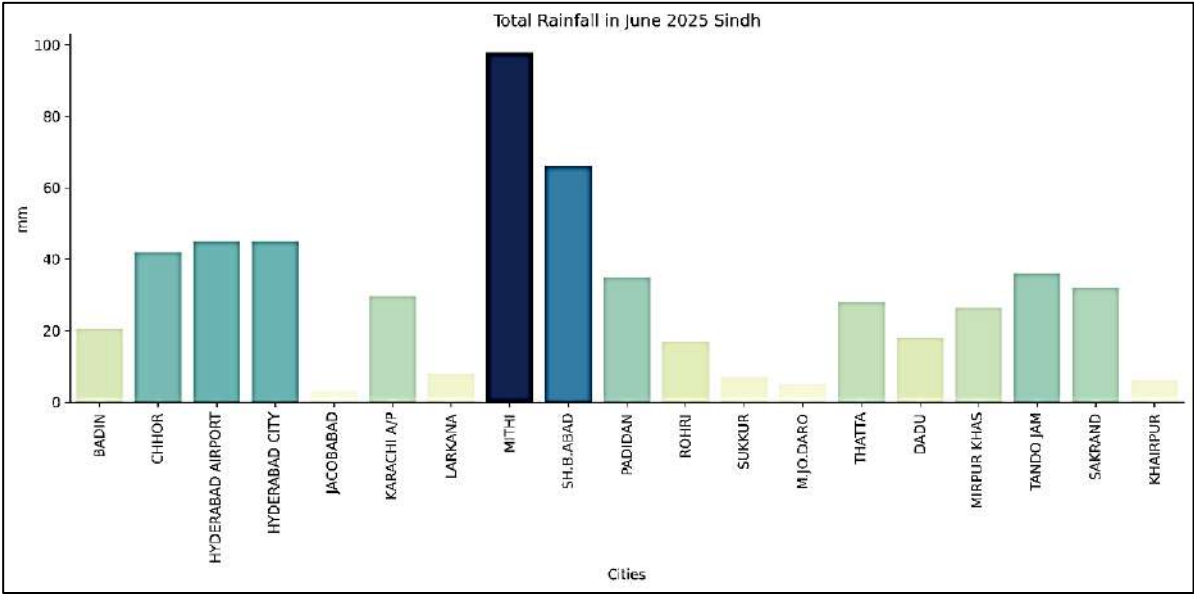


Figure: Actual rainfall June 2025 (PMD data)

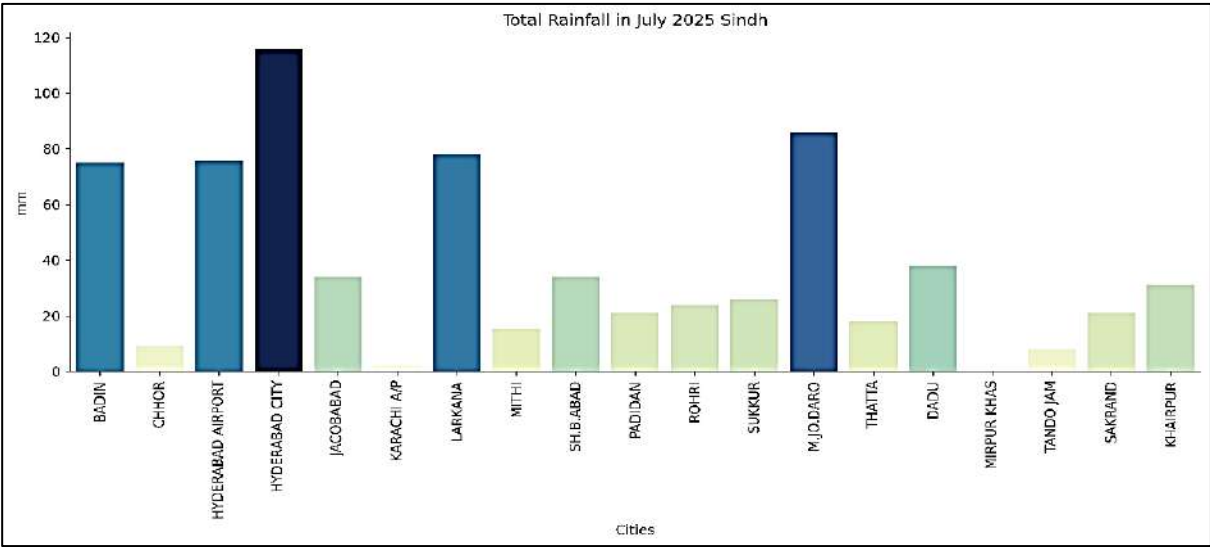


Figure: Actual rainfall July 2025 (PMD data)

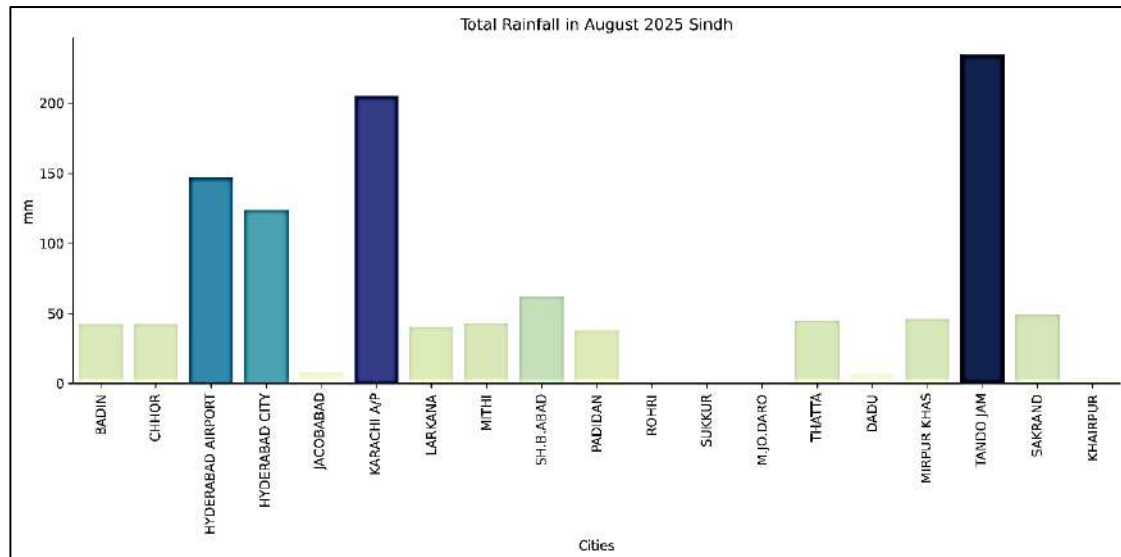


Figure: Actual rainfall August 2025 (PMD data)

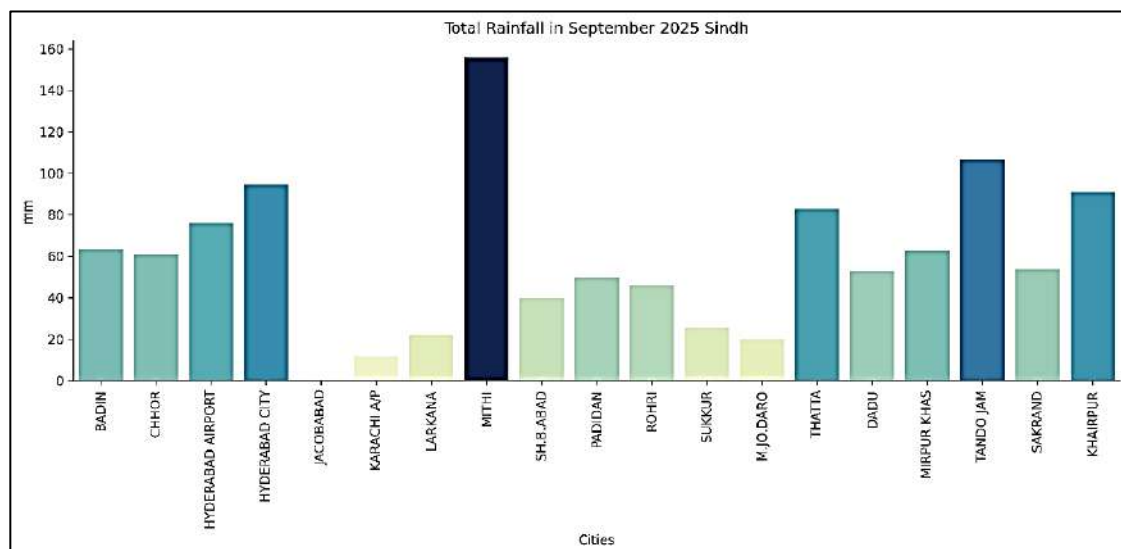


Figure: Actual rainfall September 2025 (PMD data)

Balochistan:

Pre-Monsoon

Balochistan's rainfall pattern for Monsoon 2025 is expected to remain **uneven and localized**. **Eastern and south-eastern districts** such as **Khuzdar, Lasbela, and Washuk** are projected to receive **slightly above-normal rainfall**, mainly during the **latter half of the season**, improving short-term water availability. In contrast, **western and central areas** including **Quetta, Zhob, and Barkhan** are likely to experience **near- to below-normal rainfall**, continuing **arid and dry conditions** across much of the province. Although rainfall will generally stay limited, **occasional intense downpours** may trigger **localized flash floods and hill torrents**, particularly in **Khuzdar and Lasbela**. Overall, while modest rainfall improvement is expected in the southeast, **Balochistan will largely remain dry**, requiring continued vigilance for **water scarcity and flash-flood hazards** in vulnerable basins.

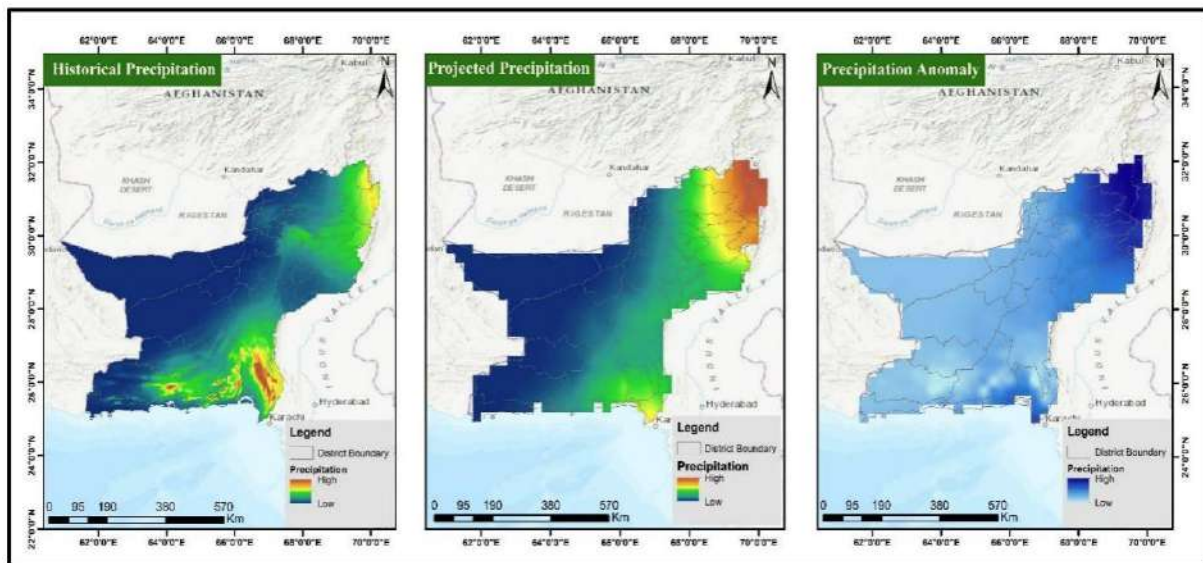


Figure: Rainfall Projections for Monsoon 2025 (NEOC, NDMA)

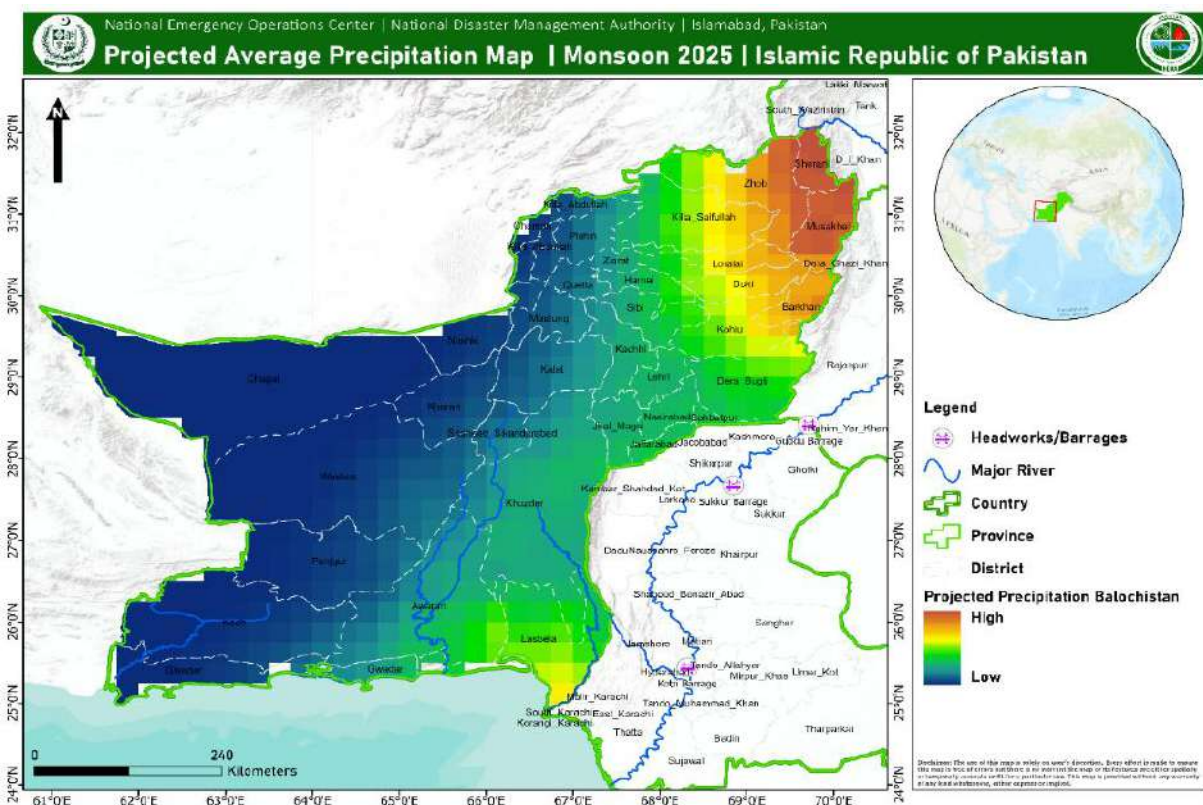
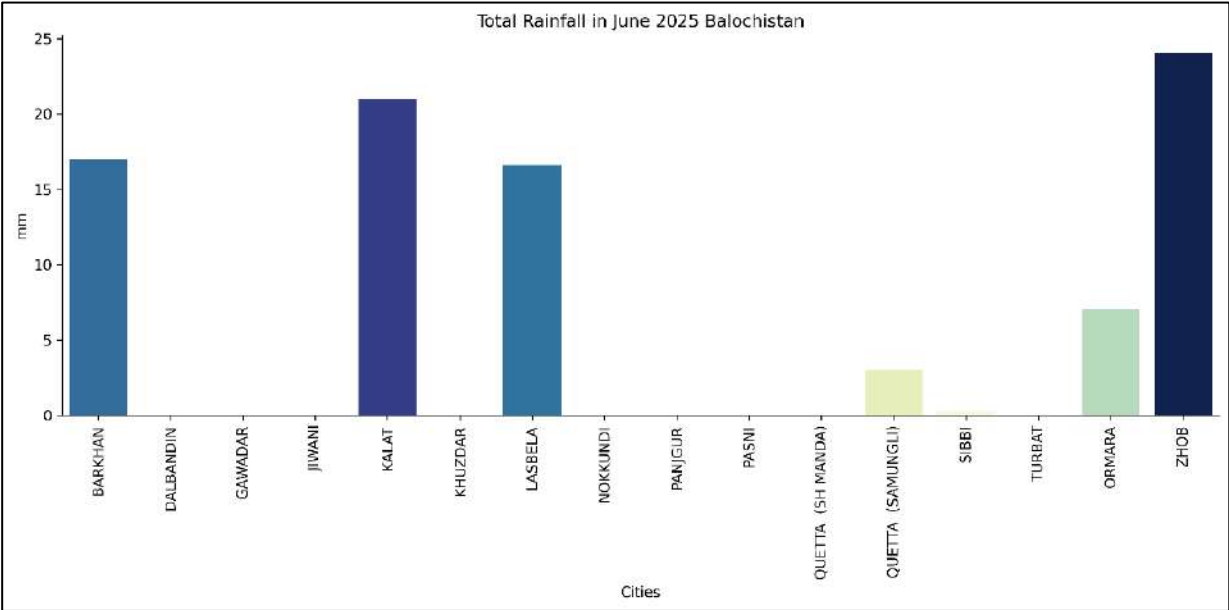


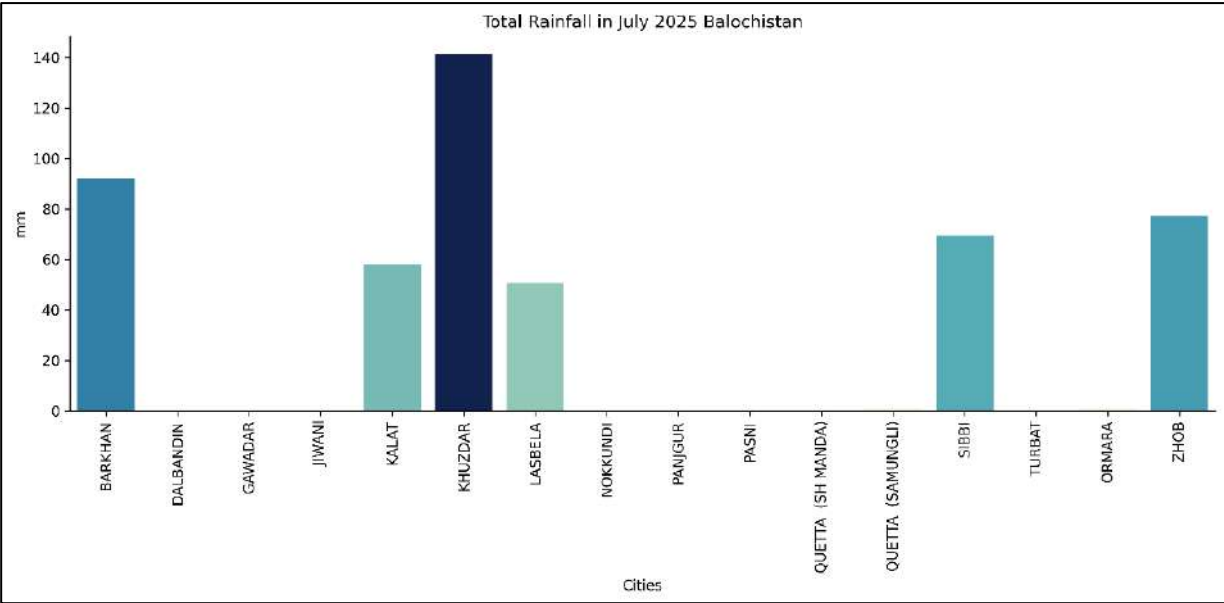
Figure: Rainfall Projections for Monsoon 2025 (NEOC, NDMA)

Meteorological Outlook 2025:

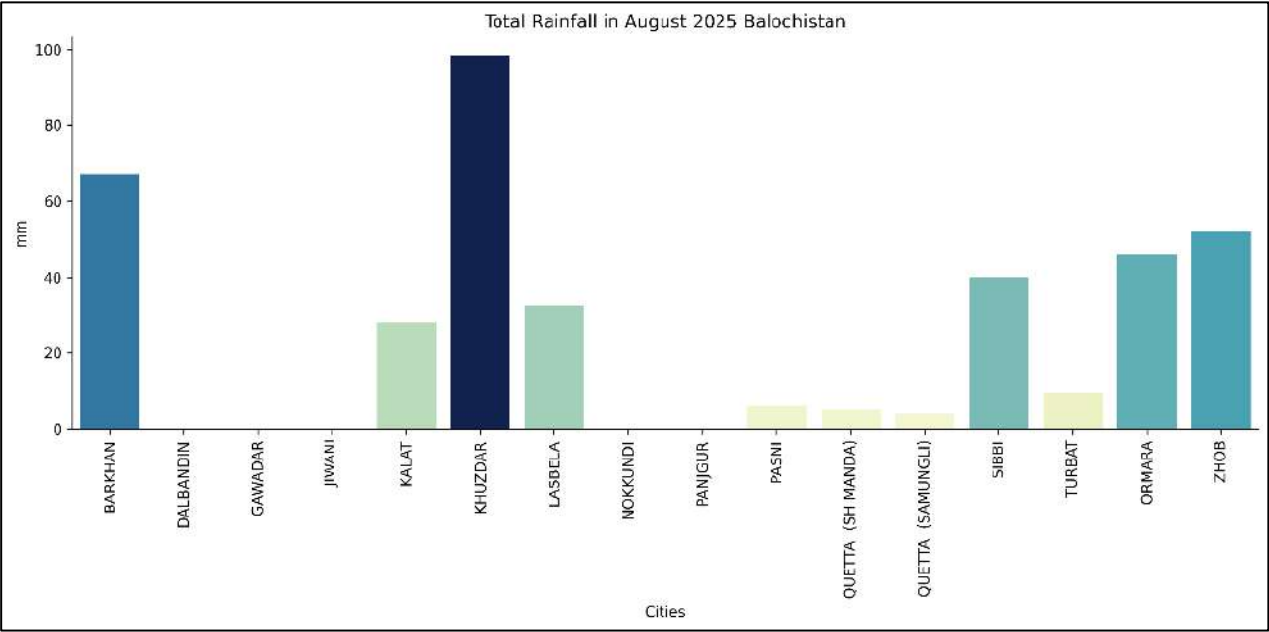
Balochistan recorded **74.8 mm rainfall (+28%)**, showing significant improvement over its climatological average. July (+32.5%) and September (+23.7%) were particularly wet months, while August (+24%) maintained consistent above-normal rainfall. A major highlight of the season was the **rare September deep depression**, which weakened over the **Balochistan coast** after crossing Sindh, producing **heavy rainfall and thunderstorms** across Lasbela, Khuzdar, Ormara, and Gwadar. **Ormara recorded 30 mm** and **Gwadar 5.4 mm on 11 September**, setting new records for the month. However, the intense runoff generated **flash floods and hill torrents** in Bolan, Nari, and Mula basins, damaging roads and small bridges, especially in eastern and coastal districts.

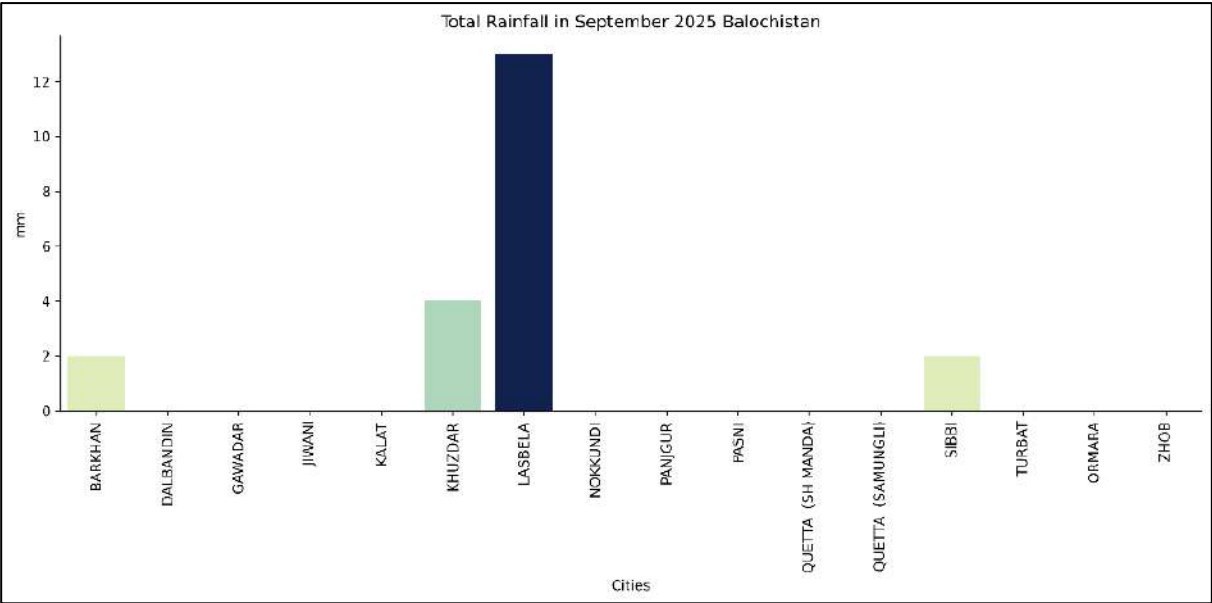


The bar graphs of total rainfall across Balochistan districts for June and July 2025 highlight clear regional contrasts and monsoon variability. In June, Zhob and Kalat recorded the highest rainfall (24mm & 21 mm), while most southern and western areas remained dry. By July, monsoon intensity increased sharply, Khuzdar received the highest rainfall (around 140 mm), followed by Barkhan (about 90 mm) and Zhob (nearly 80 mm). Moderate rainfall was observed in Sibi, Kalat, and Lasbela, whereas Dalbandin, Gwadar, Nokkundi, Panjgur, Pasni, Turbat, and Quetta saw little to none. Overall, rainfall was concentrated in the northern and central regions, reflecting an active but uneven monsoon pattern across Balochistan.



The bar graph illustrates the total rainfall across Balochistan districts in August 2025, showing moderate to high variability across the province. Khuzdar recorded the highest rainfall (around 98 mm), followed by Barkhan (68 mm) and Zhob (52 mm). Moderate rainfall was observed in Sibi, Ormara, and Lasbela, ranging between 30–40 mm, while Kalat received about 27 mm. In contrast, Dalbandin, Gwadar, Nokkundi, Panjgur, Pasni, Turbat, and Quetta experienced very little precipitation, mostly below 10 mm. Overall, rainfall during August was concentrated in the central and northeastern districts, continuing the monsoon trend seen in previous months, while the southwestern belt remained largely dry.





The bar graph depicts the total rainfall across Balochistan districts in September 2025, showing a sharp decline in precipitation as the monsoon season weakened. Lasbela received the highest rainfall (around 13 mm), followed by Khuzdar (4 mm), while Barkhan and Sibi recorded minimal rainfall of about 2 mm each. Most other districts, including Dalbandin, Gwadar, Panjgur, Pasni, Turbat, Ormara, Zhob, and Quetta, experienced negligible or no rainfall. Overall, the data indicates that September marked the retreat of the monsoon from Balochistan, with only isolated light showers observed in a few southern and central districts.

Khyber Pakhtunkhwa:

Pre-Monsoon Projection by NEOC

Khyber Pakhtunkhwa is expected to experience a **variable monsoon pattern** during 2025. **Northern districts** such as **Abbottabad, Mansehra, Swat, Dir, and Chitral** are projected to receive **normal to below-normal rainfall**, with potential **localized flash floods** due to intense short-duration rains over steep terrain. **Central and southern KP**, including **Peshawar, Mardan, Charsadda, Kohat, and Dera Ismail Khan**, will likely see **normal to slightly above-normal rainfall**, particularly during **late July**. Elevated temperatures across the province will accelerate **snow and glacier melt**, increasing **river discharge** in upper catchments. Key pre-monsoon risks include **landslides, infrastructure damage along mountain roads**, and **overflowing rivers** during heavy rainfall spells.

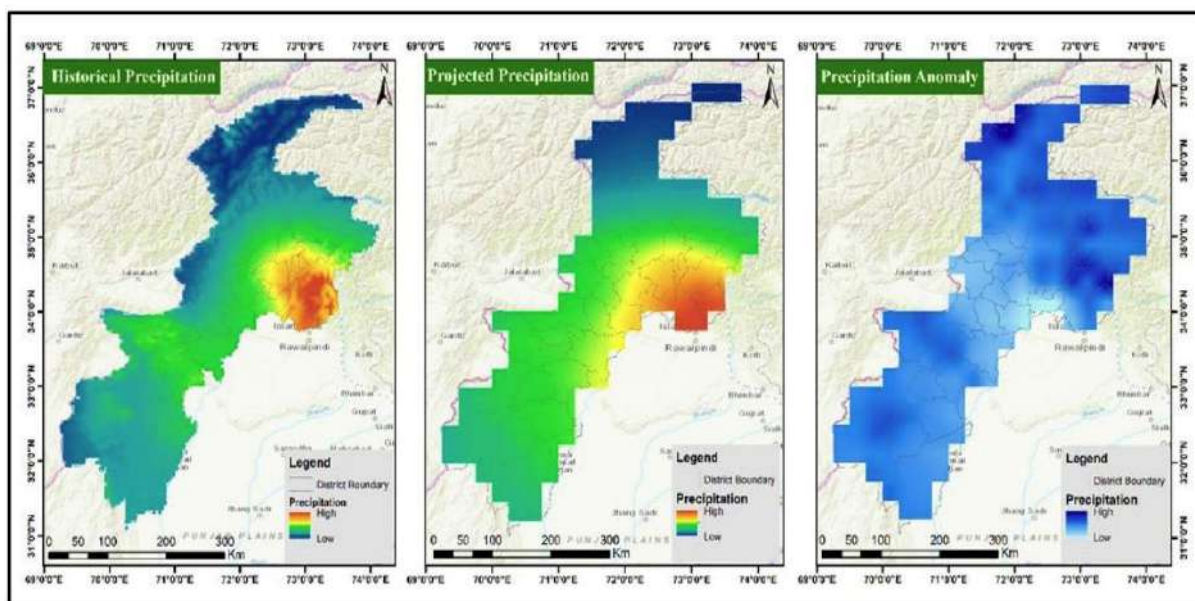


Figure: Pre-Monsoon Projected Precipitation by NEOC

Meteorological outlook 2025

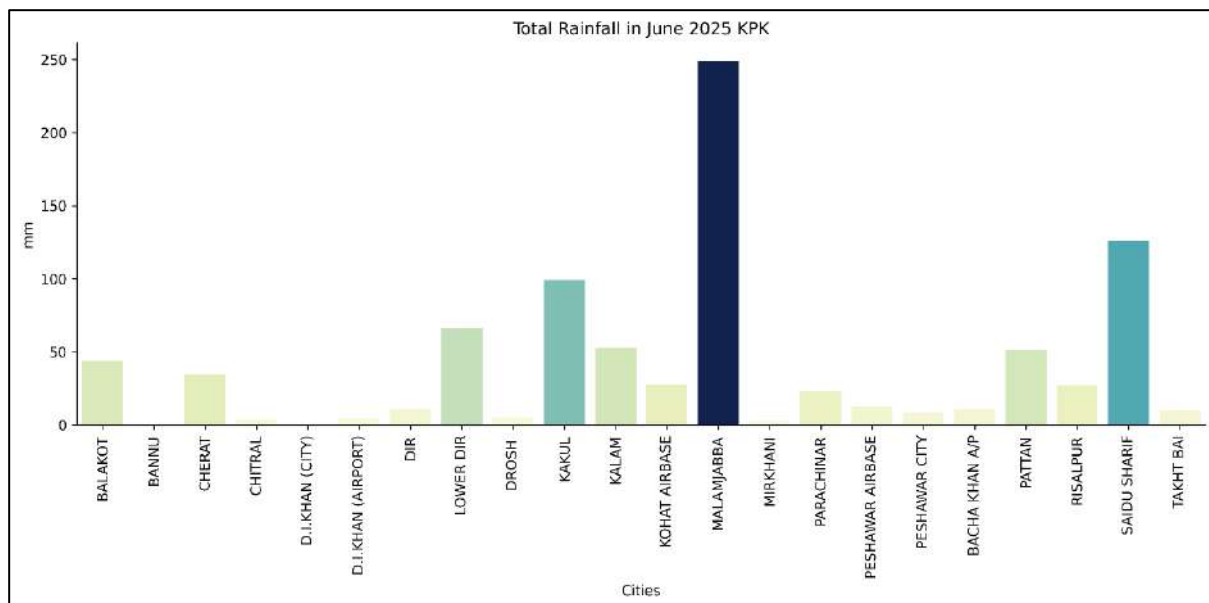
Khyber Pakhtunkhwa experienced **260.7 mm rainfall (+2%)**, close to the long-term average. However, the province saw **frequent flash floods and landslides**, particularly in July and August. Districts including Swat, Chitral, Dir, and Kohistan were hit by cloudbursts and short-duration intense rain events, while **urban flooding** occurred in **Peshawar, Nowshera, and D.I. Khan**. Flash flood peaks in August coincided with high temperatures that enhanced glacial melt, resulting in **GLOF incidents and slope failures** in upper valleys. September rainfall declined (-17.7%), but saturated catchments maintained a persistent high-flow risk.

Monsoon 2025 – Khyber Pakhtunkhwa (Spell-wise Summary)

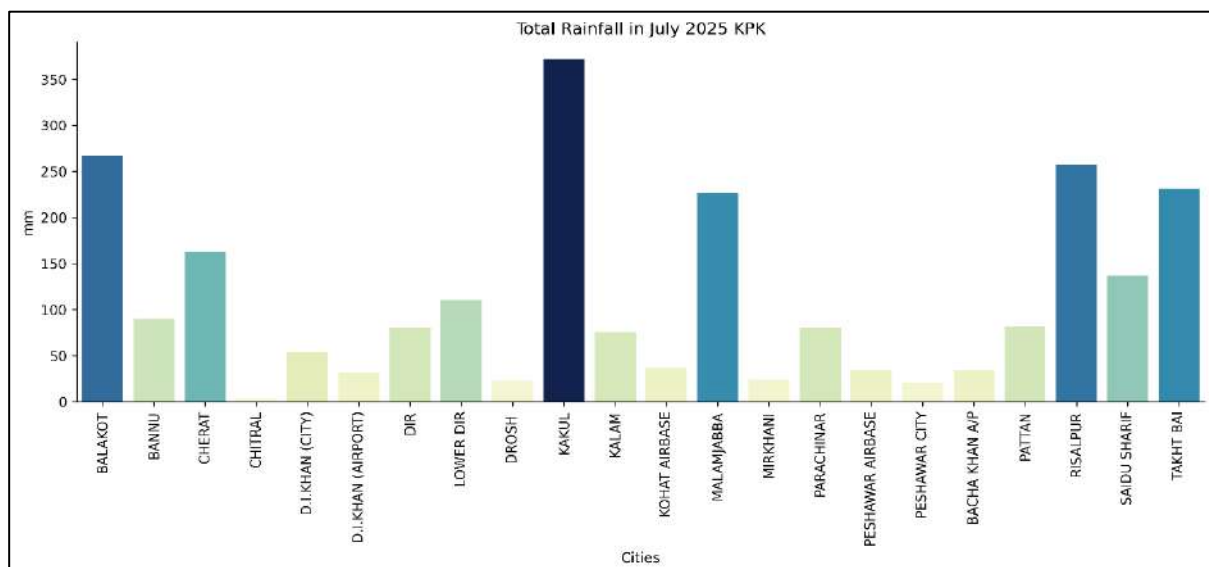
- **Spell 1 (Early July):** Light to moderate rainfall over upper KPK (Chitral, Dir, Swat). Slight rise in streams; no major damage.
- **Spell 2:** Moderate, continuous rain in Malakand and Hazara divisions; minor landslides in hilly areas.
- **Spell 3:** Widespread showers in Swat, Shangla, and Mansehra; localized urban flooding in Mingora and Abbottabad.
- **Spell 4:** Intense rainfall around Charsadda, Nowshera, and Peshawar causing drainage congestion and field inundation.
- **Spell 5:** Heavy rainfall persisted; river levels rose across central KPK, moderate crop and infrastructure impact.
- **Spell 6:** Extended wet period in Mardan and Swabi; flash floods reported in nullahs and small tributaries.
- **Spell 7:** Very heavy rainfall in Hazara and Malakand divisions; flash flooding and slope failures in upland zones.

- **Spell 8:** Severe downpours across northern KPK; high soil saturation led to repeated slope instability and runoff.
- **Spell 9 (Late August):** Widespread heavy rain in southern KPK (Kohat, Bannu, D.I. Khan); canals and lowlands overflowed, damaging crops and rural infrastructure.

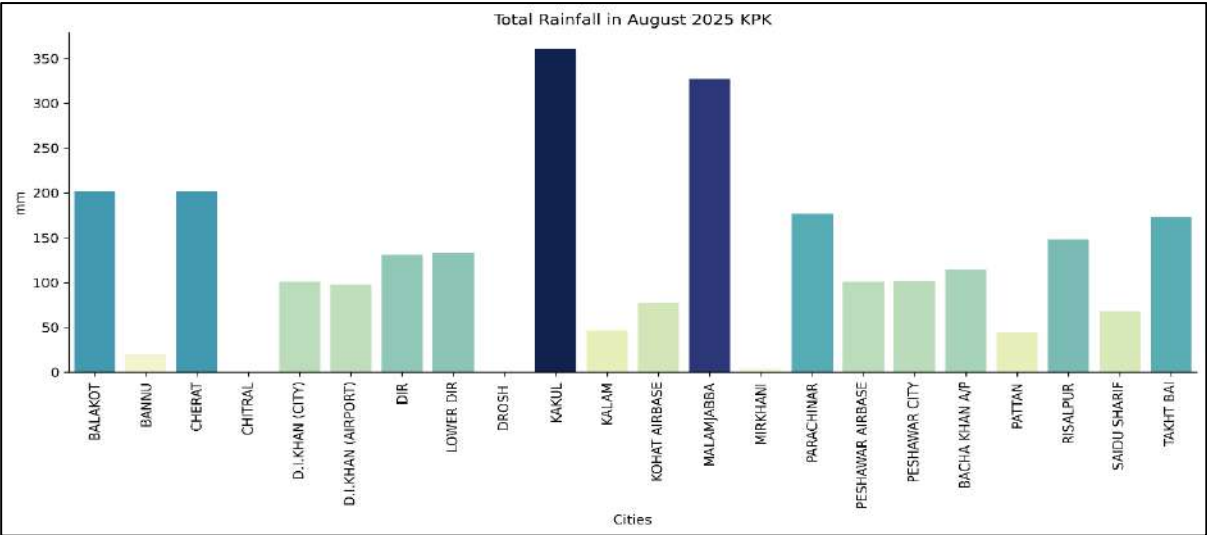
Overall: The 2025 monsoon in KPK was marked by increasing rainfall intensity, frequent flash floods, and growing hydrological pressure from north to south.



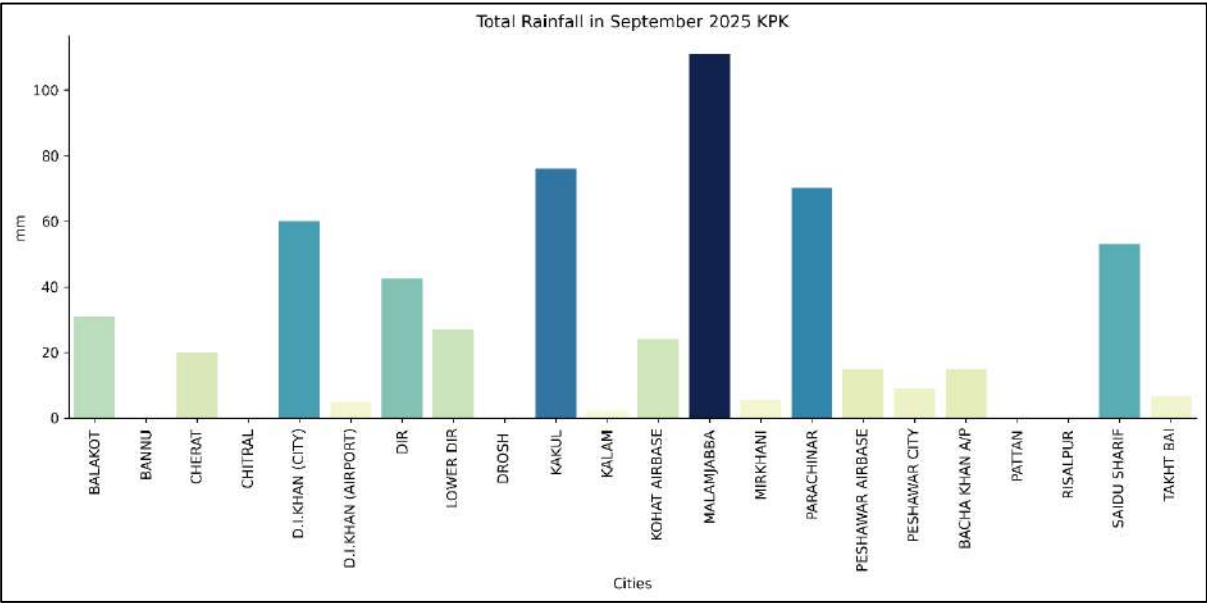
The bar graph shows the total rainfall across Khyber Pakhtunkhwa districts in June 2025, indicating varied precipitation across the province. **Malam Jabba** recorded the highest rainfall (around **250 mm**), followed by **Kakul** (**100 mm**) and **Lower Dir** (**65 mm**). Moderate rainfall occurred in **Kalam**, **Balakot**, and **Peshawar**, while southern districts like **D.I. Khan**, **Bannu**, and **Kohat** received very little rain. Overall, rainfall was **concentrated in northern and hilly regions**, reflecting the onset of the monsoon season in upper KPK.



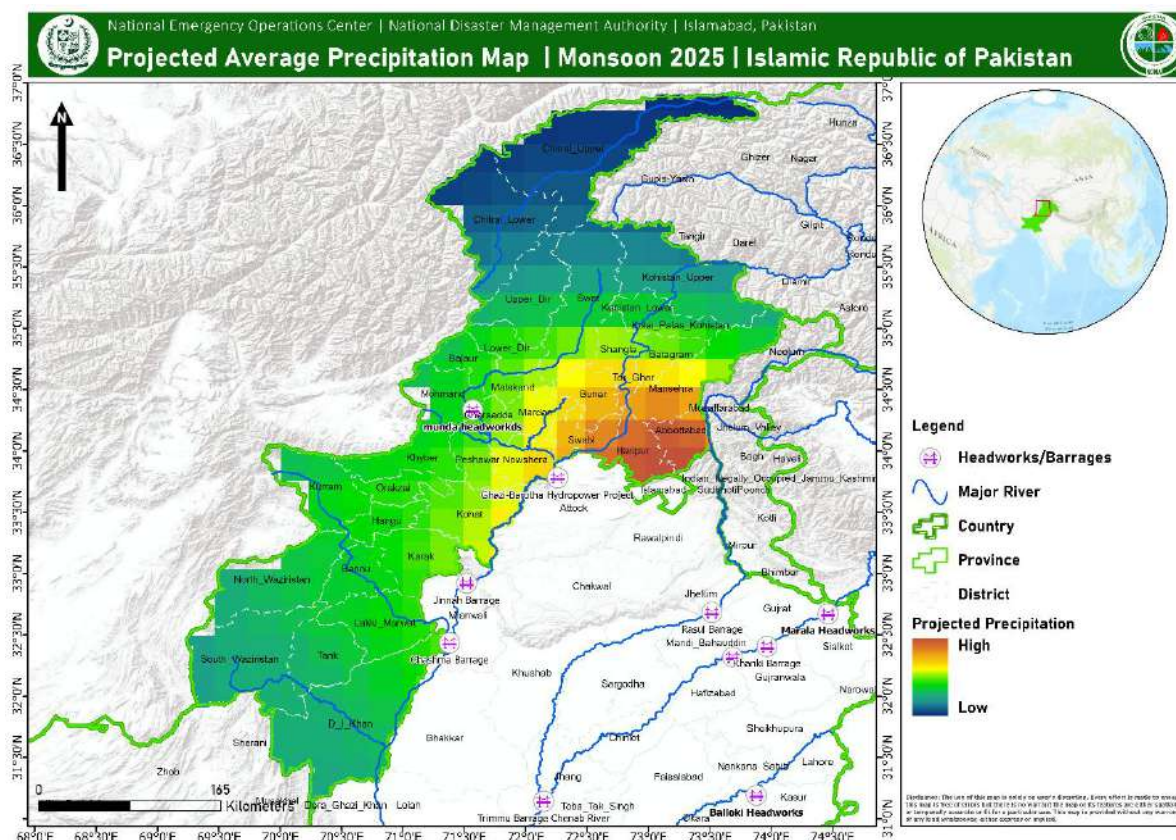
In July 2025, rainfall increased significantly across KPK. **Drosh** received the highest rainfall (about **370 mm**), followed by **Balakot (270 mm)** and **Kakul (200 mm)**. **Risalpur, Cherat,** and **Pattan** also recorded substantial precipitation between **150–250 mm**, showing an active monsoon phase. In contrast, **Bannu, D.I. Khan,** and **Peshawar City** saw comparatively low rainfall. Overall, July was marked by **widespread and intense monsoon activity**, especially in **northern and central KPK**.



The bar graph for August 2025 indicates continued strong monsoon rainfall across KPK. **Kakul** again topped the list with around 360 mm, followed by **Malam Jabba (320 mm)** and Cherat, Risalpur, and Peshawar Airbase with over 200 mm. Balakot, Lower Dir, and Parachinar also received moderate rainfall between 150–200 mm, while southern areas like Bannu and D.I. Khan remained relatively dry. The data suggests persistent monsoon influence, particularly in elevated northern districts.



By September 2025, rainfall declined notably as the monsoon weakened. Malam Jabba still recorded the highest rainfall (around 100 mm), followed by Kakul (75 mm) and D.I. Khan (City) (60 mm). Moderate showers occurred in Parachinar, Saidu Sharif, and Cherat, while most southern and western areas received minimal rainfall. Overall, September marked the retreat of the monsoon, with light to moderate rainfall persisting mainly in northern and north-eastern regions of KPK.



Gilgit Baltistan:

Pre-Monsoon Projection by NEOC

The northern mountainous territories of Gilgit-Baltistan are forecasted to receive normal to below normal rainfall. In GB, districts such as Astore, Skardu, Hunza, and Gilgit are likely to experience precipitation in late July and August. This may lead to glacial lake outburst floods (GLOFs) at different vulnerable locations.

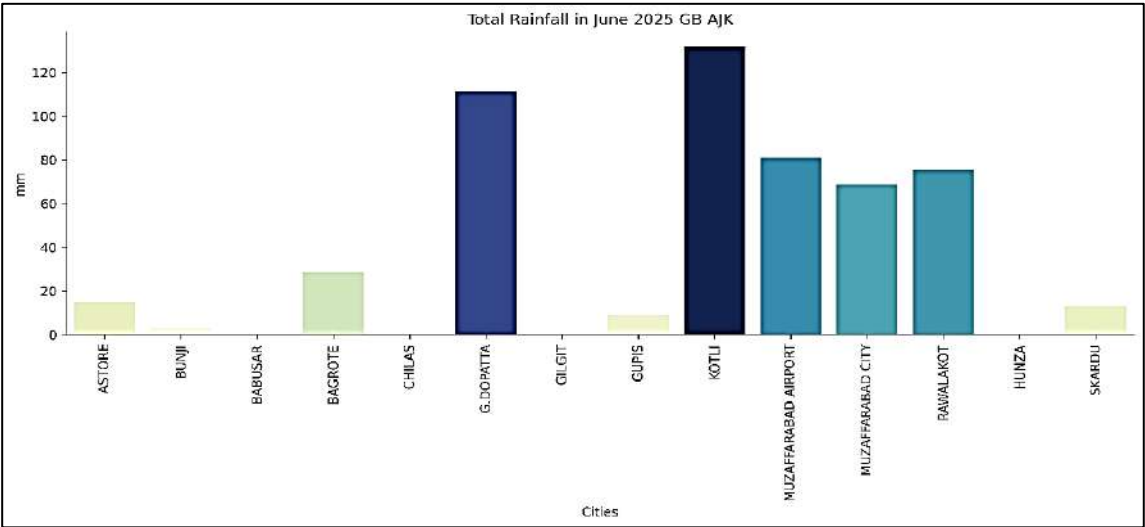
Metrological Outlook 2025:

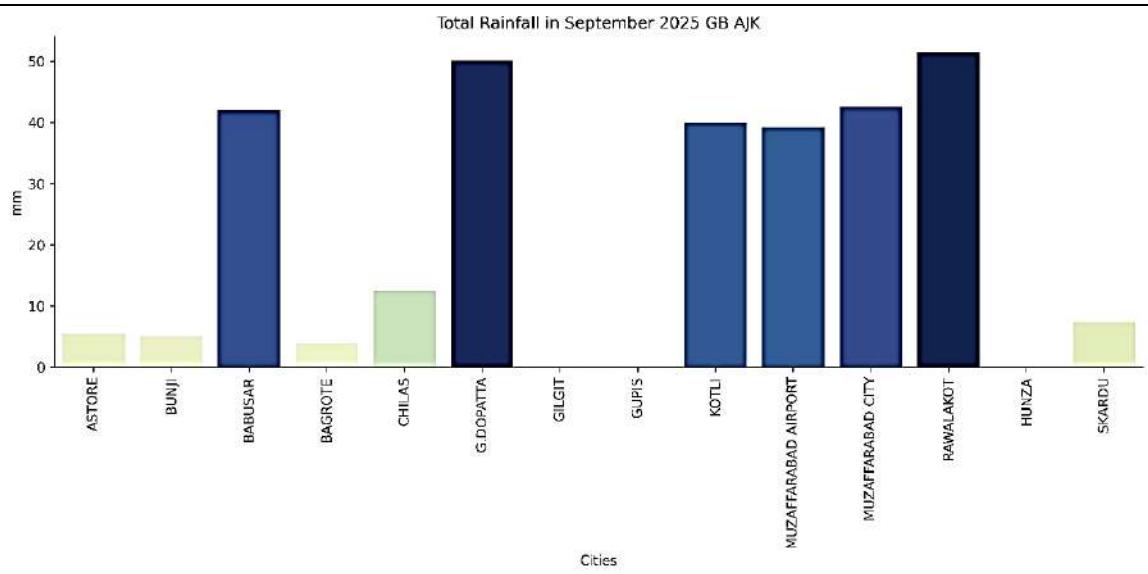
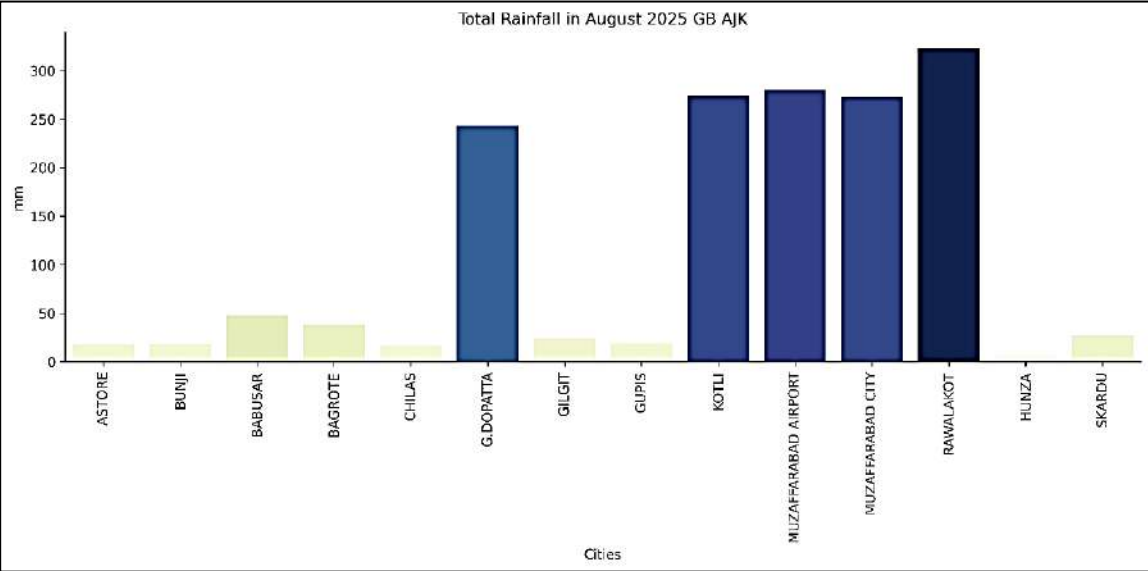
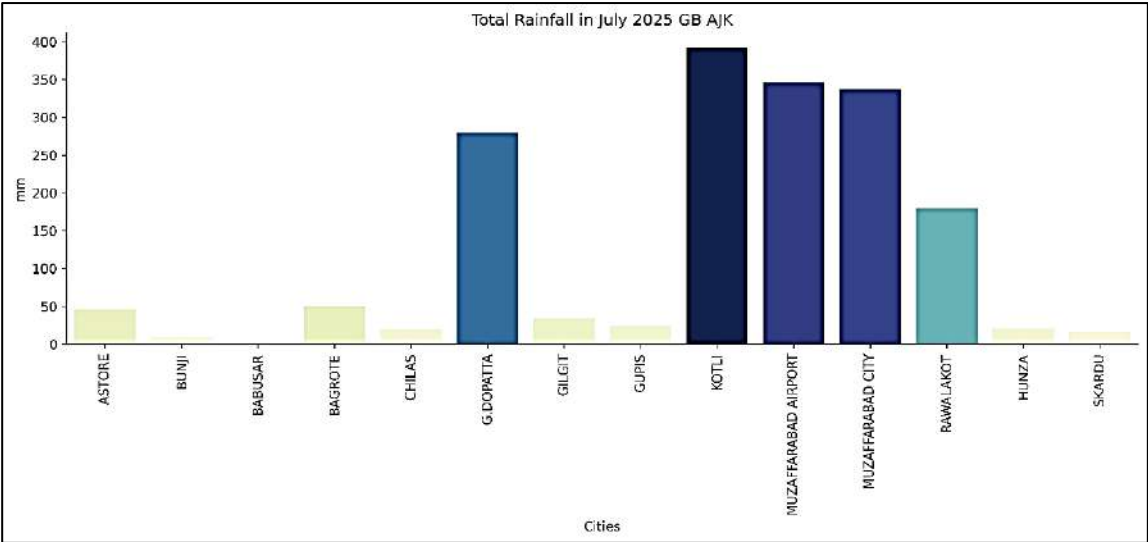
Gilgit-Baltistan received **51.9 mm rainfall (+31%)** above normal. The region experienced a combination of **rainfall and heat-induced glacier melt**, triggering **flash floods and GLOF threats** in several valleys. Heavy rainfall during **July (+52%)** and **August (+44%)** led to the overtopping of streams and the reactivation of unstable slopes. Late-season rains in September declined (-21.7%), but river stages remained elevated due to continued meltwater

contribution. Key affected valleys included **Hunza, Ghizer, Skardu, and Astore**, where localized flooding and road washouts were reported.

The 2025 monsoon season in Gilgit-Baltistan (GB) and Azad Jammu & Kashmir (AJK) was marked by **intense rainfall, accelerated snow and glacier melt, and extreme temperature fluctuations**, resulting in widespread flash floods, landslides, mudflows, and related hazards.

During the 2025 monsoon, rainfall activity in **Gilgit-Baltistan and AJK** showed strong spatial and temporal variation. In **June**, the heaviest rainfall occurred in **Kotli (about 130 mm)**, followed by **Garhi Dupatta** and **Muzaffarabad**, marking the early onset of monsoon showers mainly across AJK, while northern GB valleys like **Astore, Gupis, and Skardu** received light rainfall below **20 mm**. By **July**, monsoon intensity peaked, with **Kotli** (around **380 mm**) and **Muzaffarabad** (350–370 mm) recording extremely heavy rainfall that led to local flooding and landslides, while **Rawalakot** and **Garhi Dupatta** also received substantial precipitation. In **August**, rainfall remained high, particularly in **Rawalakot (320 mm)**, **Muzaffarabad**, and **Garhi Dupatta**, sustaining saturated soils and elevating flood risks in foothill zones. By **September**, precipitation subsided significantly, with **Rawalakot, Garhi Dupatta, and Babusar** registering moderate rainfall (40–50 mm), while the rest of the region saw minimal rain, signaling the retreat of the monsoon. Overall, **AJK experienced far greater rainfall intensity than GB**, consistent with its more humid and orographically influenced climate. Total Rainfall graphs district wise are shown below (Data PMD).





Azad Jammu & Kashmir:

In **Azad Jammu & Kashmir**, heavy monsoon systems intensified flash flood activity in Neelum, Muzaffarabad, Haveli, and Rawalakot valleys. The **orographic effect of the Pir Panjhal and western Himalayas** amplified rainfall, producing intense short-duration downpours. These rainfall events rapidly swelled rivers like the **Neelum, Jhelum, and Poonch**, causing flash floods that inundated settlements, destroyed bridges, and eroded agricultural land along riverbanks. The steep terrain of AJK, coupled with saturated soils, triggered **widespread landslides** that blocked key transport routes, isolating many upland communities. Particularly in **Neelum Valley and Muzaffarabad district**, rainfall combined with slope instability led to multiple slope collapses, mudflows, and debris slides, resulting in infrastructure damage and displacement of residents.

The rainfall analysis for Azad Jammu & Kashmir (AJK) during **July–August 2025** reveals multiple episodes of intense precipitation, which significantly heightened the risks of **flash floods, landslides, and riverine flooding** across the mountainous districts. Hourly rainfall charts for each city indicate distinct peak events, often linked to localized **cloudbursts** and sustained monsoon systems.

a. Key Findings by District

(1) Muzaffarabad

- (a) Experienced some of the **sharpest hourly peaks**, exceeding **40–50 mm/hr** during late July.
- (b) Such intense bursts likely triggered **urban flooding**, road inundation, and slope instability in surrounding hills.
- (c) The area remains highly vulnerable due to its location along active fault lines and steep valleys.

(2) Rawalakot

- (a) Recorded **moderate-to-high peaks** of ~30 mm/hr, particularly in early August.
- (b) Flash floods in narrow valleys and **road blockages due to landslides** were the primary risks.
- (c) Waterlogging in agricultural areas also posed risks to local livelihoods.

(3) Bagh

- (a) Showed **frequent medium-intensity rainfall** events with a few sudden peaks >25 mm/hr.
- (b) The district's rugged terrain means even moderate rainfall can cause **slope failures and debris flows**, endangering rural communities.

(4) Kotli & Mirpur

- (a) These districts recorded **sustained but lower-intensity rainfall** compared to northern AJK.
 - (b) Flood risk here is more linked to **river swelling** and **catchment runoff**, potentially impacting downstream settlements and infrastructure.
-

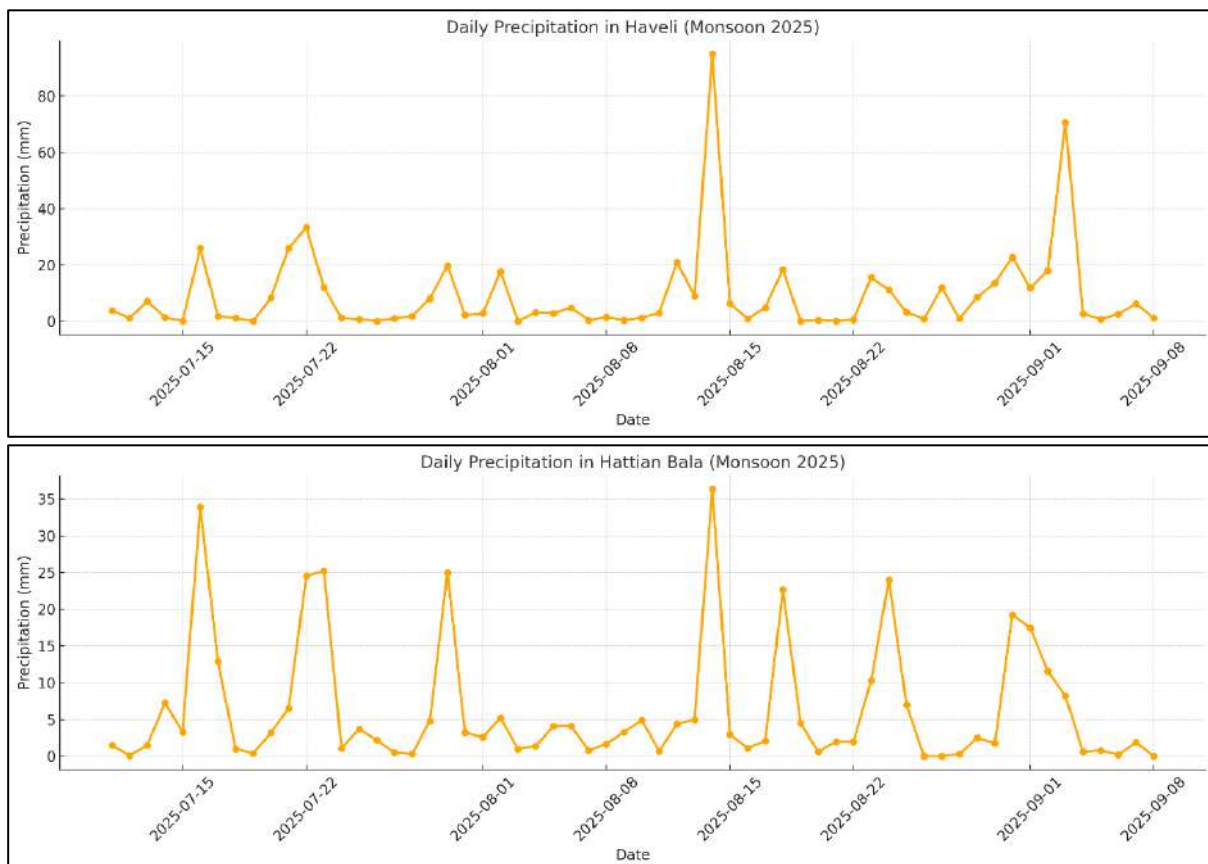
(5) **Neelum Valley (Kel, Sharda)**

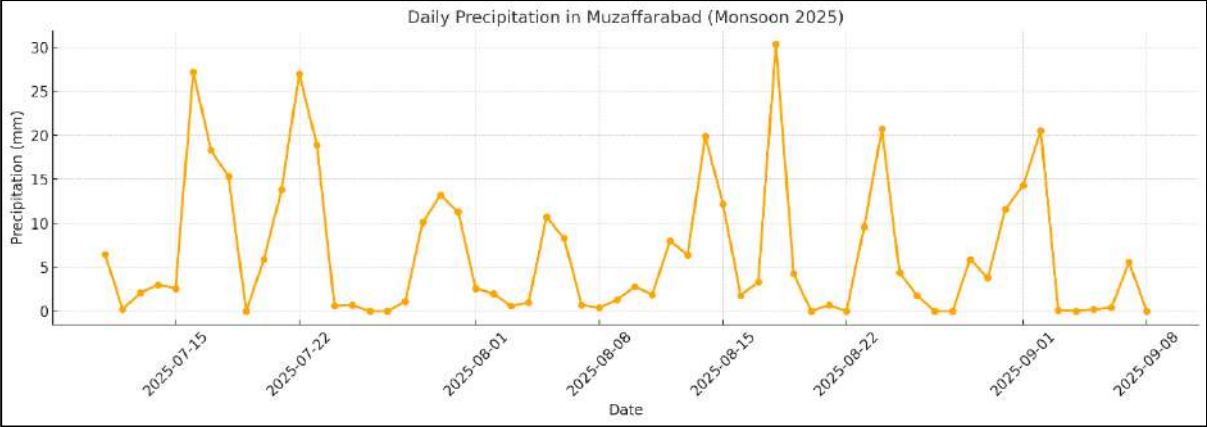
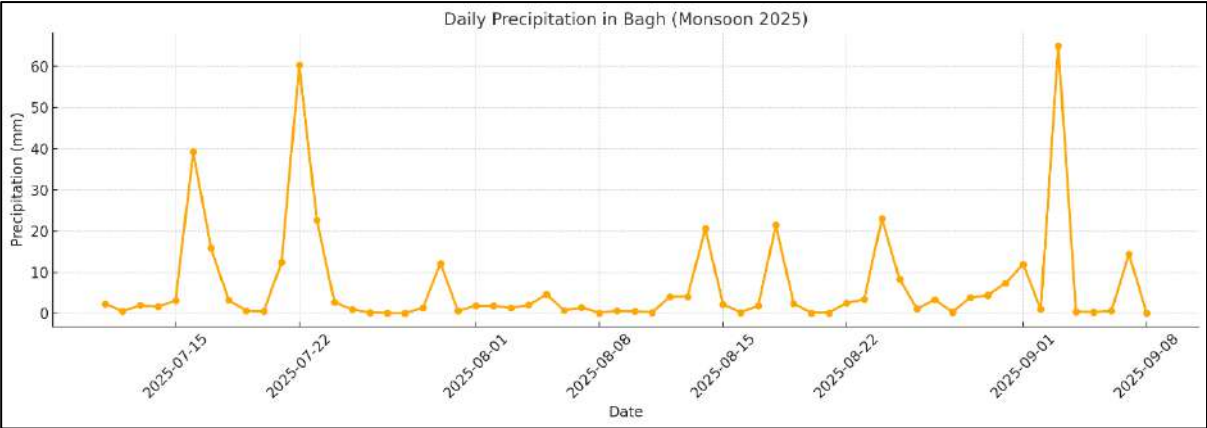
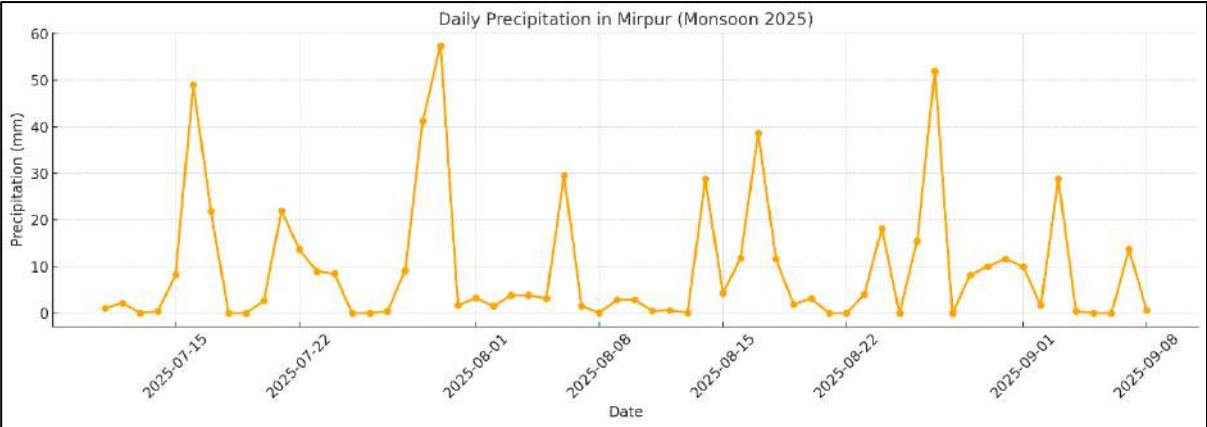
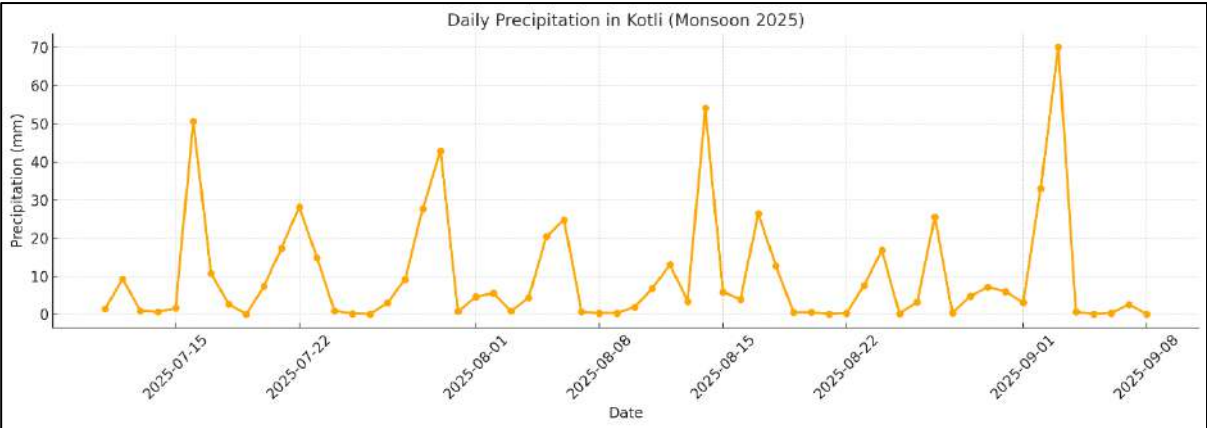
- (a) Experienced some of the **most dangerous rainfall patterns**, with sharp peaks >45 mm/hr in July.
- (b) These cloudburst-type events posed extreme risks of **flash floods, glacial stream surges, and large-scale landslides**, often cutting off valley connectivity.

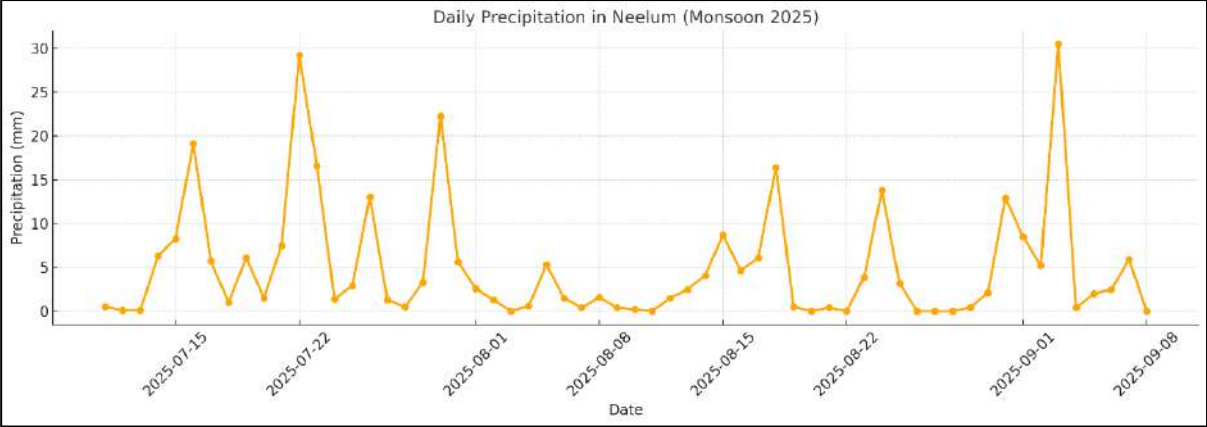
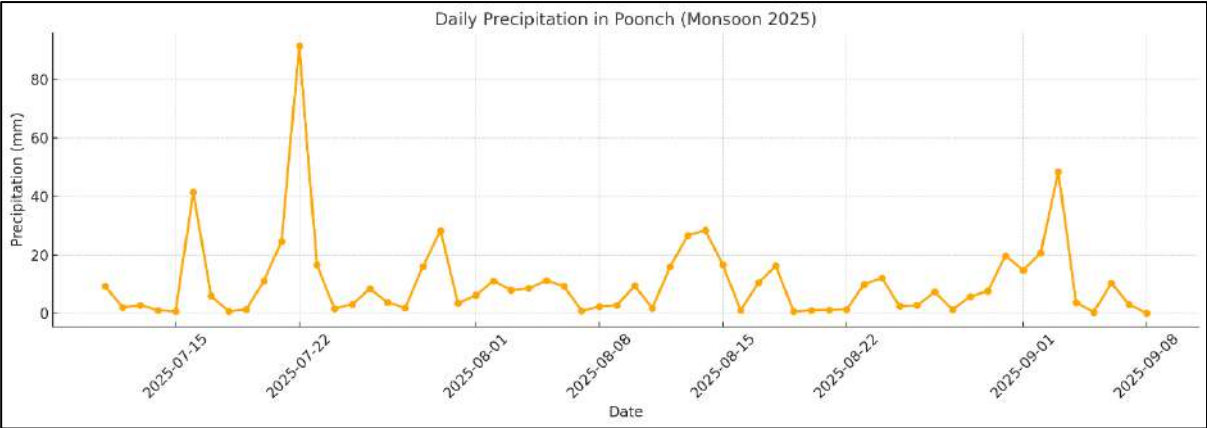
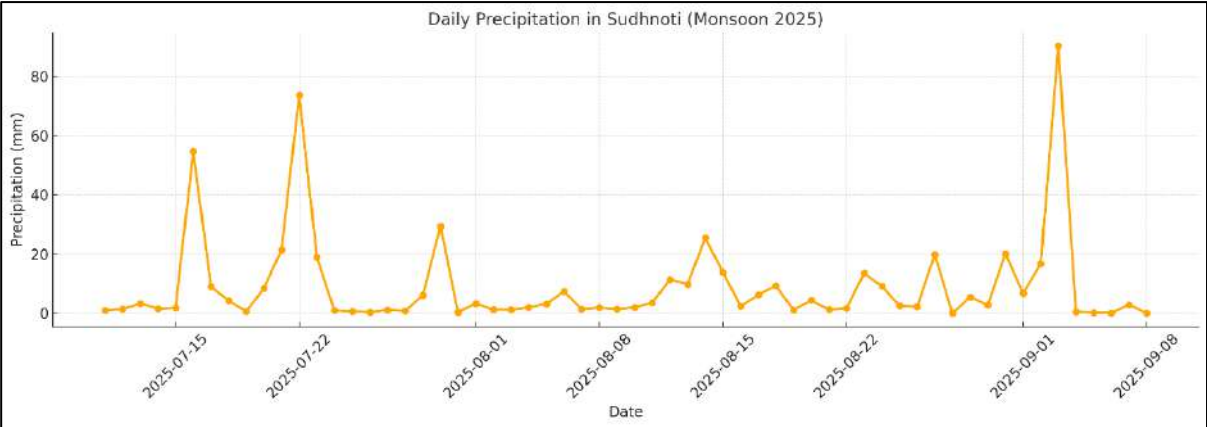
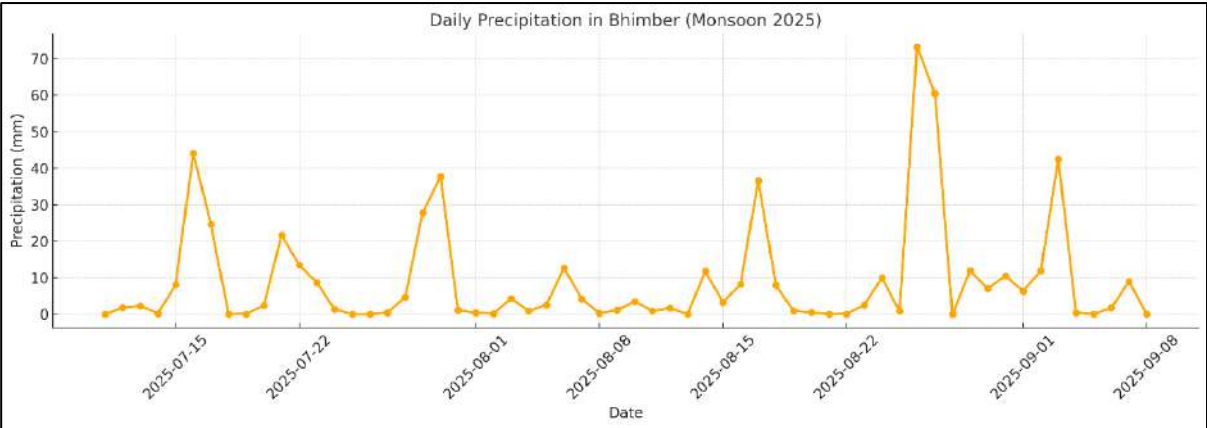
b. Hazard Linkages

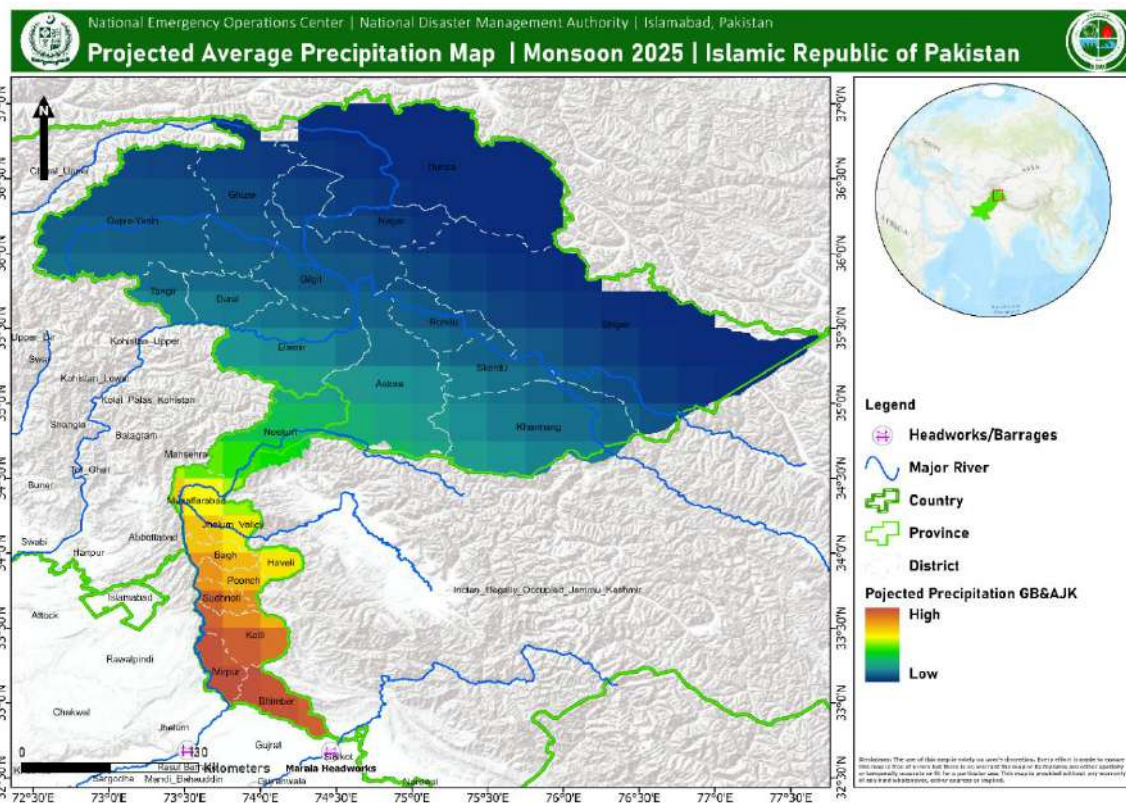
- (1) **Flash Floods:** Peaks above 40 mm/hr. in narrow valleys like Neelum and Muzaffarabad almost certainly led to localized flash flooding.
- (2) **Landslides:** Steep slopes in Rawalakot, Bagh, and Neelum Valley were destabilized by repeated heavy rainfall, triggering slope failures.
- (3) **River Flooding:** Sustained rainfall in Kotli and Mirpur increased inflows to rivers and reservoirs, raising downstream flood risk.
- (4) **Climate Link:** Rising **temperatures and glacier melt** in July–August further added to water volumes, intensifying the severity of flash floods when coupled with heavy precipitation.

- c. Overall Impacts:** The monsoon 2025 rainfall patterns in AJK point to a **cascade of hazards**: cloudbursts leading to flash floods, which then triggered landslides and road blockages. This not only endangered local populations but also disrupted transportation and emergency relief operations in one of Pakistan’s most disaster-prone mountain regions.









Hydro-Meteorological Analysis (River Flows)

River Chenab

a) Marala Headworks

Flow peaked at **895,740 cusecs** during Wave 1 and **549,737 cusecs** during Wave 2, before subsiding to low flood levels by **5 September 2025**. As the flows remained within the structure's design capacity, no breaching sections were required. The detailed **discharge hydrographs** and **breaching section** details are given in **Appendix 2 and 3**.

b) Khanki Headworks

An extremely high flood reached **1,085,750 cusecs** on **27 August 2025** (Wave 1), nearly matching its **1,100,000 cusecs** design capacity. Wave 2 peaked at **502,663 cusecs** on **4 September 2025**. Both crests remained within structural limits, and no breaching was necessary.

c) Qadirabad Headworks

Flow peaked at **1,077,951 cusecs** on **27 August 2025** during Wave 1, exceeding the **900,000 cusecs** design capacity. To reduce structural stress, a controlled breach was executed at protective embankment of the Qadirabad Barrage at RD 8000 (Right Marginal Bund) with support from Pakistan Army 30 Corps, resulting in inundation of parts of Hafizabad District.

d) Chiniot Bridge

Discharge rose to 718,500 cusecs, an extremely high level approaching the bridge's design capacity of about 800,700 cusecs. The same wave advanced downstream toward Trimmu Barrage.

e) Trimmu Barrage

At the Chenab–Ravi confluence near Jhang, Wave 1 peaked at 550,965 cusecs on 1 September and Wave 2 at 493,073 cusecs on 7 September 2025. Both crests passed safely within the 875,000 cusecs design capacity.

f) Panjnad Headworks

Wave 1 peaked at **609,669 cusecs** on **7 September**, and Wave 2 at **703,698 cusecs** on **11 September 2025**. Both remained within the **865,000-cusec** design capacity.

River Ravi

a) Shahdara Bridge Corridor

As the river entered Pakistan at **Kot Naina (Shakargarh)** on **27 August 2025**, Wave 1 peaked at **≈ 290,000 cusecs**, while **Jassar** recorded **240,500 cusecs** the same day. Flows receded below **75,000 cusecs** by **30 August** before rising again to **84,060 cusecs** on **3 September (Wave 2)**. At **Shahdara Bridge**, Wave 1 reached **219,770 cusecs** on **28 August**, and Wave 2 **112,500 cusecs** on **5 September 2025**.

b) Balloki Headworks

Discharge peaked at **223,385 cusecs** on **30 August (19 PST)** during Wave 1 and **148,210 cusecs** on **5 September (15 PST)** during Wave 2. The structure's **380,000 cusec** capacity was not exceeded.

c) Sidhnai Headworks

Flows rose to **193,470 cusecs** on **3 September (08 PST)** during Wave 1 and **135,575 cusecs** on **8 September (16 PST)** during Wave 2. With a design capacity of **≈ 150,000 cusecs**, backwater conditions posed risks to structural stability. To relieve pressure, the **Mai Safuran Embankment** was deliberately breached at two points using explosives, resulting in widespread rural inundation.

River Sutlej

a) Ganda Singh Wala

The flood was marked by exceptional intensity and long duration. A peak of **345,366 cusecs** occurred on **29 August 2025**, followed by sustained high flows of **310,000–330,000 cusecs** from **3–10 September**. Overall discharge remained above **250,000 cusecs** for about **15 days (28 August – 11 September)** and above **150,000 cusecs** for nearly **19 days (26 August – 13 September)**.

b) Suleimanki Headworks

Inflows increased from **35,000–40,000 cusecs** in mid-August to **100,000–110,000 cusecs** by **26–29 August**, cresting near **150,000–155,000 cusecs** around **30–31 August**. A second high stage of **140,000–145,000 cusecs** persisted through **4–8 September** before gradual recession to **85,000–95,000 cusecs** mid-September and **40,000–45,000 cusecs** by month-end.

c) Islam Headworks

Inflows rose from $\approx$ **30,000 cusecs** in mid-August to **50,000–55,000 cusecs** by **29–30 August**, then increased to **85,000–105,000 cusecs** in early September. The crest reached $\approx$ **120,000–123,000 cusecs** on **9–10 September**, followed by a managed drawdown to $\approx$ **100,000 cusecs** (12 September) and stabilization near **82,000–85,000 cusecs** (15–16 September). Flows then declined progressively to $\approx$ **45,000–50,000 cusecs** by **27–28 September**, showing continued attenuation toward **Panjnad**.

 River's Maximum Observed Peaks Discharge During Monsoon (15th June - 15th October) Since 1928											
River	Site	1			2			3			Remarks
		Cusecs	Date	Flood level	Cusecs	Date	Flood level	Cusecs	Date	Flood level	
Indus	Tarbela	832000	30-07-2010	EH	510000	31-07-1989	High	500000	10-09-1992	High	Available Data from 1928
	Kalabagh	950005	14-07-1942	EH	937453	30-07-2010	EH	862000	02-08-1976	EH	
	Chashma	1038873	01-08-2010	EH	786600	03-08-1976	VH	689100	29-08-1983	VH	
	Taunsa	959991	02-08-2010	VH	789000	22-07-1958	VH	675233	07-08-1976	VH	
	Guddu	1199672	15-08-1976	EH	1172292	13-08-1986	EH	1162653	31-07-1988	EH	
	Sukkur	1166574	15-08-1986	EH	1161000	16-08-1976	EH	1130220	09-08-2010	EH	
Jhelum	Kotri	980329	14-08-1956	EH	964897	27-08-2010	EH	826369	25-08-1994	EH	
	Mangla	1090000	10-09-1992	EH	1060000	29-08-1929	EH	1045000	04-07-1959	EH	
Chenab	Rasul	952170	10-09-1992	EH	876000	05-07-1959	EH	875000	29-08-1929	EH	
	Marala	1100000	26-08-1957	EH	902240	27-08-2025	EH	870795	05-07-1959	EH	
	Khanki	1086410	27-08-1959	EH	1085750	27-08-2025	EH	1021018	05-07-1959	EH	
	Qadirabad	1077952	27-08-2025	EH	948530	11-09-1992	EH	904285	07-09-2014	EH	
	Trimmu	944333	04-09-1928	EH	888117	14-09-1992	EH	706433	06-08-1976	EH	
	Panjand	802516	17-08-1973	EH	744152	18-09-1992	EH	710000	12-08-1976	EH	
Ravi	Jassar	680000	04-10-1955	EH	Overflow	25-09-1988	EH	328000	27-08-1957	EH	
	Shahdara	576000	27-09-1988	EH	542000	06-10-1955	EH	237380	11-08-1973	EH	
	Balloki	389845	28-09-1988	EH	275000	22-09-1950	EH	275000	08-10-1955	EH	
	Sidhnai	330210	02-10-1988	EH	244348	15-08-1976	EH	212340	12-09-1995	EH	
Sutlej	Sulemanki	598872	08-10-1955	EH	399453	30-09-1988	EH	360412	30-09-1947	EH	
	Islam	492581	11-10-1955	EH	308425	04-10-1988	EH	285254	04-10-1947	EH	
Note: H=High VH=Very High EH= Exceptionally High											
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Comparison of 2014 and 2025 Floods

From the hydrograph in Figure 1 above, it is evident that the lag time between Marala and Qadirabad during the 2014 flood event was approximately nine hours. During this interval, the flood peak decreased by 38.28% between Marala and Khanki, followed by an increase of 23.34% between Khanki and Qadirabad. The hydrograph indicates that it took nearly four days for the flood peak to travel from Qadirabad to Trimmu, where a further 30.30% reduction was observed, demonstrating significant attenuation over this reach.

Flood 2014 Analysis of Marala, Qadirabad, Trimmu, Panjnad, and Guddu

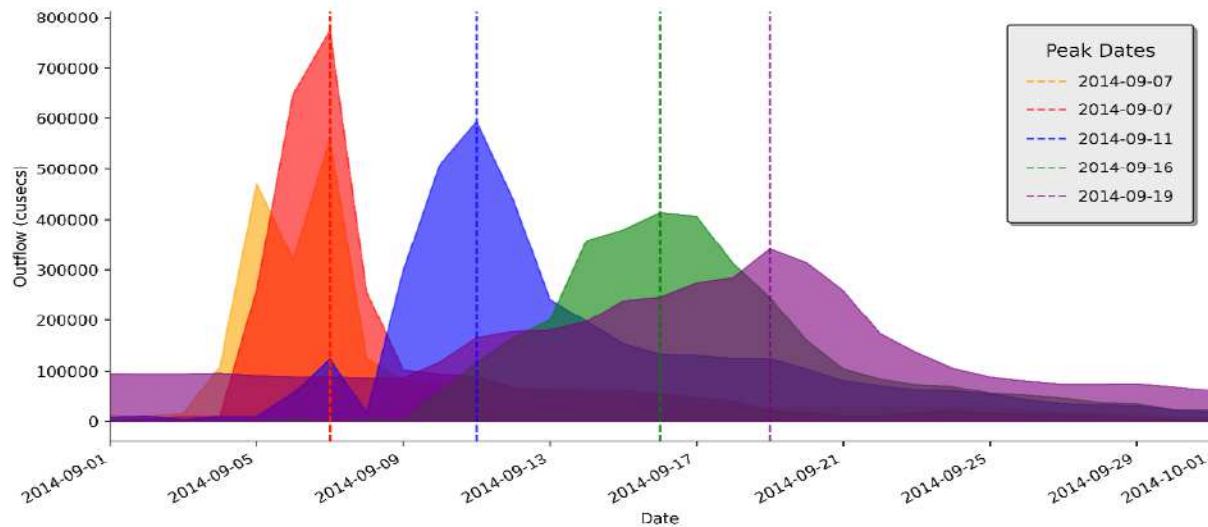


Figure: Flood Peaks & Lag Times 2014

Additional lag times are also apparent in Figure 1, with the flood peak requiring approximately five days to travel from Trimmu to Punjnad, accompanied by a 17.58% decrease, and an additional three days to propagate from Punjnad to Guddu. These observations collectively confirm the attenuation and transformation of the flood wave as it progresses downstream, primarily due to inundations, dispersion, surface roughness, slope, travel distance, and lag time.

Flood 2025 Analysis of Marala, Khanki, Qadirabad, Trimmu and Punjnad

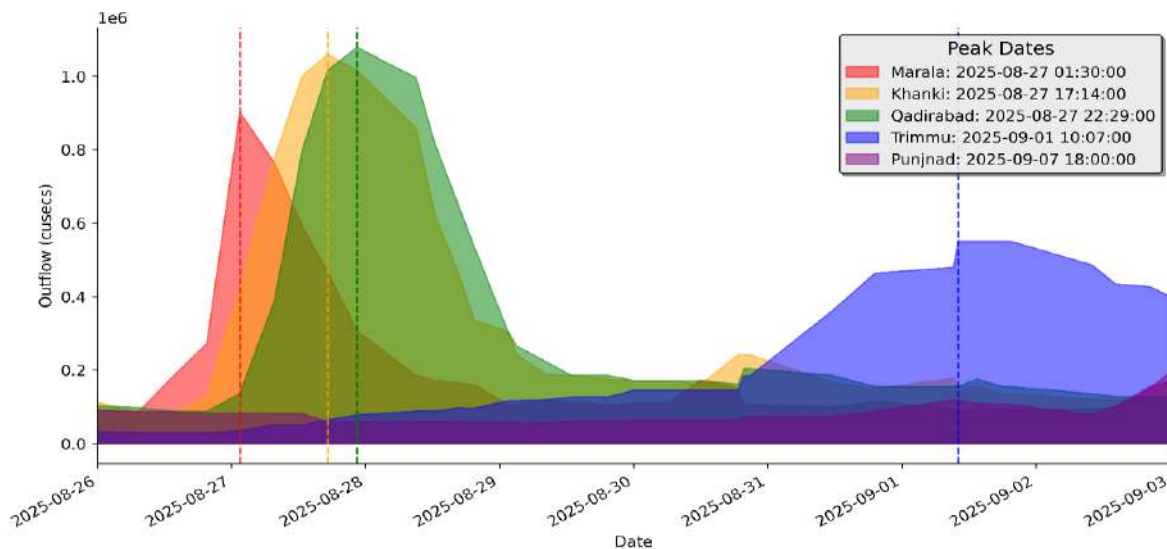
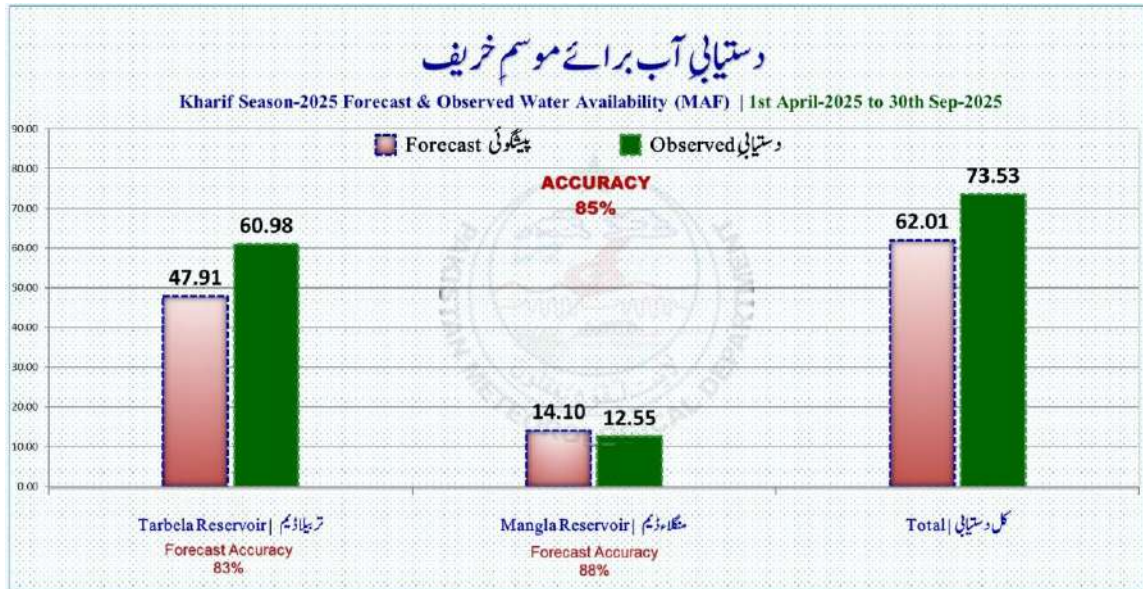


Figure: Flood Peaks & Lag Times 2025

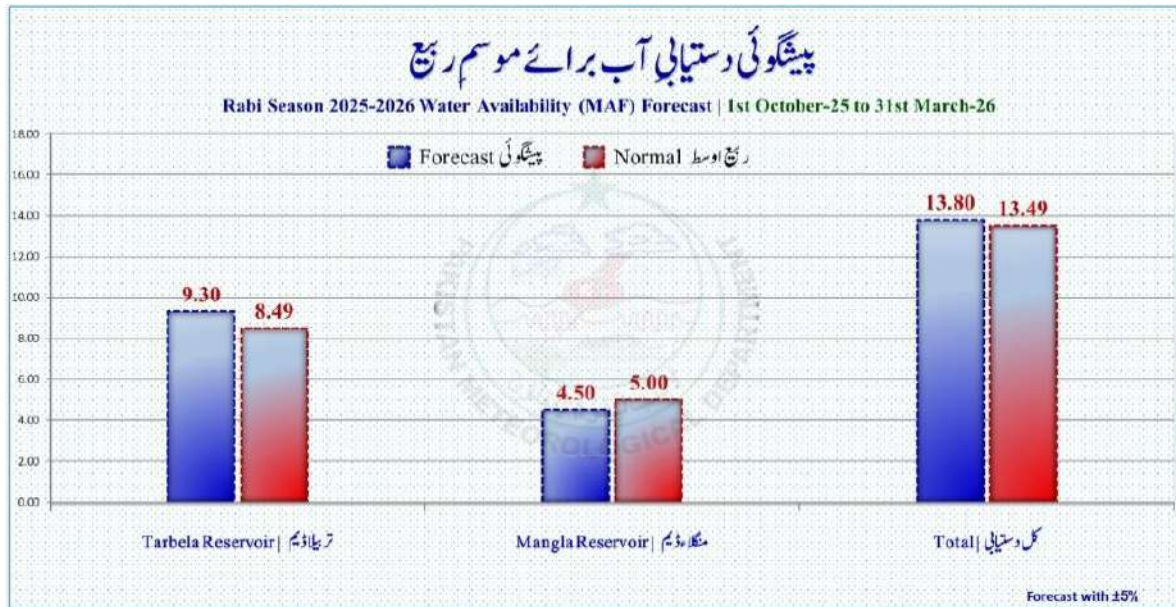
Hydro-Meteorological Analysis (Reservoir Operations)

Executive Summary

- **Reservoirs filled to capacity:** Tarbela, Mangla and Chashma reached full live storage by early October. Tarbela peaked at 1,550 ft (5.728 MAF) on 21 August; Mangla at 1,242 ft (7.277 MAF) on 9 October; Chashma at 649 ft (≈ 0.311 MAF) by late September. Cumulative live storage was approximately 13.3 MAF.

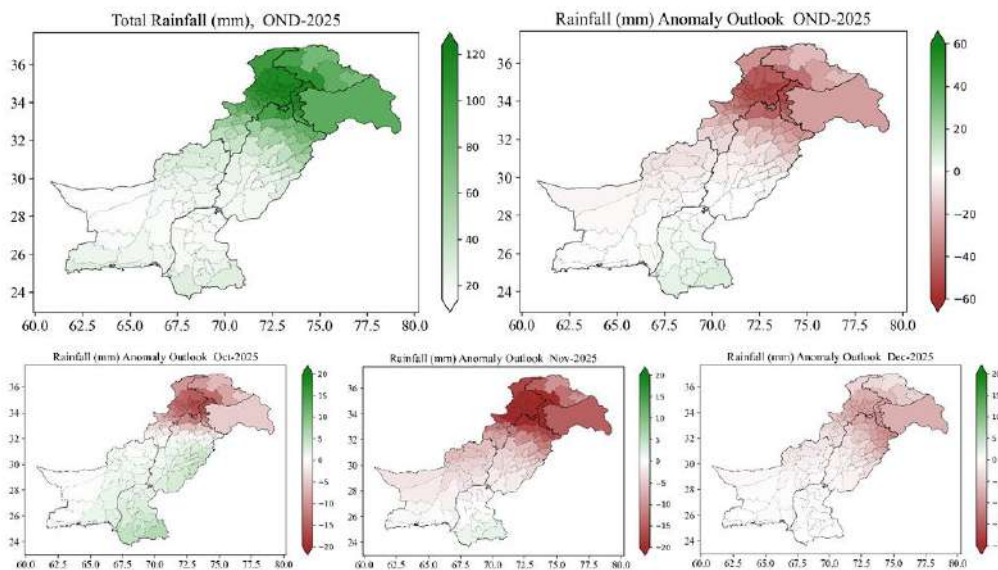


- **Critical spill/releases:** To mitigate floods, Tarbela's spillways were opened multiple times i.e on 6 August (11:30 pm, 5 August) under near-full conditions with forecasts up to $\sim 240,000$ cusecs. On 29 August, IRSA reported Tarbela inflow at 188,500 cusecs and outflow at 181,100 cusecs; Mangla inflow at 28,400 cusecs and outflow at 8,000 cusecs. These controlled releases maintained safe river stages downstream.
- **Flood control & irrigation roles:** Reservoir storage absorbed peak monsoon runoff, significantly reducing downstream flood risk. With dams at full capacity, strategic releases are now supplying irrigation canals. All reservoirs provide critical support to hydropower and agriculture.
- **Emergency actions:** NDMA/PDMA issued multiple flood alerts and mobilised emergency resources. PDMA Punjab issued flood warnings and directed embankment strengthening. NDMA forecasted heavy rains (5–8 August) and noted Tarbela at $\sim 94\%$ and Mangla at $\sim 61\%$ full. Local administrations implemented safety measures (e.g., Section 144 near Khanpur/Haripur on 2 July). WAPDA/IRSA coordinated dam releases to balance flood mitigation with irrigation needs.
- **End-of-monsoon water supply:** With reservoirs at 100% capacity (Tarbela 5.728 MAF; Mangla 7.277 MAF; Chashma 0.311 MAF), ample water is available for Kharif irrigation and the upcoming Rabi season. Releases will be optimized to meet demand while maintaining buffer storage.



End-of-monsoon Rabi Season outlook 2025-26:

Seasonal Projections (Precipitation)

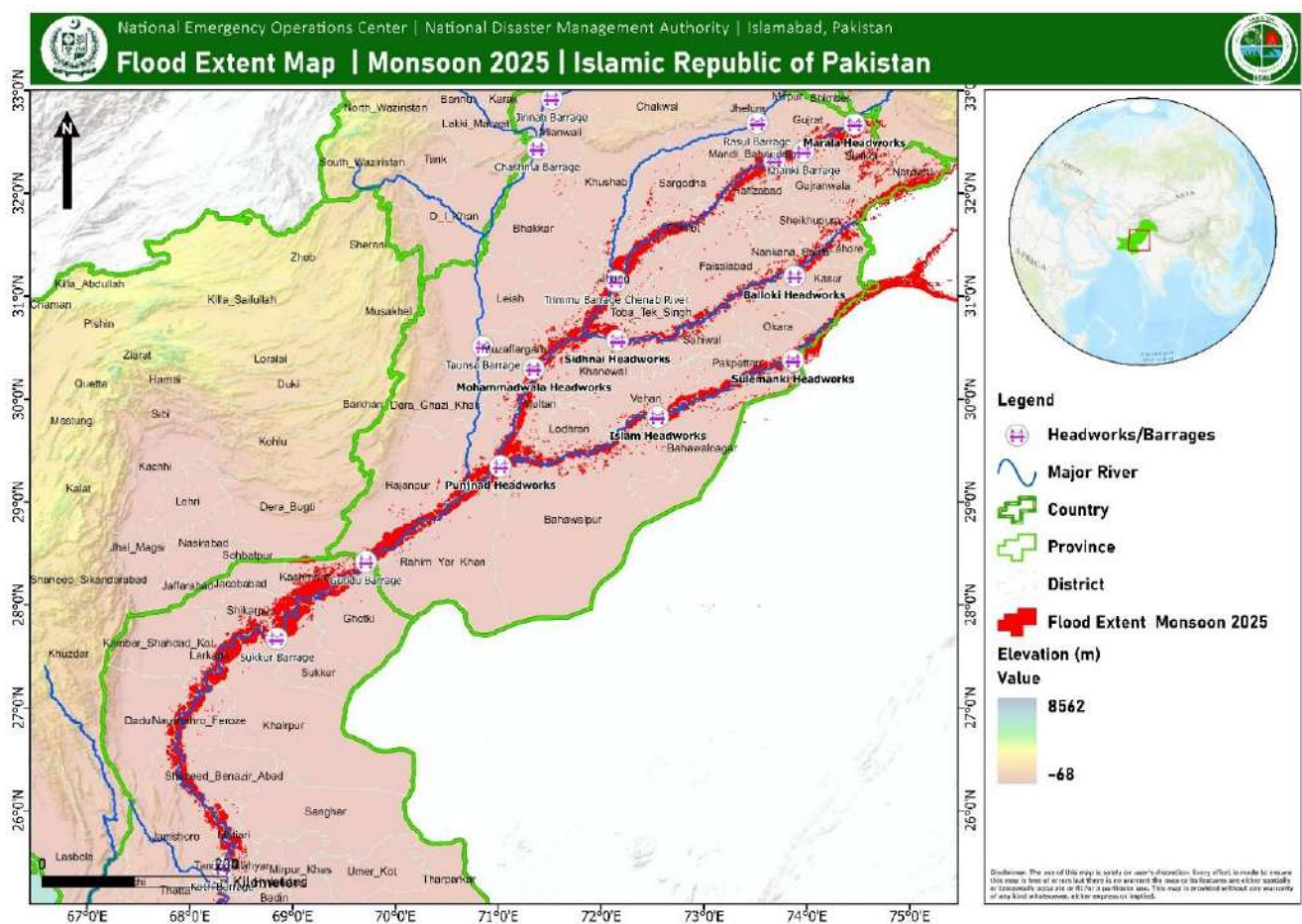


Month	Overall Trend	Regions Likely Below Normal	Regions Likely Near/Above Normal	Remarks
October 2025	Near to slightly above normal in east/southeast	Gilgit-Baltistan, Khyber Pakhtunkhwa, Azad Kashmir, Potohar region	Central & south-eastern Punjab, Sindh, adjoining Balochistan	Residual monsoon activity supports rainfall in eastern belt; northern regions drier
November 2025	Below normal rainfall across most regions	Kashmir, Upper KP, Potohar, northern Punjab, parts of Sindh	Lower Sindh (slightly above normal)	Deficits intensify; limited WD activity; isolated rainfall in south
December 2025	Below normal rainfall persists , though slightly improved	North-eastern Punjab, Kashmir, Upper KP, Gilgit-Baltistan	Lower Pakistan (near normal)	Weak WDs bring limited rainfall; dry northern belt continues
Overall	Below normal rainfall over most of Pakistan	Northern belt (GB, KP, AJK, Potohar)	Southern belt (Sindh, SE Punjab)	South slightly wetter; North significantly drier

Geographical Distribution of Impact & Inundated Area:

Punjab Province:

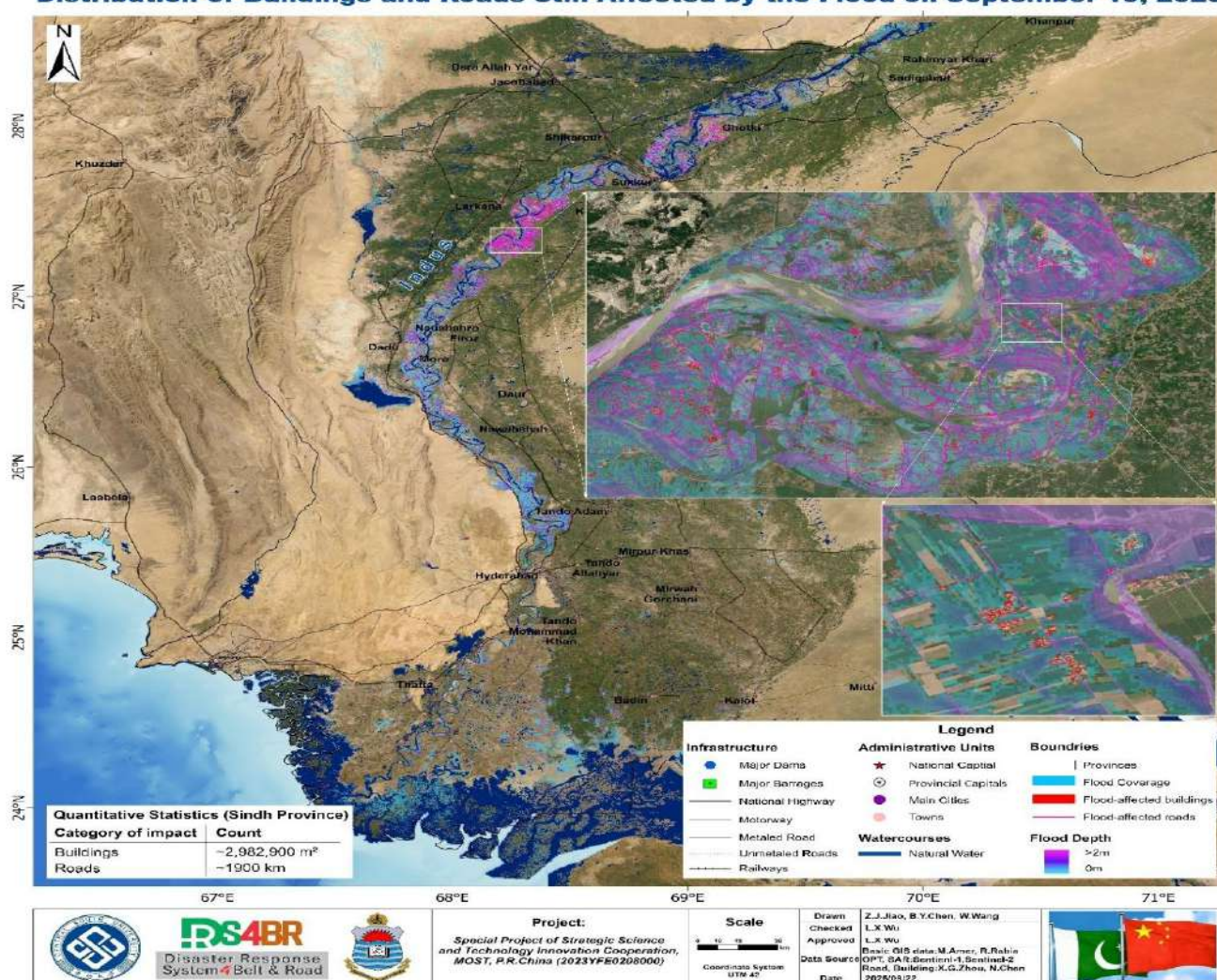
Punjab witnessed the most widespread flooding during the 2025 monsoon, primarily along the Chenab, Ravi, and Sutlej rivers. Overflow from major headworks such as Trimmu, Punjnad, Suleimanki, Balloki, and Islam inundated extensive agricultural plains of **Multan, Muzaffargarh, Lodhran, Bahawalpur, Vehari, and Rahim Yar Khan**. Floodwaters damaged standing cotton, sugarcane, and rice crops, while low-lying settlements near riverbanks experienced displacement and infrastructure loss. Several embankments and canals were overtopped, particularly near southern Punjab, causing waterlogging and transport disruption. The day wise flood extents of Punjab are also given in **Appendix-1**.



Sindh Province:

Sindh faced **prolonged and downstream flooding** as floodwaters from upper catchments entered through **Guddu, Sukkur, and Kotri Barrages**. The Indus River floodplain expanded widely, submerging large tracts of **Kashmore, Shikarpur, Ghotki, Khairpur, and Dadu districts**. Flood impact was intensified in **low-lying and tail-end irrigation areas**, damaging crops and rural settlements. Stagnant water in depressions near **Thatta, Badin, and Jamshoro** affected livelihood and sanitation conditions, highlighting the province's vulnerability to prolonged inundation.

Distribution of Buildings and Roads Still Affected by the Flood on September 19, 2025



Khyber Pakhtunkhwa Province:

KPK experienced a series of **intense rainfall spells and flash floods** during the 2025 monsoon, severely affecting hilly and foothill districts. Among the worst-hit areas, **District Buner** faced **devastating flash floods and landslides**, triggered by continuous heavy rain along steep slopes and narrow valleys. Multiple villages were cut off as roads, bridges, and small hydel structures were washed away. The sudden surge in hill torrents caused **severe damage to houses and farmland**, particularly in the tehsils of **Daggar and Gagra**.

The humanitarian impact in Buner was significant, with an estimated **death toll exceeding 100 lives**, mostly due to **house collapses and flash flood incidents**. Several others sustained injuries, while displacement occurred in low-lying settlements. Emergency response teams faced challenges in accessing remote areas due to **damaged road links and continued slope instability**. The 2025 floods highlighted the growing vulnerability of mountainous districts like Buner to **intense localized rainfall and rapid surface runoff**, underscoring the need for slope stabilization and improved early warning systems in upper KPK.

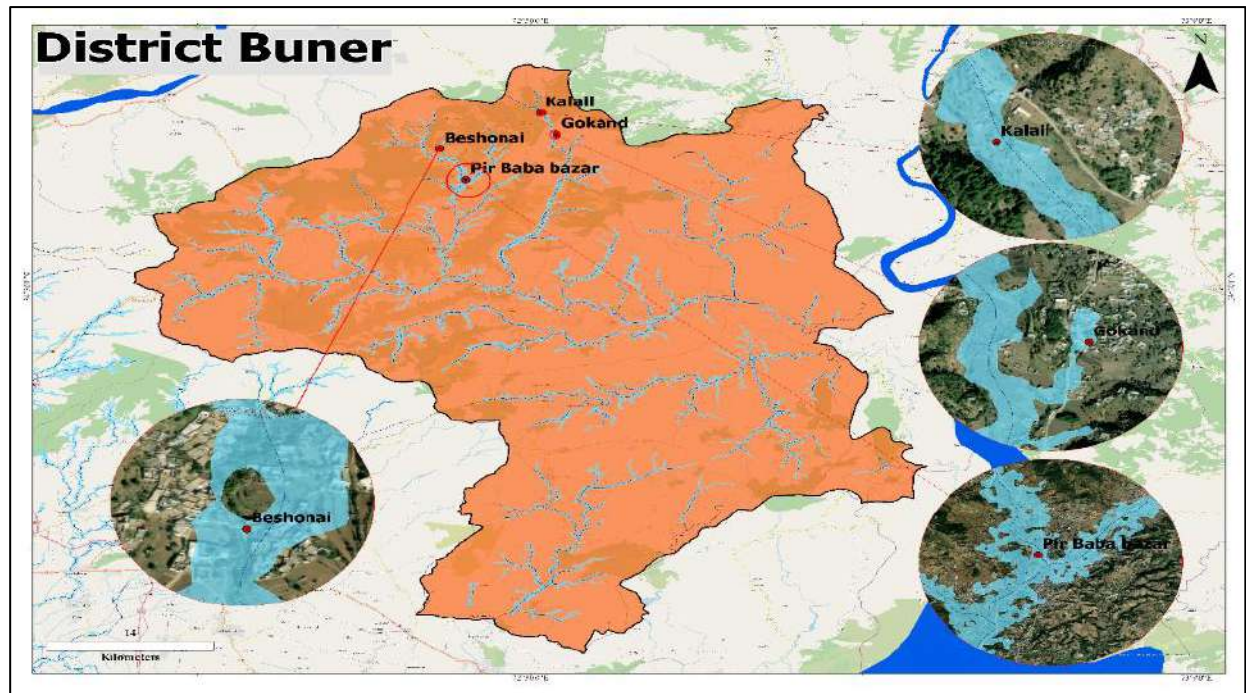


Figure: Flash Flood Prone areas of District Buner

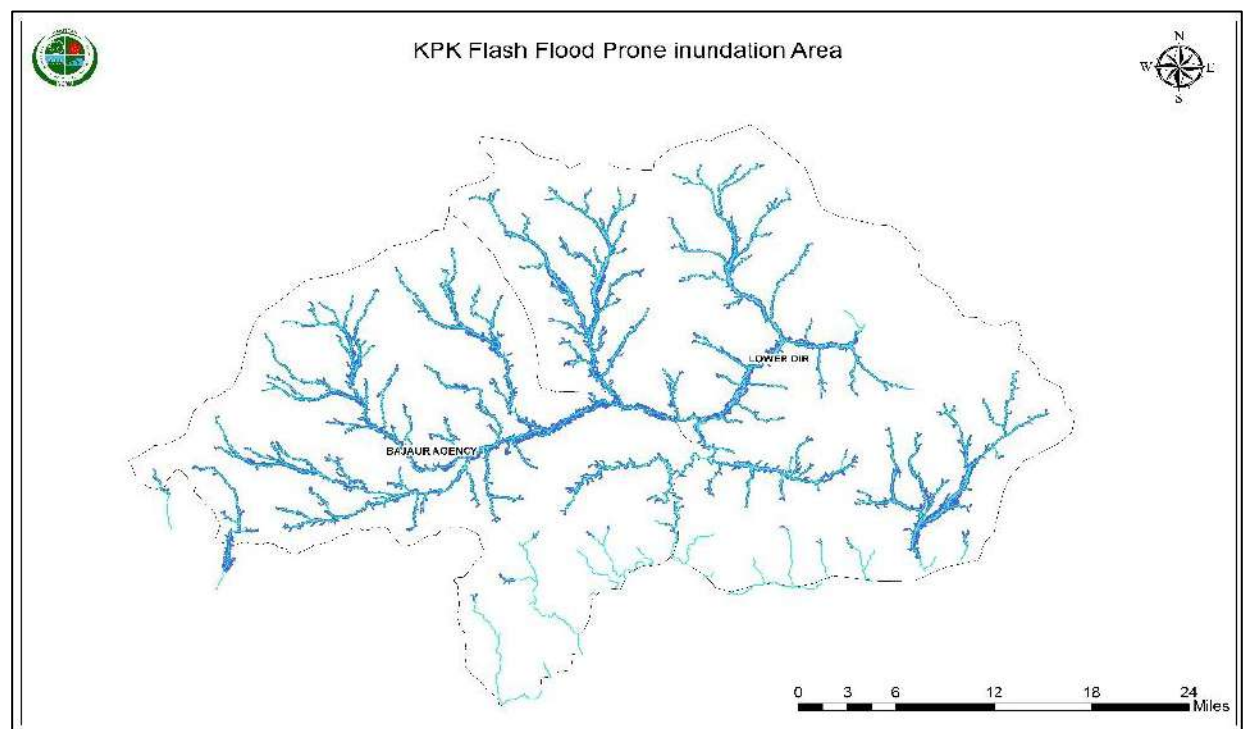
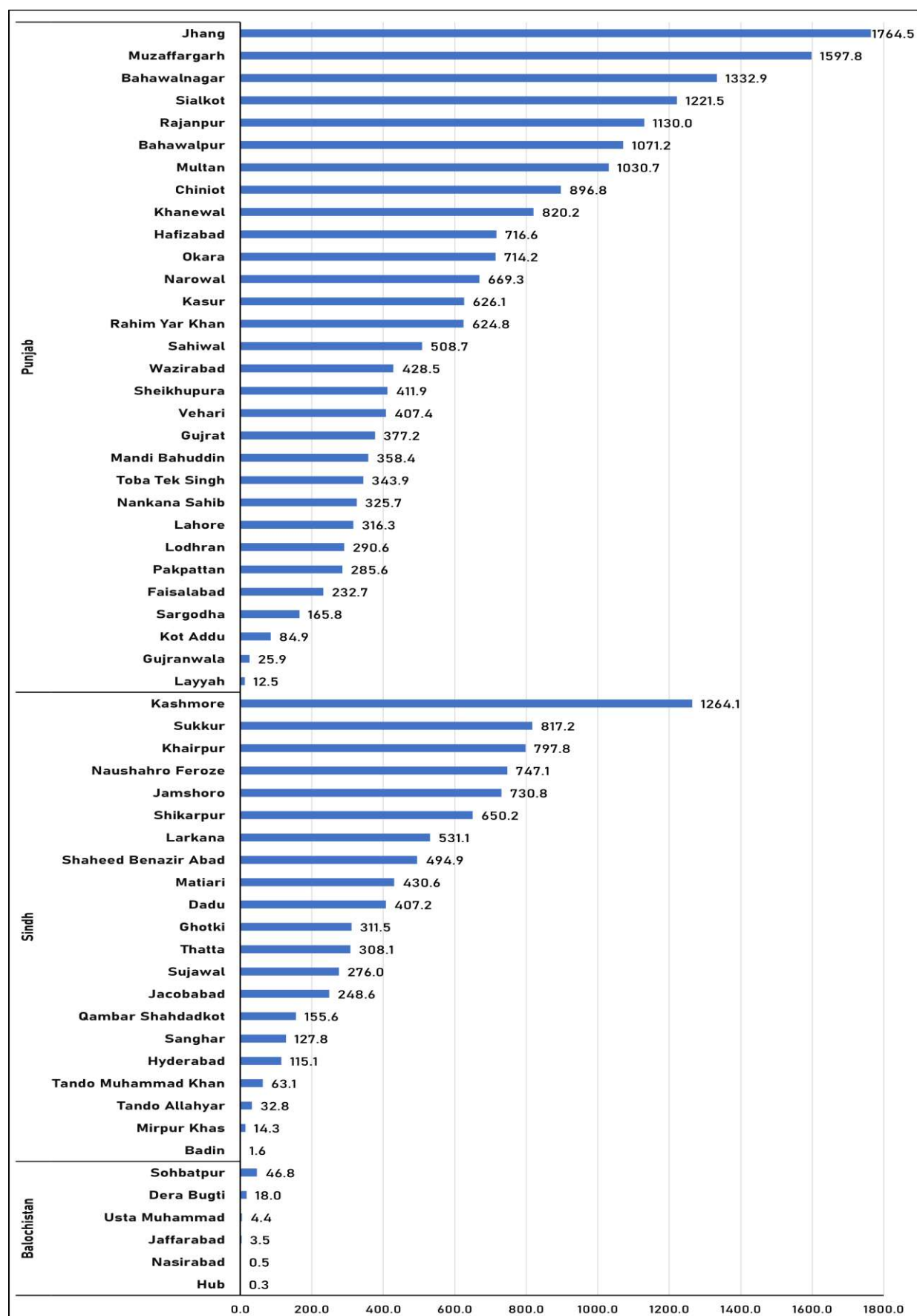


Figure: Flash Flood Prone areas of District Bajaur and Lower Dir

Inundated Area (sq.km) District Wise:



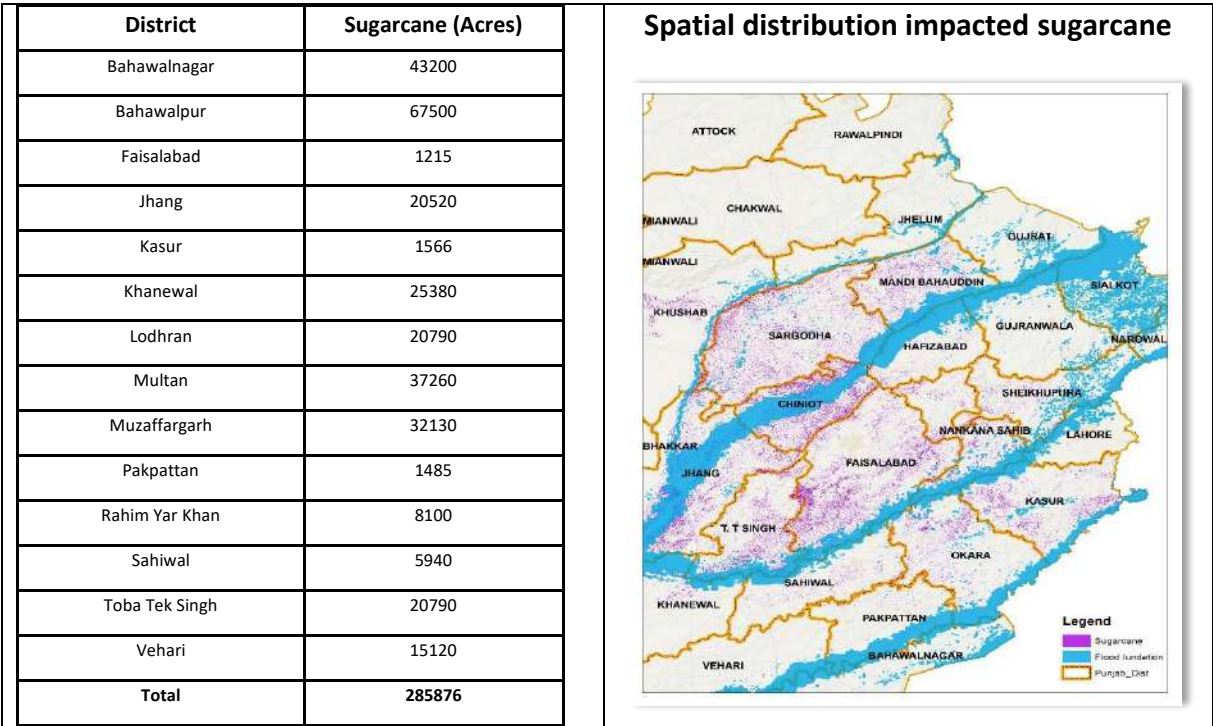
Agriculture impacts:

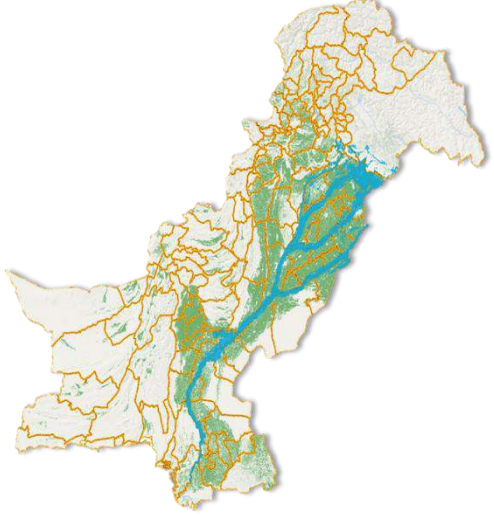
Agricultural Impact of Monsoon Floods 2025

The 2025 monsoon floods caused extensive damage to Pakistan’s agricultural sector, affecting an estimated **2.67 million acres of cropped area nationwide**. The majority of losses occurred in **Punjab Province**, where nearly **2.4 million acres** of farmland were impacted — including **1.0 million acres of rice**, **0.3 million acres each of cotton and sugarcane**, and **0.8 million acres of other seasonal crops**.

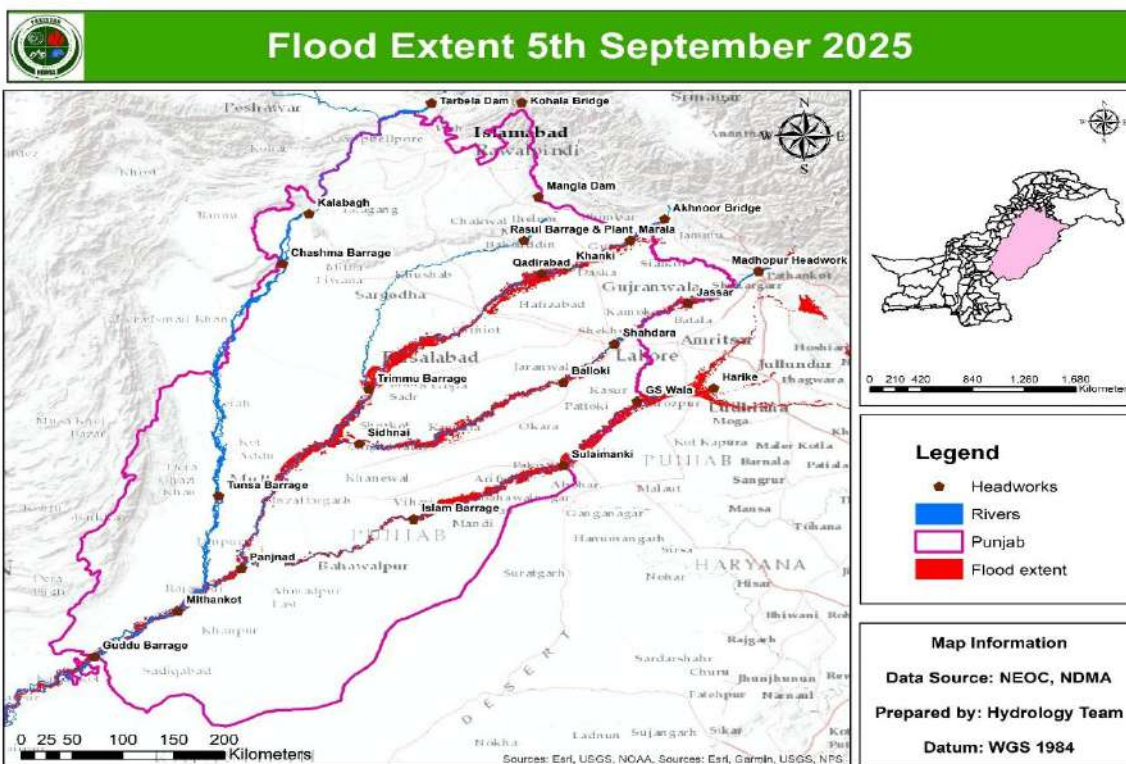
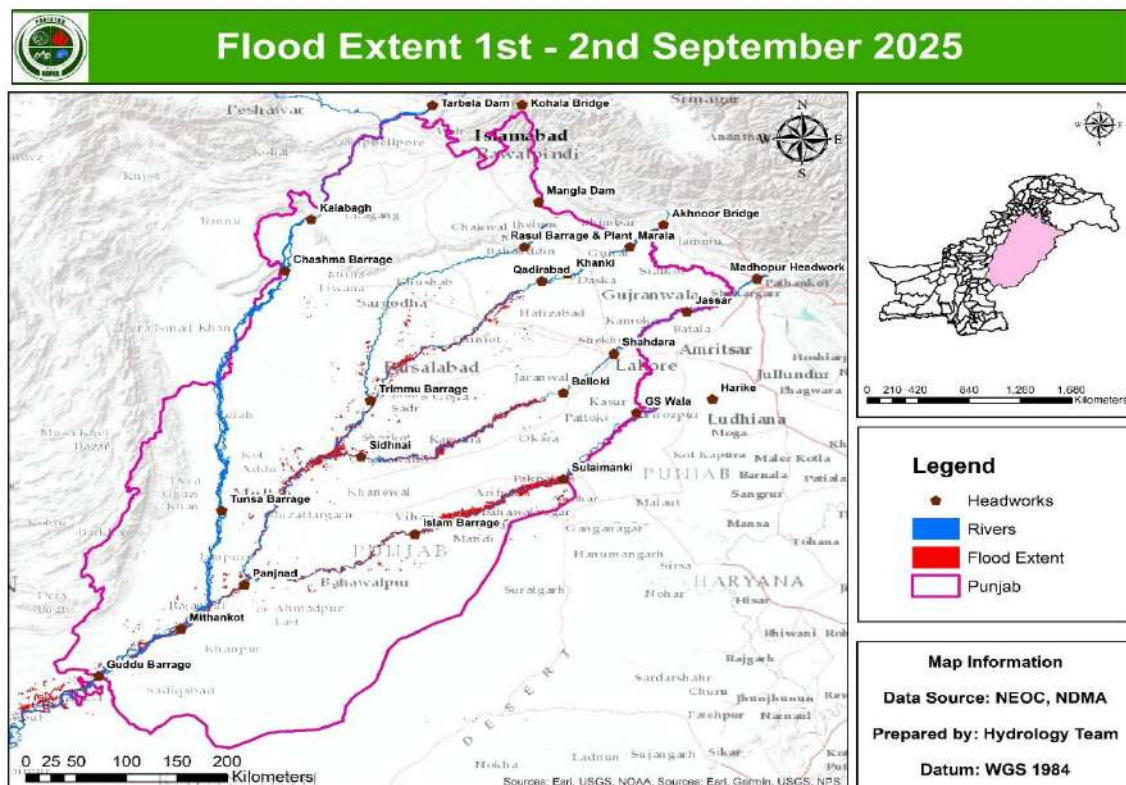
In **Sindh Province**, floodwaters damaged approximately **0.2 million acres**, mainly comprising **rice (0.1 Mn acres)** and **cotton (0.05 Mn acres)** in low-lying irrigated zones near the Indus. Smaller but notable impacts were also reported in **Khyber Pakhtunkhwa (KPK)**, where **0.065 million acres** were affected, primarily **rice (0.03 Mn acres)** and **other minor crops (0.035 Mn acres)** due to flash floods and hill torrents.

Overall, the 2025 floods severely disrupted the **summer cropping season**, particularly for **rice, cotton, and sugarcane**, leading to economic losses, reduced rural income, and delayed sowing for the subsequent Rabi season.



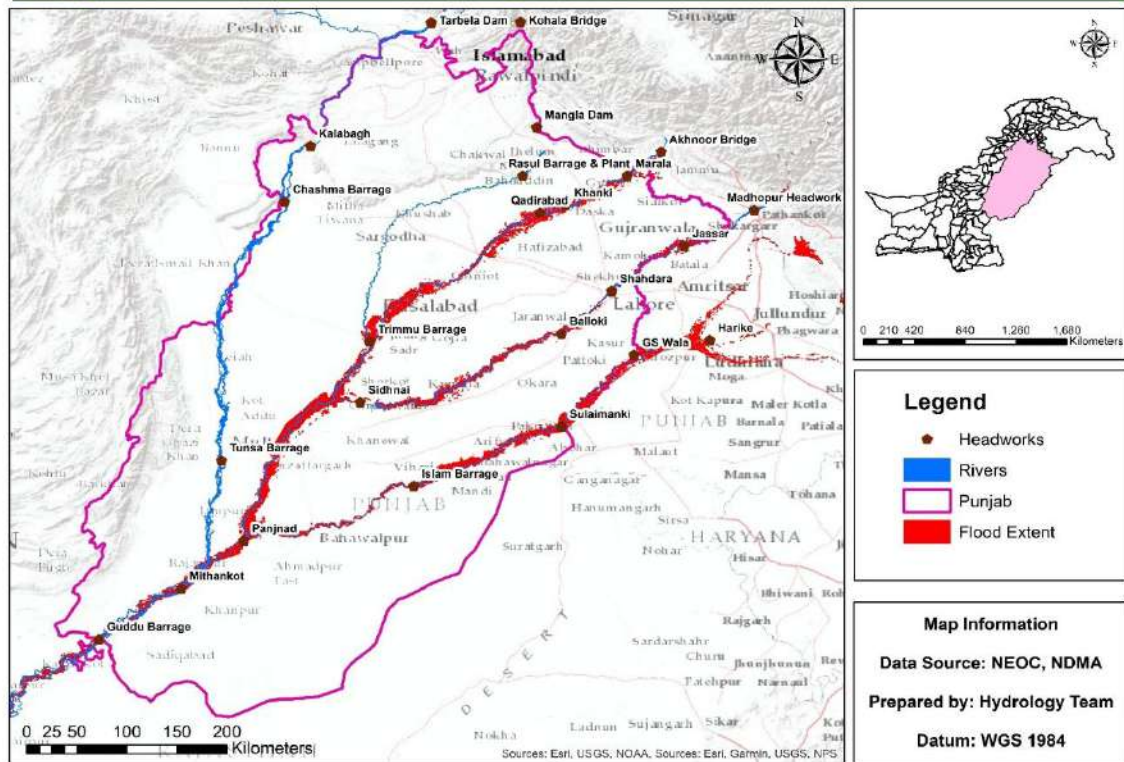
Province	Impacted Crop (Million Acre)					Spatial distribution impacted all crops
	Rice	Cotton	Sugarcane	Others	Total	
Punjab	1.0	0.3	0.3	0.8	2.4	
Sindh	0.1	0.05	0.01	0.04	0.2	
KPK	0.03	-	-	0.035	0.065	
Bln	-	-	-	-	-	
GB	-	-	-	-	-	
AJ&K	-	-	-	-	-	
Total	1.13	0.45	0.31	0.875	2.665	

APPENDIX 1 - Actual Flood Extents Punjab 2025

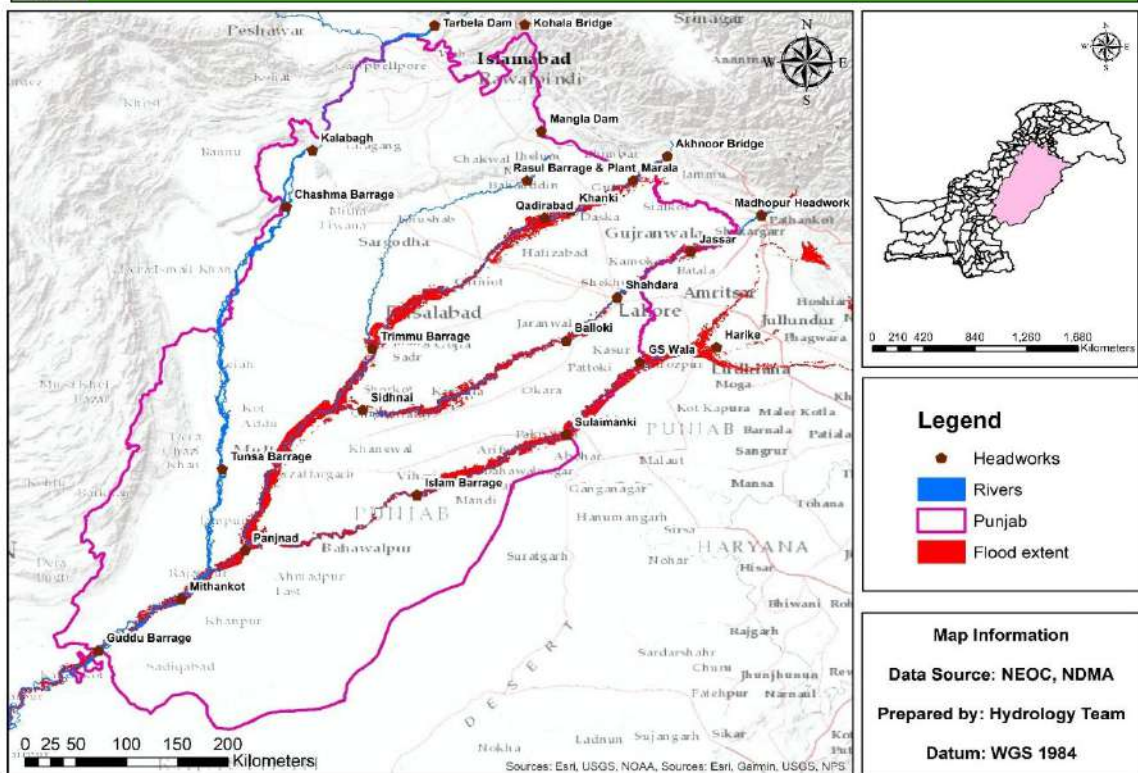




Flood Extent 6th September 2025



Flood Extent 7th September 2025



APPENDIX 2 – Critical Hydrological Structures’ Flow Trends



Figure: Flood waves 1 & 2 at Marala Headworks

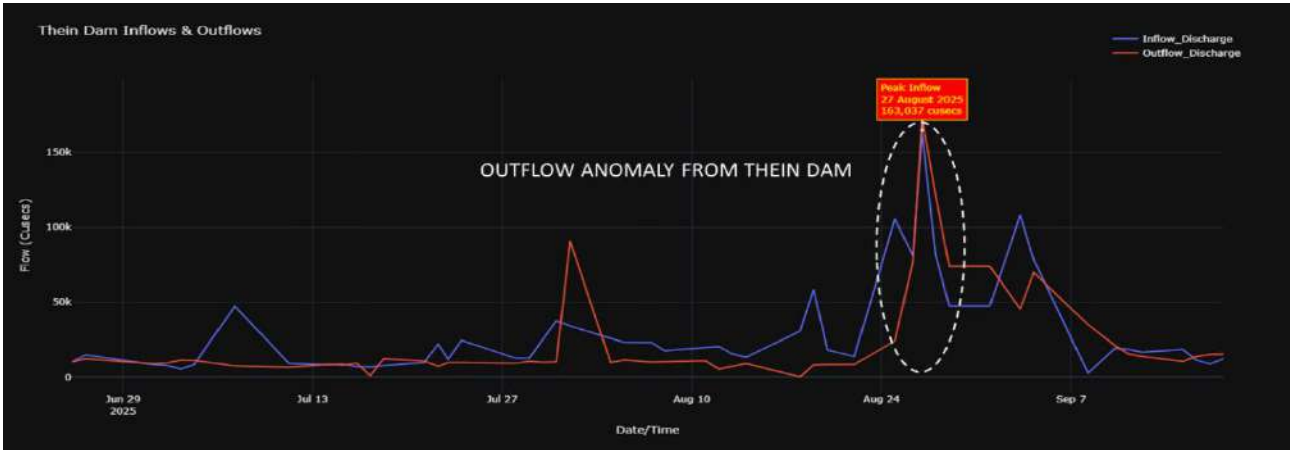


Figure: Thein Dam inflows/outflows

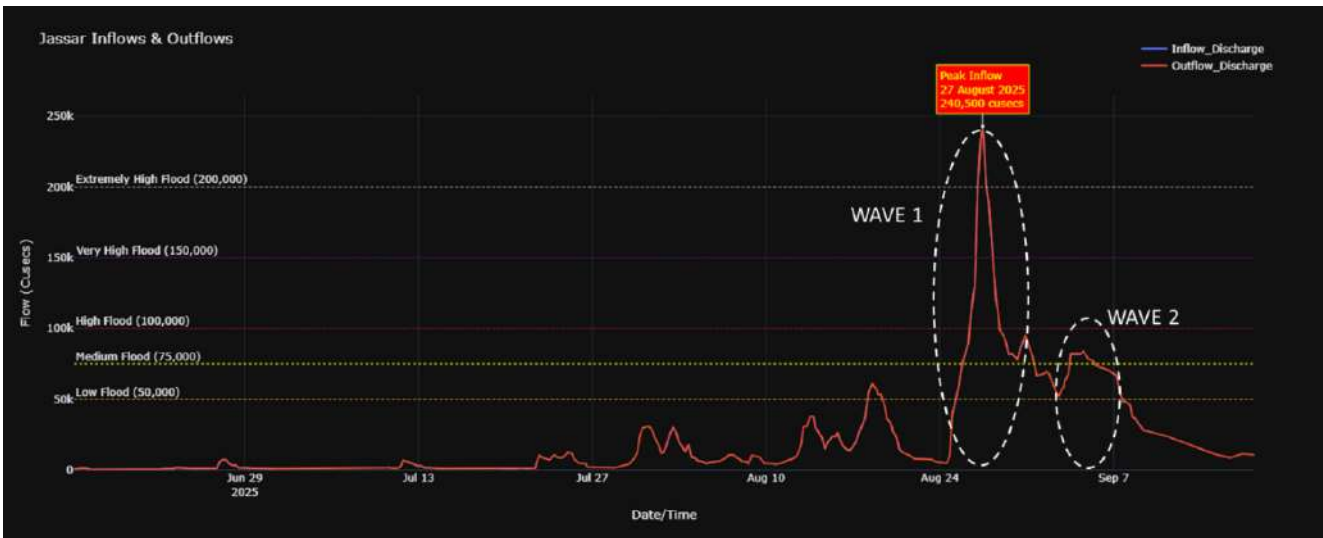


Figure: River Ravi flood waves 1 & 2 at Jassar entry point



Figure: River Ravi flood waves 1 & 2 at Shahdara, Lahore

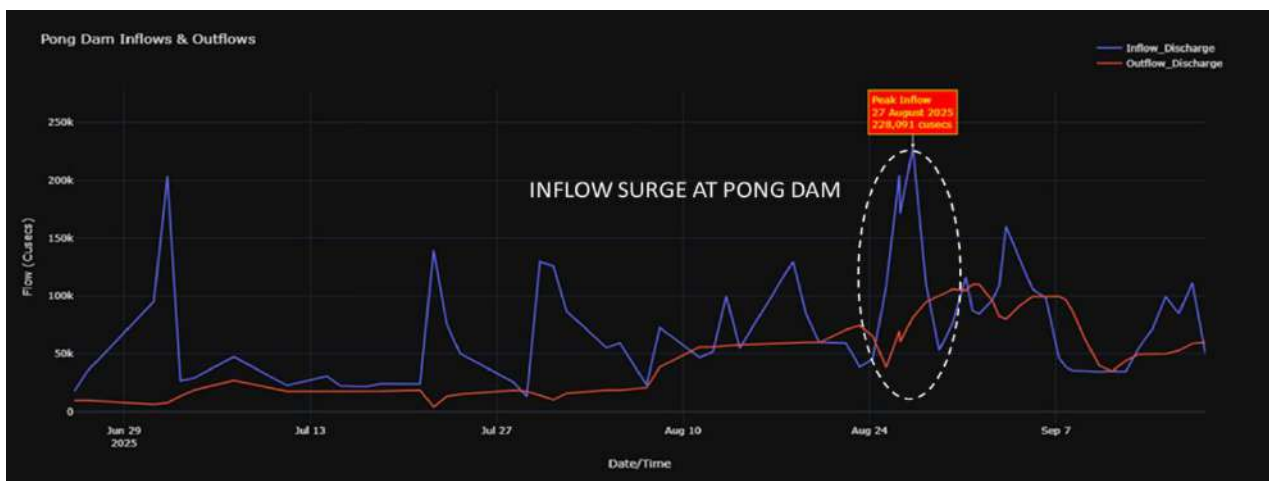


Figure: Pong Dam inflows/outflows



Figure: Surge at Ganda Singh Wala, Sutlej River

APPENDIX 3 – IMPACT OF BREACHES

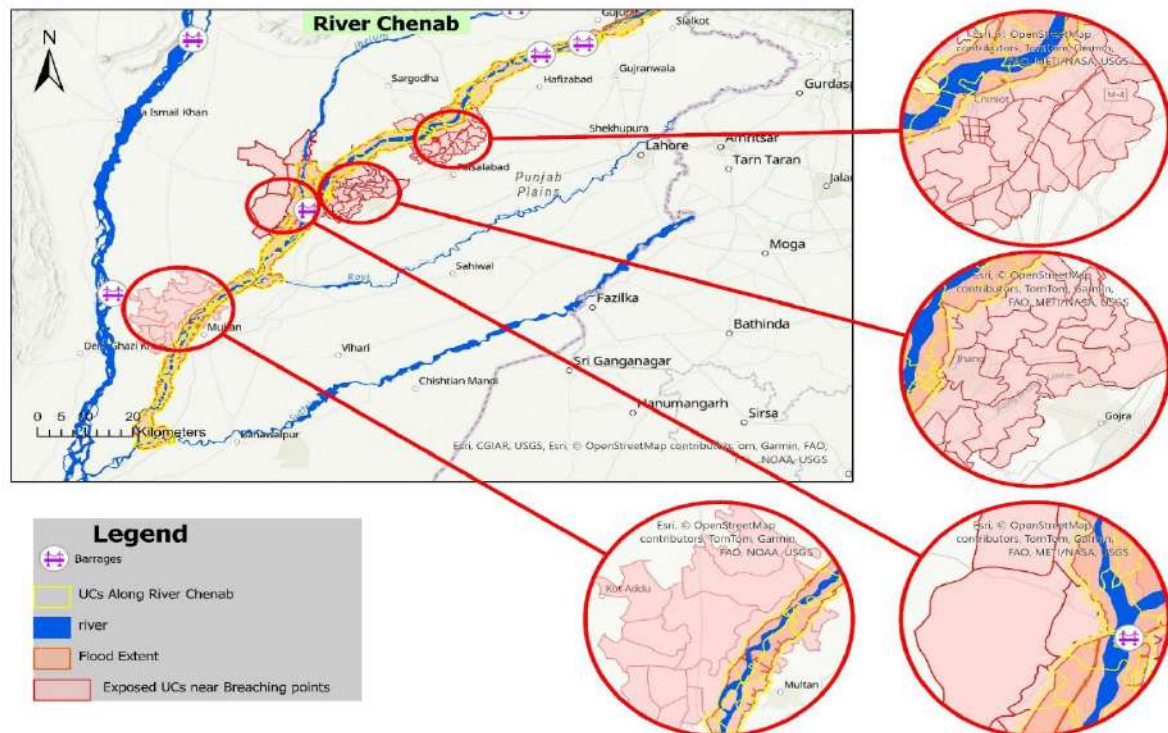


Figure: Impact of Breaches on **Chenab (Chiniot, Jhang, Multan)**

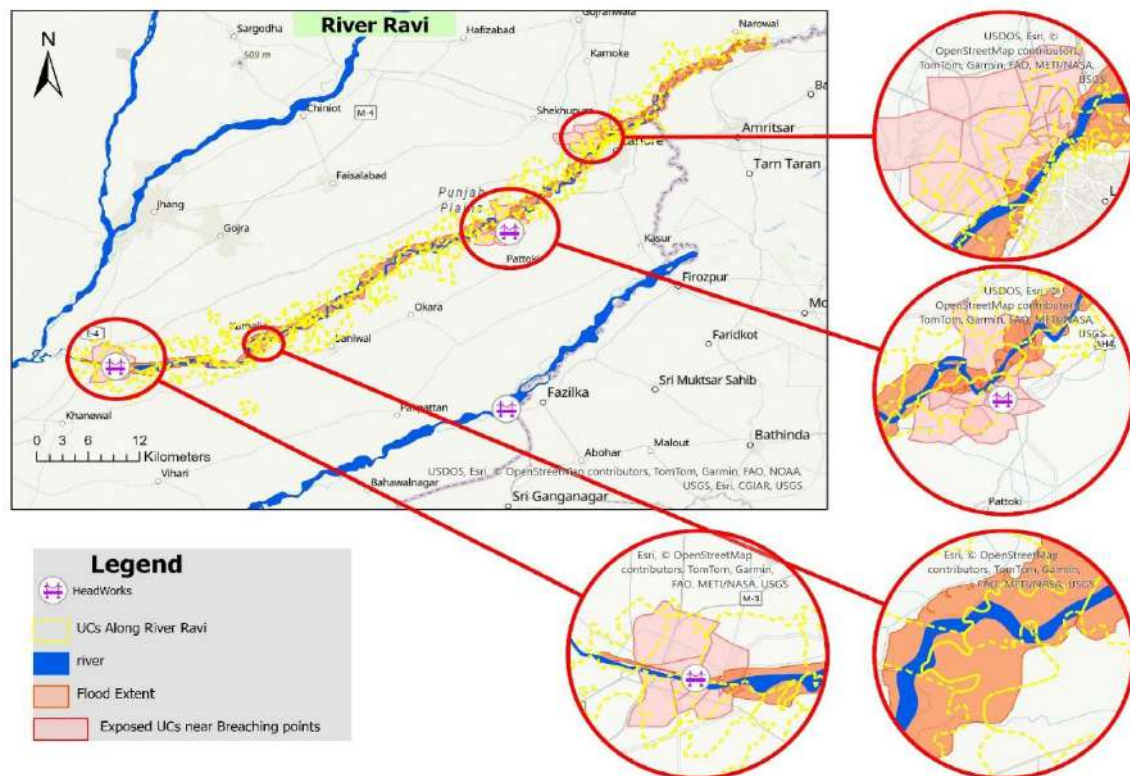


Figure: Impact of Breaches on **Ravi (Shahdara, Balloki, Sidhnai)**



Figure: List of available breaching sections on the rivers.

APPENDIX 4 – Affected Union Councils

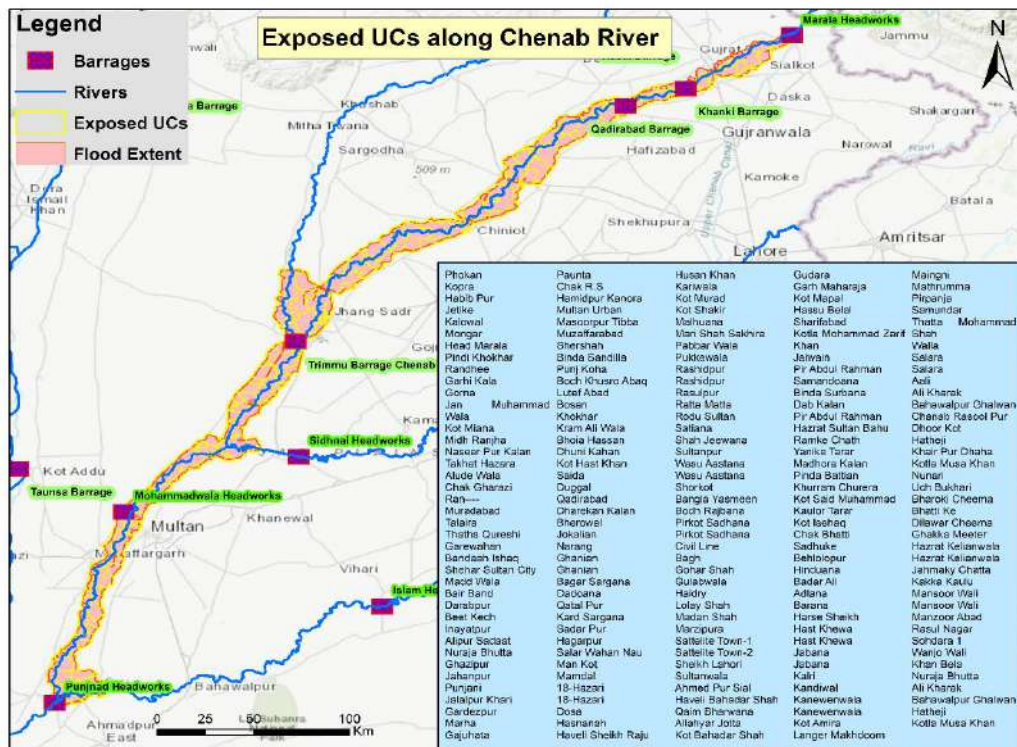


Figure 1: Chenab affected UCs

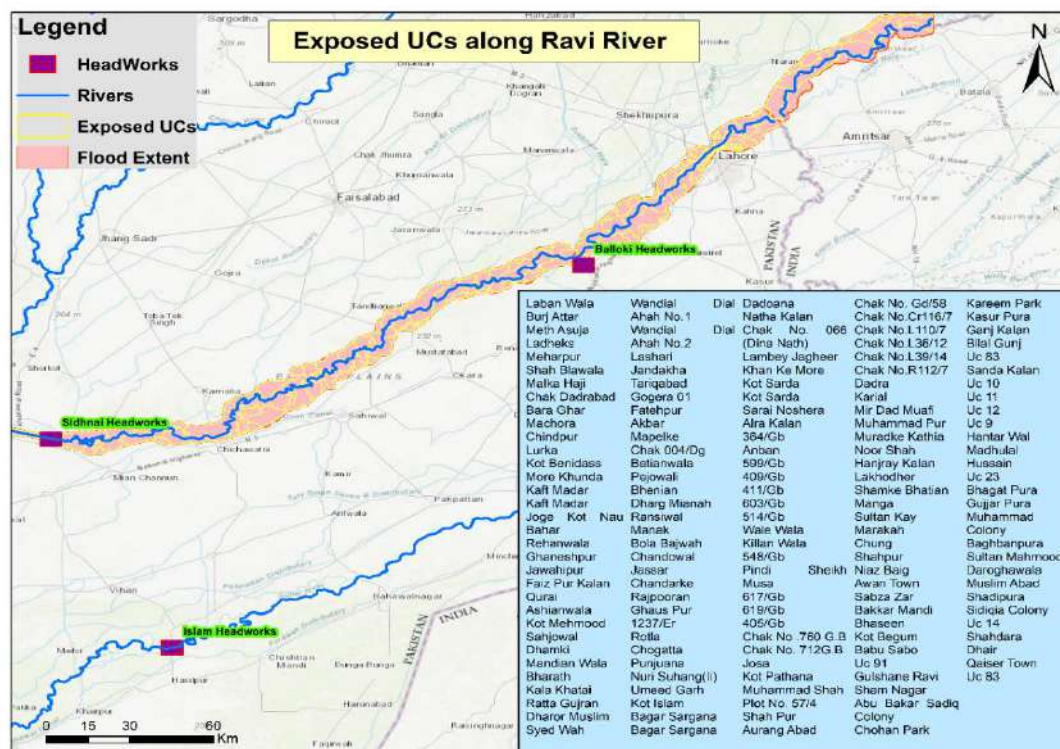


Figure 2: Ravi affected UCs

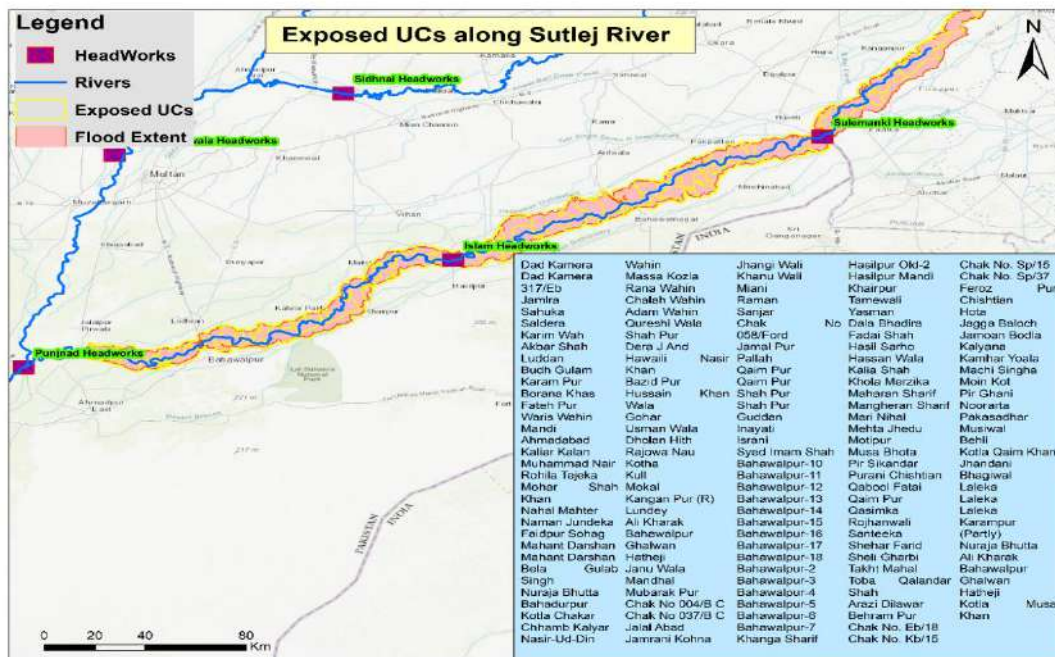


Figure 3: Sutlej affected UCs

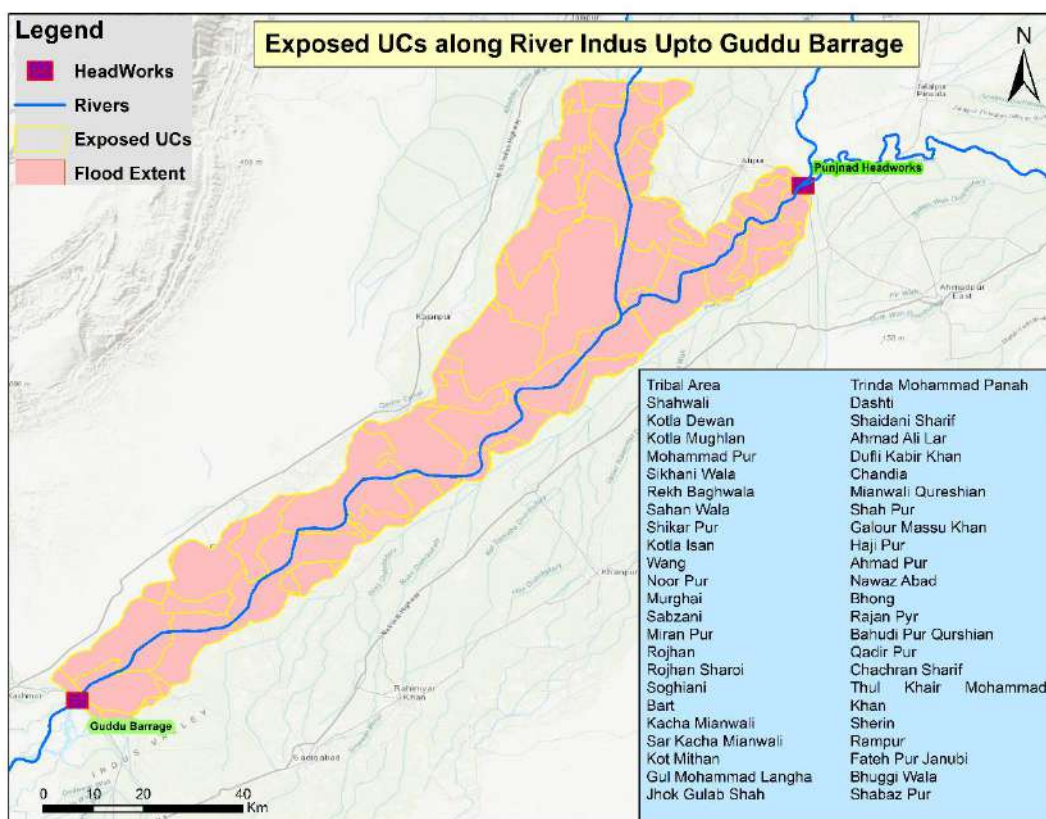


Figure 4: Affected UCs (Panjnad to Guddu)

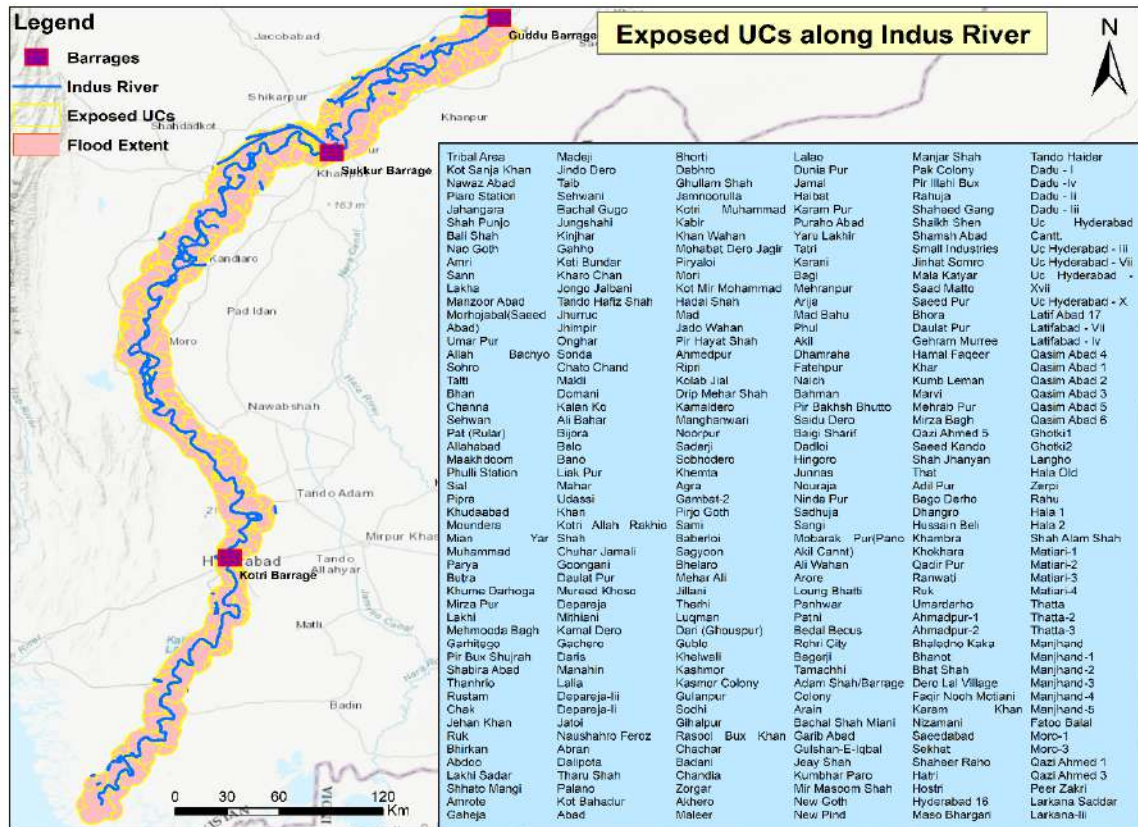


Figure 5: Indus affected UCs (Guddu to Arabian Sea)



POST-MONSOON REPORT 2025

RISK COMMUNICATION DRIVE

NDMA MEDIA DIRECTORATE

NDMA MEDIA DIRECTORATE



RISK COMMUNICATION (NDMA MEDIA DIRECTORATE)

1. Monsoon season 2025 brought significant risks, including heavy rainfall, cloudburst, riverine flooding, snowmelt, flash floods and landslides across Pakistan. Given the scale of potential hazards, timely and **effective risk communication** was essential to **safeguard communities** and ensure coordinated **preparedness**.

2. NDMA's Media Directorate launched a **multi-platform communication-based information relay mechanism** to disseminate **real-time alerts, advisories** and **response updates** to vulnerable populations, government institutions and international stakeholders.

3. Strategic Objectives

- a. **Timely Dissemination.** Deliver early warnings and advisories to vulnerable communities via mass media and telecom networks.
- b. **Public Awareness.** Educate communities and institutions on preparedness and safety measures.
- c. **Amplification of NDMA Updates.** Enhance visibility of NDMA's situational monitoring and response operations.
- d. **Credibility Enhancement.** Reinforce NDMA's role as Pakistan's central disaster management authority.

4. Key Activities and Outputs

- a. **Pre-Monsoon Risk Communication Initiatives.** To strengthen preparedness before the onset of the 2025 monsoon, NDMA launched a series of **strategic pre-monsoon communication activities** aimed at building institutional coordination, enhancing outreach capacity and ensuring effective early warning dissemination.

- (1) **Partnership with Telecom Sector.** NDMA formalized a **Letter of**

Agreement with Jazz, one of Pakistan's leading telecom operators, to deliver **geotagged SMS alerts** directly to at-risk communities. The agreement set a precedent for broader telecom engagement in DRR.



- (2) **Leveraging the Disaster Management Coordination Forum (DMCF).** The **DMCF** was actively **utilized** as a platform to integrate provincial and district administrations into NDMA's communication framework. This process ensured that messaging was consistent, contextual and operationally relevant.
- (3) **Establishment of United Disaster Media Support Groups (UDMSGs).** NDMA spearheaded the establishment of UDMSGs. These groups brought together media professionals, communication officers and disaster managers across federal and provincial levels as well as global media.
- (4) **Knowledge Sharing and Capacity Building.** NDMA organized a **national seminar on risk communication**, engaging multisectoral stakeholders including government departments, humanitarian agencies, academia and media. The seminar focused on best practices for preparedness messaging, audience segmentation and leveraging technology for disaster awareness. Complementing this, a **Provincial Disaster Risk Communication Coordination Conference** was held to align provincial messaging strategies with NDMA's national framework.
- (5) **International Engagement.** Recognizing the importance of global best practices, NDMA hosted a **webinar with international stakeholders** from the global media, ICIMOD, INGOs and global disaster communication networks.



- (6) **Development of Documentary Series.** As part of targeted communication for high-risk regions, NDMA developed a **10x specialized series of documentaries** on GB. The productions focused on role of CBDRM and Community Emergency Response Teams (CERTs) in local disaster management. Importantly, the series also addressed psychosocial challenges linked with disasters, including post-traumatic stress disorder (PTSD) and gender-based violence (GBV), underscoring the need for inclusive, holistic approaches to disaster preparedness.



▪ **Monsoon Risk Communication Initiatives**

(1) **Press Releases & Tickers**

- (b) Issued **800+** tickers & press releases from June-September 2025. These media releases were broadcasted in real-time across **141 satellite channels** under attribution of 'NDMA Media Wing'.



(c) **Content Included**

- Disaster Early Warning July to September (**DEW-3**) and catchment-specific forecasts.
- Situation** of rivers, hydrological structures & reservoirs.
- Hazard projections** such as flash floods, torrential rains, snowmelt, landslides, GLOFs and riverine flooding.

- iv. Prime Minister, Federal Ministers, Parliamentarians, Secretaries and heads of **Institutions briefings** at NEOC.
- v. Briefing of **Ambassadors and Foreign Missions on monsoon impacts**.
- vi. **International delegations'** visits to NEOC.
- vii. **Relief dispatches** to PDMA Punjab and KP and **related coordination updates**.

(2) **SMS Alerts**

- (a) Campaigns Conducted: **10 SMS Alert campaigns, (The duration of each campaign was one week).**
- (b) **Partners:** Pakistan Telecommunication Authority (PTA) + telecom operators.
- (c) Coverage: **High-risk districts with localized instructions.**
- (d) **SMS Campaigns Overview**



Campaign No.	Target Districts	Content Focus	Estimated Reach (Mn)
1–3	Northern Areas	Flood warnings, landslides, travel advisories	200
4–6	KP, GB & Punjab	Travel Advisories, Evacuation guidance & Riverine flooding	
7–10	Sindh & South Punjab	Riverine flooding	

(3) **Ring-Back Tones (RBTs)**

- (a) Total Activated: **2 monsoon safety tones (July- September)**

- (b) Coverage: **Nationwide**
- (c) Impact: Passive but repetitive reinforcement of preparedness messages

(4) **Public Service Messages (PSMs)**

- (a) Produced around **15 thematic broadcast PSMs**, aired through **social media platforms & TV Channels** including **YouTube**.



- (b) Themes included: **rain emergencies & flood preparedness, safety guidelines, evacuation guidance, health emergencies and NDMA mobile application** information.

(5) **Media Engagements (Pressers, Media briefings & TV Interviews)**

- (a) Coordinated and broadcast **20x Press Conferences & Media Briefings** by Prime Minister, Federal Minister, Chairman NDMA & National Leadership.



- (b) Coordinated more than **100 television interviews** of NDMA experts on national and regional channels.
- (c) Interviews were aimed at sensitizing the general public about hazards, vulnerabilities and risk reduction measures during the monsoon season.

(6) **Social Media Outreach**

- (a) During the 2025 monsoon season, NDMA's official social media platforms including Facebook, X, Instagram, LinkedIn, Tiktok, whatsapp channel played a pivotal role in **real-time risk communication and public engagement**. Content projected through these channels included **early warnings, rainfall and flood advisories, preparedness infographics, short educational videos, live updates on relief operations and**

coverage of high-level briefings. The use of **Urdu** expanded accessibility, while interactive posts and video messages ensured higher audience retention.



- (7) **Local Language Radio Broadcasts.** NDMA utilized Pakistan Broadcast Cooperation (PBC) & Radio Pakistan **regional radio stations broadcasting in local languages** including Pashto, Sindhi, Saraiki, Hindko, Dari, Shina, Chitrali, Punjabi during 2025 monsoon season. Alerts and advisories were tailored into **simple, culturally relevant messages** that resonated with rural populations, many of whom have limited access to television or digital media. These broadcasts provided **real-time rainfall and flood warnings, evacuation instructions and preparedness guidelines**, ensuring inclusivity in communication outreach.



- (8) **Alert Dissemination through Religious Institutions (e.g., Mosques)** Recognizing the influence and reach of religious institutions in community life, NDMA collaborated with local authorities and religious leaders to utilize Mosques and other places of worship for timely dissemination of flood alerts and evacuation guidance. Through Mosque loudspeakers and community announcements, especially in remote or digitally disconnected areas, urgent advisories were broadcast to maximize outreach. This approach enhanced trust, localized engagement and rapid mobilization for early evacuation efforts.

Communication Tool	Outreach/ Audience	Effectiveness (Qualitative)
TV Interviews & Press Briefs	National & International	Established NDMA as authoritative voice & Strengthened credibility and transparency
Press Releases & Urdu Tickers	Nationwide	Enhanced public visibility and awareness, provided updates to public
Social Media Updates	Digital-first	Engaged youth and urban audiences
SMS Alerts	Vulnerable districts	Provided life-saving, actionable guidance
Ring-Back Tones	Nationwide	Reinforced disaster preparedness through NDMA voice

5. **Impact**

- a. Monsoon preparedness and safety messages reached diverse audiences nationwide.
- b. SMS alerts provided life-saving instructions in vulnerable areas.
- c. NDMA maintained continuous visibility across print, electronic and digital platforms, reinforced by 100+ expert interviews.
- d. Use of ring-back tones ensured preparedness reminders in daily communications.
- e. NDMA reaffirmed its role as the lead agency for disaster risk communication.

<><><><>

GCC / DRR - INCLUSIVE PREPAREDNESS REPORT - 2025**1. Humanitarian Coordination and Conference Outcomes**

- a. **Humanitarian Conference - 3rd July 2025.** On the special directives of the **Chairman NDMA**, an emergency **Humanitarian Conference** was convened on **3rd July 2025**, bringing together national and international partners to strengthen humanitarian coordination, anticipatory action, and inclusive disaster management mechanisms in Pakistan. The conference provided a platform to deliberate on **resource mobilization, multi-sectoral coordination, and inclusive preparedness planning**. Key humanitarian working groups and task forces participated, including:-
 - (1) Gender Task Force (GTF).
 - (2) Gender and Humanitarian Action Group (GHAG).
 - (3) Age, Disability and Diversity Task Force (ADDTF).
 - (4) Education in Emergencies (EiE) Working Group.
 - (5) Nutrition in Emergencies (NiE) Working Group.
- b. Following the conference, the **Plans Wing** of NDMA convened a follow-up coordination session to scale up **Monsoon Preparedness 2025**, with a particular focus on **disability-inclusive early warning systems** in alignment with the **Sendai Framework for Disaster Risk Reduction**.

2. Innovation and Inclusion in Humanitarian Systems

- a. **RFID Initiative – 24th September 2025.** NDMA introduced **Radio Frequency Identification (RFID)** technology to improve efficiency, transparency, and inclusivity in disaster response operations. The initiative aims to enhance real-time tracking of relief supplies and strengthen accountability, while ensuring visibility of **vulnerable populations** during emergencies. Two prototypes have been developed:-
 - (1) **Prototype 1: Individual Information Band** – Stores personal, CNIC, and medical data to assist first responders in providing timely care.
 - (2) **Prototype 2: Geotagging Tracker Band** – Incorporates real-time tracking for vulnerable individuals in hazard-prone districts, ensuring safety during evacuation and relocation.
- b. This technology, once finalized, will serve as a breakthrough for tracking **persons with disabilities, elderly individuals, and children**, enabling **faster reunification and beneficiary verification** during humanitarian operations.

3. **Disability-Disaggregated Data – Balochistan.** In recognition of the need for **inclusive disaster data**, GCC–NDMA formally requested all **PDMA/GBDMA/SDMA** to include disability columns in daily **Situation Reports (SitReps)**. Acting swiftly, **PDMA Balochistan** became the **first PDMA in the country’s history** to record and share **disability-disaggregated data** of men, women, and children with NDMA in **September 2025**. This practice marks a significant institutional step toward **inclusive data governance**, setting a precedent for replication across provinces.

4. **Disability-Assistive Early Warning Systems.** NDMA, through its **Technical and GCC wings**, is developing **disability-assistive early warning systems** to ensure accessible alerts for persons with disabilities during emergencies. The system integrates **multi-format communication channels** — visual, audio, and tactile — to ensure early warnings are actionable for all. The pilot has been finalized and will be launched ahead of upcoming seasonal hazards, reinforcing NDMA’s **commitment to inclusive preparedness** under the **Sendai Framework Priority 4**: “Enhancing disaster preparedness for effective response.”

5. **Post-Monsoon Flood Response 2025: Introduction.** The **2025 floods** in Pakistan caused widespread damage across multiple provinces. The **Gender and Community Cell (GCC)** consolidated inputs from partner organizations focusing on **gender, child protection, disability inclusion, and resilience building** in the flood response.

6. **Capacity Building Initiatives**

- a. **GBViE Training – Flood 2025.** Focused on ensuring safety, dignity, and access to essential services for survivors of gender-based violence in emergencies. Enhanced responder capacity to identify and mitigate GBV risks.
- b. **EiE Training – Education in Emergencies.** Strengthened education continuity and child protection measures in crisis contexts. Promoted resilient, inclusive learning environments through inter-sectoral response frameworks.
- c. **Activity Timeline.** 8th & 27–29 August 2025.

7. **Partner Organization Responses**

Organization	Key Focus	Districts	Province
Indus Hospital & Health Network (IHHN)	Maternal & child healthcare, disability treatment, community wellness	Buner, Shangla	KP
Save the Children	Education continuity, psychosocial recovery, girls’ education	Multan, Shangla	Punjab, KP

Organization	Key Focus	Districts	Province
Alkhidmat Foundation	Relief supplies, hygiene/dignity kits, food security	Bajaur, Swabi	KP
Islamic Relief	Shelter, food, gender-sensitive support for women-headed households	Bajaur, Multan	KP, Punjab
HELP Foundation	Community protection, psychosocial support	Muzaffargarh	Punjab

8. **Psychosocial and Education Recovery Efforts**

- a. **Psychosocial Support.** Implemented in **Buner, Swat, and Muzaffargarh**, targeting trauma care, stress management, and community resilience for women and children.
- b. **Education Recovery**
 - (1) **UNICEF & Sanjh Preet Organization:** Installed High-Performance Tents (HPTs) for safe learning spaces in Punjab.
 - (2) **RSPN & SRSP:** Established 32 Temporary Learning Centres (TLCs) in Swat, Shangla, Buner, and Mansehra, benefiting over 3,000 children.

9. **Women's Leadership and Climate Resilience.** The **Potohar Organization for Development Advocacy (PODA)**, in collaboration with the **Gender and Community Cell (GCC)**, **NDMA**, facilitated the visit of **25 rural women leaders from calamity-hit districts** to the **National Emergency Operations Centre (NEOC)** during the **18th Annual Rural Women Conference**. The engagement was designed to make **NDMA's resilience and preparedness efforts visible at the grassroots level**, connecting national disaster management mechanisms with community voices. It highlighted **women's leadership and agency in climate adaptation, local decision-making, and disaster resilience**, underscoring their critical role as partners in building safer, more inclusive communities.

10. **Lessons Learned**

- a. Gender and community inclusion enhanced overall response quality.
- b. Disability and age-disaggregated data improved targeted interventions.
- c. Early integration of protection and education ensured continuity for children.
- d. Coordination among humanitarian actors minimized duplication.
- e. Women's leadership strengthened local adaptive capacity.

11. **Rapid Gender Analysis (Gender Task Force).** Recognizing the differentiated impacts of crises on diverse population groups, the national coordination architecture adopted an

inclusive rapid analysis approach across provinces, aligned with the **Gender Task Force (GTF)** and collaborating mechanisms (GBVIE, PSEA Network, AAP Working Group, and ADDTF). Using streamlined qualitative tools—community consultations, key informant interviews, and rapid field observations—the analysis captured **gender-, age-, and disability-specific vulnerabilities, capacities, and priorities**. This work complements UNOCHA’s rapid needs overviews by providing **deeper, protection-focused insights** to inform operational planning, inter-agency coordination, and equitable resource allocation nationwide. Cross-cutting findings across provinces highlight: heightened **safety and protection risks** (including GBV and SEA), **absence or insufficiency of safe and accessible spaces** for women, girls, older persons, and persons with disabilities; critical **health and WASH gaps** (including SRH and MHM); **escalation of unpaid care burdens** for women and adolescent girls; **barriers to assistance** (mobility, documentation, stigma, distance); widespread **psychosocial distress** with limited structured MHPSS services; and **low participation of women and marginalized groups** in decision-making and feedback loops. The programmatic implications are clear: establish **Women- and Girl-Friendly Spaces (WGFS) / Women Community Centers (WCCs)** as protective entry points; operationalize **survivor-centered GBV and PSEA pathways**; ensure **inclusive AAP mechanisms**; deliver **gender-responsive health and WASH services**; provide **age- and disability-sensitive MHPSS**; and link immediate relief to **livelihood recovery**—especially for women-headed households—so that humanitarian action tangibly advances **resilience and equity** across all provinces.

12. **Response to PM Office Query.** Following a formal query from the **Prime Minister’s Office** regarding the pronounced **male-to-female disparity in flood-related casualties** reported from **District Buner**, the **Gender and Community Cell (GCC)** of NDMA promptly undertook a **Rapid Gender Analysis (RGA)** to investigate the underlying causes. The analysis revealed that men accounted for nearly three-quarters of the fatalities due to their higher exposure in outdoor and commercial areas such as markets, transport routes, and construction zones, which were directly hit by flash floods and landslides. In contrast, women and children experienced fewer immediate fatalities due to limited mobility and fewer structural collapses in residential zones; however, with more than **50 individuals—predominantly women—still missing**, the gender ratio of casualties is expected to narrow as recovery operations continue. The findings underscore how **mobility patterns, livelihood exposure, and socio-cultural gender norms** shape vulnerability in disasters, reaffirming the importance of **gender-responsive risk assessments** and **sex-disaggregated data systems** for all provinces.

13. **Conclusion.** Disasters often deepen pre-existing inequalities, yet they also reveal the transformative capacity of inclusive action. Through the **Post-Monsoon 2025 response** and

Winter Preparedness initiatives, NDMA reaffirms its commitment to **equitable resilience**, ensuring that **women, children, persons with disabilities, and the elderly** remain at the centre of disaster preparedness and recovery efforts.

14. **Event Time Line**

Pic/ Video	Location	Bhu Long/ Lat	District	Province
  ISLAMIC RELIEF	Gadezai (Pirbaba)	72.453567/34.600923	Buner	KP
 INDUS HOSPITAL	Daggar	72.462956/34.496739	Buner & Shangla	KP
 SAVE THE CHILD	Alipur & Jalapur	71°12'18.3"E/29°33'57.5"N 71°13'47.7"E/29°45'09.8"N	Multan	Punjab

Pic/ Video	Location	Bhu Long/ Lat	District	Province
  ALKHIDMAT Foundation	Dalori Bala & Sarkoi	72.4690000/34.1220000	Bajaur & Swabi	KP
 HELP Foundation	Alipur	71°12'18.3"E/29°33'57.5"N	Muzaffargarh	Punjab



ACTIVITY: GBViE 27TH TO 29TH AUGUST, 2025



ACTIVITY: EIE CONFERENCE 8TH AUGUST,2025



PSCHOSOCIAL SUPPORT: BUNER, SHANGLA, MUZAFFARGARH



EDUCATION RECOVERY: TEMPORARY LEARNING CENTRES SHANGLA, SWAT