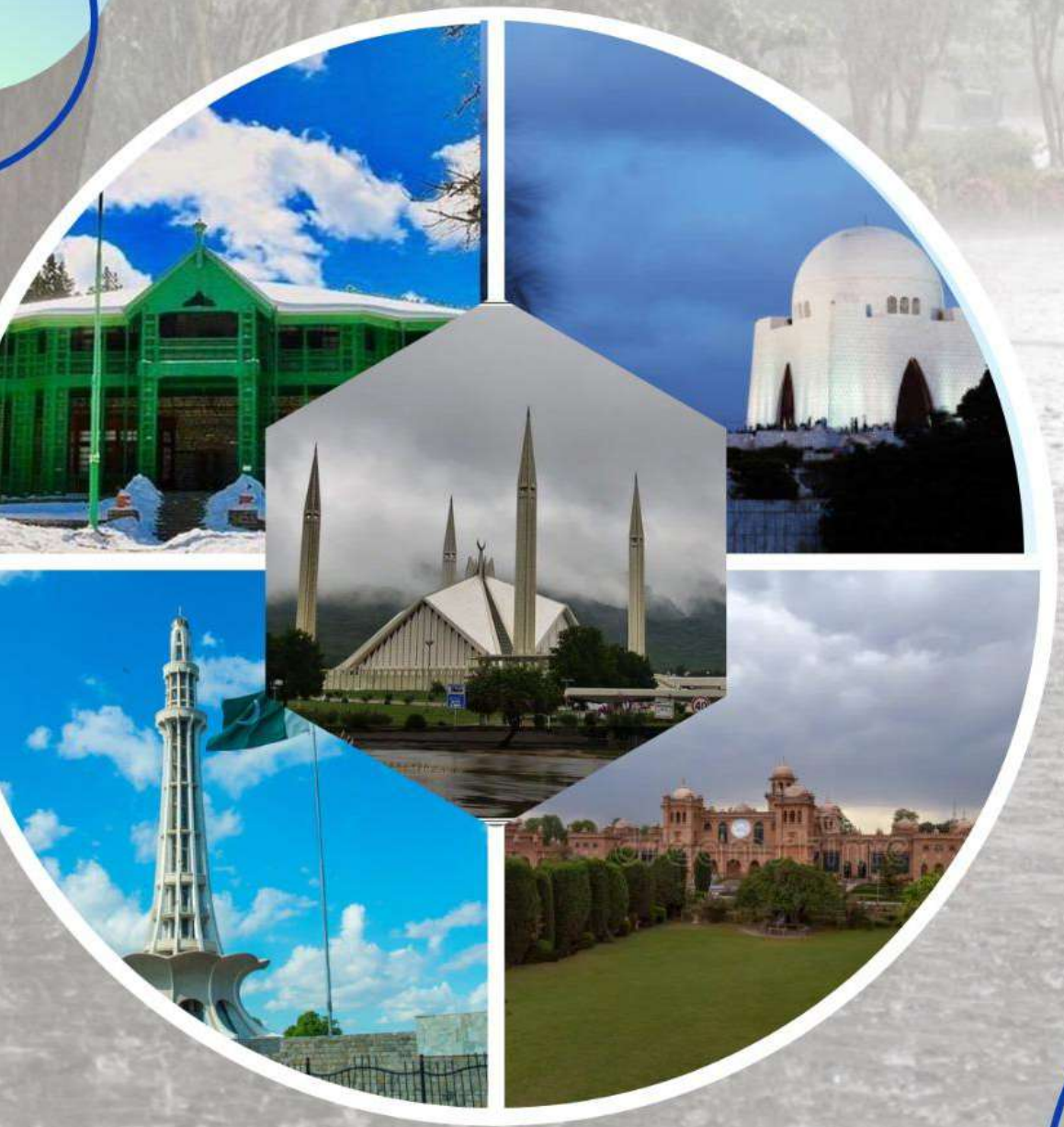
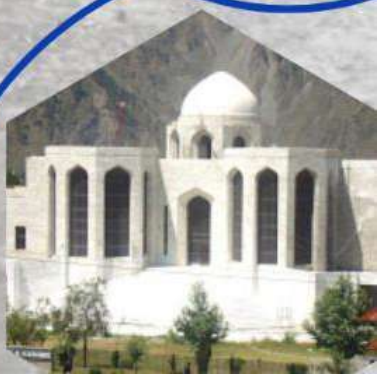
Government of Pakistan

Prime Minister's Office

National Disaster Management Authority (HQ)

MONSOON CONTINGENCY PLAN 2025





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List of Acronyms

AJ&K	Azad Jammu and Kashmir
BHU	Basic Health Unit
CAFs	Civil Armed Forces
C&W	Communication and Works Department
CMO	Cellular Mobile Operator
CSO	Civil Society Organization
DDMA	District Disaster Management Authority
DM	Disaster Management
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
GLOF	Glacial Lake Outburst Flood
HR	Human Resource
ICT	Islamabad Capital Territory
INGOs	International Non-Governmental Organizations
IOD	Indian Ocean Dipole
ITCZ	Inter-Tropical Convergence Zone
KP	Khyber Pakhtunkhwa
LST	Land Surface Temperature
LEAs	Law Enforcement Agencies
MIRA	Multi-Sector Initial Rapid Assessment
MISP	Minimum Initial Service Package
MJO	Madden-Julian Oscillation
MoCom	Ministry of Communications
MoNFS&R	Ministry of National Food Security and Research
MoNHS&R	Ministry of National Health Services and Research
MoWR	Ministry of Water Resources
NDMA	National Disaster Management Authority
NDMP	National Disaster Management Plan
NDRP	National Disaster Response Plan
NEOC	National Emergency Operations Centre
NGOs	Non-Governmental Organizations
NHA	National Highway Authority

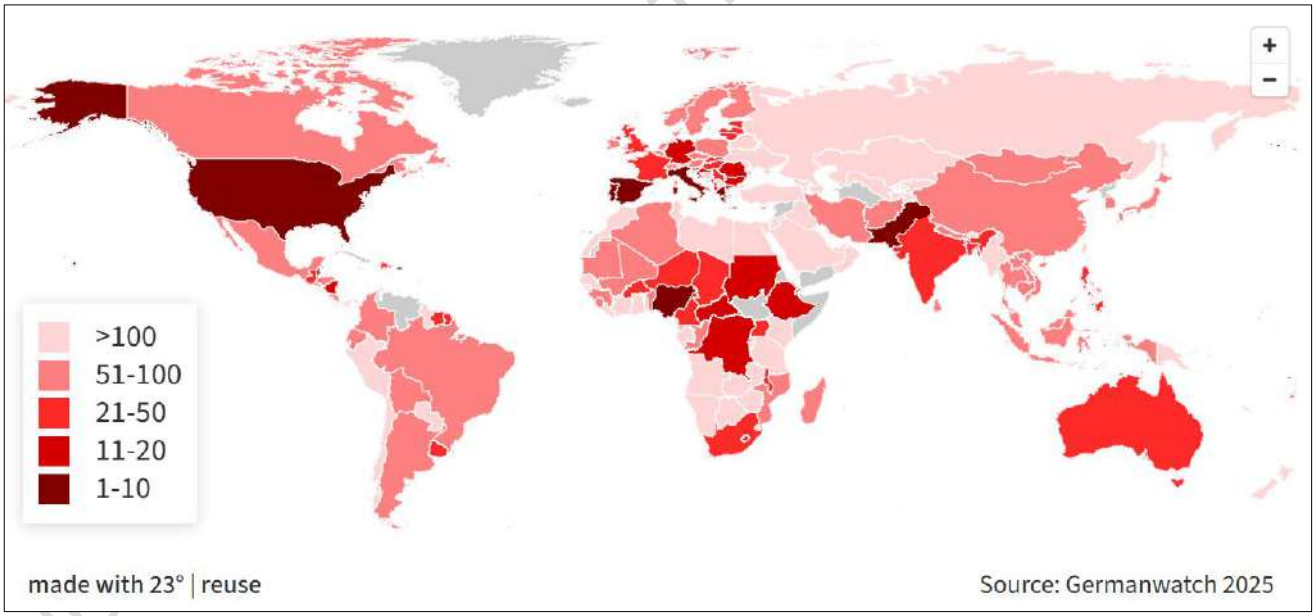
NIH	National Institute of Health
OBM	Outboard Motor
PDMAs	Provincial Disaster Management Authorities
PEMRA	Pakistan Electronic Media Regulatory Authority
PHA	Provincial Highway Authority
PID	Provincial Irrigation Department
PMD	Pakistan Meteorological Department
PCIW	Pakistan Commission for Indus Waters
PMO	Prime Minister's Office
PR3	Preparedness, Response, Recovery and Rehabilitation
RMM	Real-time Multivariate MJO
SAR	Search and Rescue
SDMA	State Disaster Management Authority (AJ&K)
SITREP	Situation Report
SOP	Standard Operating Procedure
SST	Sea Surface Temperature
SUPARCO	Space and Upper Atmosphere Research Commission
UN	United Nations
USAR	Urban Search and Rescue
WAPDA	Water and Power Development Authority
WASA	Water and Sanitation Agency

General

1. Pakistan is geographically and topographically diverse, with snowcapped mountain ranges in the North, rolling hills and river basins in the Center, arid deserts in the South, and a long coastal belt along the Arabian Sea. Pakistan's diverse terrain renders it highly susceptible to a variety of natural hazards, including floods, earthquakes, landslides, cyclones, droughts, and glacial lake outburst floods (GLOFs). The interplay among climate variability, socio-economic pressures, and inadequate infrastructure has increased the frequency, severity, and impact of disasters.

2. According to the Global Climate Risk Index (CRI) 2025 published by Germanwatch, Pakistan has been among most climate-vulnerable countries in the world, underscoring its acute susceptibility to the adverse impacts of climate change. This ranking highlights a paradox: while Pakistan contributes less than 1% to global greenhouse gas emissions, it faces disproportionate consequences in the form of frequent and intensifying extreme weather events.

3. These events include erratic Monsoon patterns, prolonged heatwaves, accelerated glacial melt in the Northern highlands, increasing cyclonic activity along the Arabian Sea, and prolonged periods of drought in the arid Southern and Western regions. Each of these hazards has shown a rising trend in both frequency and severity over the past two decades.



Picture 1 *Shows the Climate Risk Index 2025*

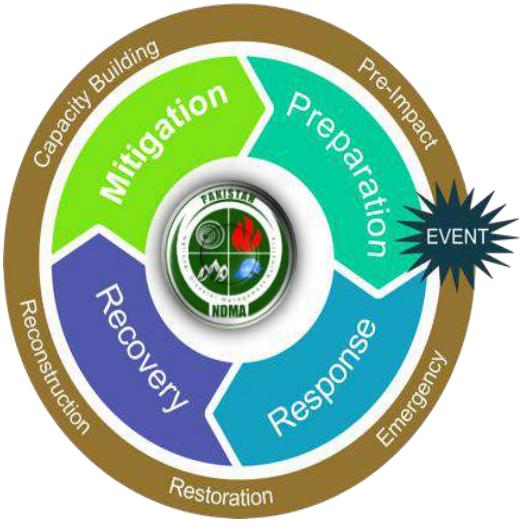
4. The country has faced a wide range of hazards throughout its history. Floods riverine, flash, and urban are the most recurrent and damaging, affecting millions of people annually. Earthquakes in Northern regions, recurring droughts in Southern and Western areas, and cyclones along the coastal belt have all left significant human, social, and economic impacts. The disasters of 2005 (earthquake), 2010 (super floods), and 2022 (Monsoon floods) have shaped the institutional disaster management landscape in Pakistan.

5. The Monsoon Contingency Plan 2025 must be grounded in a holistic understanding of

Pakistan's disaster landscape. This includes incorporating historical disaster trends, emerging climate projections, lessons learned from past emergencies, vulnerability assessments, and an up-to-date inventory of available resources and response capacities at all administrative levels. Equally important is the clear articulation of institutional roles and responsibilities, ensuring that all stakeholders from Federal ministries to provincial departments, humanitarian partners, and community-based organizations to operate in a coordinated and synchronized manner.

6. NDMA under clause 9(a) and 9(b) of NDMA Act 2010 (enclosed at **Annex-A**) deals with the complete spectrum of disaster management activities in the paradigm of **PR 3** (Preparedness, Response, Recovery and Rehabilitation). Consequent to passage of 18th Constitutional Amendment, Disaster Management has been devolved to the provinces and other federating units. Nonetheless, NDMA issues policy guidelines, renders directions and early warnings to various federal and provincial departments and DM agencies to initiate mitigation measures for potential disaster risks and contingency plans for any disaster situation under likely hazards. Accordingly, NDMA has issued the **National Disaster Management Plan (NDMP) 2025** and **National Disaster Response Plan (NDRP) 2024/25**. In the same context, the issuance of **National Monsoon Contingency Plan** is an annual practice, undertaken before the start of Monsoon Season.

7. "**National Monsoon Contingency Plan 2025**" has been prepared in coordination with all disaster management stakeholders from Federal to Provincial levels. It is based on analysis of seasonal forecast by NDMA Tech Team and Pakistan Meteorological Department (PMD) and likely impact of climate change. The plan lays down guidelines for all disaster management tiers and stakeholders for proactive preparations, measures for mitigation against likely hazards, preparedness for most probable to worst-case scenarios and mounting an effective and timely response against likely hazards / emergencies during Monsoon Season 2025. In this regard, the NDMA actively engaged all relevant stakeholders to provide updates on ongoing preparatory and mitigation measures for the upcoming Monsoon season.



Aim

8. To formulate national contingency and response guidelines for all disaster management stakeholders at National and Provincial / State levels for proactive and inclusive preparedness and effective response to any flood like situation as per contingencies based on Monsoon Seasonal Outlook 2025 and other likely emergencies in the country.

Scope

9. The Plan shall encompass following: -

a. **Part I - Organizational Responsibilities**

(1) Responsibility Matrix for Flood Management.

(2) Salient Aspects.

(3) Lessons Learned and Way Forward.

b. **Part II - Seasonal Outlook and Scenarios**

(1) Monsoon Seasonal Outlook 2025.

(2) Perceived Impacts of Monsoon Outlook 2025.

(3) Monsoon Season 2025 Contingencies.

(4) Provincial / District Hazard, Vulnerability & Flood Inundation Maps along with Dams and Head Works Situation Report.

(5) Flood Routing Map (Lag time) and Structural Limit.

c. **Part III - National Guidelines for Monsoon 2025**

(1) Preparedness Phase.

(2) Response Phase (Rescue and Relief).

(3) Early Recovery Phase.

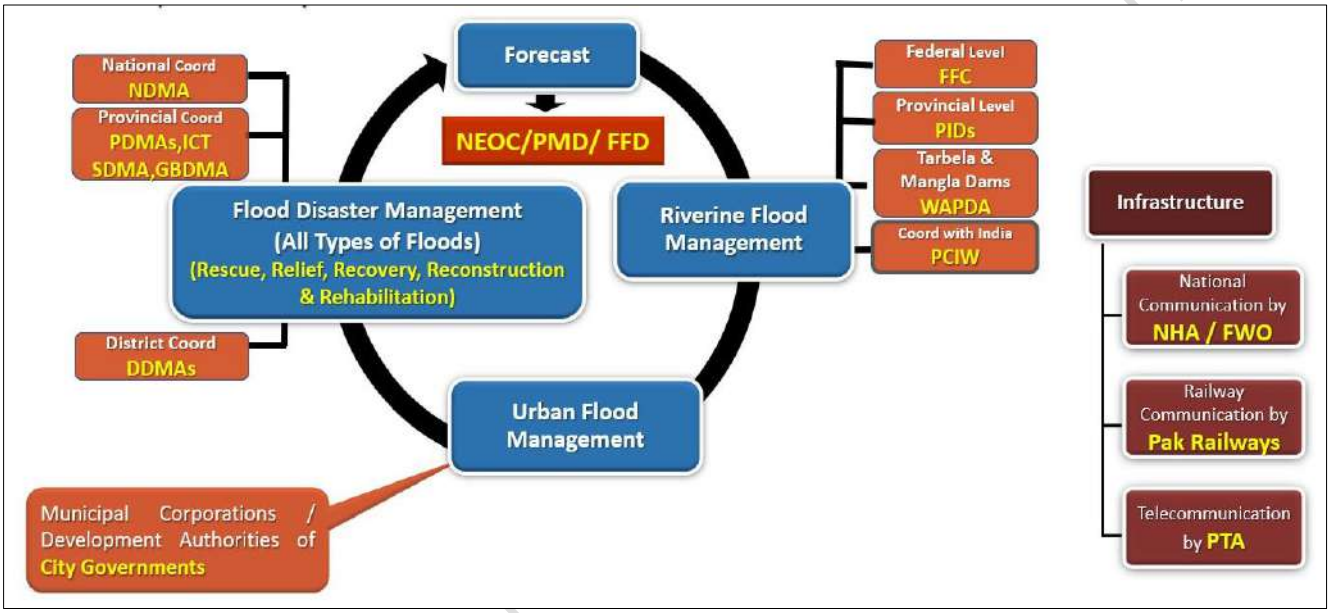
(4) Coordination Aspects.

(5) Logistical Considerations.

PART I - ORGANIZATIONAL RESPONSIBILITIES

Responsibility Matrix for Flood Management

1. Responsibility matrix explains the sequence of actions and responsibilities by various stakeholders in line with their tasks and functions for effective flood management. The activities under the contingency plan trigger as soon as forecast or advisory is issued by NEOC, PMD, FFD, FFC and PCIW based on the weather forecast or river flow data, following which NDMA issues relevant advisories and guidelines. These roles and responsibilities of all relevant stakeholders have been clearly laid down in the **NDMP 2025**, **NDRP 2024/25** and **National Monsoon Contingency Plan** issued on regular / seasonal basis. Figure below represents the sequence of actions by different stakeholders and the overall paradigm of responsibility matrix.



Salient Aspects

2. In addition to the specific mandates of Federal and Provincial departments, it is important to highlight the salient aspects of the concerned departments, which are as follows:-

a. **National Emergency Operations Centre (NEOC)**. Will continuously monitor evolving weather patterns both within the region and globally to evaluate their potential impact on Pakistan. It will issue early warnings and impact-based advisories for different regions of the country, aiming to enhance preparedness and minimize disaster risks. Under normal conditions, alerts will be shared on a need basis; however, during the presence or forecast of any major or potentially severe weather system, NEOC will shift to daily monitoring and reporting. These warnings will be disseminated to all concerned stakeholders to enable timely response actions, coordination, and the implementation of contingency plans at national and provincial levels.

b. **Pakistan Meteorological Department (PMD)**. To monitor weather patterns developing in the region and around the globe, assess their likely impact on Pakistan and issue a forecast highlighting impact for the different regions of the

country. The forecast will be issued on need basis under normal circumstances and daily during any large / potentially significant weather system impacting the country.

c. **Flood Forecasting Division (FFD)**. To monitor and forecast river flows and issue regular reports including likely impacts in different regions. The reports will cover major reservoirs, riverine and hill torrent regions of the country.

d. **Federal Flood Commission (FFC)**. To coordinate and implement National Flood Protection Plan through concerned Provincial and Federal line agencies, provide guidance for national level coordination and issue directions to all concerned Provincial and Federal departments for managing flood water through dams, hydraulic structures, canals and protective works.

e. **Ministry of Water Resources (MoWR)**. Plan and establish mechanism for streamlining coordination between FFC, WAPDA and PIDs for flood management and provide guidelines to all stakeholders for implementation of the National Water Policy by taking all stakeholders on board.

f. **Water and Power Development Authority (WAPDA)**. Ensure activation of reservoir management committees, with involvement of all stakeholders for regulation of all reservoirs for effective flood management. The committees must operate in line with the directions issued by federal bodies and plan in light of the forecasts issued.

g. **Provincial Irrigation Depts (PIDs)**. To work in close cooperation with FFC, Reservoir Management Authorities, Army Engineers and District Administrations to ensure effective operation of hydraulic structures, canals and flood protection works including operation of breaching sections as and when required to ensure public safety.

h. **District Disaster Management Authorities (DDMAs) / Local Administrations**. Being the 1st tier responders, carryout assessment of respective regions and formulate plans to address the vulnerabilities identified. Coordinate with all relevant stakeholders for comprehensive flood response and develop capacities to meet local challenges. Enforce removal of encroachment from nullahs, canals and rivers etc. to preclude risks arising from likely floods. Comprehensive plans be prepared, catering for respective vulnerabilities, to enable effective mitigation and coordination for rapid response against seasonal contingencies.

i. **Municipal Corporations / Line Departments**. Respective authorities to work in close coordination with line departments to ensure timely cleaning of storm water drainage system and nullahs. Conduct audits of machinery and manpower before onset of Monsoon season to meet the gaps identified.

j. **Pakistan Commission for Indus Waters (PCIW)**. Coordinates with India on

the timely sharing of river flows / dam discharge data during Monsoon season of the three Eastern Rivers (Ravi, Sutlej and Beas) and the three Western Rivers (Indus, Jhelum and Chenab) have been allocated to Pakistan to reduce reliance on India in given scenario monitor Indian reservoir activities for early warning.

k. **Pakistan Telecommunications Authority (PTA)**. Coordination with Cellular Mobile Operators (CMOs) and other telecom operators for timely maintenance / restoration of telecom infrastructure affected by disasters and the dissemination of SMS alerts for at- risk / vulnerable communities.

l. **Ministry of Communications (MoCom)**. To help enable and augment the capacity of NHA in restoration of connectivity and aid in coordination between relevant stakeholders including NHA, respective PHAs and C&W Departments.

m. **Ministry of National Health Services and Research (MoNHS&R)**. To coordinate with National Institute of Health (NIH) and respective provincial health departments and provide support to national health system for tackling emergent / likely health needs.

n. **Ministry of Railways (MoR)**. Ensure adequate preparations against likely seasonal hazards and undertake maintenance / restoration of railways communication infrastructure in the aftermath of Monsoon emergencies.

o. **Ministry of National Food Security and Research (MoNFS&R)**. Coordinate with provincial agriculture departments to establish a coordinated mechanism for safeguarding crops from potential floods, thereby fulfilling the responsibility of ensuring food security and minimizing the impact on agricultural production.

p. **Pakistan Electronic Media Regulatory Authority (PEMRA)**. Enforcement and regulation of electronic media in order to ensure factual information is shared with the general public on Monsoon floods.

q. **PDMAs / SDMA / GBDMA / ICT Administration**. As 2nd tier responders, in addition to having overall mandate for DM in respective regions, ensure coordination with all relevant stakeholders for planning, implementing mitigative policies and developing well-coordinated response against likely Monsoon emergencies. 2nd tier responders to ensure the following: -

(1) Profile regional vulnerabilities / risks through conduct of MHVRAs.

(2) Archive hazards to develop accurate database for reference in future planning.

(3) Ensure adequate relief stockpiling.

(4) Conduct audits for preparedness measures (HR and machinery).

(5) Plan and conduct mock exercises to enhance DM stakeholder coordination.

(6) Establish region-specific awareness campaigns.

(7) Establish and operate Early Warning Systems.

(8) Generate timely situation reports (SITREPs).

(9) Develop and update contingency plans on annual and seasonal basis.

(10) Facilitate effective rehabilitation and recovery effort.

(11) Identify likely relief camps locations.

r. **Rescue 1122**. To ensure expedient provision of emergency rescue services including lifesaving first aid and ambulance service in any emergency situation. Plan and conduct rescue operations in coordination with local administrations / DDMAs, provincial authorities and Armed Forced, if required.

s. **Police Services / Law Enforcement Agencies (LEAs)**. To ensure provision of security and safety to disaster affected areas by securing private / public property and also provide safe and secure working environment to different agencies / NGOs etc. working in the affected areas.

t. **Armed Forces / Civil Armed forces (CAFs)**. Ensure assistance to civil administration by providing support in evacuation emergency rescue, relief and medical support in disaster affected areas, once requisitioned.

u. **International Non-Governmental Organizations (INGOs) / Non-Governmental Organizations (NGOs) / Civil Society Organizations (CSOs).** To ensure provision of humanitarian assistance and emergency relief support to disaster affecters through provision of shelter, food packages and medical support in coordination with NDMA / PDMAs / DDMAs.

v. **National Highway Authority (NHA) / Frontier Works Organization (FWO).** Devise a detailed plan for timely maintenance and restoration of national highways and motorways infrastructure in light of likely Monsoon emergencies with special focus on the areas / sections which were affected / damaged during the floods 2022.

w. **Provincial Highway Authorities (PHA)**. Coordinate with various contractors for the maintenance & restoration of respective provincial highway infrastructure in the aftermath of disaster situation.

x. **Communication and Works Departments of Provinces / GB / AJ&K and ICT**. Employ respective resources and establish coordination with various contractors for the maintenance and restoration of respective provincial and rural access road infrastructure in the aftermath of disaster situation.

y. **Space and Upper Atmosphere Research Commission (SUPARCO)**. Provide overall situation and damage assessment using satellite technology on required basis.

Lessons Learned and Way Forward

3. To strengthen Pakistan's disaster preparedness and response mechanisms, it is vital to extract actionable insights from past experiences, particularly the 2022 floods. These events have exposed systemic gaps and offered opportunities for critical reforms. The following updated lessons and strategic recommendations are presented for institutional learning and forward planning: -

a. **Weather and River Flow Monitoring**

(1) Expand weather station coverage in remote and hazard-prone areas, including Balochistan, KP, GB, and AJ&K.

(2) Install automated gauges, sensors, and remote monitoring systems in flash flood zones, urban drainage points, and hill torrent areas.

(3) Adjust forecasting models to account for irregular weather patterns due to climate change.

(4) Improve access to and integration of transboundary river flow data.

(5) Enhance river flow gauge network for real-time flood monitoring.

(6) Upgrade to networked, real-time telemetry systems for data collection.

(7) Update riverbed cross-section data to reflect ground realities.

b. **Regulating Weather Information and Public Communication**

(1) Coordinate among PMD, WASA, NDMA, and private weather sources for uniform, verified forecasts.

(2) Integrate private-sector weather station data into the national system.

(3) Define legal mandates for issuing and disseminating weather warnings.

c. **Centralized Disaster Risk Information Systems**

(1) Establish GIS-based, multi-hazard risk and vulnerability mapping system.

(2) Maintain a centralized national database of trained disaster professionals.

d. **Governance, Legal Frameworks and Compliance**

(1) Ensure implementation of fire safety and seismic building codes.

(2) Define agency responsibilities for early warning and response systems.

(3) Enforce laws to remove encroachments in flood-prone waterways.

(4) Prohibit private bund construction disrupting natural flow.

(5) Regulate development near nullahs and riverbanks.

(6) Implement the Planning Commission's Disaster Risk Reduction Checklist in infrastructure projects.

(7) Ensure PEMRA rule enforcement on responsible media coverage.

e. **Public Advisory Systems and Risk Communication**

(1) Promote awareness campaigns to encourage public trust in alerts.

(2) Use regional languages in early warnings for better understanding.

f. **Reservoir and Dam Management**

(1) Prioritize de-silting of reservoirs and dams.

(2) Conduct annual audits and structural assessments of reservoirs.

(3) Regulate informal settlements near transitional watercourses.

(4) Submit annual reservoir reports to NDMA and PMO.

g. **Operational Documentation**. Institutionalize digital and written documentation of rescue and relief operations.

h. **Coordination of Relief Efforts**. Enhance coordination with NGOs/ INGOs to prevent duplication of relief work.

i. **Communication Resilience**. Invest in backup satellite and mesh communication systems for emergencies.

j. **Capacity Building at Local Levels**

(1) Deploy trained DDMA staff and allocate regular budgets.

(2) Conduct simulation exercises at the district level.

k. **Update of Breaching Points**. Demarcate updated breaching points reflecting hydrological changes and urban growth. Coordinate with all concerned for placement / pre-location of breaching equipment and resources at sites.

l. **Prevention of Unauthorized Embankment Breaches**. Enforce laws to prevent illegal bund breaches causing rural flooding.

m. **Drainage Improvement in Vulnerable Areas**. Redesign drainage in flood-prone towns using climate-resilient techniques.

n. **Encroachment Removal from Waterways**. Remove encroachments in major nullahs and riverbeds before Monsoon.

o. **Desilting of Nullahs**. Conduct comprehensive desilting campaigns in urban centers before Monsoon.

p. **Incident Reporting and Compensation**. Develop digital platforms for timely incident verification and compensation disbursement.

q. **Dedicated Aviation Support for Emergencies**. Allocate dedicated aviation assets for rapid disaster response and logistics.

r. **Additional Strategic Recommendations Monsoon 2025**

(1) **Disaster Risk Financing and Social Protection**

(a) Introduce micro-insurance schemes for high-risk districts in partnership with NADRA and insurers.

(b) Utilize BISP data for targeted post-disaster cash disbursements.

(2) **Smart Surveillance and Drone Technology**

(a) Use drones for real-time flood monitoring, damage assessment, and mapping.

(b) Utilize drone footage to detect illegal encroachments and

infrastructure vulnerabilities.

(3) **District-Level Resilience Indexing**

(a) Create a district-level flood and climate resilience index.

(b) Use this index for prioritizing investments and capacity-building.

(4) **Mobile Technology and Community Connectivity**

(a) Develop regional-language apps for flood alerts and emergency guidance.

(b) Enable citizens to report damages and alerts through mobile platforms.

(c) Utilize worship places for risk communication.

(5) **Gender-Responsive Disaster Planning**

(a) Ensure gender-sensitive relief provisions including WASH, hygiene kits, and maternal health.

(b) Train female disaster responders at local levels.

(c) Provide relief to elderly and special people on priority.

(6) **Public-Private Technical Collaboration**. Engage local startups and universities in developing digital tools for forecasting, relief and logistics.

(7) **Urban Resilience through Climate-Smart Planning**

(a) Incorporate floodplain zoning and green buffers in urban planning.

(b) Promote rooftop rainwater harvesting and green roofing in dense urban zones.

(8) **Pre-Flood Community Resilience Coordination Meetings**. Conduct and arrange coordination meeting with local authorities and communities defining evacuation protocols and support.

(9) **Resilient Critical Infrastructure**. Retrofit schools and BHUs in high-risk areas as resilient relief shelters.

PART II - SEASONAL OUTLOOK AND SCENARIOS

Monsoon Climate Indicators

1. The South West Monsoon is a principal component of Pakistan's climate system, accounting for over 70% of the annual precipitation and playing a decisive role in sustaining agriculture, hydropower, and freshwater availability. Occurring from 30th June through 15th September, the Monsoon remains the most critical hydrometeorological phenomenon for Pakistan. However, recent decades have seen a marked increase in the interannual variability and spatial heterogeneity of Monsoon rainfall, influenced by complex atmospheric-oceanic interactions under a changing climate regime.

2. As Monsoon 2025 approaches, global climate diagnostics such as a neutral El Niño-Southern Oscillation (ENSO), a neutral Indian Ocean Dipole (IOD), anomalously warm sea surface temperatures (SSTs) in the Arabian Sea and Bay of Bengal, and evolving phases of the Madden-Julian Oscillation (MJO), lesser snow cover in the Northern hemisphere, weakening of subtropical Jet stream, higher pressure gradient around Mascarene high, increased temperature differential between Land Surface Temperature (LST) and Sea Surface Temperature (SST), Northward movement of Inter tropical convergence zone (ITCZ), constructive interference of Rossby waves with MJO suggest a season characterized by above-normal rainfall coupled with above average Land Surface Temperature (LST) with regional disparities and heightened extreme event risks.

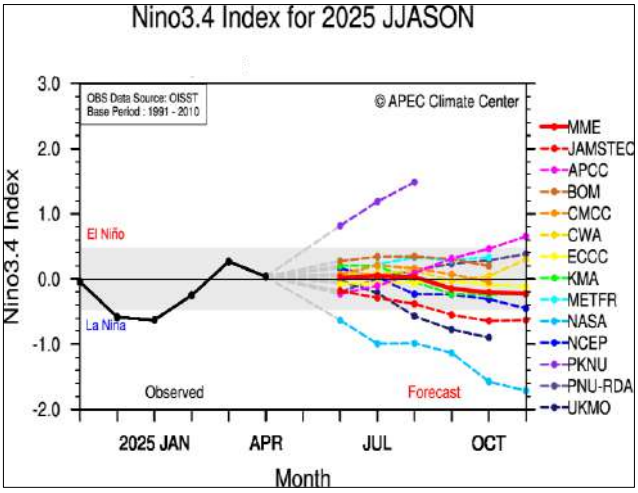
3. The South Asian Monsoon is a highly dynamic and multifaceted atmospheric system governed by a range of interrelated climate drivers. These include differential land-sea thermal contrasts, shifts in large-scale atmospheric circulation, and the positioning and intensity of subtropical high-pressure zones. Rather than being a singular weather event, the Monsoon emerges from a complex interplay of thermodynamic, oceanic, and atmospheric processes operating across various spatial and temporal scales. In Pakistan, Monsoonal rainfall is primarily shaped by this intricate coupling of climatic factors, which jointly influence the onset, distribution and variability of seasonal precipitation.

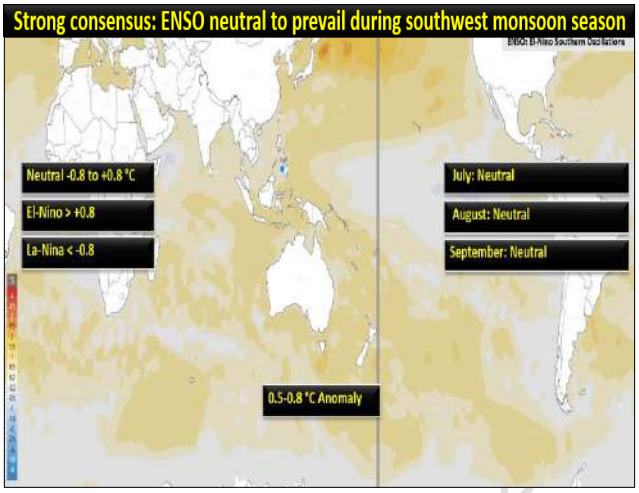
ENSO Forecast

4. As of May 2025, the El Niño-Southern Oscillation (ENSO) remains in a neutral phase, characterized by near-average sea surface temperatures (SSTs) across the central and Eastern equatorial Pacific Ocean. Recent assessments indicate that these neutral conditions are expected to persist through the Northern Hemisphere summer, with a higher probability during June to August and chances exceeding through August to October as well.

5. In ENSO-neutral conditions, the absence of significant El Niño (warm phase) or La Niña (cool phase) influences suggests that large-scale atmospheric patterns may not be strongly driven by ENSO-related anomalies. However, it's important to note that even during neutral phases, regional climate variability can occur due to other factors such as the Indian Ocean

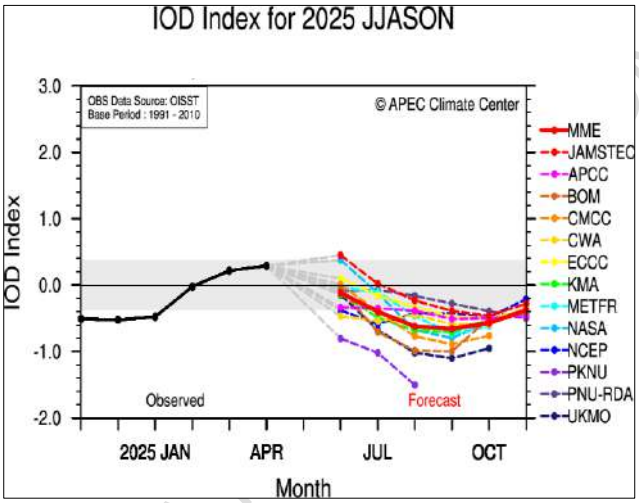
Dipole (IOD), Madden-Julian Oscillation (MJO), and local atmospheric dynamics.

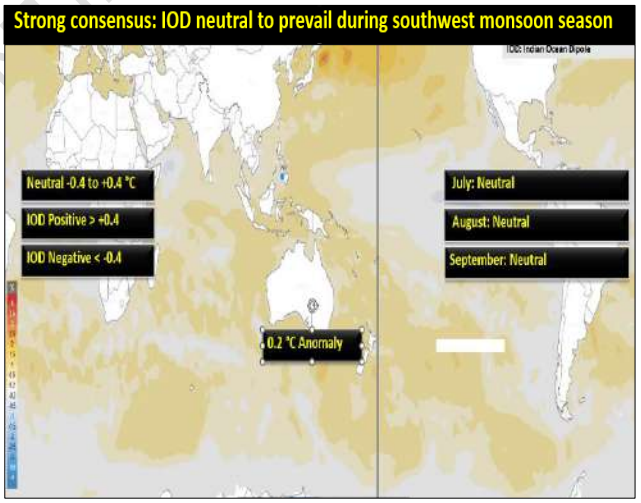




6. **Implication for Pakistan**. This implies that while the overarching ENSO dynamics may be influencing localized weather patterns could still lead to variability in Monsoon rainfall. Historical data indicates that ENSO-neutral years can still produce fluctuations in Monsoon intensity, with instances of both heavy rainfall and dry spells, depending on the interplay of secondary climatic drivers.

7. **Indian Ocean Dipole (IOD)**. The IOD is currently in a neutral phase and will remain to neutral state is likely to persist through August 2025, with an increased likelihood of a negative IOD developing in the latter half of the year.



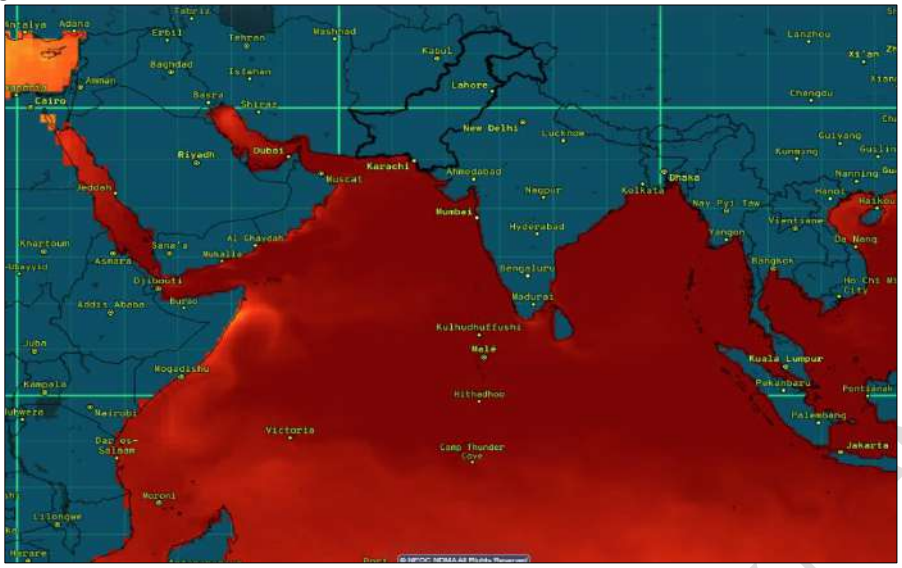


8. **Implications for Pakistan**. A neutral IOD typically implies average Monsoon conditions. However, if a negative IOD develops later in the season, it could suppress Monsoon activity, particularly in Southern and North-Eastern regions of Pakistan.

9. **Sea Surface Temperature (SST) Anomalies in the Arabian Sea**. Current SST anomalies in the Arabian Sea are slightly above average, ranging from +0.5°C to +1.0°C. These warmer conditions are expected to continue through the Pre-Monsoon (April - June) and Monsoon (July - September) periods.

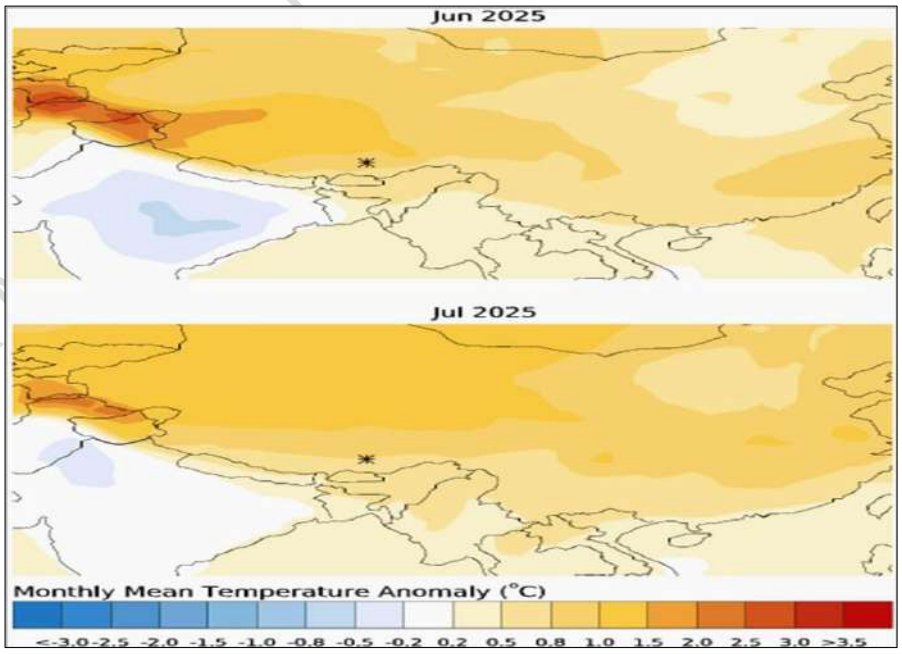
10. **Implications for Pakistan**. Rising SSTs can enhance evaporation rates, leading to increased moisture availability. This may result in stronger Monsoon currents and potentially above-normal rainfall in Southern Sindh, coastal Balochistan, and parts of Punjab. However,

higher SSTs also raise the risk of early-season heatwaves and could contribute to the formation of low-pressure systems, leading to sporadic heavy downpours or flash flooding in vulnerable regions.



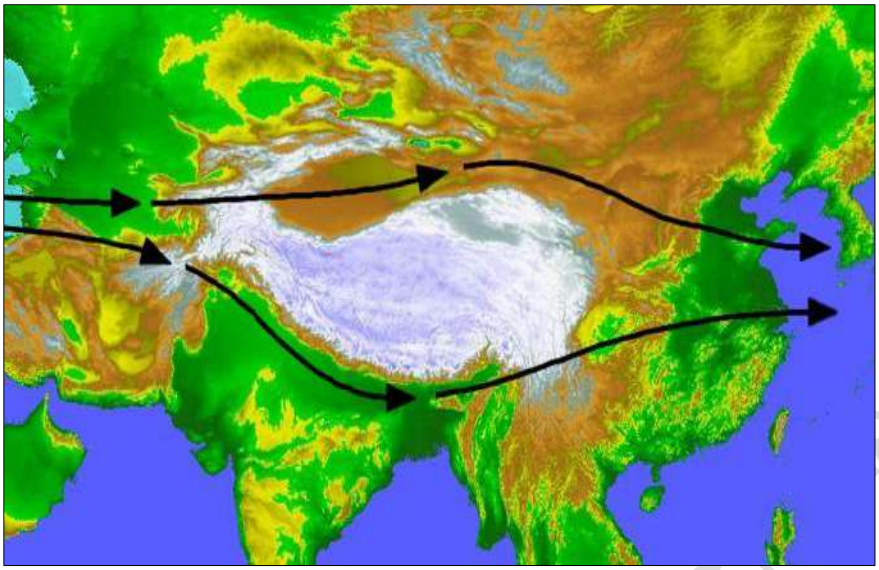
11. **Madden-Julian Oscillation (MJO)**. As of mid-May 2025, the MJO remains incoherent based on Real-time Multivariate MJO (RMM) observations. However, dynamical model forecasts indicate a potential increase in amplitude, suggesting a more active MJO phase in the coming weeks.

12. **Implications for Pakistan**. An active MJO, particularly in Phases 1 and 2, can enhance convection over the Indian Ocean, leading to increased rainfall over Pakistan, including the North-Eastern and Southern parts. Historical data indicates that such phases often coincide with wet spells lasting 5 - 10 days, which could heighten the risk of flash floods in hilly areas.



13. **Tibetan Plateau Land Surface Temperature (LST)**. Recent studies indicate a significant warming trend in the Tibetan Plateau, with lake surface temperatures increasing at a rate of 0.47±0.30°C per decade.

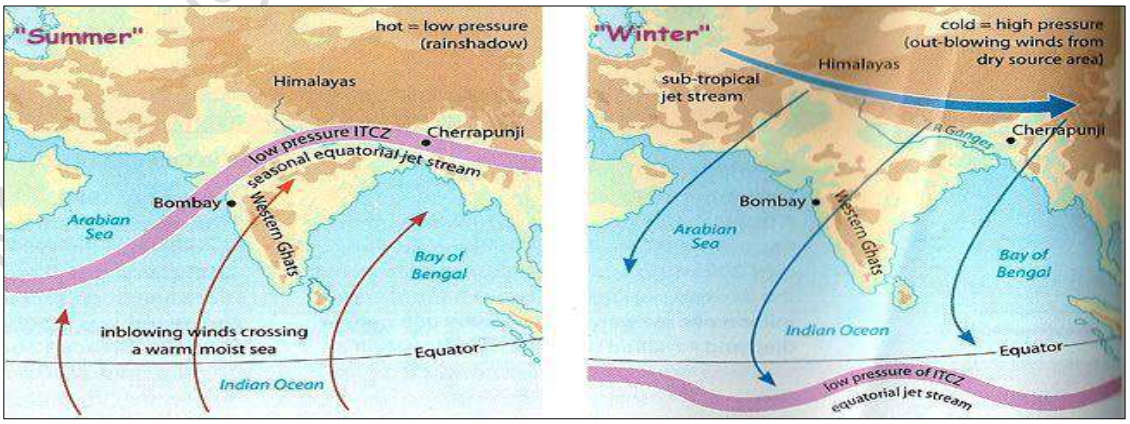
14. **Implications for Pakistan**. Higher LSTs over the Tibetan Plateau can lead to the development of low-pressure systems, enhancing the Monsoon circulation and potentially increasing precipitation over Pakistan.



15. **Subtropical Jet Streams**. Forecasts suggest a potential weakening or splitting of the subtropical jet stream in the coming months. Such changes can create favourable conditions for Monsoon development by allowing better moisture transport from the Indian Ocean.

16. **Implications for Pakistan**. A weakened or split jet stream could facilitate the formation of high-pressure systems like the Mascarene High, enhancing Monsoon flow into the subcontinent, including Pakistan.

17. **Inter-Tropical Convergence Zone (ITCZ)**. ITCZ is expected to shift Northward during the Northern Hemisphere summer, positioning over Pakistan during the Monsoon season. This movement, driven by solar heating, is anticipated to bring rainy spells, enhancing precipitation, especially from June to September.



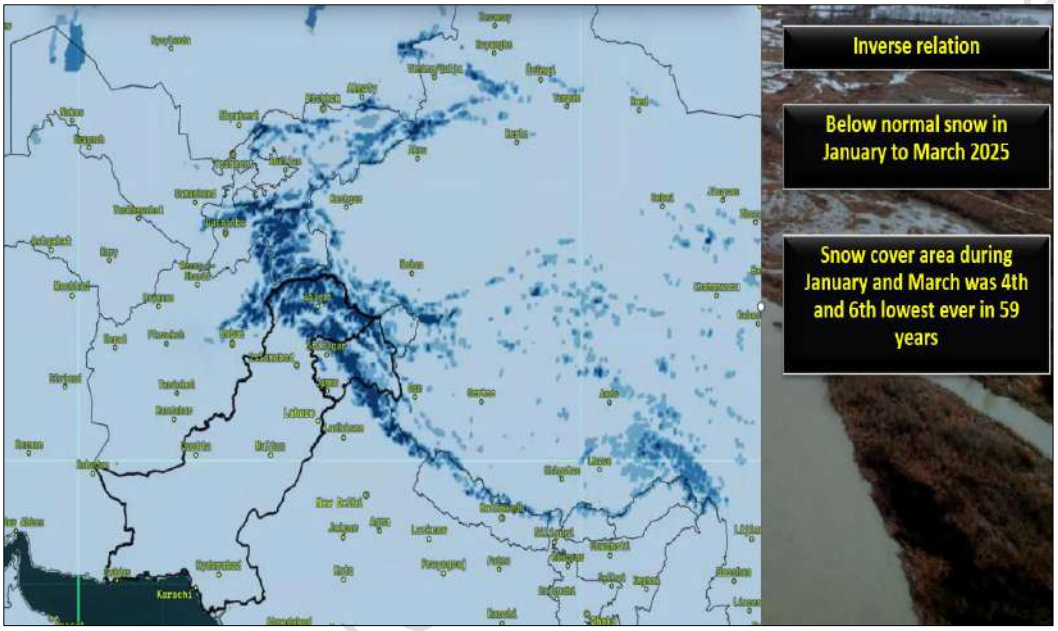
18. **Implications for Pakistan**. The Northward shift of the ITCZ can lead to increased rainfall across the country, particularly benefiting the agricultural sectors dependent on Monsoon rains.

19. **Snow Accumulation in the Himalayas**. Snowfall in the Hindu Kush-Himalayan region has reached a 23-year low, threatening nearly two billion people dependent on snowmelt for

water. This reduced snow accumulation is attributed to warmer winters and decreased precipitation.

20. **Implications for Pakistan**. Less snow accumulation can lead to higher land surface temperatures in the summer, enhancing the land-sea temperature contrast and potentially strengthening Monsoon circulation. However, it also raises concerns about early snow melt leading to glacier exposure and extreme events.

21. **Land Surface Temperature (LST) and Sea Surface Temperature (SST) Difference**. Pakistan has experienced extreme heat in recent weeks, with temperatures in Central and Southern regions rising (approximately 47.8°C). These high LSTs, combined with slightly above-average SSTs in the Arabian Sea, create a significant temperature gradient.



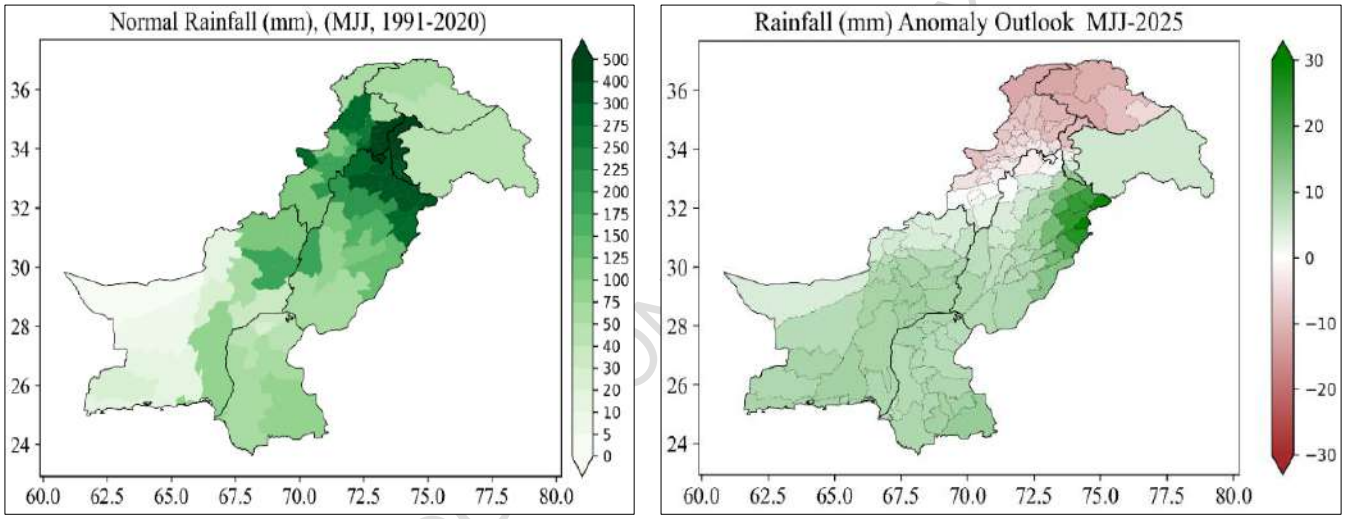
22. **Implications for Pakistan**. The pronounced land-sea temperature difference can enhance Monsoon circulation by creating low-pressure areas over the land, drawing in moist air from the sea. This dynamic is expected to contribute to the strength and distribution of Monsoon rains across the country.

PART II - SEASONAL OUTLOOK AND SCENARIOS

Monsoon Seasonal Outlook 2025 by PMD

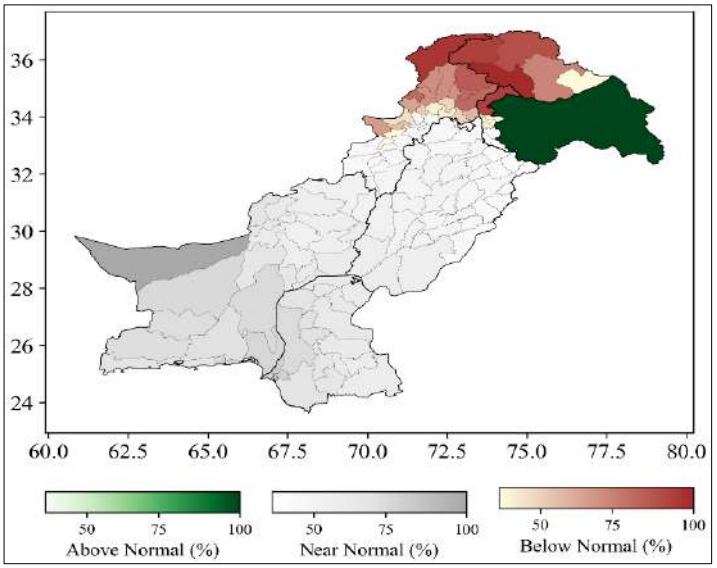
1. ENSO-neutral conditions are currently present and are expected to persist through the summer of 2025 with a 74% probability, while the IOD is also projected to remain in its neutral phase at least until August. Currently, the ENSO is in a neutral state, meaning neither El Niño nor La Niña conditions are present. Forecasts suggest this neutral phase is likely to continue through summer 2025 with a 74% probability. This implies relatively stable large-scale atmospheric patterns with no major ENSO-driven anomalies expected to impact the South Asian Monsoon system.

2. The Indian Ocean Dipole, a key influencer of Monsoon behaviour in the region, is also expected to remain in a neutral phase until atleast August 2025. This suggests that the IOD will neither enhance nor suppress Monsoon activity significantly during the early to mid-Monsoon period.



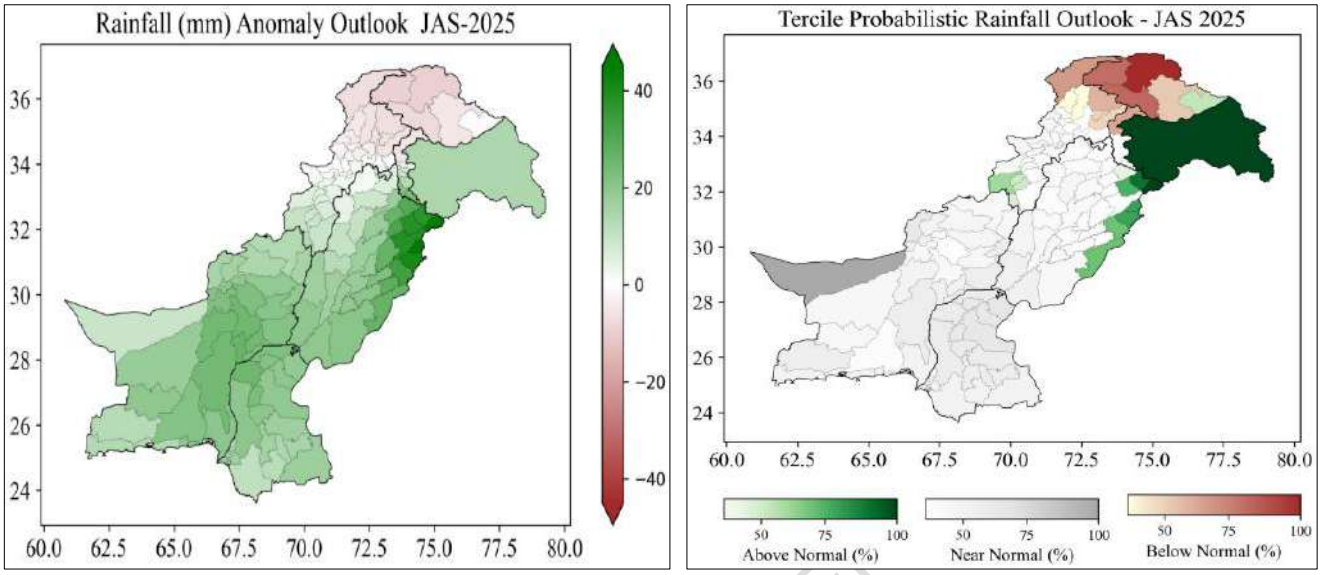
Map 1: Normal Rainfall (MJJ 1991-2020) and Rainfall Outlook (MJJ-2025)

3. In Pakistan, the North-Eastern parts of Punjab are anticipated to witness the highest departure from normal rainfall. Central to Southern regions of the country are likely to experience normal to slightly above-normal rainfall, whereas Northern Khyber Pakhtunkhwa (KP), GB, and Kashmir are expected to receive normal to slightly below-normal rainfall during this period.



Map 2: Tercile Probabilistic Rainfall Outlook - MJJ

4. The North Eastern regions of Punjab are projected to witness the significant deviations from normal climate patterns. Central and Southern regions, including areas like Southern Punjab, Sindh and parts of Balochistan are expected to receive near-normal to slightly enhanced rainfall during Monsoon 2025. These Northern highland areas are forecasted to receive rainfall amounts that are at or slightly below the seasonal average.



Map 3: Tercile Probabilistic Rainfall Outlook - JAS 2025

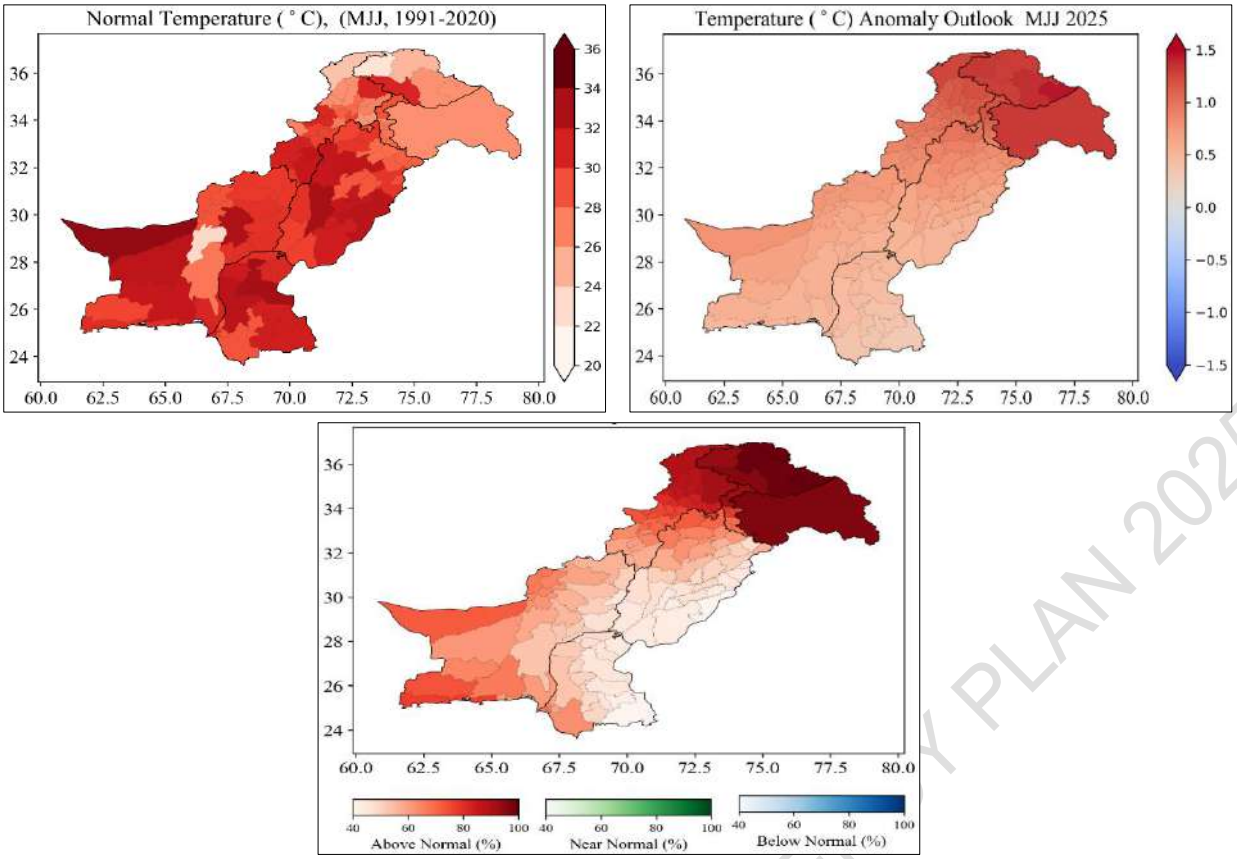
5. The forecast indicates a high probability of **above-normal rainfall** in North-Eastern Punjab and parts of South-Eastern regions, raising concerns for potential flooding and waterlogging in these areas. Conversely, **below-normal rainfall** is projected for Northern regions, including upper KP and Gilgit-Baltistan, posing a risk of water stress and reduced river inflows. Most of Balochistan, Southern KP, and interior Sindh are likely to experience **near-normal rainfall**.

a. Nationwide min-max temperatures are expected to be **Above Normal** throughout the country.

b. Most **significant temperature deviation** is expected over Northern KP, Gilgit Baltistan, State of AJ&K and Southern Balochistan.

c. **Mean temperatures** are expected to remain **above normal** throughout the country, with maximum departure over **Kashmir, GB and adjoining areas of KP**.

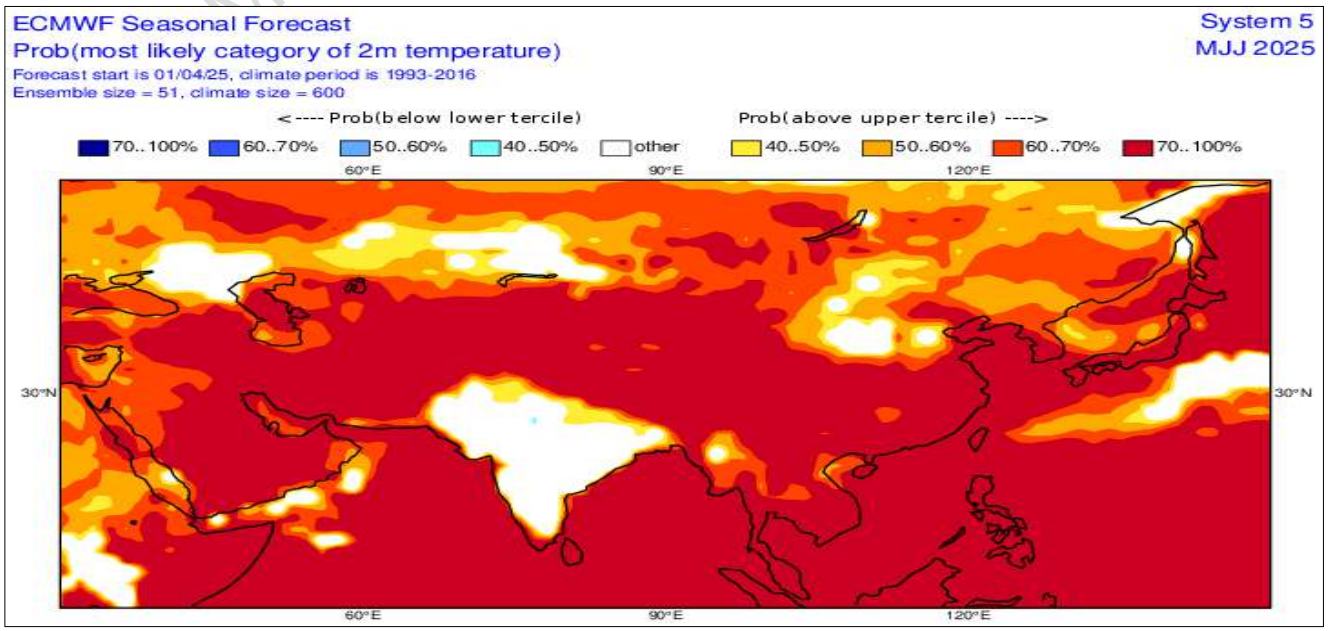
6. During the Monsoon season this year, above normal temperatures are expected in Northern Pakistan, particularly in upper KP, Gilgit-Baltistan, and upper Azad Jammu & Kashmir (AJ&K). In contrast, the rest of the country, including Central and Southern regions, is likely to experience near normal temperature conditions throughout the season.



Map 4: Temperature (MJJ 1991-2020) and Tercile Probabilistic Temperature Outlook (MJJ-2025)

7. The tercile probabilistic temperature outlook indicates that the majority of models predict **above-normal temperatures** across the country with **maximum likelihood over Southern coastal belt and Northern parts of the country**.

8. The map highlights that **Pakistan and surrounding South Asian regions are expected to experience significantly warmer than normal temperatures**, with a **70–100% probability** of temperatures falling in the **upper (hotter) tercile** of historical records. This strong likelihood of above-normal heat is consistent across **most of the Asian continent**, especially in **Pakistan, India, China, and South East Asia**, indicating an **increased risk of heatwaves** and associated impacts.

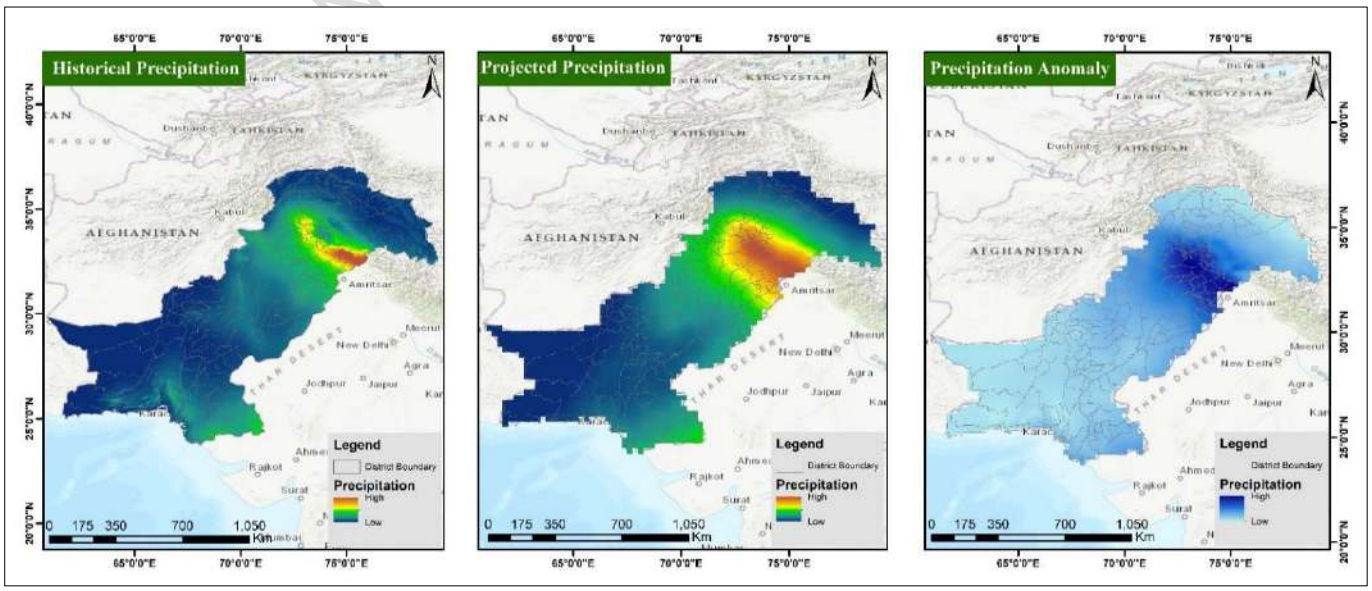


Meteorological Outlook by NDMA Technical Team

9. The Monsoon season in Pakistan for 2025 is expected to begin on 26 - 27 June, approximately four days earlier than the normal onset of the South West Monsoon in the country. The season will extend until 15th September 2025. Given the prevailing climatological variables namely, neutral ENSO and IOD conditions, a Northward shift of the Inter tropical Convergence Zone (ITCZ), reduced snow cover in the Northern Hemisphere, rising temperatures, and increased pressure differentials between the South Asian landmass and the Pacific and Indian Oceans, it is anticipated that the 2025 Monsoon will bring overall above-average precipitation and temperatures, with some regional and local anomalies. This outlook is consistent with trends observed in recent years, where the North Eastern and Southern parts of the country have experienced intensified Monsoon activity.

10. NEOC team, with input from South Asian Seasonal Climate Outlook Forum (SASCOF) and multiple forecast models including those from the PMD's meteorological team has developed a consensus-based outlook. It predicts above-normal rainfall coupled with above-normal land surface temperatures, along with localized variability. North Eastern, Central, Southern, and South Eastern regions of the country are expected to receive significantly above-normal precipitation. In contrast, Northern parts of KP and GB are likely to experience below-normal rainfall. Districts located along the foothills of the Sulaiman and Kirthar Ranges are expected to receive higher-than-average precipitation.

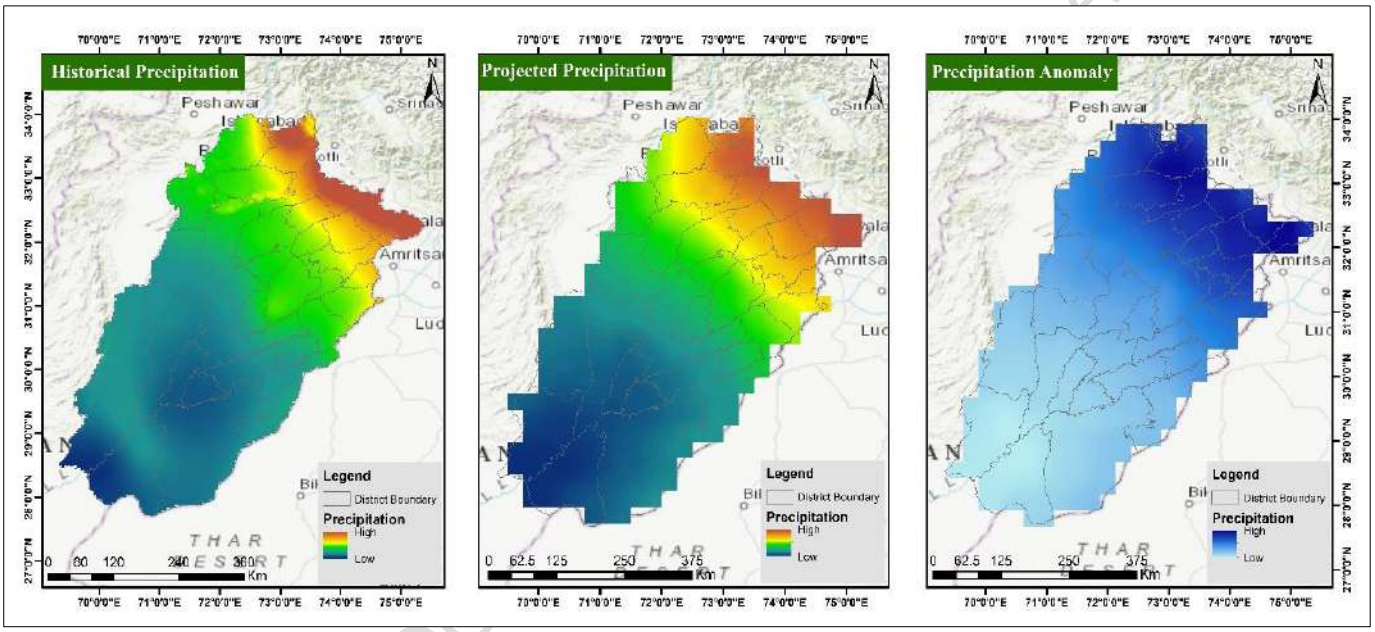
11. The most pronounced temperature anomalies are projected for North Western Pakistan, particularly Northern KP and GB. Notable increases in land surface temperatures are also expected in Southern Balochistan, Central and North Eastern Sindh, and Central and Southern Punjab. These above-normal temperatures especially during the early Monsoon phase may accelerate snowmelt in high-altitude Northern regions, leading to increased river flows and a heightened risk of flooding.



Pakistan Comparative Analysis for Average Precipitation (JAS)

Provincial Monsoon Outlook

12. **Punjab Outlook**. Punjab is expected to be one of the most impacted provinces, with the Northern, North Eastern, and Central districts likely to experience higher precipitation anomalies. Districts projected to receive rainfall above their climatological averages include Sialkot, Narowal, Gujrat, Lahore, Rawalpindi, Gujranwala, Sargodha, Faisalabad, Jhelum, Chakwal, and Murree. Similarly, South Western districts located along the foothills of the Sulaiman Range namely Rajanpur, Dera Ghazi Khan, Muzaffargarh, Layyah, and Lodhran are also expected to receive above-normal precipitation this year. These areas are likely to experience persistent Monsoon Dera Ghazi Khan and adjacent hill torrent regions may be vulnerable to flash flooding, especially in late July. The overall risk for Punjab includes waterlogging, damage to crops, and infrastructural strain in densely populated cities.



Punjab Comparative Analysis for Average Precipitation (JAS)

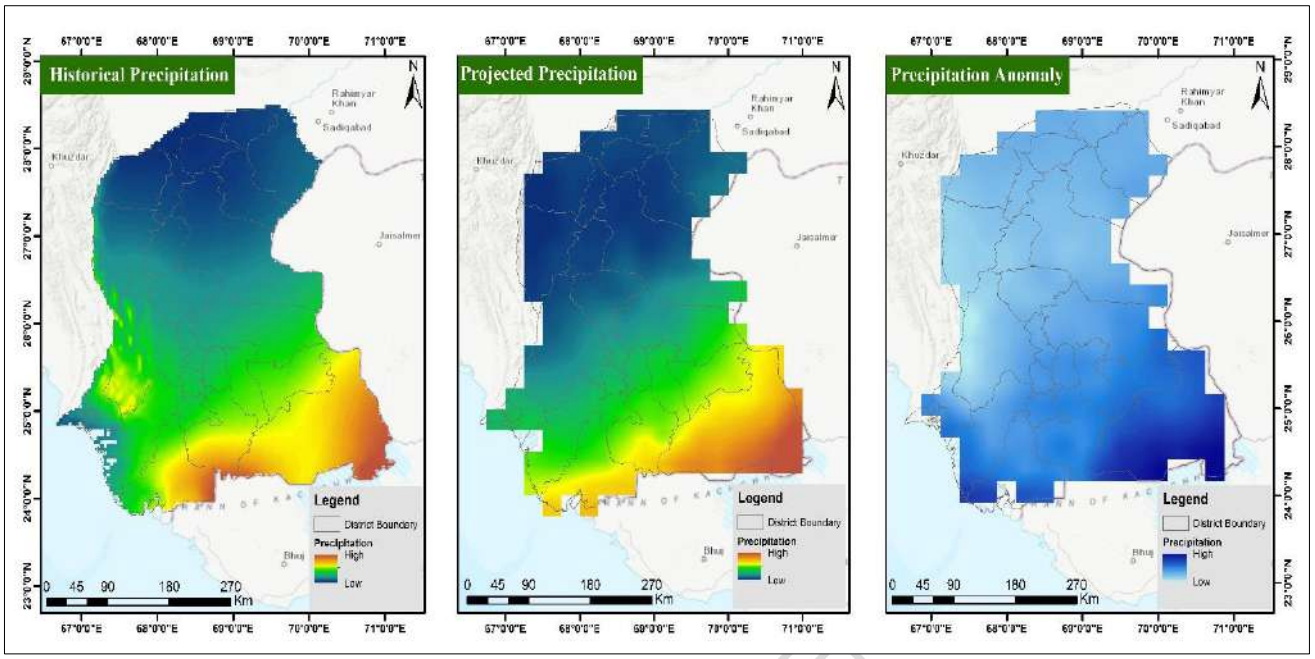
13. **Sindh Outlook**. Sindh will experience a mixed Monsoon pattern. Upper Sindh, including Sukkur, Larkana, Jacobabad, Kashmore, and Dadu, is likely to witness **above-normal rainfall**, particularly in late July. Lower Sindh, encompassing Karachi, Hyderabad, Thatta, Badin, and Mirpurkhas, is forecasted to see **to slightly above-normal rainfall**, which may lead to episodes of urban flooding, particularly in urban hotspots Karachi. While the rainfall will bring relief from extended dry spells in some areas, it may also overwhelm the drainage infrastructure in major cities. Heatwaves are another concern for Sindh, especially before the peak Monsoon rains begin, further stressing energy and water resources:-

a. **Historical Precipitation**. Sindh typically experiences low to moderate Monsoonal rainfall, with coastal and South Eastern districts like Karachi, Thatta, and Badin receiving more rain than the arid interior regions such as Jacobabad, Sukkur, and Khairpur.

b. **Projected Precipitation**. Monsoon 2025 forecasts suggest above-normal rainfall in lower Sindh, while upper Sindh is expected to see near-normal to

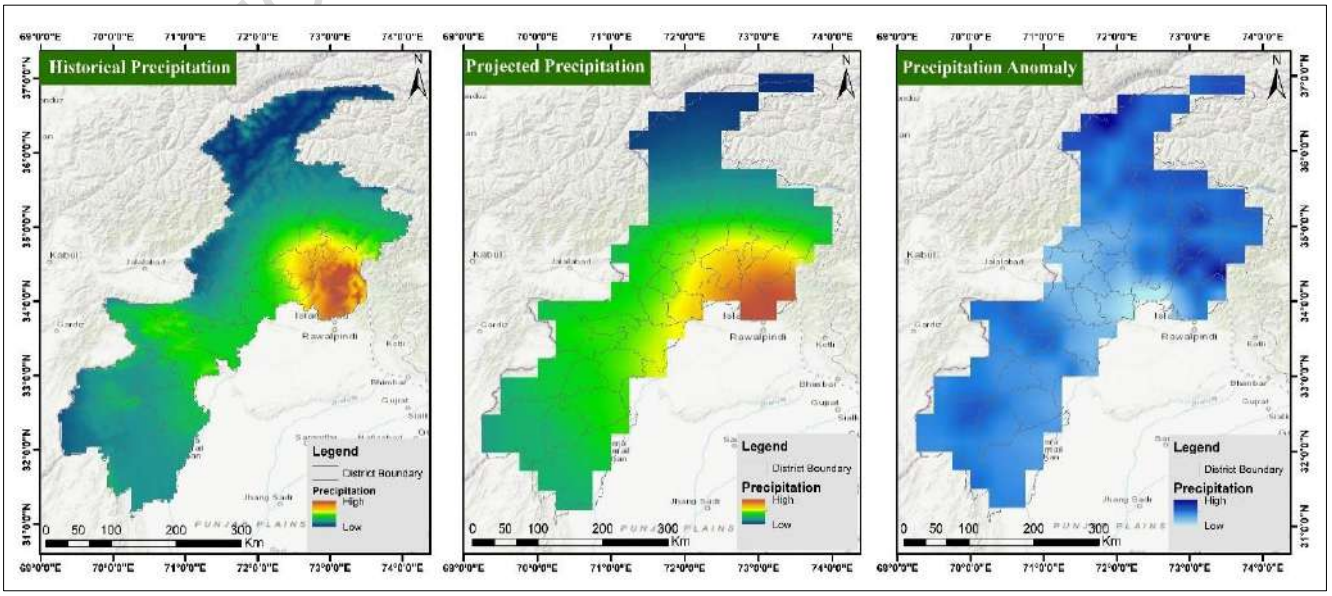
moderately increased rainfall.

c. **Precipitation Anomaly**. Positive anomalies are projected, especially in South Eastern Sindh, indicating a modest increase in rainfall that could improve water availability but also raise the risk of urban flooding in low-lying coastal cities.



Sindh Comparative Analysis for Average Precipitation (JAS)

14. **Khyber Pakhtunkhwa (KP) Outlook**. In KP, the Northern districts such as Abbottabad, Mansehra, Swat, Dir, and Chitral are expected to receive **normal to below-normal rainfall**. These areas may face localized flash floods due to intense rainfall combined with steep topography. Central and Southern KP, including Peshawar, Mardan, Charsadda, Kohat, and Dera Ismail Khan, will likely experience **normal to slightly above normal** rainfall during the second half of July. Higher-than-normal temperatures in this region will contribute to rapid snow and glacier melt, particularly in upper KP, leading to increased river discharge. The key risks include landslides, damage to road infrastructure in hilly areas, and overflowing rivers during heavy spells.



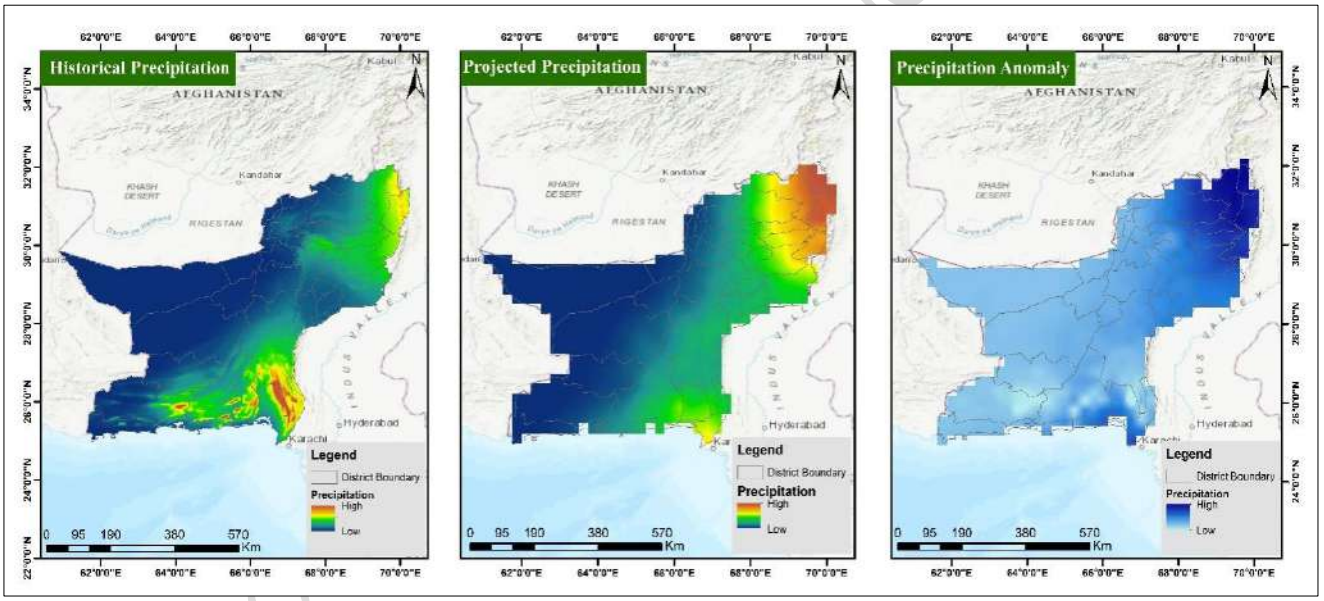
KP Comparative Analysis for Average Precipitation (JAS)

15. **Balochistan Outlook**. Balochistan's rainfall distribution will remain uneven. Eastern and Central districts such as Khuzdar, Lasbela, and Washuk are forecasted to receive **slightly above-normal rainfall**, especially during the later half of the Monsoon. In contrast, Western districts like Quetta, Zhob, and Barkhan are likely to experience **near-normal to below-normal rainfall**. Despite periodic rains, most of Balochistan may continue to experience arid conditions due to long-standing deficits. However, areas that receive sudden bursts of heavy rain will be at risk for localized flash floods due to low soil absorption and minimal vegetation:-

a. **Historical Precipitation**. Balochistan has historically received very low Monsoon rainfall, especially in Central and Western districts; slightly higher rainfall is observed in South Eastern areas like Lasbela and Khuzdar.

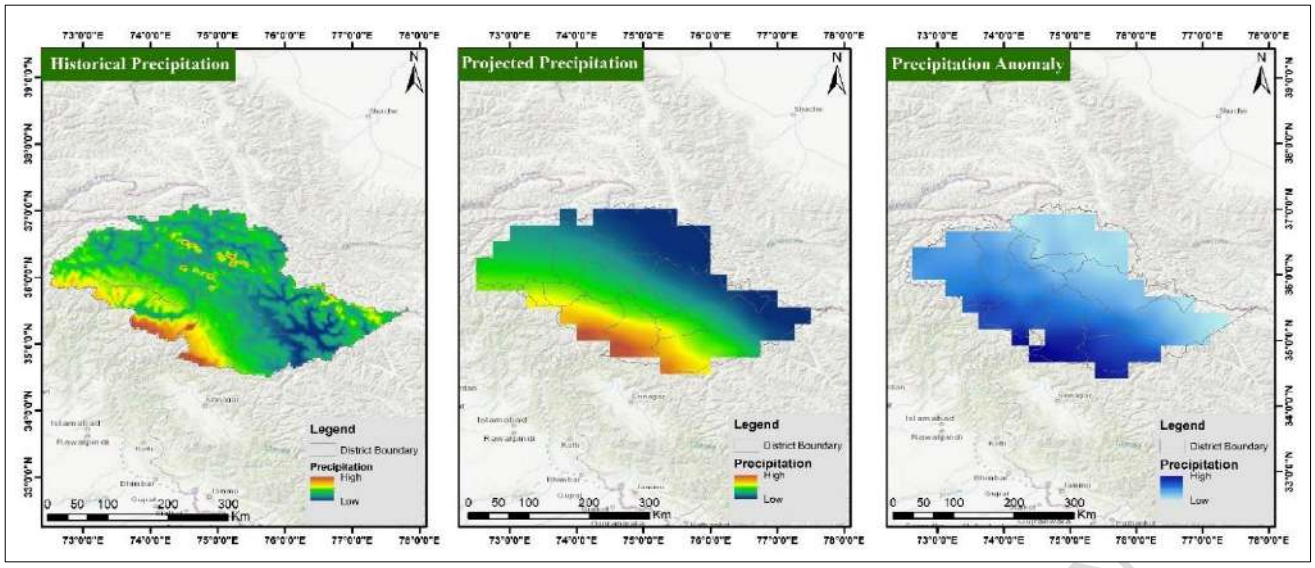
b. **Projected Precipitation**. Future projections show prominent change, with increases expected in South Eastern and North Eastern districts.

c. **Precipitation Anomaly**. Slight positive anomalies in the South East suggest a small increase in rainfall, but overall, Balochistan will receive rains in comparison with historical patterns.



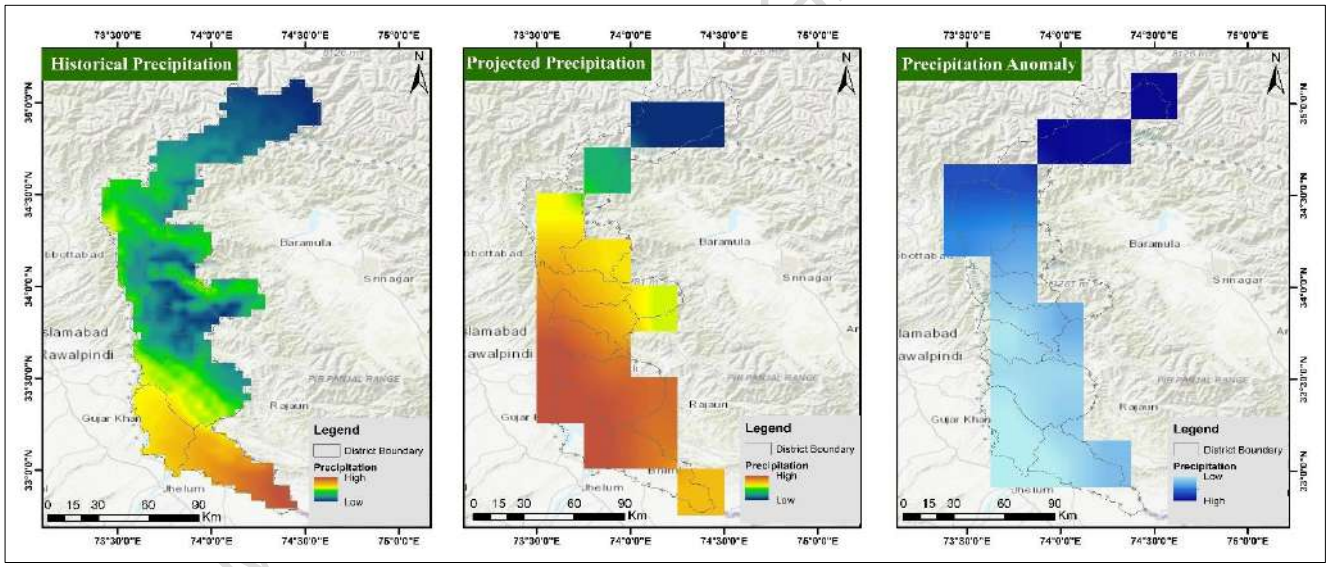
Balochistan Comparative Analysis for Average Precipitation (JAS)

16. **Gilgit-Baltistan (GB) Outlook**. Northern mountainous territories of GB 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 locations.



GB Comparative Analysis for Average Precipitation (JAS)

17. **<u>Azad Jammu & Kashmir AJ&K) Outlook</u>**. In AJ&K, including Muzaffarabad, Neelum Valley, and Rawalakot, isolated heavy rains are forecasted. The rugged terrain and high rainfall intensities pose significant risks of landslides and riverine flooding. These regions also contribute to the upper catchment areas of major rivers, affecting downstream water flows in Punjab.



AJ&K Comparative Analysis for Average Precipitation (JAS)

Monsoon 2025 Contingencies

18. **Visualized Contingency Scenarios**. Monsoon's visualized contingency scenarios, derived from Monsoon Seasonal Outlook for Monsoon 2025 are as under: -

a. **Scenario-1 (Less Likely) - Below Normal Monsoon**. This scenario, though less likely, must be accounted for as part of national contingency planning due to its potential impact on agriculture, water availability, and regional drought risks. It may unfold as under:

(1) **Below average rainfall** across most regions of the country, particularly in rain-fed (Barani) areas of Balochistan, Southern Punjab and parts of Sindh.

(2) Reduced snow and glacier melt due to lower temperatures and diminished Monsoon influence, leading to decreased river flows, especially in the Indus and its tributaries.

(3) Increased risk of drought-like conditions especially in arid and semi-arid zones such as Tharparkar, Cholistan, and Western Balochistan, impacting agriculture and livestock.

(4) Depletion of water reservoirs creating challenges for irrigation, urban water supply, and hydropower generation in later months.

(5) Increased reliance on groundwater extraction potentially leading to long-term aquifer stress and water quality degradation.

b. **Scenario- 2 (Most Likely) - Above Normal**. It may unfold as under: -

(1) Most regions, across the country will experience Above Normal Rains.

(2) Increased snow / ice melt expected and resultantly higher flows in all rivers will be experienced.

(3) Extreme weather patterns i.e. torrential / heavy rains, hailstorm, windstorms may develop during the season and are to be expected across the country.

(4) Urban flooding in metropolitans will be possible under climate induced heavy precipitation, which is expected.

(5) Northern Regions i.e. Northern KP and GB will be prone to development of glacial lakes hence triggering GLOFs.

(6) Increased chances of Seasonal Lows.

c. **Scenario-3 (Likely) - Intense Monsoon**. This probable scenario may consist of events such as very heavy isolated downpours coupled with higher temperatures, unpredictable release of water from Indian reservoirs alongwith forced release of water from own reservoirs, create a scenario for riverine flooding. It may unfold as below:-

(1) Extraordinary riverine flood conditions triggered by extreme events.

(2) Urban flooding due to torrential / heavy downpours in short time span.

(3) Peak flood conditions may exist particularly in Eastern rivers affecting areas of Punjab and Sindh.

(4) Increased chances of Seasonal Lows.

(5) Common possibility (Urban flooding, landslides, flash floods & GLOF) emerges as a phenomenon in cities / regions prone to such hazards.

d. **Scenario-4 (Most Dangerous) - Abnormal Monsoon**

(1) Combination of Scenarios 1, 2, 3 and 4 similar to floods experienced in the past 2010 and 2022.

(2) Extraordinary flood conditions triggered by extreme climatic change induced events.

(3) High water levels in major water reservoirs.

(4) Common possibility (Flash floods, Riverine Floods, Urban flooding, landslides, avalanches, & GLOF) emerges as a more frequent and recurrent phenomena to a high degree in cities / regions prone to such hazards.

(5) Massive inundation may be experienced, especially in low lying areas of Balochistan, South Punjab and Sindh.

(6) Reduced frequency of extreme weather events such as urban flooding, riverine flooding, and GLOFs; however, heatwaves may intensify, especially in Southern and Central Pakistan, compounding risks for human health and agriculture.

(7) Risk of delayed sowing and poor crop yields, particularly for Kharif crops such as rice, maize, and cotton in rain-dependent areas.

(8) Greater dependence on inter-provincial water sharing arrangements and closer monitoring of water releases from reservoirs and dams (e.g., Mangla and Tarbela) to support strategic water management.

Provincial / District Hazard, Vulnerability and Flood Inundation Maps

19. NDMA Tech Team has prepared Hazard and Vulnerability Maps, Flood Inundation Maps and Flood Projection Maps which are essential part of preparedness. These maps are created on the basis of historical data of affected areas, extent of damage, population density and housing units. It indicates different hazard zones (Very High, High, Medium, Low and Very Low) that have been identified after detailed analysis. These maps are attached as **Annexes B – L**.

FFD Flood Routing Map (Lag time) and Structural Flood Limits

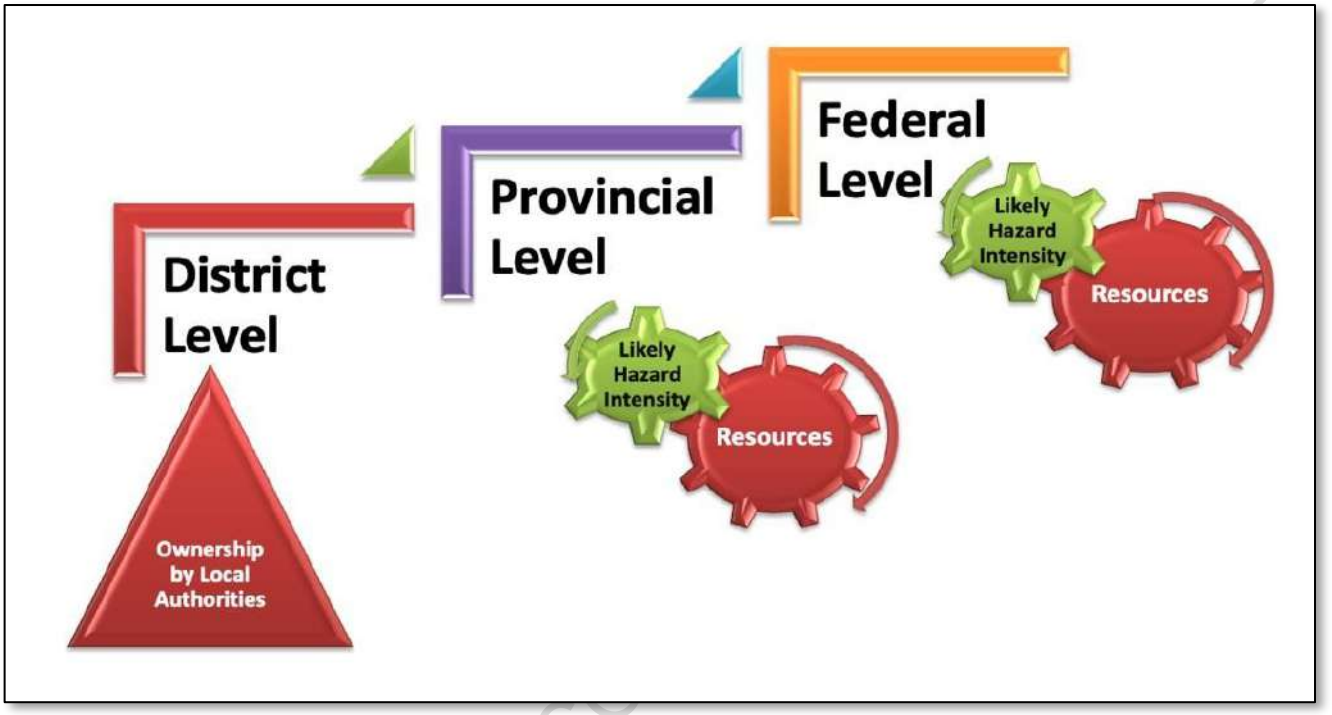
20. Flood lag times and Structure Flood Limits as per FFD are shown in routing model attached as **Annex M** and **Annex N** respectively.

PART III - NATIONAL GUIDELINES FOR MONSOON 2025

Overview of Disaster Management Structure

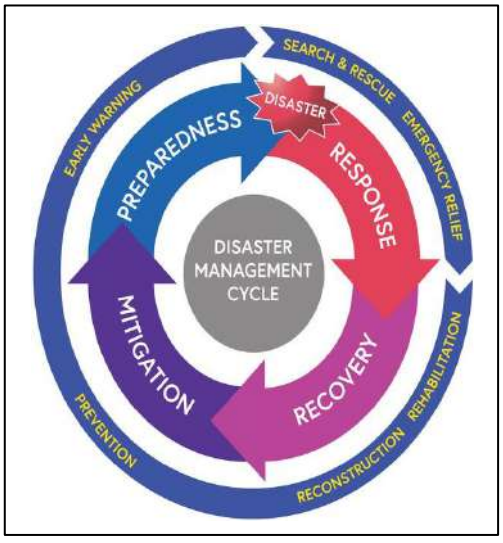
1. The National Monsoon Contingency Plan Response Guidelines have been developed with a focus on addressing structural challenges in response mechanism and drawing from lessons learned during previous floods, particularly Floods of 2022. National response to Monsoon-related disasters is organized into three tiers: -

Three-tiered Response Mechanism Following Bottom-Up Approach



2. **Anticipatory Actions for Response**. The following section will outline the anticipatory actions for the three phases of response {Preparedness, Response (Rescue & Relief) and Early Recovery} activities which are to be proactively undertaken at Federal, Provincial and Local Levels by all concerned stakeholders. These measures have been developed over a period of time taking into account lessons learned and best practices at all three levels of the disaster management system.

3. **Preparedness Phase Anticipatory Actions**. The following guidelines serve as a roadmap for all stakeholders, emphasizing the importance of proactive planning and readiness. While these guidelines cover general preparedness actions, detailed plans from each level of governance will outline specific measures for comprehensive readiness. Stakeholders are advised to tailor these guidelines to local / regional contexts to strengthen preparedness efforts and establish a robust framework for risk mitigation.



a. **General Mitigation and Preparedness Measures**

(1) **Vulnerability and Risk Assessment**. Undertake comprehensive assessment of at-risk regions to evaluate vulnerabilities and formulate location-specific preparedness and response plans.

(2) **Updating District Hazard Maps**. District hazard maps to be updated down to union council level to identify the most vulnerable communities for sensitization, awareness, early warning and evacuation in emergencies. Pay particular attention to the following: -

(a) **Riverine Floods**. Identify settlements / encroachments inside river plains (*kacha* areas), communities living close to riverbanks and vulnerable sections identified by respective irrigation departments.

(b) **Flash Floods**. Identify settlements closer to / inside water courses.

(c) **Landslides / Avalanches / GLOFs**. Identify communities residing near dangerous slopes / potential landslide areas in mountainous regions.

(d) **Urban Flooding**. Identify low-lying areas prone to inundation in congested city centers.

(3) **Resource Mapping**. Prepare resource allocation based on distribution of existing resources / manpower deputed and assess if they are fit / sufficient to meet respective risks / vulnerabilities. PDMAs to ensure resource mapping of volunteers, NGOs / INGOs, UN agencies, trained responders, required equipment / machinery at district and preferably at Tehsil level to help identify available resources for effective coordination and response.

(4) **Prepositioning of Earth Moving Machinery**. Respective governments, NHA, Communication and Works Departments and other relevant organizations should preposition dedicated earth moving machinery in landslide / flood- prone highways, link roads and isolated mountainous areas of KP, AJ&K and GB. This includes arrangements for bridges and an increased number of maintenance teams at risk-prone locations. Details of critical sections must be covered in contingency plans for respective departments.

(5) **Completion of Mitigation Projects**. Ensure timely completion of ongoing mitigation projects within the specified timeframe to safeguard lives and infrastructure.

(6) **Repair Infrastructure**. Damaged infrastructure be repaired, and shortage of pitching store reserves be recouped and pre-positioned at

safe locations. Repair and maintenance of leftover flood protection works should be completed immediately / before onset of Monsoon, FFC to coordinate and share detailed reports on processes completed by respective departments.

(7) **Inspection / Monitoring of Flood Protection Works**. Round the clock vigilance of vulnerable sections of flood protection structures / bunds, identified by respective irrigation departments be ensured through irrigation staff, police / LEAs, Civil Defence and local community volunteers. Incomplete flood protection works, if any, will be particularly kept under special watch by respective PIDs / PDMAs / DDMAs.

(8) **Dam / Reservoir Operations**. Efficient coordination among all stakeholders, in accordance with revised instructions and Standard Operating Procedures (SOPs) of dams and reservoir management is crucial to ensure timely response and preparedness.

(9) **Location of Relief Camps**. Earmark locations for relief camps and make necessary administrative arrangements based on needs and past experiences. Ensure that relief camps are accessible and located close to main arteries for efficient delivery of relief goods to affected people.

(10) **Updated Flood Contingency Plans**. All concerned stakeholders should update their flood contingency plans based on NDMA's National Monsoon Contingency Plan 2025 and respective SOPs of the planning process. These updated plans should be shared with NDMA and relevant stakeholders immediately.

(11) **Planning for Vulnerable Groups**. Planning for the needs and concerns of vulnerable groups should be based on available authenticated gender, age and disabled disaggregated data at district level. Ensure inclusive preparedness measures to address specific requirements of vulnerable populations.

(12) **Special Conferences**. Conduct specialized conferences of all relevant stakeholders to discuss preparations and comprehensive response measures to facilitate a well-coordinated response in case of extreme events and assist in timely decision-making processes.

(13) **Conduct Mock Exercises**. Plan and execute mock exercises involving all relevant stakeholders and local communities. Simulate disaster scenarios to streamline response strategies, identify gaps and improve overall preparedness.

(14) **Audit**. Conduct a comprehensive audit of equipment, machinery and

trained manpower to identify gaps and initiate measures to meet essential preparation requirements. Ensure preparedness for effective disaster response for seasonal hazards.

(15) **Provision of Timely Information**. PDMAs to ensure timely provision of accurate and relevant information regarding incidents and response, utilize NDMA's Standardized SITREP format (**Annex O**) for reporting and enhance incident reporting mechanisms for increased efficiency.

4. **Hazard-Specific Preparedness Measures**. Following preparedness measures based on past experiences will help to mitigate losses incurred during floods: -

a. **Riverine and Urban Flooding**

(1) Identification of low-lying areas prone to pondage and inundation in congested areas of the metropolis.

(2) Strengthening the understanding of flood risk management, floodplain regulations and effective urban planning through capacity building efforts for Municipal Corporations and line departments.

(3) Implementation of necessary measures such as widening, dredging and de-silting of storm water and sewerage drains to maintain their functionality and reduce the risk of urban flooding.

(4) Removal of encroachments along floodplains and drains to reclaim the original extents of water flow, facilitating unobstructed drainage and preventing waterlogging in urban areas during heavy rainfall events.

(5) Regular assessment and maintenance of serviceability and operability of pumping stations responsible for managing stormwater and sewage disposal, establishing robust maintenance protocols and contingency plans.

(6) Training and refresher programs for technical manpower involved in flood management and drainage operations to enhance their skills and knowledge.

(7) Provision of reliable backup electricity arrangements, such as generators for sewage disposal and pumping stations / de-watering pumps to guarantee uninterrupted operations during power outages, enabling efficient drainage and sewage management during flood events.

(8) Establishment of dedicated committees at the municipal level, particularly in major cities, responsible for planning and implementing contingency plans, involving relevant stakeholders and experts / volunteers for a coordinated and proactive approach to flood preparedness / response in urban areas.

b. **Flash Floods**

(1) Awareness drive for local communities based on historical data and vulnerability mapping.

(2) Long-term plans for rehabilitation of populations at risk of flash floods.

(3) Commissioning of emergency services such as Rescue-1122 in mountainous and inaccessible regions. As an interim measure, plan for forward placement of emergency services manpower and relief stores.

(4) Installation of signposts along waterways in regional language for community awareness. These signposts should clearly indicate the threat level of waterways, provide information on protective measures and include contact information of relevant authorities.

(5) Implement special community-based vigilance measures during dark hours and periods of intense rains, utilizing sirens or loudspeaker announcements from mosques.

(6) Strengthen early warning systems to provide timely and accurate information about potential flash floods.

(7) Conduct regular maintenance of drainage systems and infrastructure to ensure efficient water flow and reduce the risk of flash floods.

(8) Enhance coordination and communication between relevant agencies, DM authorities and local communities to facilitate prompt response and evacuation during flash flood events.

(9) Implement land use planning and zoning regulations to restrict human settlements in high-risk flash flood areas.

(10) Promote construction of flood-resistant infrastructure and buildings in flash flood-prone regions.

(11) Provide training and capacity building programs for emergency response teams and volunteers to enhance their readiness and effectiveness in managing flash flood situations.

c. **Glacial Lake Outburst Floods (GLOFs)**

(1) Conduct regular monitoring of glacial lakes by relevant authorities (NEOC / SUPARCO / PMD) to identify vulnerable glacial lake sites / discharge levels before onset of Monsoon.

(2) Install early warning systems at GLOF sites that integrate real-time data monitoring, remote sensing and weather forecasting to monitor key indicators and promptly alert authorities / communities about potential GLOF events.

(3) Develop hydrographs along water channels downstream to predict and

understand GLOFs more accurately. This will provide crucial information for effective planning and response strategies.

(4) Construct adequate trapping dams with capacity to reduce force and volume of floodwaters to mitigate potential damage to downstream areas and infrastructure.

(5) To prevent lake outbursts, under mentioned civil engineering interventions may be considered. Application of these measures will have to be considered from case-to-case basis: -

(a) Reinforce moraine dams using techniques such as concrete cementing and gabion walls to prevent overtopping of lake water.

(b) Keep volume of stored water in the lake to a safe level; initially by dropping the level and then by excavating a tunnel or deepening the breach of the moraine-dam to retain the lower level, utilizing siphon systems, electrical pumping or controlled blasting.

(6) Utilize geospatial technologies / remote sensing to create accurate and up-to- date hazard vulnerability maps, providing valuable insights into the potential impact of GLOFs on surrounding communities and infrastructure.

(7) Conduct awareness campaigns / community training programs to enhance the preparedness and resilience of local communities, educating them about risks and necessary protective measures.

(8) Establish safe evacuation routes and designated assembly points for affected communities, considering the topography and accessibility of at-risk areas. Conduct regular drills / rehearsals to test the effectiveness of evacuation plans and ensure coordinated responses during GLOF emergencies.

(9) Plan for the permanent relocation of settlements located in high-risk areas prone to GLOFs. Simultaneously, focus on constructing disaster-resilient infrastructure based on thorough hydrological studies.

(10) Foster international cooperation and knowledge exchange in GLOF risk management, leveraging experiences and best practices from other countries in GLOF monitoring, mitigation and response.

d. **Landslides / Avalanches**. The vulnerability to landslides and avalanches is influenced by the geography of an area and local climatic conditions, and it is crucial to identify / address high-risk regions. Following precautionary measures be considered to enhance preparedness and to mitigate impact of landslides / avalanches: -

(1) Review and update recorded history of landslides / avalanches in prone

areas. In addition to conducting vulnerability risk assessments, gather information from local notables who have personal experience of such events for risk mitigation strategies.

(2) Raise awareness among local communities in vulnerable areas about the importance of paying special attention to weather forecasts and alerts. Heavy rainfall can trigger landslides and avalanches, while sudden temperature variations can increase the likelihood of avalanches in susceptible areas.

(3) Establish community-based early warning system as part of the response mechanism in landslide / avalanche-prone areas. Local notables be nominated to ensure timely dissemination of alerts; this may involve use of watchmen, loudspeakers, megaphones, whistles, SMS alerts, telephonic communications or any other suitable means to alert the community.

(4) Based on landslide / avalanche alerts issued by PMD, local administration to consider precautionary measures such as closing roads and tracks leading to avalanche / landslide-prone areas. Contingency plans should include organized evacuation of people to safer locations.

(5) Conduct detailed geological and geo technical surveys in high-risk areas to assess slope stability and identify potential landslide and avalanche zones.

(6) Implement slope stabilization techniques such as slope reinforcement, retaining walls and erosion control measures in vulnerable areas to minimize the risk of landslides / avalanches.

(7) Promote afforestation and sustainable land use practices to enhance slope stability and reduce susceptibility of slopes to erosion and failure.

(8) Develop and implement building codes / structural resilience strategies that consider the risk of landslides / avalanches, particularly in mountainous regions.

e. **Cyclones**. While Cyclone Season has passed, owing to changes in temperature, the possibility of such events cannot be completely ruled out at the start or end of Monsoon Season. Therefore, following guidelines can protect people / property in vulnerable areas: -

(1) Enhance meteorological infrastructure to improve cyclone monitoring and prediction accuracy, utilizing advanced technologies such as Doppler radar and satellite imagery.

(2) Strengthen collaboration and information sharing among meteorological

departments (NEOC / SUPARCO / PMD), DM agencies and stakeholders for timely dissemination of cyclone warnings.

(3) Develop clear protocols and SOPs for issuing cyclone warnings, ensuring consistent and comprehensible communication.

(4) Conduct public awareness campaigns utilizing diverse media channels, educational materials and community engagement initiatives to increase public understanding of cyclones, their associated hazards and the necessary actions individuals should take before, during and after a cyclone event.

(5) Establish community-based early warning systems in cyclone-prone areas leveraging technology and local networks to disseminate timely and location- specific alerts through various channels, such as loudspeakers, sirens, SMS alerts, community radio and social media platforms, ensuring that communities receive warnings and can take appropriate actions to safeguard their lives and property.

(6) Develop evacuation plans for high-risk coastal areas, identifying safe shelters, evacuation routes, transportation arrangements and the mobilization of resources necessary for orderly and efficient evacuation of residents to designated safe areas.

(7) Conduct drills to test the effectiveness of evacuation plans and response mechanisms.

(8) Strengthen critical infrastructure in coastal areas to withstand cyclonic winds and storm surges by implementing cyclone-resistant designs, construction standards and retrofitting measures.

(9) Promote individual preparedness through family emergency plans and supply kits.

(10) Provide training and capacity building for first responders and emergency management personnel.

(11) Foster collaboration with national and international partners for assistance and technical support.

(12) Conduct post-cyclone assessments to identify lessons learned and improve future responses.

5. **Early Warning System**

a. **Early Warning by Government Agencies**. PMD will be the focal organization supported by NDMA Tech Team in providing flood early warnings and it is the only authorized agency to issue weather / flood forecasts. PDMAs / GDMA / SDMA must strictly guard against issuance of climate-based warnings based on

open-source applications. Following measures should be undertaken by PMD and other stakeholders for effective dissemination of alerts: -

(1) FFD, subordinate department of PMD, will disseminate daily flood forecasts during the Monsoon season.

(2) Weather and flood forecasts / advisories will be issued based on a predefined schedule, detailed as follows: -

(a) **Normal Conditions**

Monthly	First week of the month
Weekly	Every Monday

(b) **Onset of Floods**

Normal	Every 24 hours
High / Very High	6 hours
Significant Event	Every hour
Extreme Event	Minimum permissible time before occurrence

(3) Respective PDMAs will issue specific weather advisories / warnings / flood alerts to district authorities and relevant stakeholders via fax, email, telephone, SMS, WhatsApp messages and instant website uploads.

(4) NDMA / PDMAs / GBDMA / SDMA and PMD will release breaking news or tickers to TV, including the national TV. Additionally, PMD has a broadcasting studio within its premises that will be utilized for video updates. Radio broadcasts will be utilized through national and FM radio stations to keep public informed about impending disasters and related advisories.

(5) Important advisories and alerts will be shared on social media platforms (Twitter, Facebook) through official government agency accounts only.

(6) PMD will designate a focal person authorized to deal with weather and flood forecasts, whose contact information will be made available to all stakeholders for timely communication. In this regard, a WhatsApp group by NDMA, named “DM Responders” will also be utilized for information dissemination and issuance of guidance / instructions.

(7) Mobile Application and website of NDMA will also upload updated early warning.

b. **Community Early Warning through Advisories**

(1) Public Service Messages (PSMs) must be generated forthwith by NDMA / PDMAs / GBDMA / SDMA and DDMAs through print and electronic media.

(2) Disseminate crucial information to the public through billboards, posters, banners, brochures, warning signs and floodwater level indicators. These communication channels serve to educate and alert individuals living in at-risk areas.

(3) All concerned departments and local communities must be apprised about the forecast and its likely unfolding at the onset of Monsoon.

(4) Communities are provided information about safer places, relief camps and evacuation plan by concerned departments.

(5) To avoid false alarms, all Disaster Management Authorities ensure implementation of Clause 35 of NDMA 2010.

(6) Community-based indigenous early warning systems are established in areas vulnerable to flash floods, landslides, GLOFs and avalanches through the following means: -

(a) Placement of round-the-clock lookouts, especially during periods of intense rain or at night.

(b) Use of sirens or announcements on loudspeakers, including those in mosques.

(c) Traditional methods such as lighting fires, drum beating and religious worship places by people residing in higher areas of such regions.

(d) Conducting evacuation drills to familiarize the community with the evacuation process.

Response Phase Anticipatory Actions (Rescue and Relief)

6. During the initial stages of disaster response, rescue operations play a vital role in saving precious lives and ensuring safety of affected individuals. Following must be done by all concerned: -

a. **General Response Guidelines**

(1) Plan forced evacuation, if merited, in cases of limited warning time, utilizing all available provincial / district resources.

(2) DDMAs, as first responders, to mobilize communities for disaster response, promoting community involvement and addressing the issue of human resource scarcity.

(3) Prioritize rescue and evacuation of vulnerable groups, including the elderly, disabled, women and children.

(4) NHA and Pakistan Railways must restore communication infrastructure and establish alternate routes promptly.

(5) SUPARCO will provide NDMA with satellite imagery and assessments for

projected flood developments in affected areas.

(6) Make traffic arrangements to regulate flow on national and provincial arteries in case of infrastructure damage caused by floods.

(7) Strictly curb disaster tourism to ensure public safety and prevent interference with rescue and relief operations.

(8) Coordinate and ensure the availability of flood rescue equipment (boats, OBMs) and trained responders (OBM operators) positioning them to respond effectively in various regions.

(9) Coordinate deployment of Urban Search and Rescue (USAR) teams through NDMA / PDMAs for operations in collapsed buildings and landslides within their respective provinces.

(10) PDMAs must ensure the provision of rationalized flood-fighting equipment as demanded by Pakistan Army before the onset of Monsoon 2025. PDMAs and Pakistan Army to establish a mutually devised mechanism for collection, utilization and maintenance of equipment as per requirements.

(11) Coordinate availability of staff from relevant departments, especially hospitals and emergency services, even on holidays during the Monsoon season.

(12) Incorporate Rescue 1122, emergency services, civil defense, volunteers and law enforcement agencies in rescue operations.

(13) Aviation resources at the disposal of Provincial Govts to be utilized.

(14) Aviation efforts be requisitioned through NDMA by respective Provincial / State Governments with expenditures to be borne by the respective Govts.

b. **Rescue Measures for Riverine Floods**

(1) Activate the established coordination mechanism led by DM agencies for a swift and well-coordinated response.

(2) Mobilize SAR teams equipped with flood rescue equipment, strategically placed in flood-prone areas along riverine regions.

(3) Prioritize the rescue and evacuation of individuals stranded or isolated by rising water levels in riverine flood situations.

(4) Establish temporary shelters and safe evacuation routes for affected communities in riverine flood zones.

(5) Conduct aerial surveys and utilize drones to identify submerged or stranded individuals for targeted rescue operations.

(6) Coordinate with SUPARCO to obtain real-time satellite imagery and

flood assessments for effective rescue operations.

(7) Deploy specialized watercraft and trained personnel for swift water rescue and evacuation in riverine flood scenarios.

(8) Implement a robust communication system to ensure coordination between search and rescue teams and local authorities.

c. **Rescue Measures for Flash Floods and Cloud Burst**

(1) Collaborate with local authorities, relevant departments and emergency services to develop specific search and rescue strategies for flash flood scenarios.

(2) Activate the established coordination mechanism for a swift and well-coordinated response.

(3) Mobilize search and rescue teams with flood rescue equipment and specialized swift water rescue gear for rapid response in flash flood-prone areas.

(4) Prioritize evacuation and rescue of individuals trapped in rapidly rising floodwaters or isolated by flash floods.

(5) Utilize early warning systems and community alerts, to warn vulnerable communities in flash flood-prone areas.

(6) Conduct rapid assessments of affected areas to identify high-risk locations and deploy search and rescue teams accordingly.

(7) Coordinate with NDMA to requisition USAR Team support, if required for specialized rescue operations.

(8) Establish temporary shelters and medical assistance centers in safe locations for evacuated individuals.

d. **Rescue Measures for Landslides / Avalanches / GLOFs**

(1) Develop protocols for the rapid deployment of search and rescue teams and specialized equipment in landslide, avalanche and GLOF-prone areas.

(2) Mobilize search and rescue teams equipped with necessary equipment for debris clearance, excavation and retrieval operations in landslide and avalanche scenarios.

(3) Utilize early warning systems and communication networks to alert vulnerable communities in high-risk areas prone to landslides, avalanches and GLOFs.

(4) Coordinate with NDMA to requisition Pakistan Army USAR team support, if required for specialized search and rescue operations in landslide, avalanche and GLOF situations.

(5) Establish mechanisms for coordination between different agencies involved in search and rescue operations in landslide and avalanche scenarios.

e. **Rescue Measures for Urban Floods**

(1) Activate the established coordination mechanism for a swift and well-coordinated response to urban flooding situations.

(2) Mobilize search and rescue teams equipped with flood rescue equipment and necessary urban search and rescue (USAR) tools for operations in urban flood scenarios.

(3) Prioritize the rescue and evacuation of individuals trapped in flooded buildings, vehicles, or other dangerous situations.

(4) Conduct search and rescue operations in coordination with local authorities, emergency services, Civil Defence and specialized USAR teams.

(5) Requisition aviation support through NDMA, if needed for aerial search and rescue operations in urban flood-affected areas.

(6) Establish communication systems to provide real-time updates and instructions to affected communities.

(7) Conduct post-disaster assessments to identify areas of improvement in search and rescue strategies for urban flooding incidents.

f. **Parameters for Flood Rescue Equipment**. Need based rationalization of the quantity of rescue boats and type of OBMs is to be done based on factors mentioned below to configure optimal response against envisaged flood threat with availability of sufficient reserves at required tiers of response: -

(1) Respective provinces are responsible for establishing the requirement of boats vis-à-vis threat of flood / vulnerability / exposure / risk assessment.

(2) Districts must be prioritized as High Threat (Priority-I), Medium Threat (Priority-II) and Low Threat (Priority-III) based on following aspects:-

(a) Historical flood data record.

(b) Population density.

(c) Urban / rural divide.

(d) Type of flood threat i.e. riverine, flash, urban etc.

(e) Degree of vulnerability and exposure e.g. population centers in water ways / proximity to rivers.

(f) Reaction time.

(3) Maximum number of passengers carried by a fiber glass rescue boat

be determined as per boat size / capacity.

(4) Response action will have following sequence: -

(a) **1st Tier - Immediate Response**. DDMA / District Administration will be responsible to generate 1st Tier response through collaboration with line departments, Rescue 1122, Civil Def organization and trained volunteers (if held). Local communities will be incorporated into response mechanism only if situation permits and the people involved are not exposed to any further risk.

(b) **2nd Tier - Build Up Response**. Respective PDMAs/ GBDMA/ SDMA and ICT Administration will be responsible to collaborate and build-up 2nd Tier response through augmentation of resources from adjacent / neighboring districts and mobilizing provincial resources including NGOs / INGOs in the area. LEAs, CAF and Armed Forces can be requested to assist if situation warrants such employment as a 3rd Tier response. Regional USAR teams will also be mobilized if specialized tasks / requirements arise.

(5) **Positioning of Rescue Boats**. The location of rescue boats will be decided based on the following aspects: -

(a) Availability of reaction time vis-à-vis flood warning, transportation time to water line and mobilization time of crew.

(b) Road communication infrastructure vis-à-vis threat of isolation in case some roads are cut-off or traffic jams deny transportation in time.

(c) Time required for build-up in shifting of resources.

(6) **Priority of Districts**. The priority will be established by respective provinces after due deliberation / consultation and shared with all stakeholders for standardized planning: -

(a) **Priority - I Districts (High Threat)**. These districts should be historically affected by floods (riverine / flash) and situated alongside rivers, Nullahs and hill torrents with relatively higher number of population.

(b) **Priority - II Districts (Medium Threat)**. These are medium priority districts, historically less affected by any type of floods with relatively low number of population.

(c) **Priority - III Districts (Low Threat)**. These are low priority districts, historically least affected by any type of flood and with relatively lesser number of population.

7. **Relief Phase**. After the search and rescue phase, focus shifts to relief operations, which are crucial for providing immediate assistance and support to affected communities. Following are the key recommendations and guidelines for an effective relief phase: -

a. **General Relief Guidelines**

(1) Incorporate NDMA's Guidelines on Multi-Sector Initial Rapid Assessment (MIRA) and Minimum Standards of Relief in Camp and Ex-gratia Assistance into all plans and stages.

(2) Design standardized food packs based on local requirements, including essential items like rice, wheat bags, ghee and milk for babies.

(3) Distribute water purification tablets and filtration to provide clean drinking water to affected people.

(4) Ensure a fair and organized distribution method for relief goods, consulting with local communities.

(5) Consider cultural context and specific food requirements for different groups, such as lactating mothers, pregnant women, infants, children and the elderly. Needs of the entire family unit must be catered to.

(6) Engage trained community teams to assist in emergency shelter planning, relief distribution, identification of missing individuals and addressing education / healthcare / water supply / sanitation / food needs.

(7) Implement the Minimum Initial Service Package (MISP) to reduce mortality, morbidity and disability, especially among women and girls, by strengthening provincial and district capacities and coordinating with stakeholders.

(8) Implement emergency preparedness plans for the education sector to ensure continuity of structured learning during disasters.

(9) Ensure that dignity of all affected persons is protected during the relief phase. Planned and need based without any segregation and avoid unnecessary gatherings for media coverage and pictures of all affected.

(10) In collaboration with provincial health departments, conduct anti-dengue / malaria / COVID-19 prevention campaigns such as spraying and removing stagnant water and implement safety precautions for COVID-19 including social distancing and disinfection.

(11) Maintain and follow supply chain of relief goods in true letter and spirit. DDMAs are the 1st Tier, supported by PDMAs to provide immediate relief. Similarly, 2nd Tier PDMAs, should be ready to render assistance once the stocks of DDMAs are exhausted. 3rd Tier of NDMA supported by national resources to extend relief support required by the provinces / regions: -

(a) NDMA maintains its stocks at strategic locations. PDMAs are responsible to collect the stocks once released by NDMA from a particular location.

(b) NDMA stocks will be requisitioned only in case of extreme emergency and with sufficient reaction time.

(c) Distribution of tents at site must be avoided. People must be motivated to come to relief camps.

(12) Establish an effective supply chain management mechanism with prequalified suppliers and transport contractors for emergency transportation of relief items.

b. **Relief Measures for Riverine Floods**

(1) Establish temporary relief camps equipped with essential facilities such as shelter, clean water, sanitation and healthcare services in safe locations away from flood-prone areas.

(2) Provide immediate medical assistance by setting up medical camps staffed with trained healthcare professionals.

(3) Ensure the availability of clean drinking water through the distribution of water purification tablets, water tankers, or installation of water treatment units.

(4) Distribute food rations and essential items to affected communities, prioritizing vulnerable groups such as children, women and the elderly.

(5) Conduct rapid assessments to identify and prioritize the restoration of critical infrastructure, including roads, bridges and communication networks.

(6) Implement early recovery measures, including debris clearance, rehabilitation of damaged structures and livelihood support to affected communities.

(7) Coordinate with relevant departments and organizations to provide psycho social support / counselling services to affected individuals and communities.

(8) Conduct comprehensive damage assessments to facilitate the estimation of losses and inform future mitigation and preparedness measures.

c. **Relief Measures for Flash Floods**

(1) Establish temporary shelters and evacuation centers equipped with essential facilities for displaced individuals.

(2) Ensure immediate medical support by deploying mobile medical teams to provide emergency healthcare services.

(3) Coordinate with relevant departments and organizations to provide emergency relief supplies, including food, water and essential items, to affected communities.

(4) Implement early warning systems and public awareness campaigns to educate communities on flash flood risks and evacuation procedures.

(5) Conduct rapid damage assessments to identify critical infrastructure and prioritize restoration efforts.

(6) Provide support for the repair and reconstruction of damaged houses, public buildings and infrastructure.

(7) Develop and implement community-based disaster risk reduction programs, focusing on flash flood preparedness, early warning systems and evacuation plans.

(8) Facilitate the rehabilitation of livelihoods through vocational training, income- generating activities and small-scale business support.

d. **Relief Measures for Landslides / Avalanches / GLOFs**

(1) Mobilize emergency response teams specialized in landslide, avalanche and GLOF rescue and relief operations.

(2) Conduct immediate search and rescue operations using specialized equipment and techniques for locating and extricating trapped individuals.

(3) Provide medical support and establish medical camps near landslide / avalanche-prone areas to ensure prompt medical assistance.

(4) Deploy teams for debris clearance and restoration of critical infrastructure, including roads, bridges and utilities.

(5) Conduct comprehensive damage assessments to estimate losses and facilitate recovery planning.

(6) Implement measures to prevent secondary hazards such as damming of rivers or lakes due to landslides or avalanches.

(7) Promote long-term measures for landslide and avalanche mitigation, including slope stabilization, afforestation and land use planning.

e. **Relief Measures for Urban Flooding**

(1) Establish temporary shelters and evacuation centers equipped with essential facilities for displaced individuals in urban areas.

(2) Ensure immediate medical support by establishing medical response teams and deploying mobile medical units to affected areas.

(3) Provide emergency relief supplies, including food, clean water and essential items, to affected communities in coordination with relevant departments and organizations.

(4) Conduct rapid damage assessments to identify critical infrastructure and prioritize restoration efforts.

(5) Implement measures for drainage system cleaning, unclogging and repair to alleviate urban flooding.

(6) Coordinate with relevant departments to ensure restoration of essential services such as electricity, water supply and communication networks.

(7) Conduct awareness campaigns to educate communities on urban flood risks, safe hygiene practices and disease prevention.

(8) Provide support for the rehabilitation and reconstruction of damaged houses, public buildings and infrastructure in urban areas.

Early Recovery Phase Anticipatory Actions

8. Early recovery phase is a critical period that follows the initial response to a disaster. During this phase, the focus shifts towards restoring essential services, rebuilding livelihoods and promoting the overall recovery of affected communities. The following recommendations and guidelines are crucial for effective early recovery efforts: -

a. **General Early Recovery Guidelines**

(1) **Early Recovery Planning**

(a) Develop and implement an Early Recovery Plan based on the findings of the rapid assessments and in coordination with relevant stakeholders.

(b) Ensure the plan includes specific objectives, activities, timelines and responsibilities for the early recovery phase.

(c) Prioritize activities that focus on restoring basic services, infrastructure, livelihoods and community resilience.

(2) **Disaster Assessment & Monitoring**

(a) Implement the Multi-Sector Initial Rapid Assessment (MIRA) framework developed by NDMA and UNOCHA to identify strategic humanitarian priorities, assess the scale of the disaster and determine priority areas of assistance.

(b) Deploy trained human resources from PDMAs / DDMAs to conduct rapid assessments using the MIRA module.

(c) Collaborate with NDMA, PDMA, UN agencies, INGOs and NGOs to carry out rapid assessments and gather data on the needs and priorities of affected and vulnerable communities.

(d) Share initial assessment report with Disaster Management Authorities within one week and the final report within two weeks to facilitate timely decision-making and planning.

(3) **Infrastructure Rehabilitation**

(a) Assess and prioritize damaged infrastructure, such as roads, bridges, schools, health facilities and water and sanitation systems for timely rehabilitation.

(b) Engage qualified engineers and construction experts to oversee the repair and reconstruction process.

(c) Ensure that infrastructure rehabilitation projects adhere to safety standards and incorporate disaster risk reduction measures.

(4) **Livelihoods and Economic Recovery**

(a) Conduct assessments to identify the impact of the disaster on livelihoods and economic activities in the affected areas.

(b) Develop and implement livelihood support programs, including cash- for-work initiatives, vocational training and access to microfinance, to help communities recover and rebuild their economic capacities.

(c) Promote the revival of local markets and businesses through targeted support and incentives.

(5) **Social and Community Support**

(a) Strengthen community-based organizations and promote community participation in decision-making processes related to early recovery efforts.

(b) Foster social cohesion and inclusivity by addressing the needs of vulnerable groups, including women, children, elderly individuals and persons with disabilities.

(6) **Coordination and Partnerships**

(a) Establish effective coordination mechanisms among government agencies, humanitarian organizations, civil society and other relevant stakeholders involved in early recovery efforts.

(b) Foster partnerships with national / international actors to leverage resources, technical expertise and knowledge sharing for efficient and effective early recovery interventions.

(c) Maintain regular communication and information sharing platforms to ensure coordinated and harmonized efforts.

b. **Hazard-Specific Early Recovery Guidelines**

(1) **Riverine Floods**

(a) Conduct rapid damage assessments to identify priority areas for early recovery interventions, focusing on critical infrastructure and

community needs.

(b) Provide immediate support for the restoration of water supply, sanitation and hygiene facilities to prevent waterborne diseases.

(c) Support the rehabilitation of damaged houses and community infrastructure, prioritizing the most vulnerable households.

(d) Assist in the recovery of agriculture and livelihoods through the provision of seeds, tools and technical support for quick replanting.

(e) Facilitate the reestablishment of local markets and income-generating activities to restore economic stability.

(f) Collaborate with local communities to develop and implement community-based early warning systems for future flood events.

(g) Ensure the active participation of affected communities in decision- making processes and the planning of early recovery interventions.

(2) **Flash Floods**

(a) Conduct rapid assessments to identify immediate early recovery needs, focusing on emergency shelter, clean water and food assistance.

(b) Provide temporary shelter solutions for displaced individuals and families, ensuring their safety and well-being.

(c) Support the rehabilitation of damaged infrastructure, such as roads and bridges, to restore access to affected areas.

(d) Facilitate the recovery of livelihoods through cash-for-work programs and the provision of livelihood inputs for short-term income generation.

(e) Promote community awareness and education on disaster risk reduction and preparedness to enhance resilience to future flash flood events.

(f) Incorporate environmental considerations in early recovery efforts to minimize further risks and promote sustainable recovery.

(3) **Landslides / Avalanches / GLOFs**

(a) Conduct rapid assessments to identify priority areas for early recovery interventions, focusing on emergency shelter, medical support and search & rescue operations.

(b) Provide immediate support for the rehabilitation and reconstruction of damaged infrastructure.

(c) Support the recovery of livelihoods through the provision of

alternative income-generation opportunities and vocational training.

(d) Promote community engagement and participation in early recovery efforts, ensuring the inclusion of marginalized groups.

(e) Facilitate the restoration of social services, including education and healthcare facilities, to support community recovery.

(f) Strengthen local capacities and institutional frameworks for disaster risk reduction and early recovery planning.

(4) **Urban Flooding**

(a) Conduct rapid assessments to identify immediate early recovery needs in urban areas, focusing on emergency evacuation, temporary shelter and basic necessities.

(b) Support the restoration of critical services, such as water supply, sanitation and electricity, to ensure the well-being of affected urban populations.

(c) Assist in the rehabilitation of damaged housing and infrastructure, prioritizing the most vulnerable communities.

(d) Promote community-led initiatives for urban drainage clearance and debris management to mitigate future flooding risks.

(e) Support local businesses and economic recovery through financial assistance and revitalization programs.

(f) Strengthen coordination and collaboration among relevant stakeholders, including government agencies, NGOs and community- based organizations for an effective early recovery response.

c. **Needs & Concerns of Vulnerable Groups**. Following aspects must be kept in focus during all stages of flood management: -

(1) Promote fair and equitable access to basic services, particularly in health and hygiene for vulnerable groups.

(2) Ensure relief sites and camps have separate washrooms with locks, adequate lighting, water and sanitation facilities to address women's security needs.

(3) Make female doctors and psycho social support personnel available to cater to the specific needs of women and children.

(4) Establish mobile medical units equipped with safe delivery, post-natal facilities and referral services to provide essential healthcare to vulnerable groups.

(5) Establish separate sleeping areas for women and children to ensure their safety and privacy.

(6) Facilitate access nutritious food and clean drinking water for vulnerable groups, including children, elderly individuals, pregnant women and feeding mothers.

(7) Prioritize the needs of children and persons with disabilities, including child- safe spaces, ramps and accessible toilets.

(8) Implement measures to prevent and address gender-based violence, such as establishing safe reporting mechanisms and providing counselling services.

Coordination Aspects

9. **Inter Provincial / Regional Coordination**. During management of disasters, inter provincial / regional coordination mechanism can require assistance especially in far flung areas in shortest possible time thus reducing sufferings of distressed population. Information about resources of neighboring provincial / regional government resources can be more conveniently incorporated in response phase.

10. **Coordination Spectrum**

a. All stakeholders will monitor flood situation by activation of Emergency Operation Centers (EOCs). EOCs will be activated by provincial DMAs, ICT administration / CDA, Pakistan Armed Forces and all relevant stakeholders as per respective SOPs from 15 June to 15 September, unless Monsoon is prolonged.

b. All stakeholders including Pakistan Armed Forces, FFC, FFD, PMD, NHA, NHEPRN & SUPARCO involved in flood management will nominate respective Liaison Officers (LOs) for National Emergency Operation Centre (NEOC) by 25 June.

c. If required, daily coordination conference will be organized by NDMA during a flood situation in NEOC at 1000 hours. All LOs will attend the conference.

d. All significant information will be immediately passed to NEOC by respective DM authorities.

e. **Coordination with UN Agencies and INGOs / NGOs**

(1) The support of UN Agencies and INGOs / NGOs will be utilized in a coordinated manner, mostly in preparedness, relief, post disaster assessments and rehabilitation phases.

(2) The capabilities of each organization must be ascertained to ensure its optimal utilization.

(3) Need based employment of UN Agencies will be regulated by NDMA and PDMAs. Efforts will be made to avoid saturation of such agencies in a

particular region.

(4) NGOs / INGOs duly cleared / approved by concerned ministries will be allowed to assist in relief operations.

11. **Reports and Returns**

a. Submission of Daily SITREP to NEOC by PDMAs / ICT Administration, PMD, FFC, FFD and NHA will be ensured as per already issued NDMA SITREP format with effect from 15 June onwards.

b. NDMA and PDMAs will update the situation on respective websites.

c. SUPARCO will provide the imageries of developing situations on daily basis. The imageries will be followed by detailed assessment of situation, damage assessment and projections.

d. To ensure a coordinated response, National Humanitarian Network (NHN) / Pakistan Humanitarian Forum (PHF) / UN Agencies and other agencies operating in Pakistan (Al-Khidmat, Edhi, Saylani etc) will share location of their stocks and human resource mapping with NDMA / PDMAs by no later than 15 June annually.

12. **Assistance / Coordination with Ministries / Departments**. Following ministries / departments are requested for assistance as mentioned against each: -

a. **Ministry of Defense**. Conduct of Relief / Rescue Operations through Pakistan Armed Forces (helicopters, troops & rescue equipment) when required.

b. **Ministry of Interior**. Availability of aviation assets for emergency response, at a short notice. Provision of elaborate security to any foreign delegations and federal officials when visiting affected / vulnerable areas.

c. **MoI&B, PID and PEMRA**. Airing of public service messages for community awareness on all media channels especially during prime hours.

d. **Pakistan Telecommunication Authority (PTA)**. To facilitate generation of SMS alerts for early warning, emergency relief and evacuation to required populace. Directions to all CMOs for extending APIs to NEOC for streamlining process of immediate alert / advisory delivery.

e. **Pakistan Tourism Development Corporation (PTDC)**. Provision of timely weather / flood related information to tourists including protection from dangers of flash floods, landslides, GLOF etc. and help evacuation of stranded tourists through local Government / Pakistan Armed Forces.

f. **Ministry of Communication**. To conduct assessment for early restoration of communication mechanism of all sub departments. In case of damage to infrastructure remain prepared to shift earth moving machinery to affected areas.

g. **Ministry of Railways**. To monitor railway tracks on regular basis and assist

transportation of relief goods to affected areas.

13. **Requisitioning of Armed Forces**. Armed Forces will be requisitioned subject to provision of rules / regulations by PDMAs / DDMAs only in case of emergency through NDMA. Additional Aviation support will be coordinated centrally by NDMA based on request of provinces and regions when called to assist in "Aid to Civil Power". Authorities utilizing services from Armed Forces will bear the cost of assets used which will be processed immediately after their employment. Armed Forces will be employed for following: -

a. Rescue and Relief Operations.
b. Aviation support.
c. Special search and rescue operations.
d. Medical support teams.
e. Search and rescue by USAR team and immediate support as per capabilities.

14. **Information Management**

a. NDMA / PDMA / GBDMA / SDMA / ICT Administration will update respective websites on 12 hourly basis during entire Monsoon season. In case of a significant activity / event / flood situation, it will be updated on 3 - 6 hours basis.
b. Print and electronic media / internet be utilized for dissemination of timely and accurate information.
c. Regular press releases, media tickers and press briefings will be ensured to present real time picture of ongoing activities, developing situations and losses / damages, if any.
d. To ensure post transmission record as well as redundancy, information will be disseminated through SMS, emails, fax and telephones.
e. SMS / WhatsApp Groups of relevant stakeholders will be made to ensure real time information sharing.

Logistical Considerations

15. NDMA has developed the **NDMA Stocking Policy 2023** for national, provincial and local level stocking of disaster relief items (available on NDMA website). The policy outlines the details for stocking and provision of relief items in Pakistan.

16. **Cardinals for Provision of Relief**. To ensure transparency, fairness and efficacy in provision of relief to disaster affectees, NDMA follows following cardinals for relief distribution: - Based on damage and need (of an area / district).

a. Total and affected population.
b. Relief already provided / being provided (by various entities).
c. Need based equitable share.
d. Poverty profile and socio-economic conditions.
e. Logistical aspects.

17. **Minimum Stocking Levels for Relief**. All respective disaster management authorities at provincial and national levels and humanitarian stakeholders will maintain minimum required stocks of relief items which have been determined as per caseloads of targeted population. The same has been outlined in the **NDMA Stocking Policy 2023**. Brief details of stock levels are enunciated below: -

NDMA Minimum Stock Level													
Provinces / State	Locations	Status	Caseload	Household (HH) - 6 x Persons	Quantity								
					Family Tents (1 per HH)	Winterized Tents (1 per 4 HH)	Shelter Tents (1 per 83 HH)	Blankets (3 per HH)	Water Tanks (1 per 16 HH)	Water Filtration Plants (1 per 200 HH)	Life Jackets	Boats w/OBMs	De-Water Pumps
Islamabad	Islamabad	**Central**	110,000	18,333	18,333	6,499	223	45,000	938	105	1,500	33	150
Punjab	Lahore	Regional	30,000	5,000	5,000	500	60	15,000	313	25	300	8	20
	Muzaffargarh	Regional	40,000	6,667	6,667	1,667	80	20,000	417	30	200	9	20
KP	Jalozai	Regional	60,000	10,000	10,000	2,500	120	30,000	625	50	200	0	60
GB	Gilgit	Regional	20,000	3,333	3,333	2,000	40	30,000	417	0	100	0	0
AJ&K	Muzaffarabad	Regional	40,000	6,667	6,667	2,500	80	35,000	417	0	100	0	0
Sindh	Karachi	**Central**	90,000	15,000	15,000	0	181	10,000	938	75	1,500	36	100
	Hyderabad	Regional	20,000	3,333	3,333	0	40	5,000	208	40	500	10	50
	Sukkur	Regional	40,000	6,667	6,667	1,667	80	10,000	417	50	500	15	100
Balochistan	Quetta	Regional	50,000	8,333	8,333	3,500	100	50,000	521	42	100	0	0
Total			**500,000**	**83,333**	**83,333**	**20,833**	**1,004**	**250,000**	**5,208**	**417**	**5,000**	**111**	**500**

PDMAs / GBDMA / SDMA Minimum Stocking Levels									
Ser	Items	Scale / Persons	PDMA Pb	PDMA Bln	PDMA Sdh	PDMA KP	SDMA	GBDMA	Total
			Stock Level @1 Mn Pop	Stock Level @ 0.15 Mn Pop	Stock Level @ 0.5 Mn Pop	Stock Level @ 0.35 Mn Pop	Stock Level @ 0.1 Mn Pop	Stock Level @ 0.05 Mn Pop	
RESCUE ITEMS									
1.	Life Jackets	100	10,000	1,500	5,000	3,500	100	50	**20,300**
2.	Drilling Hammers	1800	556	83	278	194	56	28	**2,994**
RELIEF ITEMS									
3.	Family Tents	6	166,667	25,000	83,333	58,333	16,667	8,333	**358,339**
4.	Blankets	2	500,000	75,000	250,000	175,000	50,000	25,000	**1,075,002**
5.	Mattresses	2	500,000	75,000	250,000	175,000	50,000	25,000	**1,075,002**
6.	Quilts	2	500,000	75,000	250,000	175,000	50,000	25,000	**1,075,002**
7.	Sleeping Bags	1	1,000,000	150,000	500,000	350,000	100,000	50,000	**2,150,001**
8.	Tarpaulins	6	166,667	25,000	83,333	58,333	16,667	8,333	**358,339**
9.	Mosquito Nets	2	500,000	75,000	250,000	175,000	0	0	**1,000,002**
10.	Hygiene Kits	6	166,667	25,000	83,333	58,333	16,667	8,333	**358,339**
11.	Kitchen Sets	6	166,667	25,000	83,333	58,333	16,667	8,333	**358,339**
12.	Latrine Tents	24	41,667	6,250	20,833	14,583	4,167	2,083	**89,607**
13.	Water Jerry Cans	12	83,333	12,500	41,667	29,167	8,333	4,167	**179,179**
14.	Water Coolers	6	166,667	25,000	83,333	58,333	16,667	8,333	**358,339**
15.	First Aid Kits	6	166,667	25,000	83,333	58,333	16,667	8,333	**358,339**
16.	Kerosene Heaters w/ Jerry Cans	6	0	0	0	0	16,667	8,333	**25,000**
17.	Warm Clothing	2	0	0	0	0	50,000	25,000	**75,000**
SUPPORT ITEMS									
18.	Dewatering Pumps	100	10,000	1,500	5,000	3,500	0	0	**20,100**
19.	Generators Smalls	100	10,000	1,500	5,000	3,500	1,000	500	**21,600**
20.	Hand Pallet Trolleys	5,000	200	30	100	70	20	10	**5,430**

Conclusion

35. Pakistan's geographical location makes it susceptible to dynamic hazards throughout the year, especially during Monsoons, and poses significant challenges and risks to our socio-economic and environmental fabric. With the growing influence of climate change, these challenges have become even more pronounced. The vulnerability underscores the importance of accurate weather forecasting, thorough impact assessments and a well-coordinated response. To address these issues, it is crucial to establish an efficient, proactive and synergetic system that involves all stakeholders in a coordinated response effort. Through the implementation of Monsoon Contingency Plans of respective departments, we can enhance our resilience, effectively navigate the complexities of Monsoon seasons and forge a path towards a more resilient and sustainable Pakistan.

Government of Pakistan
Prime Minister's Office
National Disaster Management Authority
Islamabad
Dated: **4 June 2025**

Brigadier
For Chairman NDMA
(**Kamran Ahmed**)
Tel: 051-9087133

Annexes

A - NDM Act Clause - 9

B - Flood Hazard Map - Pakistan

C - GLOF Hazard Map - Pakistan

D - Landslide Hazard Map - Pakistan

E - Avalanche Hazard Map - Pakistan

F - Western Rivers Flood Inundation Map

G - Eastern Rivers Flood Inundation Map

H - River Indus Flood Projections

I - River Kabul Flood Projections

J - River Jhelum Flood Projections

K - River Chenab Flood Projections

L - River Ravi Flood Projections

M - Flood Routing Map

N - Flood Limits of Hydrological Structures

O - SITREP Format for Provinces / Districts

P - Overview of PDMAs, SDMA, GBDMA & ICT Preparations

NDM ACT CLAUSE - 9

8. **Establishment of the National Disaster Management Authority.**— (1) The Federal Government shall, immediately after issue of notification under sub-section (1) of section 3, establish an Authority to be known as National Disaster Management Authority.

(2) The National Authority shall consist of such number of members as may be prescribed and shall include [the Director General] as its Chairperson.

(3) There shall be a Director General of the National Authority, to be appointed by the Federal Government, on such terms and conditions, as may be prescribed.

9. **Powers and functions of the National Disaster Management Authority.**— The National Authority shall—

(a) act as the implementing, co-ordinating and monitoring body for disaster management;

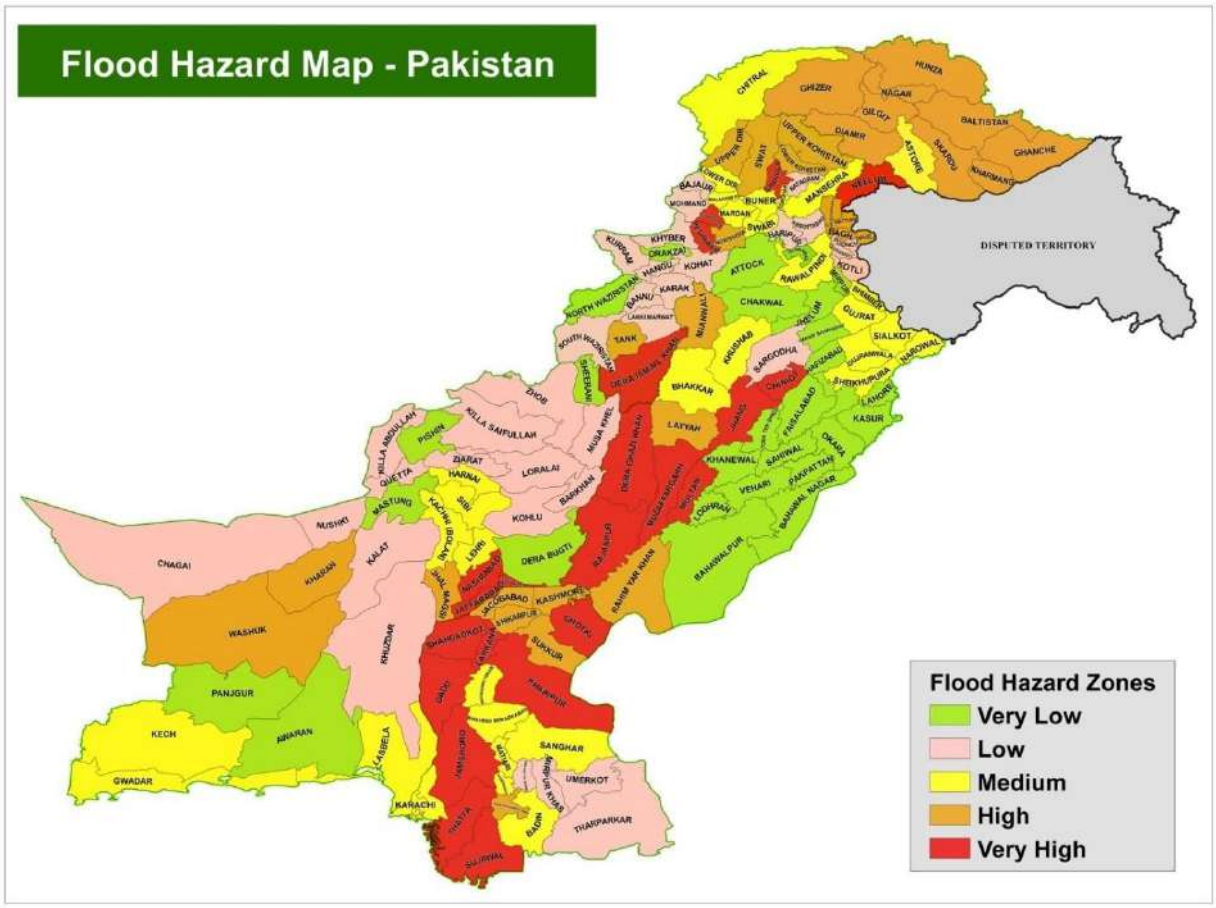
(b) prepare the National Plan to be approved by the National Commission;

(c) implement, co-ordinate and monitor the implementation of the national policy;

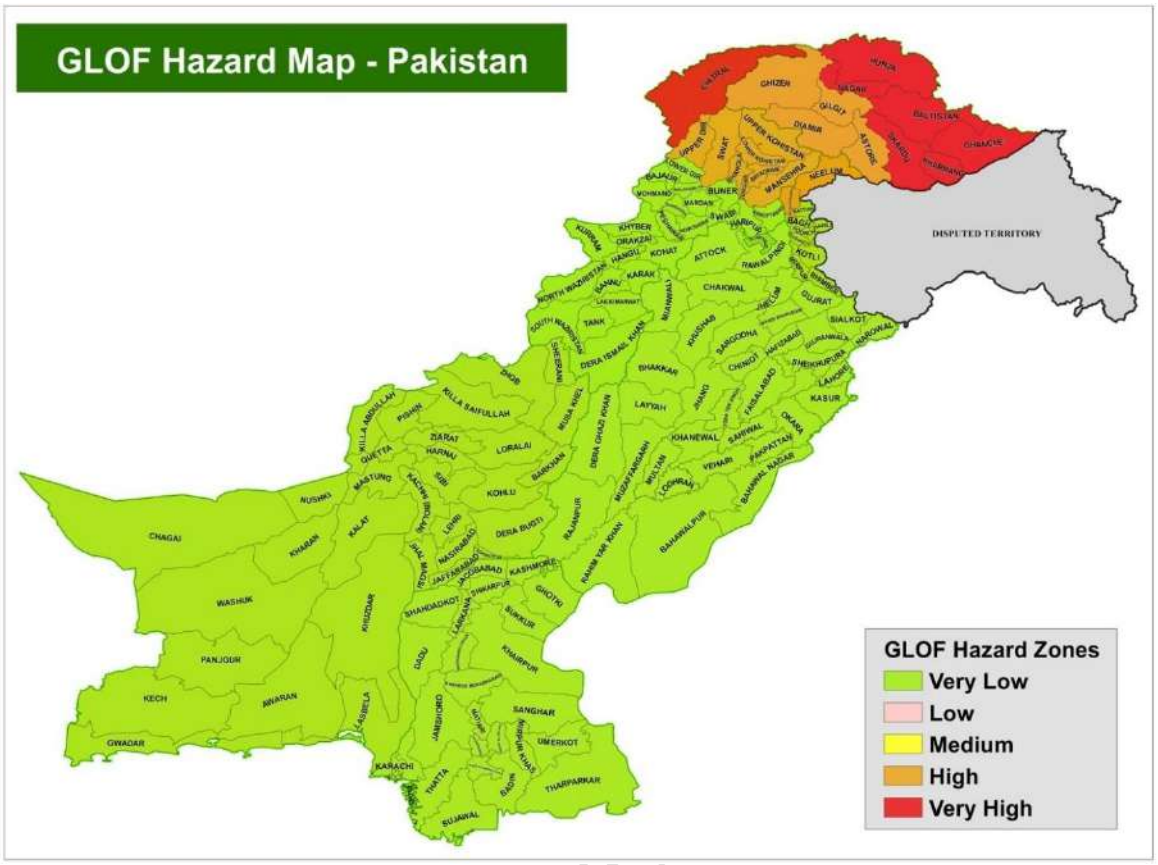
(d) lay down guidelines for preparing disaster management plans by different Ministries or departments and the Provincial Authorities;

(e) provide necessary technical assistance to the Provincial Governments and the Provincial Authorities for preparing their disaster management

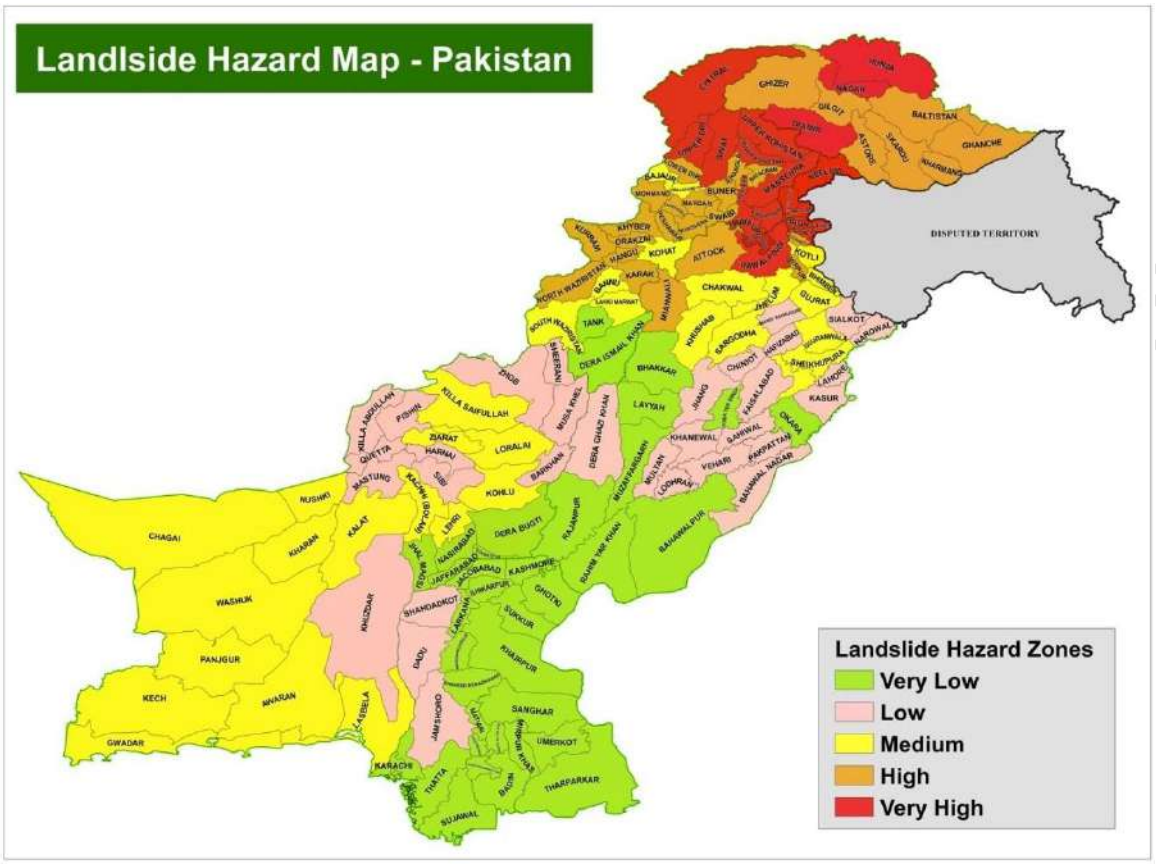
FLOOD HAZARD MAP



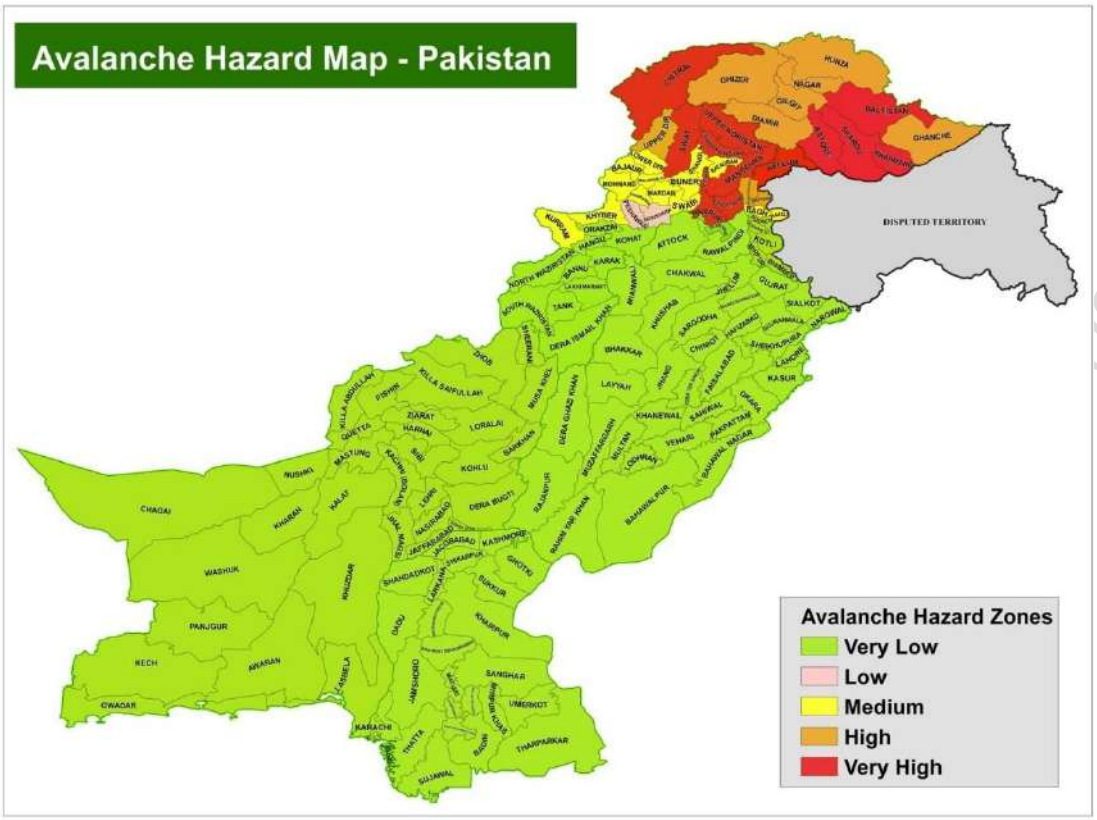
GLOF HAZARD MAP



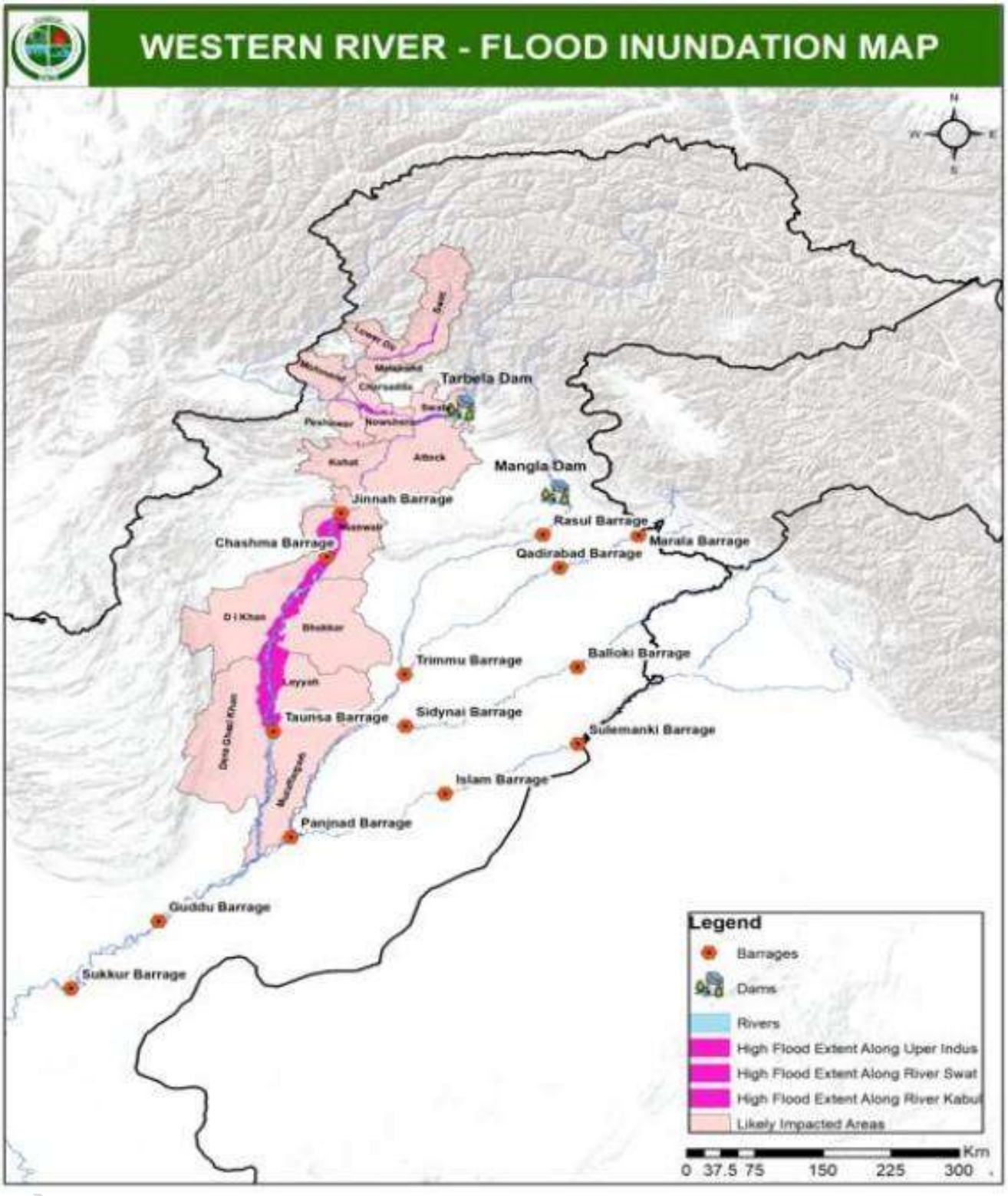
LANDSLIDE HAZARD MAP



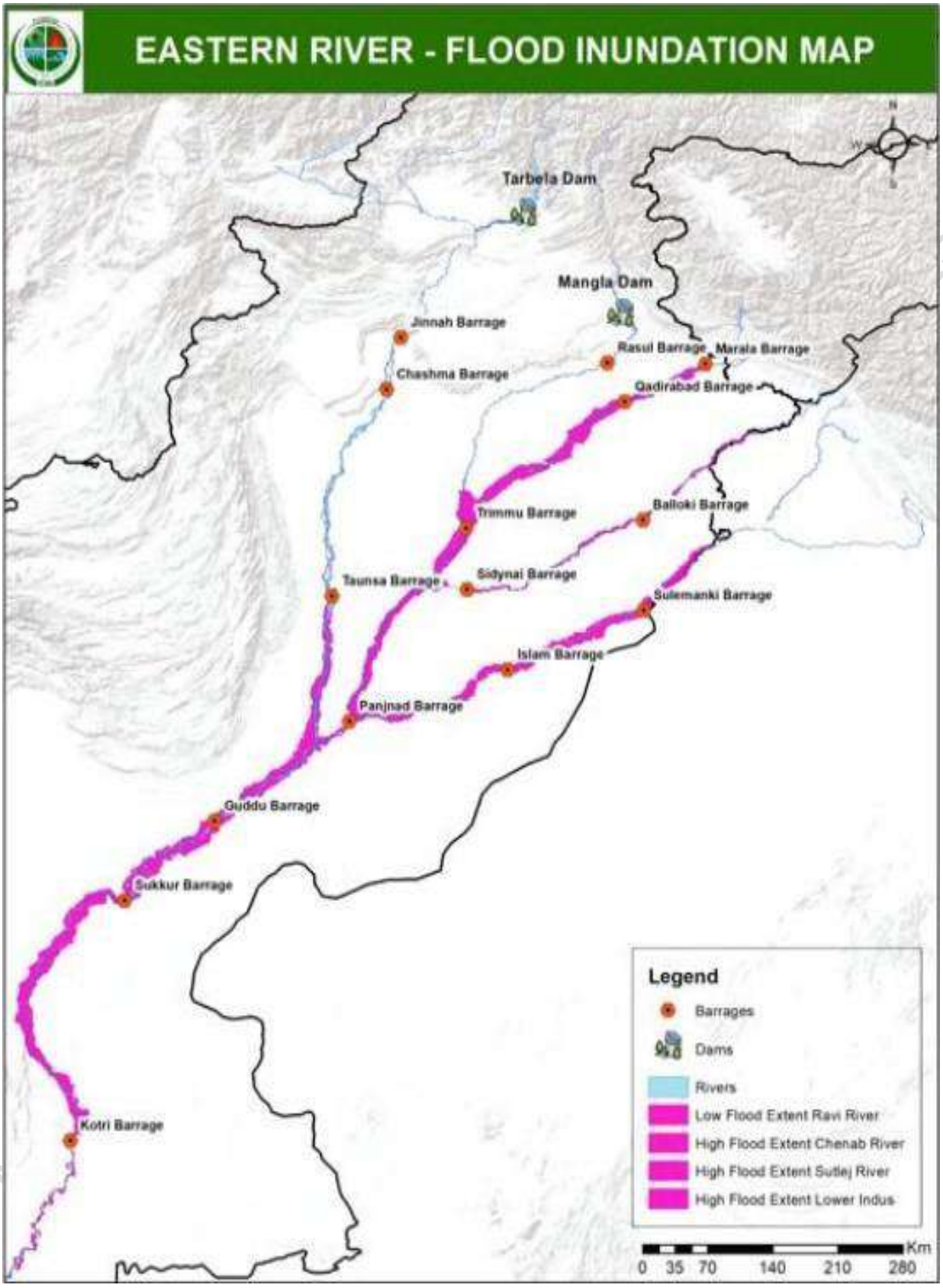
AVALANCHE HAZARD MAP



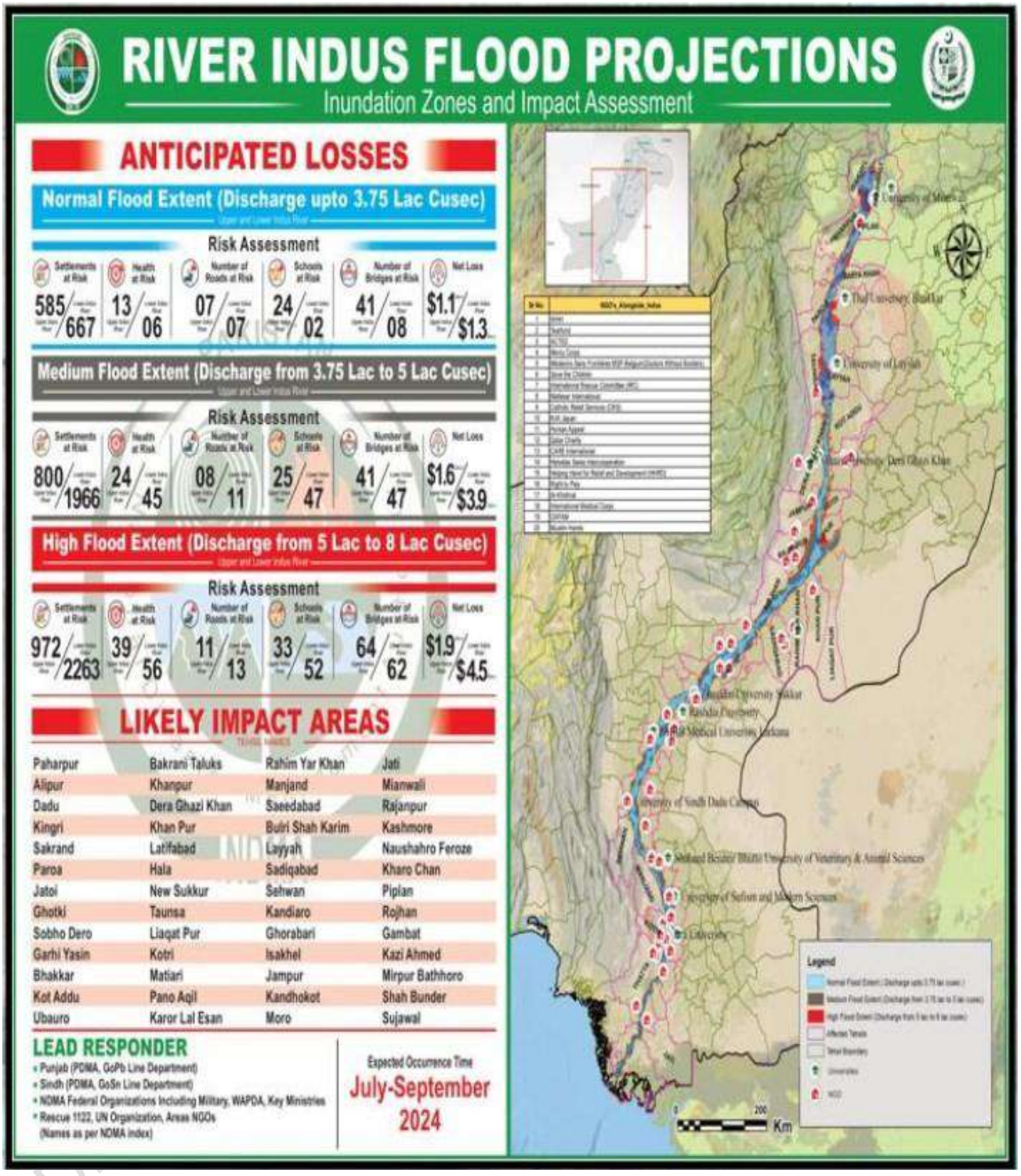
WESTERN RIVERS FLOOD INUNDATION MAP - MAJOR RIVERS



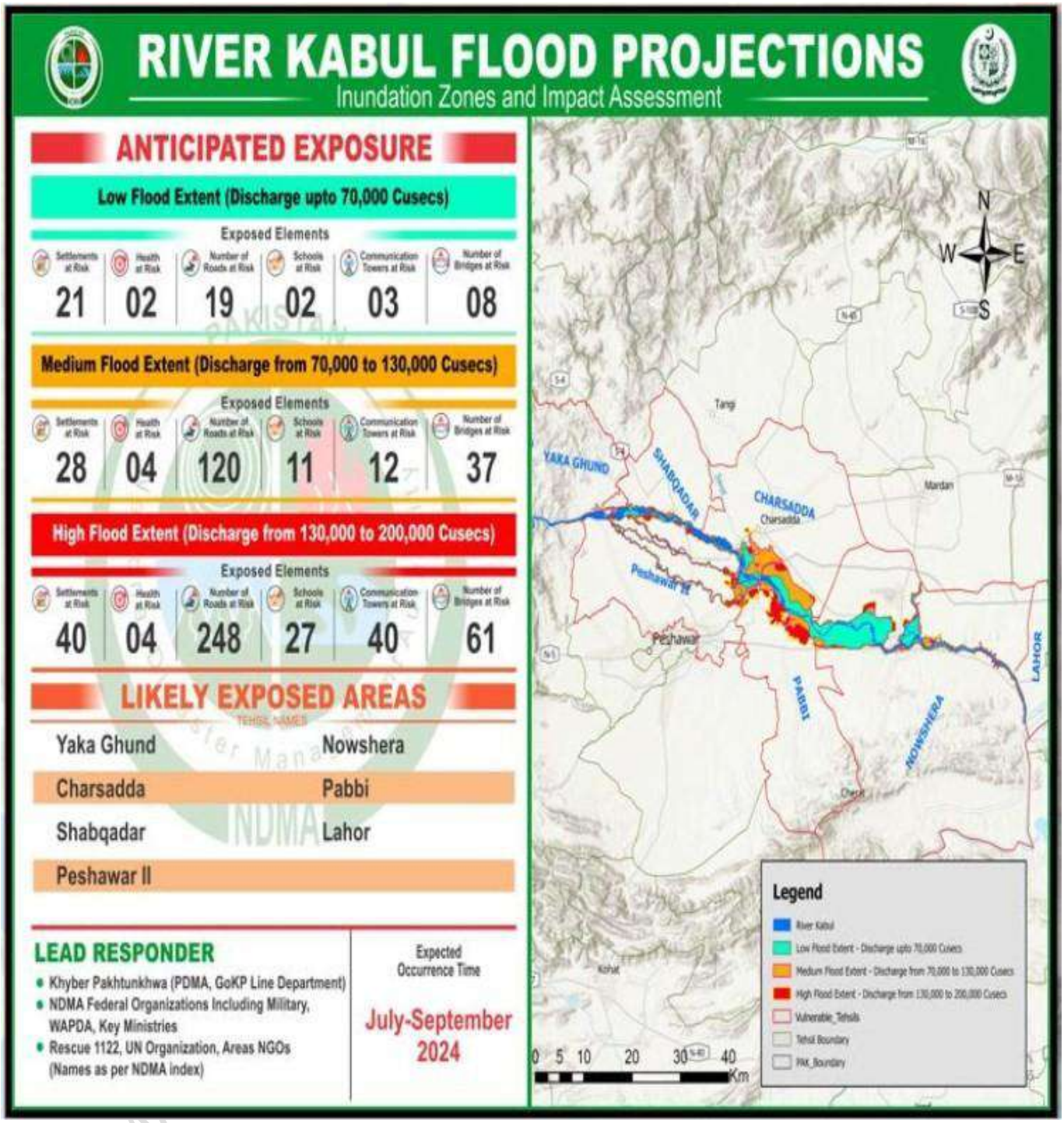
EASTERN RIVERS FLOOD INUNDATION MAP



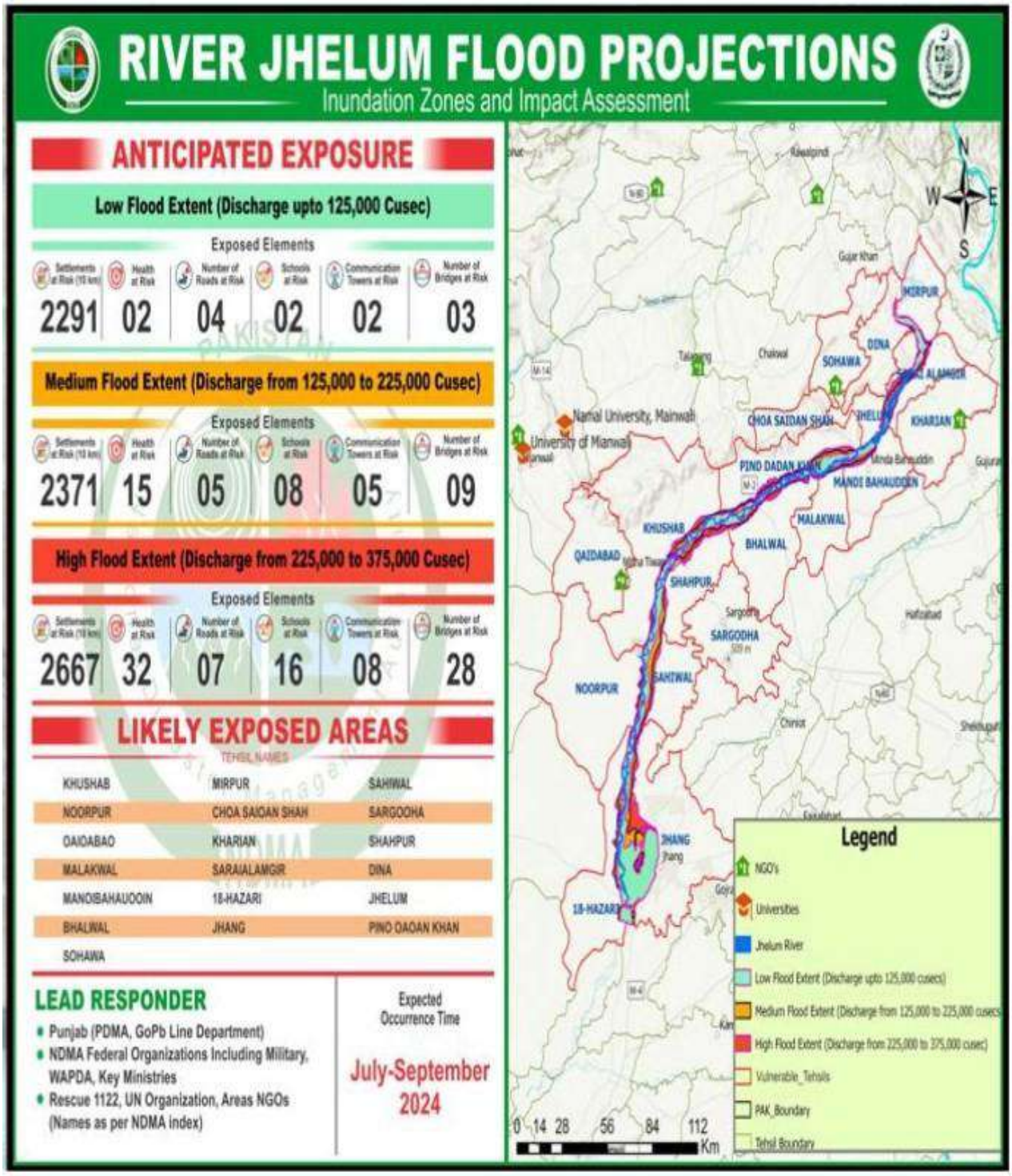
RIVER INDUS FLOOD PROJECTION



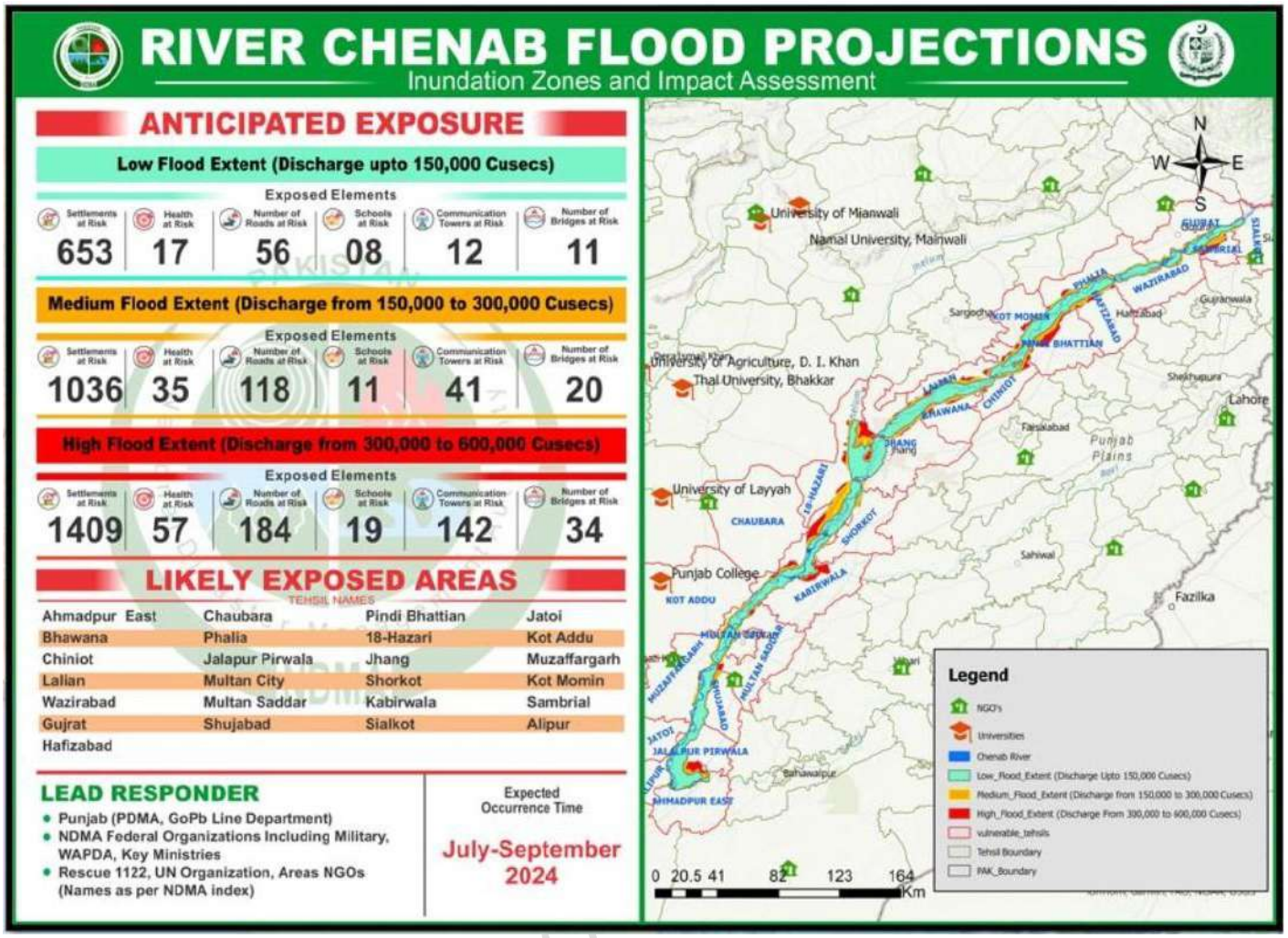
RIVER KABUL FLOOD PROJECTION



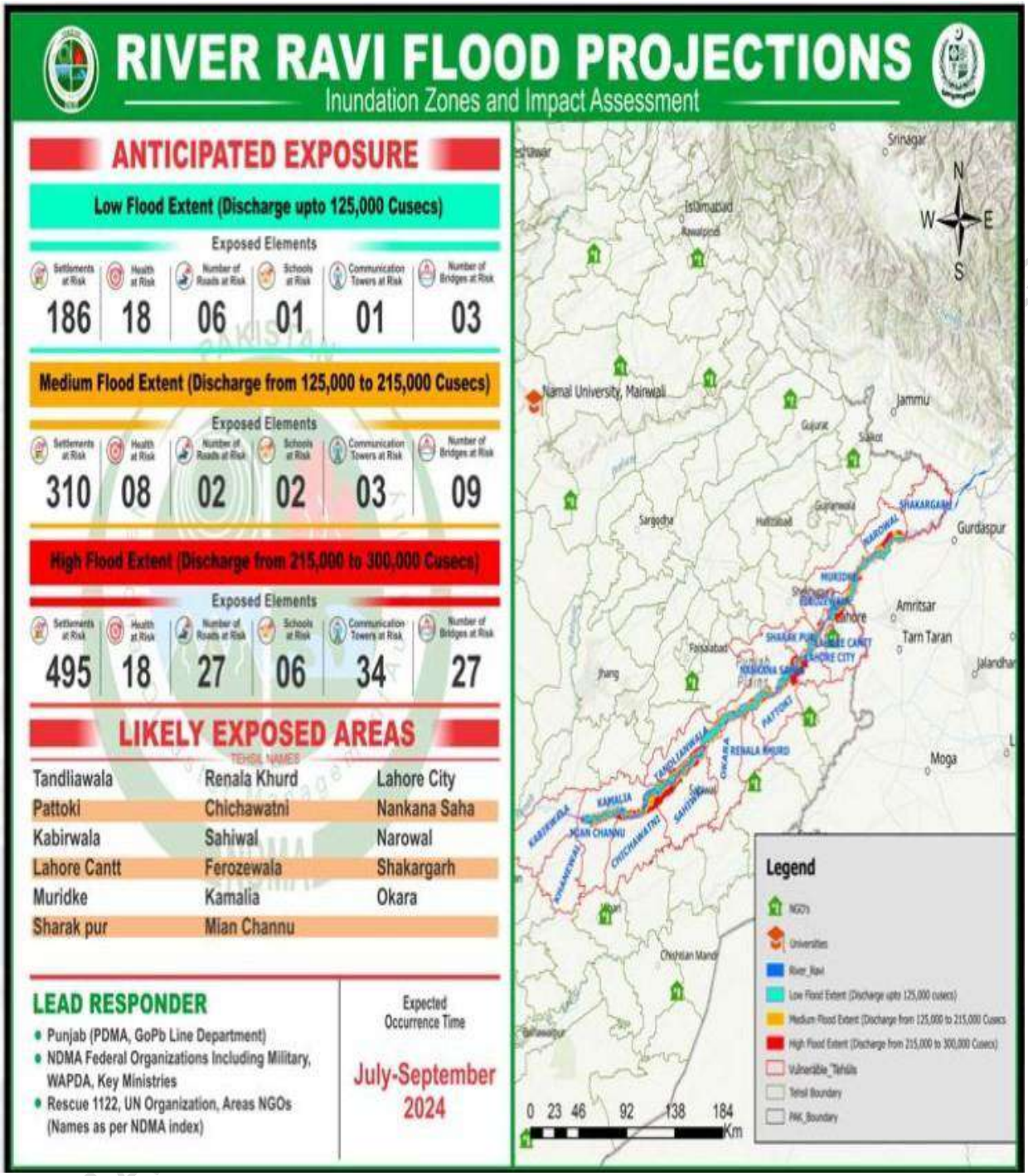
RIVER JHELUM FLOOD PROJECTION



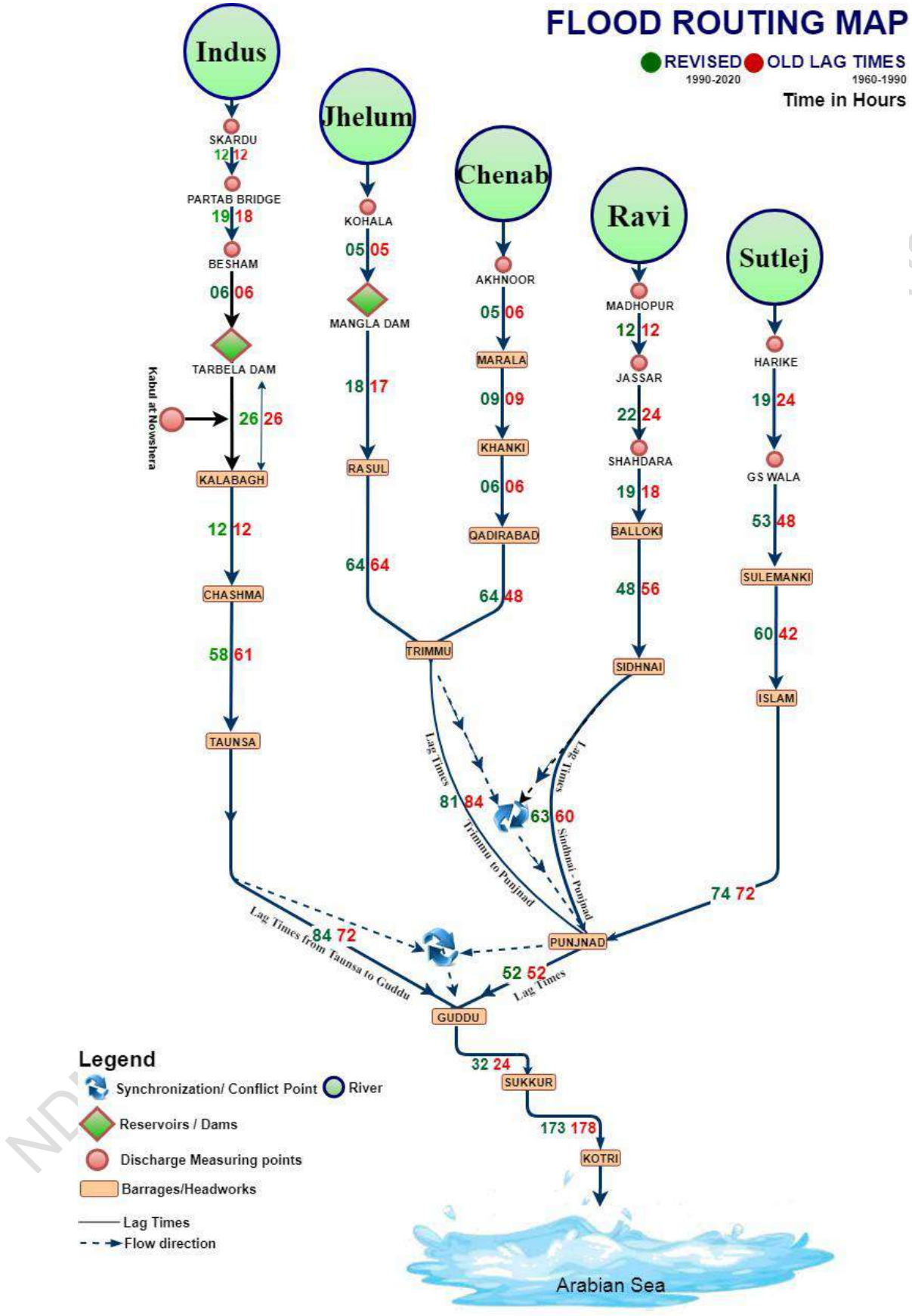
RIVER CHENAB FLOOD PROJECTION



RIVER RAVI FLOOD PROJECTION



FLOOD ROUTING MAP



Chief Met FFD Lahore | Head of team: Sahibzad Khan

Flood Routing Map | Revised Lag Time Team

Team member: Akhtar Mahmood, Saqib Hussain, Mamoona, Ghulam Farid

Annex-N

FLOOD LIMITS OF HYDROLOGICAL STRUCTURES (CUSECS)

Rivers	Sites	Design Capacity	Flood Levels				
			Low	Medium	High	Very High	Extremely High
Indus	Tarbela	1,500.00	250,000	375,000	500,000	650,000	800,000
	Attock	-					
	Kalabagh	950,000					
	Chashma	950,000					
	Taunsa	1,000,000					
	Guddu	1,200,000	200,000	350,000		700,000	900,000
	Sukkur	900,000					
	Kotri	850,000		300,000	450,000	650,000	800,000
Kabul	Warsak	540,000	40,000	60,000	100,000	150,000	-
	Nowshera	-	60,000	90,000	140,000	200,000	-
Jhelum	Kohala	-	100,000	150,000	200,000	300,000	400,000
	Mangla	1,060,000	75,000	110,000	150,000	225,000	300,000
	Rasul	850,000					
Chenab	Jammu Tawi	-	20,000	70,000	83,000	170,000	-
	Akhnur	-	75,000	197,000	297,000	350,000	-
	Marala	1,100,000	100,000	150,000	200,000	400,000	600,000
	Khanki	800,000					
	Qadirabad	807,000					
	Chiniot Bridge	807,000					
	Trimmu	645,000	150,000	200,000	300,000	450,000	
	Panjnad	700,000					
Ravi	Jassar	275,000	50,000	75,000	100,000	150,000	200,000
	Ravi Syphon	450,000	40,000	65,000	90,000	135,000	180,000
	Shahdara	250,000					
	Balloki	225,000					
	Sidhnai	150,000	30,000	46,000	60,000	90,000	130,000
Sutlej	Sulemanki	325,000	50,000	80,000	120,000	175,000	225,000
	Islam	300,000					
	G.S. Wala	-					

Nullahs	Sites	Design Capacity	Flood Levels				
			Low	Medium	High	Very High	Extremely High
Bein	Chak Amru	-	1,300	7,000	20,000	30,000	35,000
	Shakargarh	-	1,600	3,000	24,000	26,000	43,000
Aik	Ura	-	2,000	9,000	13,000	16,000	33,000
Basantar	Jassar	-	4,100	4,700	7,500	11,600	17,800
Deg	Kingra Bridge	-	10,000	15,000	22,000	30,000	-
Palku	Wazirabad	-	2,500	3,100	5,000	25,000	26,000

Annex-O

SITUATION REPORT FORMAT FOR PROVINCES MONSOON - 2025

DAILY SITUATION REPORT NO - 01

(PERIOD COVERED: 1300 HRS JUNE 2025 - 1300 HRS __JUNE 2025)

1. **Area Affected in Last 24 Hours**

Ser	District	Incident / Area Affected / Damage
a.		

2. **Extent of Damages**

a. **Damages (During Significant Events - Monsoon 2025)**

Ser	Category	Nos	Damaged / Washed Away / Affected
(1)			

b. **Summary of Overall Preliminary Damages of Infrastructure & Private Properties**: -

District	Roads / Track	Bridge	Shop	Hotel	Masjid	Houses		Power Houses
						Partially Damage	Fully Damage	

c. **Preliminary Casualty - Death / Injured (from to)**

District	Deaths				Injured			
	M	F	C	T	M	F	C	T

3. **Flood Relief Activities**

a. **Relief Camps Established**.

b. **Rescue Activities**.

c. **Aviation Activities**.

d. **Relief Activities**.

District	Tents	Food Items (Tons)	Blankets	Plastic mats	Sleeping bags

4. **Threat to Next Likely Areas**.

5. **River Discharges**.

6. **Rainfall recorded during Past 24 Hours**.

7. **Weather Forecast for Next 24 Hours**.

OVERVIEW OF PDMA's, SDMA, GBDMA & ICT PREPARATIONS

PDMA PUNJAB

1. **Vulnerable Districts**

Ser	Districts
a.	Attock
b.	Mianwali
c.	Bakhar
d.	Layyah
e.	Muzaffargarh
f.	Rajanpur
g.	Dera Ghazi Khan
h.	Sialkot
i.	Jhang
j.	Shaikhupura
k.	Narowal
l.	Hafizabad

2. **DM Logistics Needs and Gaps**

Monsoon 2025 Preparatory Actions NDMA's Instructions for Maintaining of Stock Level							
Ser	**Item**	**Scale / Person**	**NDMA Instructions**	**25 % of NDMA Instructions**	**Provincial Level Stock Position**	**Difference**	**Procurement Plans**
a.	Life Jackets	100	10,000	2,500	22,120	19,620	Pre-qualification for procuring Rescue and Relief items for the 2025-26 financial year is underway.
b.	Drilling Hammers	1800	556	139	0	139	
c.	Family Tents	6	166,667	41,667	20,344	21,323	
d.	Blankets	2	500,000	125,000	15,622	109,378	
e.	Mattress	2	500,000	125,000	1111	123,889	
f.	Quilt	2	500,000	125,000	12,282	112,718	
g.	Sleeping Bag	1	1,000,000	250,000	0	250,000	
h.	Tarpaulin	6	166,667	41,666.75	1,500	40,167	
i.	Mosquito Nets	2	500,000	125,000	21,206	103,794	
j.	Hygiene Kits	6	166,667	41,667	500	41,167	
k.	Kitchen Sets	6	166,667	41,667	200	41,467	
l.	Latrine Tents		41,667	10,417	0	10,417	

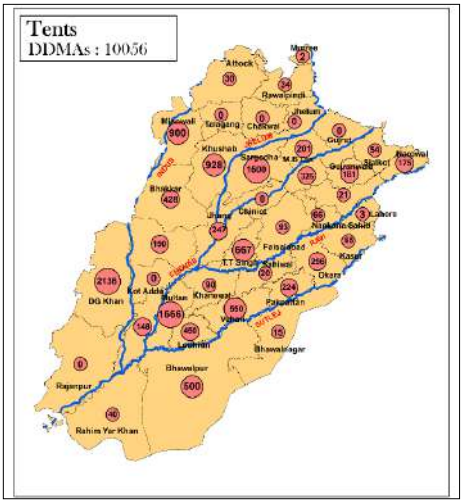
Monsoon 2025 Preparatory Actions NDMA's Instructions for Maintaining of Stock Level							
Ser	**Item**	**Scale / Person**	**NDMA Instructions**	**25 % of NDMA Instructions**	**Provincial Level Stock Position**	**Difference**	**Procurement Plans**
m.	First Aid Kits	6	166,667	41,667	3,655	38,012	
n.	Water Jerry Cans	12	83,333	20,833	0	20,833	
o.	Water Cooler	6	166,667	41,667	0	41,667	
p.	Dewatering Pumps	100	10,000	2,500	908	1,592	
q.	Generators Small	100	10,000	2,500	138	2,362	
r.	Hand Pallet Trolley	5000	200	50	0	50	

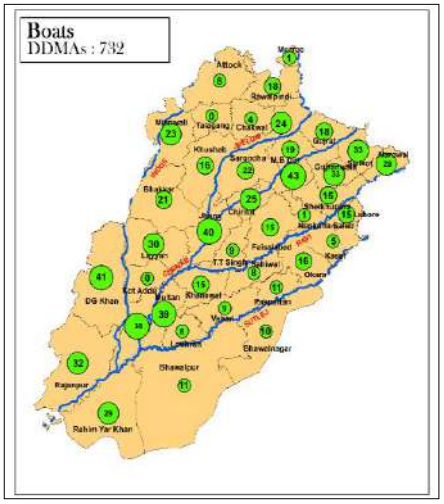
3. **Updated State for Relief Stores and Their Locations**

(1) PDMA Punjab warehouses located in Lahore and Muzaffargarh.

(2) New warehouses under construction in Jhang, Sargodha, Rajanpur, Rawalpindi.

4. **Plans for Pre-Positioning of Machinery & Procurement**. Plans exist for pre-positioning of machinery and procurement / hiring.





5. **Allocation of Funds against Upcoming Seasonal Hazards**. Proposed Budget Estimates for F.Y 2025-26:-

Ser	Sub-Head	Proposed BE 2025-26 (Rs Mn)
a.	A01-Total Operating Expense	469.69
b.	A02-Total Grant Subsides and right of Loans	1,010.00
c.	A03-Total Transfer	3.00
d.	A04-Total Physical Assets	275.00
e.	A05-Total Repair & Maintenance	25.50
Total		**1,782.99**

Mock Exercises / Awareness

6. **Mock Exercises**



7. **Awareness Campaigns Through All Media Platforms / Mediums**

a. A vigorous mass awareness campaign has been launched on the directions of Chief Minister Punjab.

b. Electronic media, Print Media, Social Media

c. TVCs will be aired on all major channels through DGPR.

d. Precautionary measures will be published in national & regional newspapers.

e. Weather alerts, evacuation plans, emergency contacts and relief camp info will be shared via Social Media.

8. **Removal of Encroachments from Nullah / River Beds**

a. PDMA issued directives to DDMAs and PID on 03.03.2025.

b. Districts Okara, Dera Ghazi Khan, Multan, Mianwali, Lodhran, Gujranwala, Chakwal and Talgang certified encroachment removal.

GOVERNMENT OF THE PUNJAB
PROVINCIAL DISASTER MANAGEMENT AUTHORITY
Dated the 3rd March, 2025

To

All the Deputy Commissioners/Chairpersons,
District Disaster Management Authorities in Punjab

Subject: REMOVAL OF ENCROACHMENTS FROM FLOOD PLAINS/WATERWAYS.

I am directed to convey that the Monsoon season-2025 is commencing and it is requested to submit report regarding removal of encroachments from floodplains/waterways of major rivers and other rivers including Hill Torrents.

2. The matter may be assigned TOP PRIORITY.

ASSISTANT DIRECTOR (TECHNICAL)
Provincial Disaster Management Authority

CC:
1. Director General PDMA, Punjab.
2. All Commissioners in Punjab.
3. Secretary Irrigation Department, Lahore.
4. PSO to SMBR/Relief Commissioner, Punjab.

9. **Update on Flood Protection Works**

a. PID formulated 08 teams for inspection of Flood infrastructure.

b. All the teams have completed the inspection work and submitted their reports.

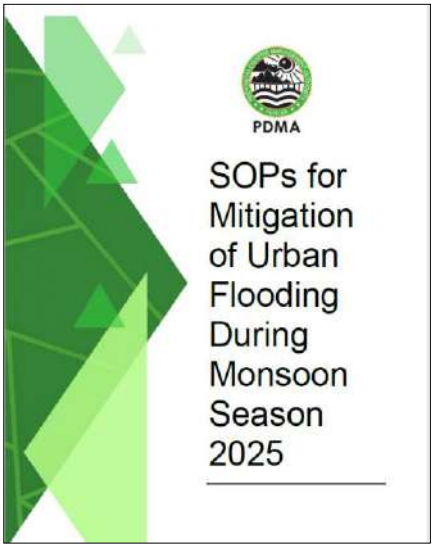
c. Most of the flood infrastructure is in satisfactory condition.

d. Some minor upgrades and reinforcement measures are being taken up by PID and will be completed well before the upcoming flood season.

10. **Urban Flood Management Plans for Major Cities**

a. SOPs circulated to Departments Concerned (WASA, Housing & Urban Development, Local Government etc).

b. All WASAs & LGs have prepared Urban Flood Management Plans.



PDMA SINDH

1. **Low Lying Areas (Total Low-lying areas in major cities 309)**

Ser	Major City	Low Lying Areas
a.	Karachi	198
b.	Hyderabad	45
c.	Jamshoro	7
d.	Mirpurkhas	3
e.	Sukkur	27
f.	Naushahro Feroze	5
g.	Sehwan	10
h.	TMK	10
i.	Dadu	4

2. **Riverine Flood Caseload (Households Likely to Affected 53,104)**

Ser	Relief Items	Quantity
a.	Tents	53,104
b.	Chatai	53,104
c.	Cooler	53,104
d.	Relief Camps	266
e.	Portable Toilets	2,660
f.	Solar Powered Flood Lights	1,064
g.	Water Tanks	2,660
h.	Cotton Mattress	159,312
i.	Hygiene Kits	53,104
j.	Mosquito Nets	159,312
k.	Kitchen Sets	53,104
l.	Ration Bags	53,104

3. **Riverine Flood Caseload (Households Likely to Affected 152,293)**

Ser	Relief Items	Quantity
a.	Tents	152,293
b.	Chatai	152,293
c.	Cooler	152,293

Ser	Relief Items	Quantity
d.	Relief Camps	305
e.	Portable Toilets	6,091
f.	Solar Powered Flood Lights	1,828
g.	Water Tanks	3,046
h.	Cotton Mattress	456,878
i.	Hygiene Kits	152,293
j.	Mosquito Nets	456,878
k.	Kitchen Sets	152,293
l.	Ration Bas	153,293

4. **DM Logistics Needs and Gaps**

Ser	Items	Required Quantity	Available Quantity	Shortfall
a.	Tents	205,397	268,739	Nil
b.	Chatai	205,397	84,485	120,912
c.	Water Cooler (10 litr)	205,397	10,514	194,883
d.	Portable Toilet	8,751	7,806	945
e.	Solar Lights	2,892	698	2,194
f.	Water Tank (250 gallons)	5,706	530	5,176
g.	Hygiene Kits	205,397	21,521	183,876
h.	Mosquito Nets	616,190	1,804,331	Nil
i.	Cotton Mattress	616,190	33,533	582,657
j.	Kitchen Set	205,397	40,549	164,848
k.	Ration Bags	205,397	-	Shall be purchased during event

5. **Update on Flood Protection Works**. PID shall brief about progress on Flood Protection Works: -

a. **Machinery**

(1)	De-watering Pumps (Varying Power)	572
(2)	RO Plant (Varying Capacities)	12

b. **Hygiene / Sanitation**

(1)	Portable Toilet	7,806
(2)	Squat Toilet	310
(3)	Clothes / Sanitary Napkins	10,070
(4)	Commode Chair	2,080
(5)	Dignity / Hygiene Kit	21,521

c. **Shelter**

(1)	Tent	268,739
(2)	Mosquito Nets	1,804,331
(3)	Animal Mosquito Nets	87,855
(4)	Tarpaulin	73,426
(5)	Water Tank (Varying Capacities)	530
(6)	Plastic Mats	84,485

d. **Household**

(1)	Blankets	278,156
(2)	Plastic Bucket	26,320
(3)	Jerry Cans	126,368
(4)	Steel Buckets	60
(5)	Kitchen Sets	40,549
(6)	Wheel Chair	2,098
(7)	Water Cooler	10,514
(8)	Stoves	50
(9)	Solar Lamps	280
(10)	Solar Home System	215

e. **Rescue**

(1)	Fiber Boats with OBM	44
(2)	Life Jackets	6,860
(3)	Life Rings	99
(4)	Mega Phone	23
(5)	Life Living Floating Rope	76
(6)	Signboard	99

6. **Plans for Pre-Positioning of Machinery Available and Procurement / Hiring Plans**. The machinery has been maintained and prepositioned at different warehouses i.e. Jamshoro, Karachi and Sukkur for its further provision to districts on need and situation basis.

7. **De-watering Pump Distribution Plan**

a. De-watering machines / pumps have been stocked in ready position for deployment.

b. Necessary resources have been identified for deployment.

c. All critical / problematic low-lying areas in urban centers have been identified.

Ser	Division	Number of Machines (to be deployed by PDMA)
(1)	Karachi	30 +10 (standby)
(2)	Hyderabad	20 +5 (standby)
(3)	Shaheed Benazirabad	5 +2 (standby)
(4)	Mirpurkhas	20 +5 (standby)
(5)	Sukkur	5 +2 (standby)
(6)	Larkana	5 +2 (standby)

8. **Allocation of Funds against Upcoming Seasonal Hazards**. Finance Department, Government of Sindh has released PKR one billion during current fiscal year for combating seasonal hazards to cater relief requirements.

9. **Update on Mock Exercises Conducted / Planned with Local Communities, NGOs / INGOs for Synchronized Response**. In coordination with DDMAs, and leading INGOs / national NGOs, the mock exercises / awareness sessions / emergency response trainings are being conducted on regular basis for enhancing capacity building of line departments and local communities of vulnerable areas for prompt response during disastrous situations / emergencies.

10. **Awareness Campaigns Through all Media Platforms / Mediums**

a. Weather alert messages shall be sent to targeted recipients in vulnerable districts through Mobile SMS Alerts regarding extreme Monsoon situation and precautionary measures for mitigating its effects.

b. Mass Awareness Campaign through Print, Electronic and Social Media shall be carried out.

11. **Desilting of Stormwater Drainage System & Removal of Encroachments from Nullah / River Beds**. The DDMAs have been directed to ensure desilting of Storm Water Drains, Nullahs, Chocking Points, removal of encroachments from nullah / river beds, if any through concerned departments including Local Government Department, Municipal Corporations, Irrigation, SCARP and PHED before onset of Monsoon Season

Ser	Items	Quantity
a.	Boat 14 Ft Fiber	20

b.	OBM 40 HP	20
c.	Dewatering Pump 6inch Dia 25 HP	22
d.	Dewatering Pump 8inch Dia 40 HP	10
e.	Generator Set 4 KVA	5
f.	Generator Set 10 KVA	7
g.	Life Jacket	288

PDMA BALOCHISTAN

1. **Vulnerability & Risk Assessment**

Low Risk Districts	Medium Risk Districts	High Risk Districts
1. Chaghi	1. Nushki	1. Sohbatpur
2. Kharan	2. Hub	2. Usta Mohammad
3. Panjgur	3. Killa Abdullah	3. Jaffarabad
4.Washuk	4. Chaman	4. Naseerabad
	5. Mastung	5. Lasbela
	6. Awaran	6. Jhal Magsi
	7. Pishin	7. Quetta
	8. Kech	8. Killa Saifullah
	9. Ziarat	9. Kacchi
	10. Kalat	10. Barkan
	11. Zhob	11. Dera Bugti
	12. Sikandar Abad	12. Harnai
	13. Duki	13. Khuzdar
	14. Gwadar	14. Kohlu
	15. Sherani	15. Loralai
		16. Musakhail
		17. Sibi

2. **Heavy Machinery with PDMA**

Available Heavy Transportation Vehicles		
a.	Mazda heavy truck six-wheeler	26
b.	Shahzor truck four-wheeler	02
c.	Heavy trucks ten-wheeler	05
d.	Mazda dumper	07
e.	Dumper ten-wheeler	05
Available Rescue Vehicles / Machinery		
a.	Rescue Ambulances	22
b.	Rescue Motorbike Ambulances	05
c.	Mobile Support Office Bus	02
d.	Rescue Fire Fighting Trucks	13
e.	Rescue Vehicle with Rubber Boat	01
f.	Rescue Fire Fighting Motorcycle	08
g.	Water Bowsers	12
h.	13ft Fiber boat at PDMA HQ	01

Available Rescue Heavy Machinery		
a.	Snowfall removing heavy machinery	02
b.	V-loader / Snow Blower	08
c.	Tractors	22
d.	Roof Tractor	02
e.	Excavator	22
f.	Grader	03
g.	Dozer	08
h.	Crane Truck	02
i.	Mazda Crane Truck (Small)	02
Available Heavy dewatering Pumps		
j.	Dewatering Pumps 12inch	09
k.	Electric Dewatering Set	4
l.	Small Dewatering Pumps	194
m.	Smal Removing Machine	08

3. **Availability of Dewatering Pump in Districts Level**

12"x12" Dewatering Complete Set		
a.	12 Corps Quetta	10
b.	Dera Bugti	5
c.	Loralai	5
d.	Mastung	10
e.	Sohbatpur	5
f.	Sibi	10
g.	Kachhi	04
h.	Zhob	05
i.	Jaffarabad	10
j.	Kalat	05
k.	Pishin	05
l.	Kohlu	05
m.	PDMA W/H Naseerabad	
(Small) Dewatering Pump		
a.	Quetta	7
b.	Lasbela	4
c.	Muslim Bagh	2
d.	Killa Abdullah	4

e.	Chaman	2
f.	Sibi	2
g.	Loralai	2
h.	Kohlu	2
i.	Ziarat	4
j.	Naseerabad	14
k.	Gwadar	31
l.	Chagai	4
m.	Pishin	2
n.	Zhob	1
o.	Kalat	2
p.	12 Core	4
q.	Duki	3
r.	Kharan	10
Dewatering Pump (Diesel)		
a.	Nasirabad	31
b.	Metropolitan Quetta	2
c.	Chagai	2
d.	Noshki	2
e.	Kachhi	1
f.	Quetta	2
g.	Chaman	1
Electric Dewatering Set		
a.	Jaffarabad	2
b.	Pishin	2
c.	Gawadar	9
d.	Awaran	1
e.	Jhal Magsi	2
f.	Sibi	2
g.	Naseerabad	4

4. **Immediate Flood Response Equipment**

Ser	Flood Response Equipment	Quantity
a.	Rescue Lifesaving jackets (Kech, Killa Saifullah / Abdullah, Dera Bugti, Sohbatpur, Jhal Magsi, Zhob, Lasbela, Harnai, Gwadar, etc.)	1200
b.	Life Saving Jackets at Sibi Scouts	100

Ser	Flood Response Equipment	Quantity
c.	Boats at Sibi Scouts (OBM Yamaha 05 Nos.)	07
d.	Rescue Raft Boats at DC office Kachhi	02
e.	Rescue Raft Boats at DC office Naseerabad	02
f.	Rescue Raft Boats at DC office Sibi	02
g.	Fiber boats 13ft and 25hp with engine) at DC office Gwadar & Jaffarabad	04
h.	Fiber boats 23ft and 40hp with engine (Gwadar, Zhob, Naseerabad, Kech & Hub)	14
i.	Boats at Commissioner office Naseerabad	04
j.	13ft Fiber boat at Quetta Head Quarter	01
k.	First Aid Kit Box (at all districts)	2942
l.	Dewatering Pumps	20
m.	Water Bladder	17
n.	Electric Dewatering Pumps (Jaffarabad, Pishin, Gwadar, Awaran, Jhal Magsi, Sibi & Naseerabad)	22

5. **Available Machineries at Division Level with Allied Departments of Balochistan**

Ser	Division	Equipment												
		Bulldozer	Fire Trucks	Water Tankers	Tractors	Cater Pillars	Ambulances	Graders	Wate Bozer	De-watering Pumps	Loader	Dumpers	Excavators	Cranes	Water Pumps
a.	Zhob	16	2	1	9	1	6	1	1	0	0	0	0	0	0
b.	Kalat	24	5	2	13	0	0	1	0	2	1	3	0	0	0
c.	Naseerabad	37	4	5	22	0	7	7	0	36	3	0	4	0	1
d.	Quetta	17	6	0	15	0	12	3	0	0	0	0	0	0	0
e.	Sibi	30	3	0	16	0	23	5	0	5	0	3	2	1	0
f.	Loralai	22	2	0	10	0	8	1	0	0	0	0	0	0	0
g.	Rakhshan	17	0	0	7	0	8	7	0	0	0	0	0	0	0
h.	Makran	7	1	0	13	0	0	2	0	6	2	7	0	0	0

6. **Storage Facilities Across Balochistan Resource Mapping**

Ser	District	HRF (15 Acres)	Warehouse 20mx50m	Warehouses 36.5mx18.2m	Flospane	Rub-Hall
a.	Quetta	1	4	1	1	4
b.	Naseerabad	-	-	1	1	-

Ser	District	HRF (15 Acres)	Warehouse 20mx50m	Warehouses 36.5mx18.2m	Flospane	Rub-Hall
c.	Jaffarabad	-	-	-	-	-
d.	Gwadar	-	-		1	-
e.	Kech (Turbat)	-	-	1	1	-
f.	Khuzdar	-	-	1	1	-
g.	Kalat	-	-	-	1	-
h.	Killa Saifullah	-	-	-	1	-
i.	Zhob	-	-	-	1	-
j.	Sibi	-	-	1	1	-
k.	Ziarat	-	-	-	1	-
l.	Chagai	-	-	1	1	-
m.	Chaman	-	-	-	1	-
n.	Loralai	-	-	1	-	-
Total		**1**	**4**	**7**	**12**	**4**

7. **Drought 2025**. Area: 377190 Sq Km, 134,050 Sq Miles (44% of Pakistan landmass). Total Division 8 Total Districts 36

a. **Drought**

(1) Periods of drought, recurring phenomena after each ten years, Balochistan. These events impact agricultural productivity, exacerbate water scarcity, and induce economic challenges, leading to food insecurity.

(2) Fifteen (15) districts of Balochistan marked as most severe in drought (Chagai, Nushki, Washuk, Kharan, Pishin, Killa Abdullah, Chaman, Kacchi, Loralai, Panjgur, Kech, Gwadar, Dera Bugti, Awaran and Jhal Magsi).

b. **Drought in Balochistan over the Period of Time**

(1) Province remained under one of the dangerous spell of Drought from 1998 to 2003;

(2) Currently, once again the province is passing through another phase of Drought.

c. **Short Term Actions Required**

(1) Deployment of water sources for community;

(2) Enhancing traditional irrigation systems in order to raise vegetative cover in extremely difficult and harsh areas of arid zone.

(3) Encourage development of technological innovations to boost artificial groundwater recharge.

(4) Undertake development of drought resistant shrubs, fodder crops and grasses for pastures and oasis for livestock.

d. **Long Term Adaptation and Mitigation Measures**

(1) National water storage capacity should increase to 90 days or more in phases;

(2) Policy interventions to restrict over-pumping of water from zones of ground water depletion;

(3) Promotion of integrated water resource management through end users.

PDMA KHYBER PAKHTUNKHWA

1. **Provincial Vulnerabilities to Monsoon Hazards**. KP peculiar physical configuration makes it vulnerable to hazards, as heavily populated districts constitute catchment areas of major rivers and perennial streams. Mountainous districts are vulnerable to GLOFs, Flash and Riverine Floods, Peshawar Basin has an exposure to inundation and similarly Southern districts prone to hailstorms, riverine and flash floods. Therefore, depending on the intensity of Monsoon precipitation and ice melt, KP is vulnerable to sudden onset hydro-meteorological disasters which require time sensitive response.

2. **Flood Categorization of River / Nullahs in KP**

Category A (Frequently Flooded in Monsoon)	Category B (Less Frequently)	Category C (Occasional)

• Kabul River
  • Adezai
  • Naguman
  • Budni
• Swat River
• Khiali River
• Khiali River
• Panjkora River
• Kunhar River
• Shah Alam
• Kurram River
• Siran River
• Kohat Toi
• Tochi River
• Kalpani Nullah
	• Jindi River
	• Gomal Zam
	• Kaitu River
	• Badri Nullah
	• Indus river (right bank)
	• Naranji Nullah
	• Haro River
	• Dalas Nullah
	• Mukam Nullah
	• Local Hill Torrents in Northern Areas of KP causing flash floods
		• Chowdhwan Zam
		• Sheikh Haider Zam
		• Chila Nullah at Pabbi
		• Chinkar Nullah at Pabbi
		• Gharandi Nullah at Urmer
		• Hakeem Ghari Nullah at Pabbi
		• Rustam Khawar
		• Takhta Baigh Khawar at Khyber Agency
		• Balar Khwar
		• Dagi Nullah at Pabbi
		• Khudrazai Nullah at Pabbi
		• Shahi Bala

3. **Flash Floods, Urban Floods, Hailstorms, Windstorms and Land Sliding**

Flash Floods	GLOFs	Riverine Floods	Urban Flooding	Heavy Rain Fall / Hail storm / Windstorms	Land sliding
Chitral	Chitral Upper	Nowshera	Peshawar	Mansehra	Abbotabad, Mansehra
Swat	Chitral Lower	Charsadda	Mardan	Abbotabad	Haripur
Kohistan (Upper/Lower)	Upper Dir	Peshawar	Abbotabad	Buner	Chitral Kohistan (L+U)
Shangla	Swat	DI Khan	DI Khan	Kohat	Shangla
Battagram	Upper Kohistan	Swat	Swat	Karak	Dir lower

Flash Floods	GLOFs	Riverine Floods	Urban Flooding	Heavy Rain Fall / Hail storm / Windstorms	Land sliding
Dir (Upper & Lower) Malakand Mansehra Buner Khyber, Bajaur, North & South Waziristan, Kurram & Orakzai	Central Kohistan	Mohmand Lower Dir	Mansehra Haripur Kohat	Bannu Lakki Marwat DI Khan	Swat Battagram Buner Kurram, Orakzai, South Waziristan

4. **Available Stock position at Humanitarian Response Facility (HRF), PDMA**

Ser	Items / Description	Quantity	Source
a.	Family Size Tents	11,127	PDMA Procurement
b.	Pillows	9,950	PDMA Procurement
c.	Hygiene Kits	6,714	PDMA Procurement
d.	Blankets	58,138	PDMA Procurement
e.	Mattress	11,644	PDMA Procurement
f.	Quilts	13,460	PDMA Procurement
g.	Kitchen Sets	14,733	PDMA Procurement
h.	Search Lights	18	PDMA Procurement
i.	Dewatering Pump	28	PDMA Procurement
j.	Plastic Sheet	2,634	PDMA Procurement
k.	Life Saving Jackets	8	PDMA Procurement
l.	Ropes	242	PDMA Procurement
m.	Gas Cylinder	202	PDMA Procurement
n.	Prayer Mats	461	PDMA Procurement
o.	Sand Bags Empty	16,400	PDMA Procurement
p.	Buckets	9,598	PDMA Procurement / Donation
q.	Tarpaulin Sheet	16,424	PDMA Procurement / Donation
r.	Wheel Chairs	15	PDMA Procurement / Donation
s.	Stretcher	20	PDMA Procurement / Donation
t.	Mosquito Nets	5,375	PDMA Procurement / Donation
u.	Jerry Canes	6,105	PDMA Procurement / Donation
v.	Mats	30,251	Donation
w.	Solar Lamp	5,268	Donation

Ser	Items / Description	Quantity	Source
x.	Sanitary Kit	4,000	Donation
y.	Pedestal Fans	110	Donation
z.	Generator	125	Donation
aa.	Fax Machine	1	Donation
bb.	Water Purification Plant	3	Donation
cc.	Cane Milk	47	Donation
dd.	Ceiling Fans	128	Donation
ee.	Domex Cleaner	248	Donation
ff.	Sprayer Machine	1	Donation
gg.	Folding Bed	133	Donation
hh.	Hand Station Wash	35	Donation
ii.	Oil Burner / Stove	422	Donation
jj.	Plastic Lota	695	Donation
kk.	First Aid Box	364	Donation
ll.	Sleeping Bags	55	Donation
mm.	Towel	280	Donation
nn.	Sweaters	9,500	Donation
oo.	Cloth Sanitary Napkins	7,017	Donation
pp.	Baby Diapers	16,985	Donation
qq.	Soap (Antibacterial)	3,800	Donation
rr.	Soap (Fatty Acid)	4,000	Donation
ss.	Water Bags / Water Packs	1,397	Donation

5. **Available Relief Stock in District of KP**

Ser	District	Tents	Tables	Plastic Sheets / Tarpaulin	Quilts / Blankets	Cooler / Jerry Cans	Buckets	Net Mosquito	Search Light	Quilts	Cylinders	Kitchen Sets	Hygiene Kit	Pillow	Blankets	Generator	Soap	Plastic Mats	Mattresses/ Daris	Bed Sheets	Tarpaulin Sheets	Plastic Matts
a.	Abbottabad	201		257		105	70	237	68	230		197	107	90	619	3	274					200
b.	Bannu	70		60	155	45		400	19		60	63	110	198			850	170	180			
c.	Battagram	33			31	111		70				42							13		78	
d.	Buner		7	192	100			169	26			163	60		133	3		145				
e.	Charsadda	731		400	2352	2200	400	56				400	359				1000	2008				
f.	Chitral Lower	10			490	11	1351	150				600	260			8					980	
g.	Chitral Upper	187			634	280	387			634	80	25	38	30	3227			60	26			
h.	D.I. Khan	125		200	300	126		200	80			200	188			4			200		200	
i.	Dir Lower	399			5005	1234	78	215		46		73			4959	5		51			1370	

Ser	District	Tents	Tables	Plastic Sheets / Tarpaulin	Quilts / Blankets	Cooler / Jerry Cans	Buckets	Net Mosquito	Search Light	Quilts	Cylinders	Kitchen Sets	Hygiene Kit	Pillow	Blankets	Generator	Soap	Plastic Mats	Mattresses/ Daris	Bed Sheets	Tarpaulin Sheets	Plastic Matts
j.	Dir Upper	460					770	160		400		592	13		4336			1230	70		1460	
k.	Hango	120	2		1740	98		170		230		58	2	118				108	26			
l.	Haripur	79				84	66	34		205	23	38		20	48		253	58	18			
m.	Karak	51				185	31	108		21	3	43					180	69				
n.	Khyber		116		215	50	72	235		225	53	200	100					40	50		100	
o.	Kohat	119	1		326	30		240				58		86					51			
p.	Kohistan Lower				300	292		3150		300			131	78			15		32	15		
q.	Kohistan Upper			450			500	5000			80	650	200				1100		1000			
r.	Kolai Palas		382	188	1241	521	122	586			9	299	42					502	35			
s.	Kurram	6		65		6		50		5			15									
t.	Lakki Marwat	389	3		245	255	120	190		245	43	100		93	210	4	756	382	182	154		
u.	Malakand	214				6	93			166	136	187	13		28			118	105			
v.	Mardan	380		43	150	70				55		54		420				123	227			
w.	Mohmand	122			124	154				124		120		119	188			65	58			
x.	Nowshera	10				50	150	50	10				10		25	3						
y.	Orakzai	270			240	220		300				240							260			
z.	Peshawar									65		1			70	2			16			
aa.	Shangla	740				136	101	575		1143	125	244		151	9285		797	500	244	157		
bb.	Swabi	109			112						16	44		49				2		66		
cc.	Swat	253				375	150	95			19				1356					285		
dd.	Tank																					
ee.	Torghar	57		65	55	150				75		83						51	42			
ff.	South Waziristan			450	450	350		190		450		350	350	450					350		350	
Total		**5135**	**511**	**2370**	**14265**	**6875**	**4461**	**12630**	**203**	**4619**	**647**	**5124**	**1998**	**1902**	**24484**	**32**	**5225**	**5682**	**3185**	**677**	**4538**	**200**

6. Available of Public Machinery in District of KP

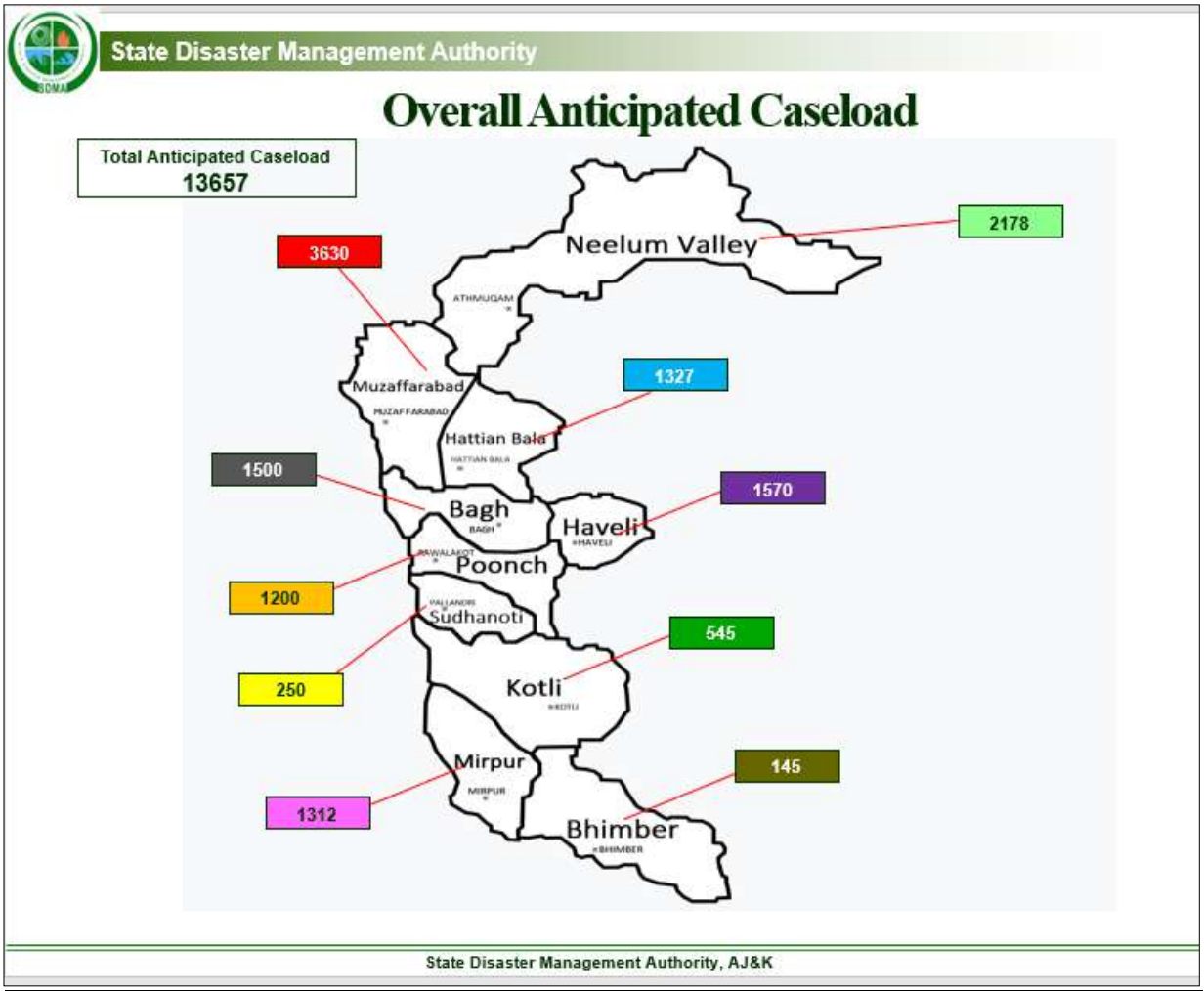
Ser	District	Recovery Vehicle	Water Bowser	Tractor Trolley	Shovel Tractor	Rescue Vehicles	Ambulance	Fire Brigade	Trucks	Trolleys Mini Tractor Trolley	Tractors	Dozers	Fire Vehicles	Dewatering Pumps	Rescue Boards	OBM 15HP	Rescue Vehicles	OBM 75 HP	Ropes (3x100 Ft)	Water Rescue Vehicles	Double Cabins	Blade Tractor	Suzuki Dumpers	Excavator	Dumpers	Chain Dozers D-65	Disaster Recovery Vehicles
a.	Abbottabad	1	1	2	2	1	2	2	12	12	20	2	8	1					5								
b.	Bannu			2					1		10	1															
c.	Battagram			2		2	2	2			7									1	4	4					
d.	Buner											1															
e.	Charsadda			8							8			9									13				
f.	Chitral Lower						6	6			5	2			6	3								15	2		
g.	Chitral Upper	1				1	7	1			1	2			2									1		1	
h.	D.I. Khan						23	4		16	34	7	1		7									10			
i.	Dir Lower			4			8	7	1		4	1			1		1			1		2		1	1		
j.	Dir Upper		1	6			6	7	5	18	37		2		2	1	2	1		1		2	7	7	5		1
k.	Hango		1	4			5	5						4			1		10								
l.	Haripur		4	15			8	4				2	3							1		4		3			
m.	Kohat						17	4			4	1	4	3													
n.	Kohistan Lower		1		1	1	1	2					1							1				1			
o.	Kohistan Upper													1	1		1										
p.	Kolai Palas																							1			

Ser	District	Recovery Vehicle	Water Bowser	Tractor Trolley	Shovel Tractor	Rescue Vehicles	Ambulance	Fire Brigade	Trucks	Trolleys Mini Tractor Trolley	Tractors	Dozers	Fire Vehicles	Dewatering Pumps	Rescue Boards	OBM 15HP	Rescue Vehicles	OBM 75 HP	Ropes (3x100 Ft)	Water Rescue Vehicles	Double Cabins	Blade Tractor	Suzuki Dumpers	Excavator	Dumpers	Chain Dozers D-65	Disaster Recovery Vehicles
q.	Kurram						6	2	3	3	7	2															
r.	Lakki Marwat						14	5		4	6			5										2	1		
s.	Malakand						15	8		10	8				1			1				5					
t.	Mansehra		2	12		2	7						10							2		2		2	1		
u.	Mardan			1		5	32			1	2		13	11	2			4		1		2					
v.	Nowshera					1	23	8	3		16		5	21	36	3						12		1			
w.	Peshawar					2				4	8			14	11			13		1		2			4		
x.	Shangla		1				11	4		4							1	1		1		2		2			
y.	Swabi		1	10		1	4		2	3	10		2	3	2	1		1		1				2			
z.	Swat		2	2				8		3	5	3					3							4	7		
aa.	Tank						4	2			3	2		4			1							8			
bb.	Torghar						4	1		1	2			2			1			1							
cc.	South Waziristan			3								3		2													
Total		**2**	**14**	**71**	**3**	**16**	**205**	**82**	**27**	**79**	**197**	**29**	**49**	**80**	**71**	**8**	**11**	**21**	**15**	**12**	**4**	**37**	**20**	**60**	**21**	**1**	**1**

7. **Rescue Equipment for Civil Defense**

Ser	Items	Quantity	Items	Quantity
a.	Pick Axes	666	Life Jackets	555
b.	Hand Shovels	694	Hand Carts	28
c.	Gloves (leather)	1,275	Saws	33
d.	Fire Buckets	630	First Aid Box	47
e.	Helmet	1,275	Folding Stretcher	4
f.	Electric Search Light	630	Torch with Solar	50
g.	Manila Rope	255	Blankets	20
h.	Rubber Tube	630	Hygiene Kits	196

1. Overall Anticipated Caseload



Ser	District	Vulnerable Families	Vulnerable Areas
a.	Muzaffarabad	3630	Makri, Lower Plate Walkway, Taali Mandi, Shahsultan, Saheli Sarkar Bridge, Gulshan Pir Allodin , Tariqabad, Manak Payeyan, Barsala, Dhani mai Sahiba, Bandi Saman, Danna Sahotar, Panjkot, Panjgran, Sarlisacha, Bheri.
b.	Jhelum Valley	1327	Khilana, Gundigran, Nalai, Gujarbandi, Chakhama, Ghehal Jabra, Hattian, Chinari , Chikar, Lamnia, Lasdhar, Banni Langryal, Bandi Ghorsian, Saina Daman, Peeran bandi, Neli, Derran, Batsher, Bail, Moji, Gahasla, Antliyan & Chatkari
c.	Neelum	2178	Chilihana, Katha Semari, Jura, Sosal Bandi Laswa Sharda,Kharigam,Surgan Bakwali,Gamote, Shonter Valley, Kel, Kalalot, Guraiz Valley
d.	Poonch	1200	Soon, Nakar, Ali sojal, Singhola, Dothan, Pothi Chapriyan, Serari Neriyan, Kalot, Bhanteeni Khas, Akramabad, Harkarian, Chak, Potha Bala, Kanoli, Numal, Chaffar Janobi, Nakar Bela, Bandi Dhalkot, Chil Bosa Galla

Ser	District	Vulnerable Families	Vulnerable Areas
e.	Bagh	1500	Grid Colony Bagh,Refugee Camp, Mang Bajri,. Qadirabad, Chatrora, Grid Colony bagh Village Bees Bagla,Thub, Village Minhasa , Mala Bagla Salian Dhondan, Dhirkot, Gojar Kohallah
f.	Haveli	1570	Chanjal, Bahdi, Jokan, Quaid-i-Abad, Hillan KalamullaKhurshidabad, Tangari, Doba, Aliwas, Sayie.
g.	Sudhnoti	250	Bharal, Chichyan. Gorah, Kancheri, Patan Sher Khan, Nerian, Papynar, Habibabad, Nalayan.
h.	Mirpur	1312	Saim, Lehri Azizpur Jharikass, Begabalwal, Sahib Chak, Jatlan, Shahpur Pakhral Chabrian Dattan, Chakraja Bains, Jhangyan, Bidder, Boryal, Tatrot, Chak rupa, Afzalpur, Qazi Chak, Raipur
i.	Bhimber	145	Ali Baig, Bhimber City, Giga Mossa, Toneen, Jhandi Chontra, Malot, Kanjlor, Saleema Matta.
j.	Kotli	545	Thalair Colony, Dakhari, Juzwi Mandi, Choch, Holar, Majjan, Jahndroot, Manoli Nala,Nala, Nala Kala Dabb
Total		**13657**	**Evacuation sites identified for all above vulnerable areas**.

2. **Detail of Nullahs in AJ&K (66)**

Ser	District	Nullahs
a.	Neelum	Phulawai, Dudgaie (Taobut), Janavai, Kel, Surgan, Kharigam, Dossut, Dudhnial, Dawarian, Nagdar, Lawat, Changan, Tehjian, Athmuqam, Katha Piran, Jagran Kundal Shahi, Leswa
b.	Muzaffarabad	Jheeng, Pathika (Butdara), Kahori, Shawaie, Chellah, Gojra Kass, Makri, Tariqabad, Kaimanja, Chatter Kalass,Saheli, Parak
c.	Jhelum Valley	Qazi Nag (Leepa), Sharian, Kalri, Sena Daman, Qazi Nag (Kathie)
d.	Bagh	Malwani Kass, Mallot, Mahl (Bessuti-Rehra)
e.	Haveli	Hillan (Khurshidabad), Budhal Sharif, Bissan, Battar (Chanjal)
f.	Poonch	Hajira, Guien, Mohri Farman Shah, Abbasspur, Ali Sojal
g.	Sudhnuti	Baral
h.	Kotli	Sarsawa, Goi, Sarhuta, Nakial, Khuratta (Rajdhani), Mohel (Sehnsa)
i.	Mirpur	Jari Kass, Ratta, Khatar, Sankiah, Kaneli, Dadyal
j.	Bhimber	Samahni , Kasguma, Bhimber City, Mallot Kass, Patni (Barnala), Pir Jamal

3. **Monsoon Risk Enhancing Factors**

a. **Tempering with Natural Environment**.

(1) Increased deforestation.

(2) Sand & stone mining.

(3) Unplanned construction of roads / cutting of hill slopes.




b. **Encroachments**

(1) Blockade of natural water ways.

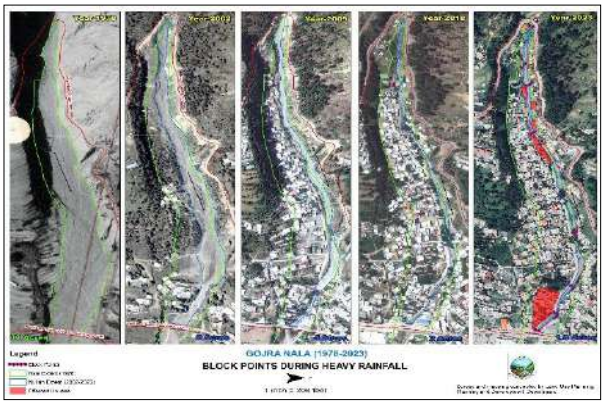
(2) Illegal use of vulnerable / marginal land for habitation.

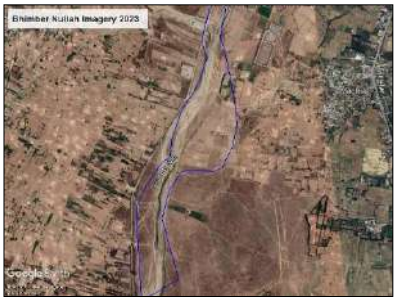
c. Inadequate early warning arrangements.

d. Non observation of early warning by general public.

e. Potential Nallahs=66.

4. **De-Silting / Clearance of Nullahs / Drains**






5. **Resources with SDMA / 1122**

Ambulance	FR Vehicle	Water Bowser	DR Vehicle	Mini FR Vehicles	Scissor Lift	Recovery Vehicle	Cranes	Wheel Loader	Folk lifter
20	19	07	13	12	02	1	03	1	02

6. **Available Machinery with Public Sector**

Machinery	Mzd	Jhelum Valley	Bhimber	Sudhnuti	Haveli	Rw.kot	Bagh	Neelum	Kotli	Mirpur	Total
JCB Machine	-	-	1	-	-	-	2	-	1	-	4
Wheel Loader	3	3	2	-	2	4	2	-		-	16
Excavator	5		3	-	1	2	3	-	1	-	15
Dump Truck	3	-	-	-	1	1	1	-	1	2	9
Tractor Trolley	-	-	-	-	2	6	3	-	2	-	13
Ambulance	17	7		6	5	13	15	11	23	9	105
Fire Brigade	3	-	-	-	-	2	1	-	-	-	6
Dozer	-	1	-	3	2	3	1	6	-	2	18
Wheel Loaders	8	1	1	-	-	-	2	-	-	-	12
Excavators	27	4	2	-	-	5	13	14	10	-	75
Dump Trucks	12	-	1	-	-	-	-	-	-	-	13
Tractor Trolleys	8	-	-	-	-	-	15	-	20	-	43
Ambulances	23	3	20	10	8	2	10	10	50	40	176
Chain Dozers	-	-	1	-	-	3	2	-	-	-	6






7. **Available Stocks with SDMA (NFIs)**

Ser	Item	Total
a.	Mattress	374
b.	Winterized Tent	20
c.	Tent	108
d.	Sleeping Bags	120
e.	Plastics Sheets	483
f.	Blanket	Nil
g.	Quilts	632
h.	CGI Sheets	26
i.	Plastic Mats	Nil
j.	Kitchen Set	318
k.	Bed Talai	215

8. **Relief Items with Districts**

Ser	District	Tents	Plastic Sheets	Plastic Mats	Blankets	Shawls	Kitchen Set	Sleeping Bag	Mattress
a.	Muzaffarabad	25	25	Nil	20	Nil	10	10	20
b.	Jehlum Valley	39	32	46	73	20	24	23	52
c.	Neelum	33	20	55	34	30	19	20	30
d.	Poonch	40	40	Nil	50	20	30	10	40
e.	Bagh	30	30	30	20	20	10	10	25
f.	Bhimber	30	20	Nil	04	10	Nil	Nil	20
g.	Sudhnuti	50	25	18	30	20	15	15	48
h.	Kotli	45	55	60	10	50	15	45	20
i.	Mirpur	30	20	10	50	50	15	15	27
j.	Haveli	35	20	Nil	100	50	15	15	20

1. **Vulnerable Districts**. All the aforementioned districts of GB are highly vulnerable to a range of natural hazards, including floods, Glacial Lake Outburst Floods (GLOFs), landslides, and other climate-induced disasters. Their mountainous terrain, fragile ecosystems, and increasing climatic variability pose significant risks to both infrastructure and human life. This vulnerability underscores the urgent need for sustained disaster preparedness, resilient infrastructure, and targeted relief planning across the region.

Ser	Districts
a.	Skardu
b.	Gilgit
c.	Diamer
d.	Ghizer
e.	Ghanche
f.	Astore
g.	Hunza
h.	Nagar
i.	Shigar
j.	Kharmang

2. **Stockpiling of Relief Items**

a. Pre-positioning of non-food items (NFIs) in all 10 districts of Gilgit-Baltistan.

b. Tents, blankets, and emergency medical kits stocked at strategic locations.

Ser	Name of Item	Quantity	Gap
(1)	Tents	3416	4000
(2)	Blankets	9376	3000
(3)	Quilts	7921	4000
(4)	Winterize Tents	530	1500
(5)	Tarpaulin Sheet	1373	4000
(6)	Kitchen Set	2140	1500
(7)	Plastic Matts	471	2500
(8)	Hygiene Kit	1852	1200
(9)	Sleeping Bags	168	2500
(10)	Shovel	364	1000
(11)	Food Packs	150	2500
(12)	Gabions	180	5000
(13)	Mattress	5761	2500
(14)	Lantern Tents	437	500

Ser	Name of Item	Quantity	Gap
(15)	De-Watering Pump	04	10
(16)	Rope 11 mm	172	300
(17)	Stairs	28	500
(18)	Bucket & Mugs	85	2000
(19)	Sand Bags	10395	25000

3. **Machinery Deployment**

a. GBDMA Heavy Machinery plays vital role in restoration of intra, inter district roads.

b. Channelization of Vulnerable Nullah using GBDMA Heavy Machinery.

Ser	Name of Machinery	Qty	Gilgit Division				Diamer / Astore Division		Baltistan Division				GBDMA HQ
			Ghizer	Gilgit	Hunza	Nagar	Diamer	Astore	Skardu	Shigar	Kharmung	Ghanche	
(1)	Wheel Loader with Bucket & blade	3	1				1		1				
(2)	Wheel Excavator with Blade	7			1	1	1	1		1	1	1	
(3)	Mini Truck	2											2
(4)	Chain Excavator with Blade	3	1	1					1				
(5)	Tractor (bucket, Blade, Trolley, Water Tank)	23	2	2	2	2	2	2	2	2	2	2	3
(6)	Air Compressor	10	1	1	1	1	1	1	1	1	1	1	
(7)	Drill Machine	20	2	2	2	2	2	2	2	2	2	2	
(8)	Hydraulic Crane	1											1
Total		**69**	**7**	**6**	**6**	**6**	**7**	**6**	**7**	**6**	**6**	**6**	**6**

4. **Fund Allocation for Seasonal Hazards**

a. Resource Mobilization Highlights:-

(1) Budgetary allocations to Commissioners and Deputy Commissioner under Finance Act 2024 for Mitigation & Relief Operations.

(2) Newly ADP reflected PC-1 with cost Rs. 80.000 million is submitted for approval from the forum.

(3) Under the said PC-1 funds are distributed among districts in terms of vulnerability and population associated.

(4) Purpose of PC-1 is implementation of structural mitigation in flood hotspots.

b. Public Awareness Initiatives Launched Via:-

(1) Local FM radios, mobile SMS alerts, and mosque announcements.

(2) Television and print media engagement.

(3) Social media outreach using infographics, videos, and community testimonials.

5. **Community Awareness & Drills**

a. Awareness campaigns in vulnerable valleys through DDMAs.

b. Mock drills conducted in high-risk areas under GLOF-II project.

6. **Mock Exercise with Stakeholders**

a. Community-based mock drills conducted / planned in coordination with:-

(1) District Disaster Management Authorities.

(2) NGOs / INGOs working in GB.

(3) Civil Defense and Rescue 1122.

(4) Community Mock Drill Exercises through GLOF-II project in targeted valleys of GB (Conducted).

ICT ADMINISTRATION

1. Baseline for Monsoon Contingency Planning

a. Monsoon Hazards Vulnerability Matrix

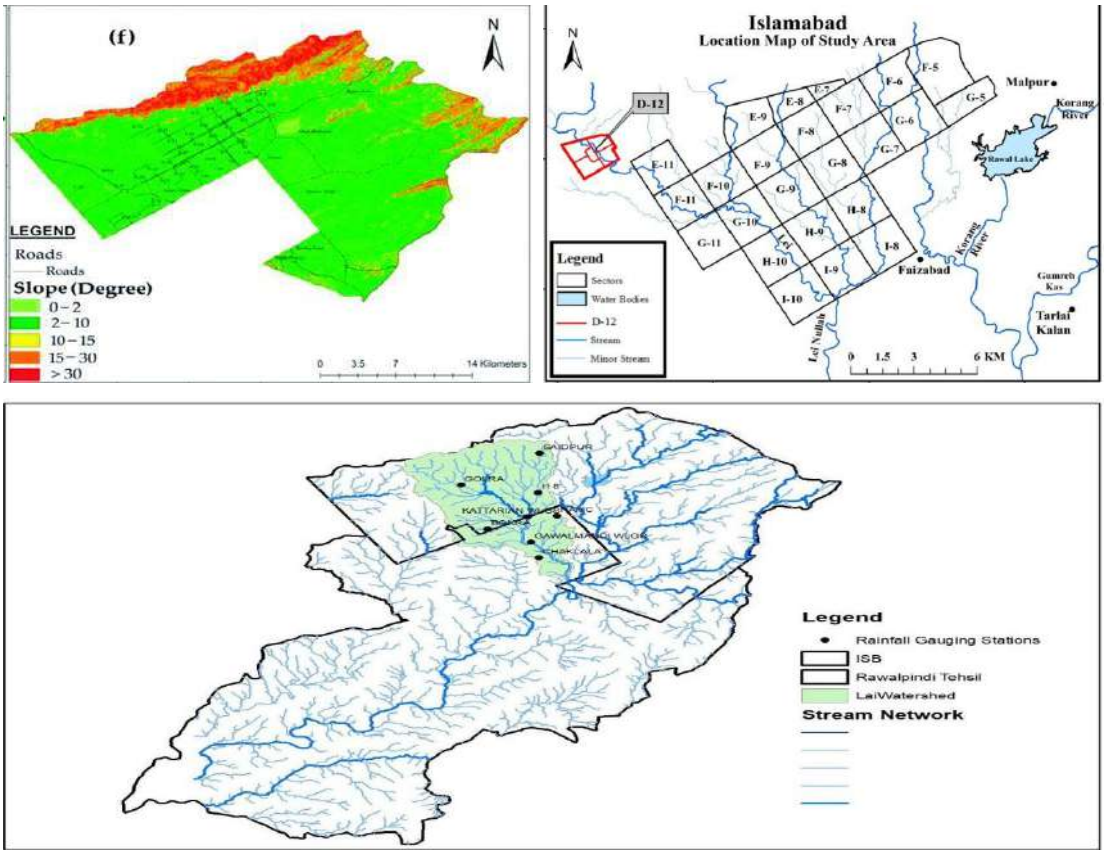
(1) Hydrology of Islamabad.

(2) Rainfall trend analysis.

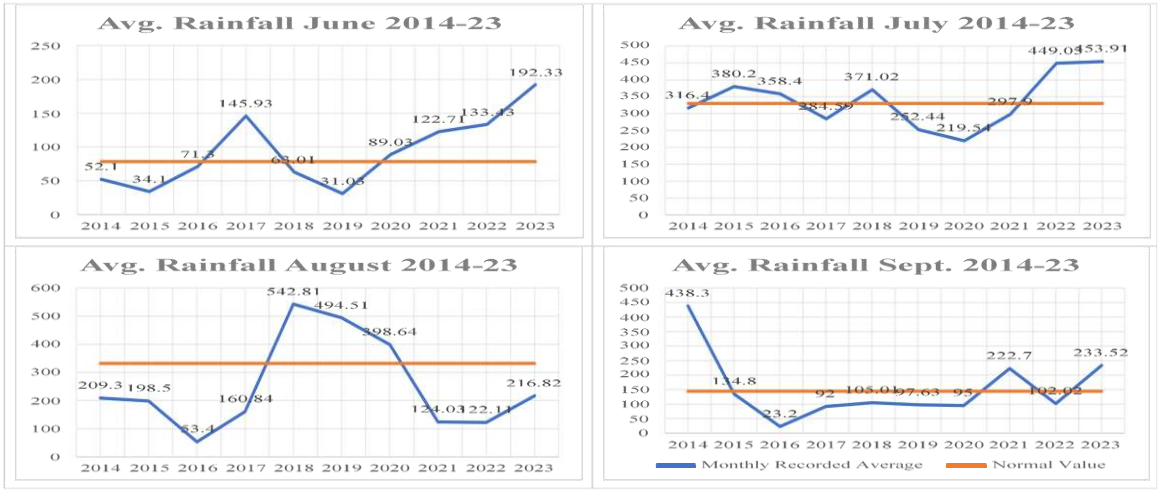
(3) Seasonal outlook.

Disaster	Flood	Flash Flood	Urban Flooding	Cloud Burst	Windstorm	Hailstorm	Heatwave
Possibility	Medium	Medium	Medium	Medium	High	High	High

b. Hydrology Islamabad



c. Annual Rain Fall 2014-2024



d. Seasonal Outlook

(1) Strong winds, dust storms and hailstorms.

(2) The extreme hydro-meteorological events over catchment areas of the major rivers of the country are likely to generate riverine floods.

(3) Flash or urban flooding is anticipated in hill torrent areas and plains of major cities in Sindh, Punjab, AJ&K, and KP due to heavy rainfall events during the season.

e. **Urban Flood Management - Preparedness**

(1) Regular checking and clearing of nullahs.

(2) Removal of encroachments.

(3) Identification of vulnerable points / localities.

(4) Mock Exercise.

(5) Community awareness.

(6) Formulation of emergency plan and stocktaking of resources.

(7) Early warning System.

(8) De-watering and drainage.

(9) Evacuation and relocation, if needed.

Command	Role
Deputy Commissioner Islamabad	District Flood Controller
SSP (Operations) Islamabad ADC (G) Islamabad	Law & order
ADC (G) Islamabad	Supervision of District Flood Control Centre and necessary coordination
Assistant Commissioners	Sub-divisional response & coordination
CDA Team	Representatives of DMA, and one person each from Directorates of Sanitation, Health, Roads and Environment
Representatives of all essential departments	To remain available for their respective roles
Emergency Numbers	16 (Emergency HQs) 051-9108084 (DC Office Control Room)
Total number of vehicles (for Monsoon)	Eight (08)
Others	De-watering equipment available in UCs and Cooperative Housing Societies

f. **Urban Flood Management- Response**

(1)	Pump with suction pipe and check valve	40

(2)	Chain saws	07
(3)	Life jackets	500
(4)	Boats	05
(5)	Lifebuoys	30
(6)	Tents	10
(7)	Working gloves	14
(8)	Gum shoes	05
(9)	Rubber gloves	10
(10)	Safety helmets	60
(11)	Torches	15
(12)	Generators	05
(13)	Reflecting jackets	100
(14)	Hammers	25
(15)	Rain coats	20
(16)	Ropes	23

g. **DM Logistics - Needs and Gaps**

(1) New specialised water / flood rescue vehicles.

(2) HTV drivers and dedicated pump operators.

(3) Specialised training for emergency personnel.

National Highways Authority (NHA)

1. **Inventory List of Retractable Bridges with Storage Locations on NHA Network**

Ser	Detail	Location	Remarks
a.	2 x Units of Compact- 200 Bridges	FWO Camp in Hassanabad (Hunza), Karakoram Highway (KKH)	
		NHA Camp in Parri, near Jaglot	Not fully assembled; only major components are available at the site.