



NATIONAL MONSOON CONTINGENCY RESPONSE DIRECTIVE 2015

National Disaster Management Authority
Government of Pakistan

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(To be read in conjunction with National Disaster Response Plan 2010)

General

1. National Monsoon Rains and Flood Contingency Response Directive is prepared every year to define projected contingencies with respect to Monsoon Season and accordingly lay down broad response / coordination guide lines for all disaster management authorities (Provincial/AJ&K/Gilgit Baltistan/ FATA/ CDA&ICT) and relevant stakeholders for an effective unified response at all tiers.
2. **Aim.** To define **perceived contingencies of Monsoon Season 2015** especially with reference to **floods / related hazards** and while identifying the **vulnerability matrix at national level**, lay down broad guidelines to all concerned with a view to ensure effective preparedness as well as coordinated rescue & relief, response thereby minimizing loss of life and damage to public and private infrastructure in case of any contingent situation.
3. **Scope.** The Directive is focussed on the following:-
 - a. Experiences from Past Floods.
 - b. Vulnerability Matrix at District Level.
 - c. Perceived Monsoon Season 2015.
 - d. Response Guidelines.
 - e. Coordination Aspects.



Experiences From Past Floods

4 **Limitations.** There are certain identified limitations which are persistent and planning for response will have to be undertaken while keeping in view these limitations:-

a. **Meteorological & Flood Forecasting System**

- (1) Prediction capability of medium to long range forecasting is only for 7 to 15 days.
- (2) Seasonal Weather Prediction can be expected at 50-60% accuracy level and only 36 - 48 hours in advance which has bearing on warning time for all stakeholders.
- (3) Availability of accurate and timely information about discharge of water in the eastern rivers is dependent upon passage of information from India.
- (4) There is no telemetry / early warning system for flash floods in hill torrents of Khyber Pakhtunkhwa, Kabul River, FATA, AJ&K, South Punjab and Balochistan which has impacts on early warning.

b. **District Disaster Management Authority.** Ad-hoc system of functioning of District Disaster Management Authority owing to non-availability of dedicated manpower and assignment of dual responsibility to District Administration has a profound bearing on response capability.

c. Permanent settlements / encroachments in the river / flood plains are prone to acute vulnerabilities.

d. Non availability of check dams for flood water management.

e. Non uniform & inaccurate database at all levels impacting on various assessments for rescue, evacuation, relief and rehabilitation.

f. Silting of rivers, canals and hydraulic structures over a period of time, which accentuates the vulnerability against flood.

g. Non-availability of risk assessment atlas at micro level which could highlight precise vulnerabilities for disaster management planning.

5. **Shortfalls**

a. Limited / non-availability of storage facilities of relief items at District Level and tendency of emergency procurement, resulting into delayed response as well as compromise on transparency in procurement.

b. Location of relief camps not aligned to the demand / need.

c. Maintenance of Flood protection bunds and restoration of flood damage works at time remains incomplete owing to limited / late availability of maintenance budget.

d. Rescue boats are of low Horse Power and cannot operate in fast current of flood waters.

e. Healthcare and WASH provision remains wanting.

f. Needs of vulnerable groups, women, children, aged person and disabled remain neglected in planning and rescue / relief operations.

g. Employment of NGOs/ INGOs / UN Organisations not ensured in a coordinated / regulated manner.

h. Damage assessment process and damage reporting is often inflated.

i. Non availability of electricity backup systems / generators for the water supply and sanitation / sewerage disposal system in urban areas.



- j. Regulation of water of Mangla & Tarbela Dams vis-à-vis inflow in reservoirs.
6. **Positive Aspects**
- a. System of SMS early warning alerts to communities in coordination with cellular companies found very useful and effective.
 - b. Model of Khadim-e-Aala Punjab Imdadi Package for provision of compensation alongside grievance address system during Floods of 2014 found effective and can be replicated in future as well.
 - c. SUPARCO's capability to estimate loss to crops and infrastructure can be used for rapid assessment at all levels.
 - d. Strategic warehouses constructed by World Food Programme at Hyderabad, Lahore, Muzaffargarh, Jallozai and Quetta have enhanced the logistics capacity of NDMA and respective PDMA's for a meaningful response at short notice.

Vulnerability Matrix at District Level

7. **Vulnerability Matrix.** The macro level vulnerability matrix and hazard maps upto district level are attached at **Annex A to T**. It is pertinent to highlight that while a normal to intense monsoon may cause floods, there is a possibility that a below normal monsoon may cause drought in the desert regions of south Punjab & Sindh and arid regions of Balochistan. The gist of the vulnerability matrix for floods / related hazards as well as droughts is tabulated as under:-

Provinces	Flash/ Riverine / Urban Flooding	Cyclones	Drought	Avalanches / Landslides	GLOF
Balochistan	✓	✓	✓	-	-
KP	✓	-	-	✓	✓
Punjab	✓	-	✓	-	-
Sindh	✓	✓	✓	-	-
AJ&K	✓	-	-	✓	-
GB	✓	-	-	✓	✓
FATA	✓	-	-	✓	-

Perceived Monsoon Season 2015

8. **Seasonal Forecast.** Using local, regional and global data sets, a Preliminary Monsoon 2015 Outlook for Pakistan has been prepared by Pakistan Metrological Department from July-September. This will be refined on periodical basis vis-à-vis progress of monsoon period. Its salient features are:-
- a. In general, 2015 monsoon is expected to be weak with some uncertainties, producing slightly less than normal rainfall during July – September.
 - b. Monsoon will gradually pick up rhythm during the 2nd and 3rd week of July producing rain in most parts of AJ&K, Khyber Pakhtunkhwa and Punjab.
 - c. However due to interaction of easterly & westerly systems may lead to a few extreme rainfalls in AJ&K, Khyber Pakhtunkhwa and North-east Punjab which may result in floods.



- d. During second fortnight of July monsoon currents will also penetrate in South-eastern parts of the country producing scattered rainfall in Sindh and Eastern Balochistan.
 - e. Overall availability of water from monsoon rainfall in the country would be satisfactory.
9. **Conclusions from Seasonal Forecast.** Keeping in view the weather forecast of Monsoon 2015, limitations of Meteorological Technology / Meteorological Prediction, overriding phenomenon of Global Climate Change and past experiences, following is concluded:-
- a. Erratic Monsoon cannot be ruled out hence adequate safeguard must be taken for any adverse contingency.
 - b. In view of expected heavy rains in Afghanistan and Khyber Pakhtunkhwa the Scenario of 2010 with **variable intensity** cannot be ruled out. Hence necessary response must be in place.
 - c. The interpretation of below normal monsoon means **normal / above normal** rains in some areas and **below normal / no rains** in some other areas of the Country resulting into cumulative degree of below normal rain all over the Country. Hence response measures must be carefully taken accordingly to **obviate any false interpretation**.
 - d. Occurrence of less rain in drought Hit areas is likely to accentuate the drought conditions, hence the need to undertake proactive measures for monitoring of drought situation as well as its response.
 - e. Prolonged monsoon as the case in 2014 cannot be ruled out, this warranting a matching response.
10. **Visualised Monsoon Contingencies 2015.** Keeping in view, the **meteorological prediction, conclusions drawn thereof and necessity of ensuring adequate safeguards against the phenomenon of climate change affecting Pakistan since last decade**, following scenarios are visualized for Monsoon Season 2015 in order of priority:-
- a. **Scenario 1 (Most Likely) - Normal Monsoon**
 - (1) Normal Monsoon will prevail all over Pakistan except drought hit zones.
 - (2) The intensity may be variable in different regions from **high (KP/FATA/ GB/ Northern Punjab) to normal and less / no rains in arid zones of Balochistan / drought areas of Punjab and Sindh.**
 - (3) The duration remains limited upto 30th September 2015.
 - (4) High Flood may be caused in certain rivers.
 - (5) Urban flooding, landslides / avalanches, flash floods likely to occur in respective vulnerable regions.
 - b. **Scenario 2 (Probable)- Erratic Monsoon**
 - (1) Intense rain may happen in some regions while below normal / no rain happen in other regions.
 - (2) Drought zone remains dry.
 - (3) Monsoon may get prolonged beyond 30th September 2015.
 - (4) High Flood expected in selected rivers.
 - (5) Cyclone activity may compliment Monsoon activity.
 - (6) Urban flooding / landslides / avalanches, flash floods as in Scenario 1.



- c. **Scenario 3 (Less Probable) - Intense Monsoon**
- (1) Intense Monsoon all over the Country with above normal rainfalls.
 - (2) Drought hit areas may also receive rainfalls (below normal to normal).
 - (3) Peak high floods happen in most of the rivers.
 - (4) Flash flood, landslides / avalanches and urban flood persist to a higher degree.
- d. **Scenario 4 (Most Dangerous)-Abnormal / Least Probable Monsoon**
- (1) Combination of Scenario 1, 2 and 3 and more similar to Year 2010.
 - (2) Extra Ordinary flood like the Year 2010.
 - (3) Flash Floods, Landslides / Avalanches as in Scenario 3.
 - (4) High water levels in Tarbela / Mangla Dam.

Guidelines - Floods

11. Response Parameters

- a. **Response at National and Provincial levels will be configured against “Monsoon Contingency Scenario 1 – Normal Monsoon”.**
- b. **Adequate safeguards / response measures will be undertaken for Monsoon Contingencies 2, 3 and 4.**
- c. **Responsibility Matrix**
- (1) **Flood Forecasting.** Pakistan Meteorological Department through its Flood Forecasting Division.
 - (2) **Dam Management.** Water and Power Development Authority (WAPDA) through Dam Management Committees and respective GM of Mangla & Tarbela Dams.
 - (3) **National Coordination Agency.** NDMA.
 - (4) **Provincial / Regional Coordination Agencies**
 - (a) PDMA Punjab.
 - (b) PDMA Sindh.
 - (c) PDMA Khyber Pakhtunkhwa.
 - (d) PDMA Balochistan.
 - (e) SDMA Azad Jammu & Kashmir.
 - (f) GBDMA Gilgit Baltistan.
 - (g) FDMA Federally Administered Tribal Areas (FATA).
 - (h) ICT & CDA Disaster Management Cell for Islamabad and ICT.
 - (5) **Transfrontier Information.** Pakistan Commission for Indus Water (PCIW) will coordinate transfrontier information about flow of water from India and share the same timely. Assistance of SUPARCO with also be sought.
 - (6) **Integrated Flood Management.** Federal Flood Commission will manage floods through structural and non structural measures.
- d. Armed Forces will be requisitioned by Province only in case of emergency through respective PDMA while keeping NDMA informed for following:-



- (1) Rescue & relief operation by Field Army Units.
- (2) Aviation Support.
- (3) Support of divers.
- (4) Special search & rescue operations.

e. **Tiers of Response**

- (1) **1st Tier.** Local response by DDMA's with integral resources and with support of District/Provincial / Army resources, if so required / requisitioned.
- (2) **2nd Tier.** Provincial efforts (logistics / rescue resources) in support of District Authorities.
- (3) **3rd Tier.** NDMA response (National efforts / National resources) in support of Province when so requested, with / without external assistance.

- f. **Flood Monitoring.** Will be done by all stake holders through respective flood monitoring cells/ centres, FFD and SUPARCO will provide intimate support about information and assessment.

12. **Preparedness**

- a. Caseload for logistics / relief response will be built on the average of relief rendered during flood / related hazards from 2005 – 2015 (one decade) in respective districts / regions / provinces by PDMA's / FDMA / SDMA / GBDMA / CDA / ICT DM Cell.
- b. Necessary stockpiling of relief items on envisaged caseload to be ensured at district level, PDMA's and NDMA by 15th July 2015 the latest.
- c. A mechanism of effective supply chain management must be established engaging prequalified suppliers, for provision of food items, relief goods (tents / blankets / tarpaulins / mosquito nets / etc.) and transport contractors for emergency transportation.
- d. Repair and maintenance of leftover flood protection bunds / works should be completed before 15th July 2015.
- e. Provincial Authorities, Rescue Services and Armed Forces to have their flood relief equipment (Boats, OBM's, etc.) available and in serviceable condition. The equipment should be strategically placed to respond to flood situations.
- f. Availability of trained OBM Operators must be coordinated and ensured during the entire monsoon season.
- g. Urban Search and Rescue (USAR) Teams in respective provinces / regions to be prepared for contingent situation to include relief operations for collapsed buildings and landslide victims.
- h. Serviceability of urban sewerage system to be ensured along with de-silting of sewers / sewage disposal stations, serviceability of heavy duty dewatering pumps and back-up generators for sewerage disposal and water supply networks / systems.
- i. **Dam Management.** There must be an intimate coordination as per revised instructions / SOPs with all stakeholders so that response is generated well in time. Coordination conferences must be held before 15th July 2015.
- j. **Breaching.** SOPs must be rehearsed / practiced in the presence of all stakeholders. Deficiencies in the breaching explosives should be made up accordingly. Breaching committees must ensure that decision regarding their section in a timely and well thought-out. Care will be taken at breaching sections during flood situation so as to ensure that no



premature breach or illegal breach by individuals takes place:-

- k. **Community Volunteers.** UN Organisations / NGOs / INGOs which have remained involved in imparting training to communities should share data with PDMA's so that in the need of hour, the trained persons be called for necessary assistance(Relief stores of UN System at **Annex U**).
- l. Locations of relief camps must be identified and reconnaissance / coordination must be done by 15th July 2015, at District Level with all stakeholders.
- m. A system of surveillance of flood protection bunds be evolved to prevent illegal breaching.
- n. Liaison officers from different departments dealing with floods like Army, PAF, FFC, FFD, PMD etc be nominated before hand for NEOC.

13. **Early Warning**

- a. **Flood Early Warning.** FFD / PMD will be the Focal Organisation for providing early warning.
 - (1) PMD and agencies observing essential data regarding floods / rains shall directly issue the warnings to NDMA / PDMA's/DDMA's and other related agencies.
 - (2) PMD shall disseminate the information on magnitudes and significance of floods / rains / cyclones without any delay through fax/SMS and e-mails.
 - (3) Flood Forecasting Division (an affiliate organisation of PMD), will disseminate Daily Floods Bulletin A& B (Forecasts) during the monsoon season and increase the frequency to 3/6 hours updates once a situation develops. It will be further transmitted by NDMA through its website.
 - (4) On receipt of the warnings weather advisory / warning / flood alert for specific area(s) and time period will be issued by respective PDMA's immediately to disseminate warning to District Authorities / Relevant Stakeholders via Fax / Email / Telephone / SMS etc.
- b. **Early Warning to Community**
 - (1) PDMA's in cooperation with PTA and cellular companies to issue early warning to vulnerable areas to each active mobile phone subscriber. NDMA with the support of PTA has got approval for the free SMS alerts for this Monsoon Season 2015 by the Cellular Companies.
 - (2) PDMA will issue SMS to the concerned districts after approval of the Chief Secretary / concerned authority. The SMS must be drafted in Roman Urdu.
 - (3) After approval, SMS Alert is to be forwarded to Focal Person(s) at all Cellular Mobile Operators (CMOs) for immediate dissemination to all local communities / area(s) most likely to be affected.
 - (4) Police wireless network as well as SMS alerts to all Govt / Non-Govt stakeholders will also be ensured as a parallel method to transmit information to local communities in order to ensure a redundancy in early warning mechanism.
 - (5) Media, particularly electronic media (TV and FM radio stations), is to play an important role as disseminating agencies in the EWS. Warning messages in the form of press releases, media briefings, tickers or news flash will be sent to Media by NDMA / PDMA's (after approval through Chief Secretaries) through PEMRA. The PDMA's must coordinate media engagement mechanism in deliberate manner to obviate misinformation, panic calls, inflated reporting and rumour mongering by any quarter.



c. **Rescue Phase**

- (1) Armed Forces of Pakistan will be mobilised once requisitioned by Provincial Governments as a National Backup for which necessary coordination will be ensured while keeping NDMA in the loop.
- (2) Rescue 1122, Emergency Services, Civil Defence Services, Volunteers and Police / Law Enforcement Agencies will be incorporated during rescue operations.
- (3) Heli-borne rescue operations will be coordinated through NDMA. Provinces will requisition the air effort from NDMA. There must be judicious employment of helicopters. A proper log book will be prepared which will indicate where and when the air effort was used and how many persons evacuated. **The expenditure of helicopter effort will be borne by respective Provincial Government.**
- (4) Provision of flood rescue equipment will be the responsibility of Provinces to Army local formations (Army flood relief equipment at **Annex V**).
- (5) Evacuation of people to safer place is the responsibility of the district administration. All evacuations will be ordered by the DC / DCO. The evacuation must take place a maximum of 36 hours before the flood of the area, depending upon the warning available. The forced evacuation must be planned in case of limited warning time, by utilising all available resources at provincial / district levels. Help may be sought from NDMA if so required.

d. **Relief Phase**

- (1) Location of relief camps must be earmarked and necessary administrative arrangements be made accordingly. It must be incorporated on **past experiences and should be needs based**. Relief camps should be accessible / closer to main arteries so that relief goods be easily delivered to the affectees.
- (2) A standardized food pack must be designed as per local requirement and to meet the needs of affectees. NDMA Food Packs details are attached at **Annex W**.
- (3) Water purification tablets and filtration systems for the provision of clean drinking water to affectees must be readily available.
- (4) Relief management is the most significant part of response to any disaster. The main purpose of the relief management is to provide life sustaining commodities to the affected communities in a fair and organized system, therefore, distribution method should be decided in consultation with local communities.
- (5) Coordination must be carried out with Pakistan Boys Scout Association and Pakistan Girls Guide Association at provincial level to provide support services at various relief camps under the overall guidance and supervision of the local administration.
- (6) Based on the past experiences, needs should be formalized at priority and the list of donated items (relief goods) should be available with all DMAs be displayed on websites and circulated through media.
- (7) Trained community level teams should assist in planning and setting up emergency shelters, distributing relief among the affected people, identifying missing people, and addressing the needs of education, health care, water supply and sanitation, food etc. of the affected community.
- (8) Sex and age disaggregated data collection at district level, must be ensured to cater the needs of all segments of the population, including vulnerable groups.



- (9) Relief packages should be according to the region's cultural context and ensure food requirements for lactating mothers, pregnant women, infants, children and elderly persons. Stockpiling and contingency planning should incorporate special needs of older persons and persons with disabilities, particularly with regards to special equipment such as wheelchairs etc. and must be able to cater for the needs of family as a whole.
- (10) Energy biscuits and other such foodstuff which is not part of their daily diet to the extent possible, be avoided, as these are not used by the affectees to meet their daily food intake. Instead items like rice, wheat bags and ghee, dry milk for babies etc. should be included. Many traditional ready made foods are available in the markets. These can be made part of the relief package after collaborating with the utility stores for discounted price.
- (11) Relief teams should engage community activists in distribution of food in the relief camps. There are always empowered women in all communities who can be agents of change in their communities and can be involved.
- (12) Dignity of all the affectees should be maintained in all phases of disaster response. DDMA's as first responders should mobilize vulnerable communities for disaster response. This will encourage community involvement, strengthen their own efforts and also address the issue of dearth of human resources.
- (13) Disease Early Warning Systems to be put in place once a situation arises.
- (14) NHEPRN should establish liaison and necessary coordination with Provincial health authorities. District and City Administration should prepare for monsoon season ahead of time by ensuring that Anti Dengue and Malaria drives commence promptly and spraying and removal of stagnant water is done on priority basis. Furthermore Health Authorities must ensure that medicines and vaccines are stockpiled at strategic locations so as to ensure availability in case of any eventuality. Health authorities must also ensure that appropriate, treated mosquito nets are available in all health facilities and are also strategically placed for distribution.
- (15) The supply chain must be maintained and followed in true letter and spirit. DDMA's are the first tier supported by PDMA's to provide immediate relief, similarly, second tier (PDMA's supported by NDMA) should be ready to render assistance once the stocks of DDMA's are exhausted. The Third Tier is of NDMA supported by National resources to extend relief support required by the provinces.
- (16) NDMA maintains its stocks at strategic locations (**attached at Annex X**). PDMA's are responsible to collect the stocks once released by NDMA from a particular location.
- (17) NHN / PHF / UN Agencies and PRCS will share location of their stocks and human resource mapping with NDMA / PDMA's so that relief assistance is well coordinated accordingly.

e. **Damage Needs Assessment**

- (1) **Multi Sector Initial Rapid Assessment (MIRA)**. MIRA is developed in collaboration between NDMA and UNOCHA with multi sector approach in the aim of sharing one common methodology and assessment tools for coherent needs data collection in any emergency is the first step of the Assessment and Monitoring Framework and is designed to identify strategic humanitarian priorities, including scale of disaster,



priority areas of assistance and to identify gaps in response after the onset of natural disasters or complex emergencies.

- (a) MIRA will be carried out once Disaster Management Authorities have a general situational overview and within 7 days of a disaster / complex emergency situation occurring.
 - (b) Rapid assessment will be carried out by NDMA / PDMA / UN / NGOs to identify needs and priorities of affected and vulnerable communities.
 - (c) Initial report is to be shared with Disaster Management Authorities within 1 week and final report is to be compiled and submitted within 2 weeks.
- (2) **Recovery Needs Assessment (RNA).** The Recovery Needs Assessment (RNA) was developed by NDMA and UN Partners to provide strategic basis for response to disasters by identifying and estimating the detailed costs in of recovery in multiple sectors to enable Government and its partners in initiating recovery work in affected communities.
- (a) RNA process will be initiated by NDMA in collaboration with UNDP and PMDAs to assess the recovery needs of communities in agriculture, education, health, communications, etc. and which will be completed within 4 - 6 weeks. This will be done through multi sector teams.
 - (b) RNA will address the needs of the local communities and lead to the restoration and further development of their infrastructure.
 - (c) Report will be submitted to Disaster Management Authorities by the end of the 5th week.

14. **Response Against Drought.** The situation will be continuously monitored as per practice in vogue (Drought Mitigation Action Plan Matrix at **Annex Y**). However, following measures will be taken into account:-

- a. Food reserves will be maintained as per provinces' existing policy.
- b. The vulnerable caseload of families to be targeted as per assessment and their needs must be addressed in the planning.
- c. Vulnerable livestock to be mapped and fodder to be deployed to fulfil the requirement of cattle.
- d. Drinking water supply should be made available to the community through water tinkering or by providing bottled water as a last resort.
- e. Relief camps should be established to facilitate the migration of humans / livestock.
- f. Emergency Health Response be generated to prevent the outburst of epidemics.

Coordination Aspects

15. **Coordinating Instructions**

- a. **Emergency Operation Centres** at National / Provincial / Regional / CDA / ICT level will start functioning from 15 June 2015 and will be closed by 15 October 2015, unless monsoon is prolonged.
- b. Daily Coordination Meetings amongst relevant stakeholders at National / Provincial / District levels should be held twice daily, once at the start of the day and once at night to



ensure that all required coordination measures are taken in timely fashion and that accurate information is prepared for daily situation reports.

- c. PDMA's should share the initial disaster information with NDMA by any fastest means i.e. by cell / telephone / SMS followed a detailed report.
- d. NDMA / PMD / PDMA's / SDMA/ GBDAM / FDMA / CDA / ICT would update the situation on their websites after every 6 / 12 hours including specific requirements of their relief goods, etc.
- e. Print media and electronic media /internet be utilized for dissemination of t i m e l y a n d accurate information.
- f. **Coordination with UN Agencies and INGOs / NGOs**
 - (1) The support of UN Agencies and INGOs / NGOs will be utilised in a coordinated manner, mostly in preparedness, relief, post disaster assessments and rehabilitation phases.
 - (2) NDMA and PDMA's will be in lead role to regulate and direct the employment of these organisations which must be demand based and does not cause saturation.
 - (3) The capabilities of each organisation must be ascertained to ensure its optimal utilisation / employment.
- g. **Reports and Returns**
 - (1) Situation report during normal situation daily by 1100 hours as per **Annex Z**.
 - (2) Situation report during critical situation twice at 1100 hours and 1800 hours daily as per **Annex AA**.
 - (3) SUPARCO will provide the imageries of developing situations on daily basis.
- h. NHA and Pakistan Railways will restore the communication infrastructure / alternate routes as early as possible.
- i. Employment of Army USAR Team will be coordinated through NDMA.
- j. Important Telephone numbers are shared at **Annex BB**.

16. **Conclusion**. A disaster always resides in a latent form. It's happening may not be controllable but its effects can always be mitigated or minimised. Better preparedness, efficient coordination and proactive approach can prevent the effects of flood and also address the aspects of resource constraints. This must therefore be the hallmark of commitment for all stakeholders.



List of Annexes

- A Vulnerability Matrix - Punjab
- B Vulnerability Matrix - Sindh
- C Vulnerability Matrix - Balochistan
- D Vulnerability Matrix - Khyber Pakhtunkhwa
- E Vulnerability Matrix - Azad Jammu & Kashmir
- F Vulnerability Matrix - Gilgit Baltistan
- G Vulnerability Matrix - FATA
- H Flood Hazard Map - Punjab
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- J Flood Hazard Map - Balochistan
- K Flood Hazard Map - Khyber Pakhtunkhwa
- L Flood Hazard Map - Azad Jammu & Kashmir
- M Flood Hazard Map - Gilgit Baltistan
- N Flood Hazard Map - FATA
- O Flood Hazard Map - Pakistan
- P Drought Hazard Map - Pakistan
- Q Avalanche Hazard Map - Pakistan
- R Cyclone Hazard Map - Pakistan
- S GLOF Hazard Map - Pakistan
- T Landslide Hazard Map - Pakistan
- U Relief Stores UN System
- V Consolidated State of Flood Relief Equipment of Army
- W Standardised Ration Packs of NDMA
- X NDMA HRFs / Flospans - Strategic Locations
- Y Drought Mitigation Action Plan Matrix
- Z Specimen Daily Situation Report Normal
- AA Specimen Daily Situation Report Critical
- BB Important Telephone Numbers



Annex A

Vulnerability Matrix-Punjab

District	Flood	Drought	Multi-hazard
Attock	L	VL	VL
Bahawalnagar	M	M	M
Bahawalpur	L	M	L
Bhakkar	M	VL	M
Chakwal	L	L	VL
Chiniot	M	M	M
D.G. Khan	VH	M	H
Faisalabad	M	M	L
Gujranwala	VH	L	M
Gujrat	VH	VL	M
Hafizabad	M	L	L
Jhang	VH	M	M
Jhelum	M	L	L
Kasur	M	M	L
Khanewal	M	H	M
Khushab	H	L	L
Lahore	M	L	L
Leiah	VH	M	H
Lodhran	M	M	L
MandiBahauddin	M	L	L
Mianwali	H	L	L
Multan	H	H	H
Muzaffargarh	VH	H	VH
Nankana Sahib	M	H	M
Narowal	VH	VL	L
Okara	M	H	L
Pakpattan	M	M	L
Rahim Yar Khan	VH	VH	VH
Rajanpur	VH	H	H
Rawalpindi	M	L	L
Sahiwal	M	H	M
Sargodha	H	L	L
Sheikhupura	VH	L	L
Sialkot	VH	VL	L
Toba Tek Singh	M	H	L
Vehari	M	M	L



Annex B

Vulnerability Matrix-Sindh

District	Flood	Cyclone	Drought	Multi-hazard
Badin	H	VH	L	H
Dadu	VH	-	VH	H
Ghotki	VH	-	VH	H
Hyderabad	VH	H	VH	VH
Jacobabad	VH	-	VH	H
Jamshoro	VH	M	VH	H
Karachi	H	VH	VH	VH
Kashmore	VH	-	VH	H
Khairpur	VH	-	VH	H
Larkana	VH	-	H	H
Matari	VH	-	VH	H
MirpurKhas	H	H	H	VH
NausharoFeroze	VH	-	VH	H
Nawabshah	VH	M	VH	VH
Kamber&ShadadotKot	VH	-	H	H
Sanghar	H	M	L	H
Shikarpur	VH	-	VH	H
Sukkur	VH	-	VH	H
Tando Allah Yar	H	H	VH	VH
Tando Muhammad Khan	H	H	VH	VH
Tharparkar	L	H	H	H
Thatta	M	H	L	H
Umarkot	L	M	M	M



Annex C

Vulnerability Matrix-Balochistan

District	Flood	Cyclone	Drought	Multi-hazard
Awaran	L	M	H	M
Barkhan	M	-	L	L
Bolan	H	-	M	M
Chagai	L	-	L	VL
DergaBugti	VL	-	VL	VL
Gwadar	VL	H	VL	L
Harnai	VH	-	M	H
Jaffarabad	H	-	L	M
JhalMagsi	M	-	VL	L
Kalat	M	-	H	M
Kech	L	-	VL	L
Kharan	M	-	H	M
Khuzdar	M	-	L	M
Killa Abdullah	M	-	M	H
KillaSaifullah	L	-	VL	L
Kohlu	L	M	VL	L
Lasbela	M	L	H	H
Loralai	VL	-	VL	VL
Mastung	VH	-	L	VL
Musa Khel	VL	-	M	L
Nasirabad	M	-	M	H
Nushki	M	-	H	H
Panjgur	M	-	M	H
Pishin	VL	-	VL	VL
Quetta	VL	-	VL	VL
Sherani	L	-	VL	L
Sibbi	L	-	L	L
Washuk	L	-	VL	VL
Zhob	M	-	M	M
Ziarat	L	-	VL	L



Annex D

Vulnerability Matrix-Khyber Pakhtunkhwa

District	Flood	Landslide	Avalanche	Drought	GLOF	Multi-hazard
Abbottabad	M	VH	VH	VL	-	M
Bannu	H	L	VL	L	-	M
Batagram	M	H	H	L	-	H
Buner	VH	H	H	L	-	H
Charsadda	VH	M	VL	L	-	M
Chitral	H	H	H	VL	H	M
D.I. Khan	H	VL	VL	L	-	L
Hangu	M	M	VL	L	-	L
Haripur	M	VH	H	VL	-	M
Karak	L	L	VL	VL	-	L
Kohat	M	L	VL	L	-	L
Kohistan	M	H	H	VL	-	M
LakkiMarwat	M	VL	VL	VL	-	L
Lower Dir	H	H	H	VL	-	H
Malakand	H	M	M	VL	-	M
Mansehra	H	VH	H	VL	-	H
Mardan	H	L	VL	VL	-	L
Nowshera	VH	L	VL	VL	-	L
Peshawar	VH	H	VL	VL	-	M
Shangla	H	H	H	L	-	H
Swabi	VH	L	VL	L	-	M
Swat	VH	H	H	L	-	H
Tank	H	VL	VL	L	-	M
Upper Dir	H	VH	H	L	-	H



Annex E

Vulnerability Matrix-Azad Jammu & Kashmir

District	Flood	Landslide	Avalanche	Drought	GLOF	Multi-hazard
Bagh	VH	VH	VH	L	-	H
Bhimber	H	L	VL	L	-	L
Hattian	VH	VH	VH	L	-	H
Haveli	VH	VH	VH	L	-	H
Kotli	H	M	VL	L	-	M
Mirpur	M	M	VL	L	-	L
Muzaffarabad	VH	VH	H	L	-	H
Neelum	VH	VH	VH	L	-	H
Poonch	VH	VH	VL	L	-	H
Sudhnoti	VH	VH	VL	L	-	H

Annex F

Vulnerability Matrix-Gilgit Baltistan

District	Flood	Landslide	Avalanche	GLOF	Multi-hazard
Skardu	M	H	M	M	M
Ghanche	M	H	M	M	M
Gilgit	M	H	L	L	L
Astore	L	H	L	M	L
Diamir	M	H	L	M	M
Ghizer	M	H	M	M	M
Hunza-Nagar	M	H	M	M	M



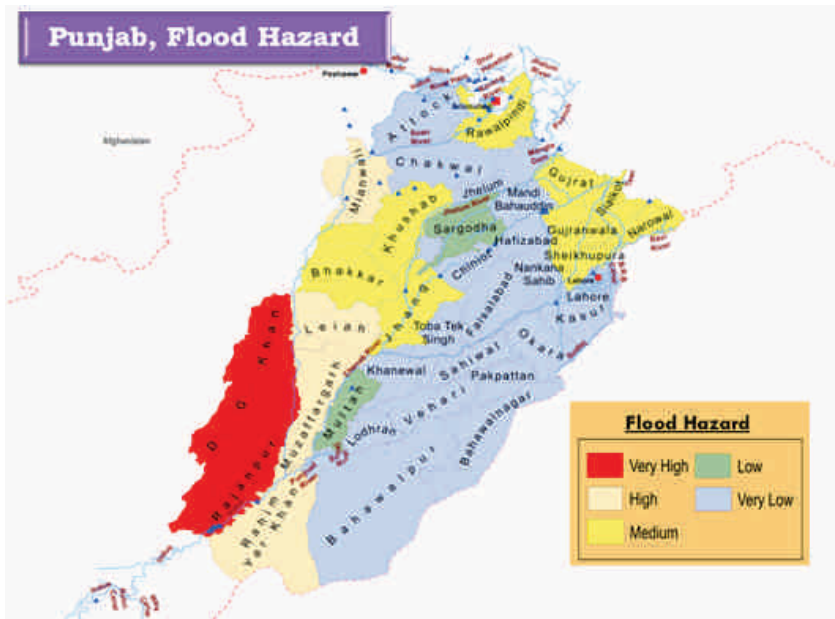
Annex G

Vulnerability Matrix-Khyber Pakhtunkhwa

District	Flood	Landslide	Drought	Multi-hazard
Bajaur Agency	M	M	L	L
Khyber Agency	M	H	L	M
Kurram Agency	M	L	L	L
Mohmand Agency	M	H	L	M
North Waziristan	L	L	L	L
Orakzai Agency	L	H	L	M
South Waziristan	L	L	L	L
FR Bannu	L	L	L	L
FR D.I. Khan	L	VL	L	VL
FR Kohat	L	M	L	L
FR LakkiMarwat	L	VL	L	L
FR Peshawar	L	M	L	L
FR Tank	L	L	L	L

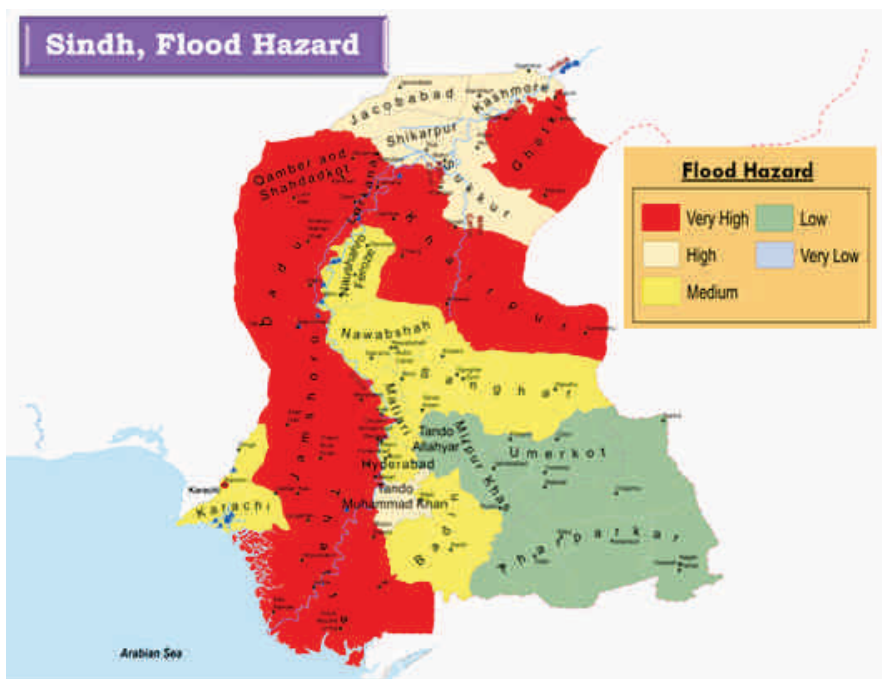
Annex H

Flood Hazard Map-Punjab



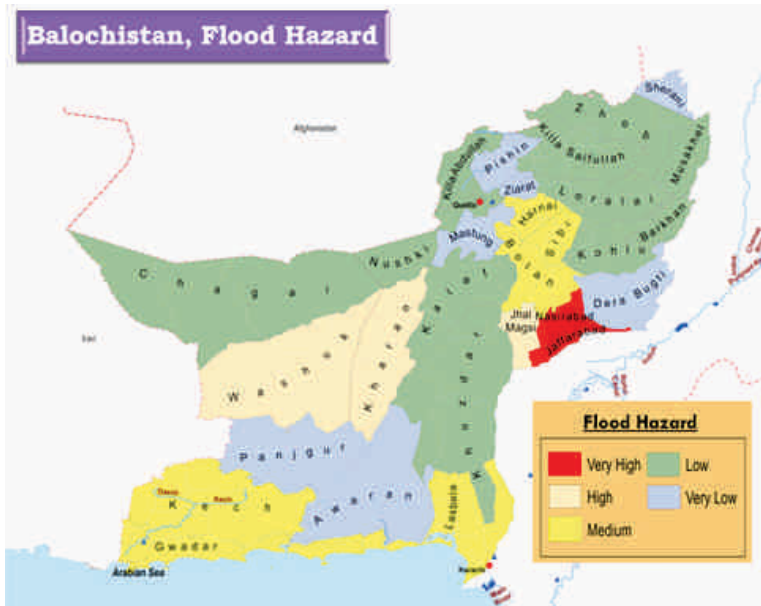
Annex I

Flood Hazard Map-Sindh



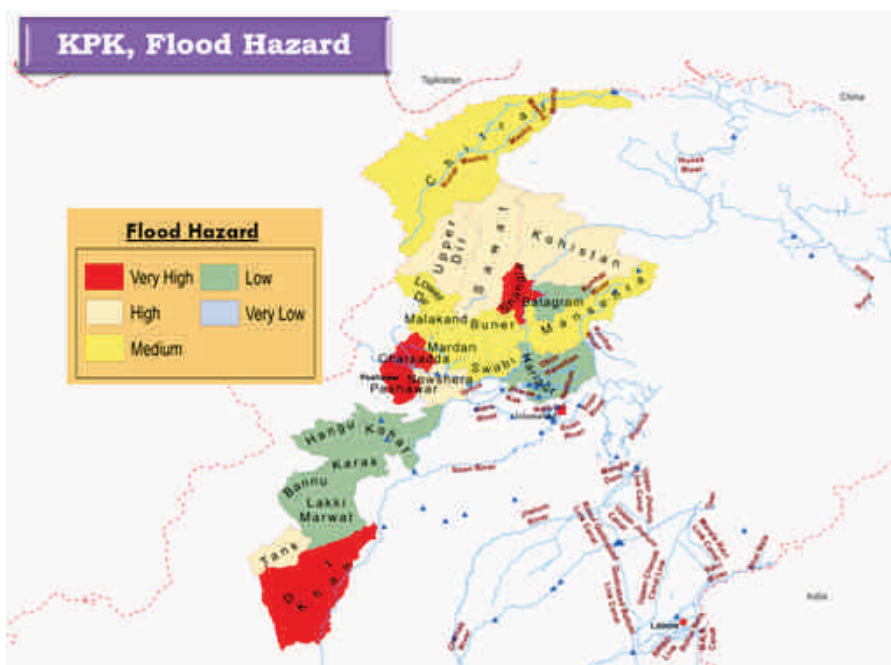
Annex J

Flood Hazard Map-Balochistan



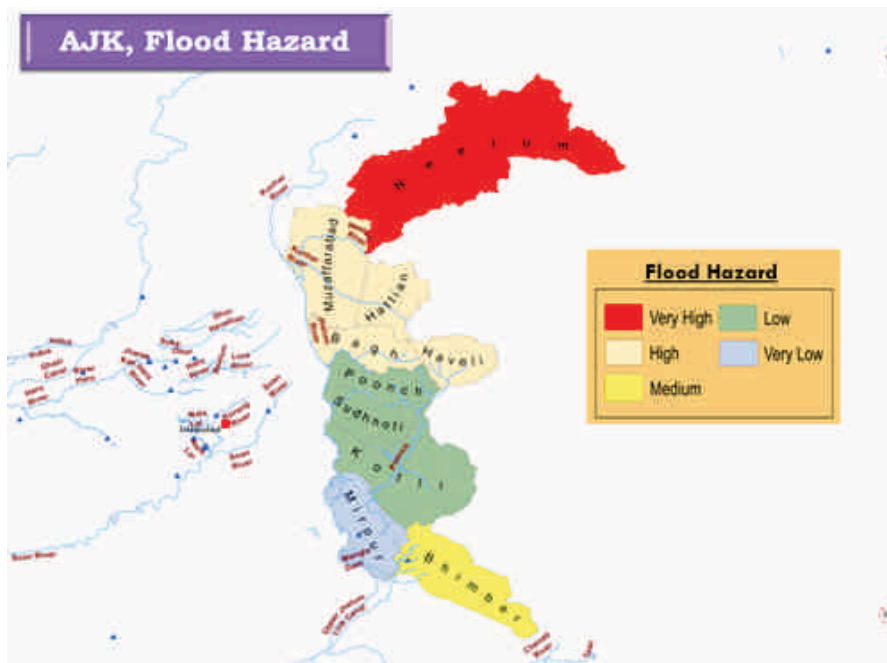
Annex K

Flood Hazard Map-Khyber Pakhtunkhwa



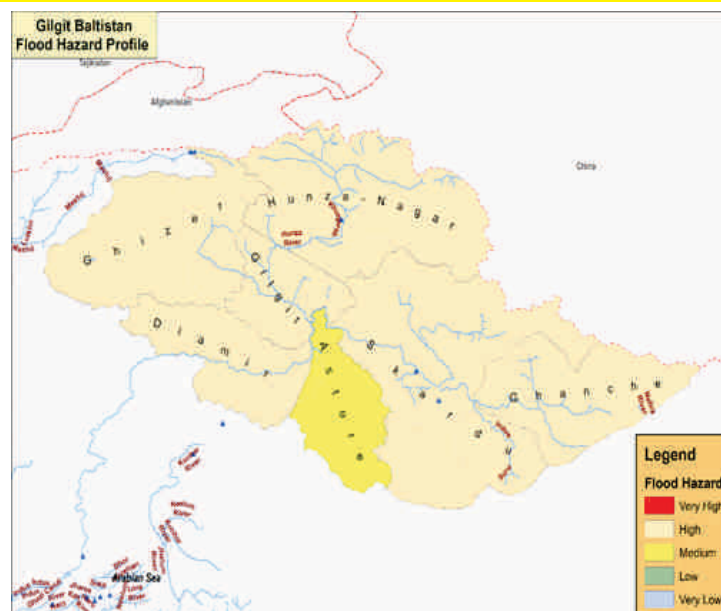
Annex L

Flood Hazard Map-Azad Jammu & Kashmir



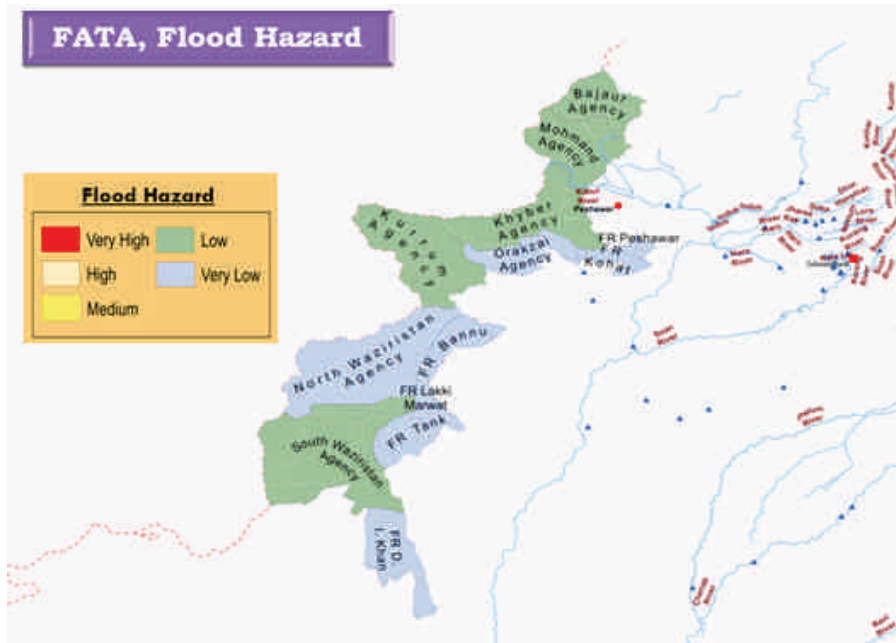
Annex M

Flood Hazard Map-Gilgit Baltistan



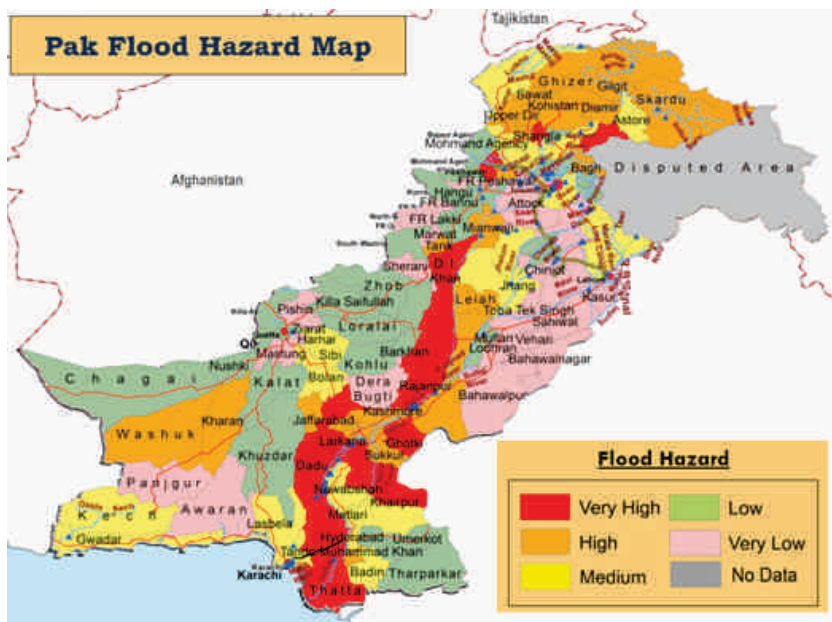
Annex N

Flood Hazard Map-FATA



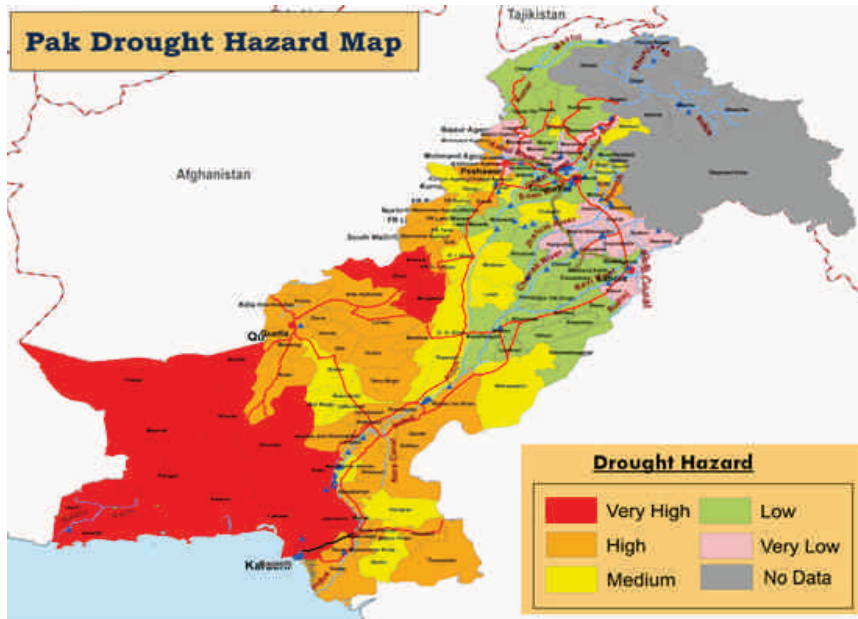
Annex O

Flood Hazard Map-Pakistan



Annex P

Drought Hazard Map-Pakistan



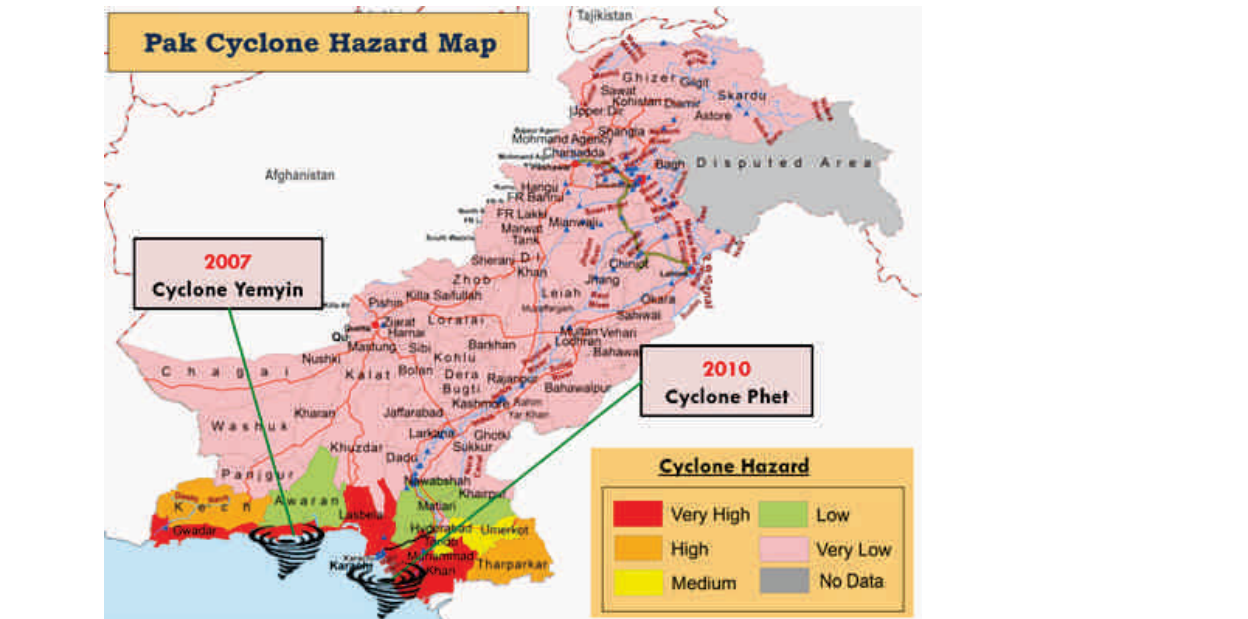
Annex Q

Avalanche Hazard Map-Pakistan



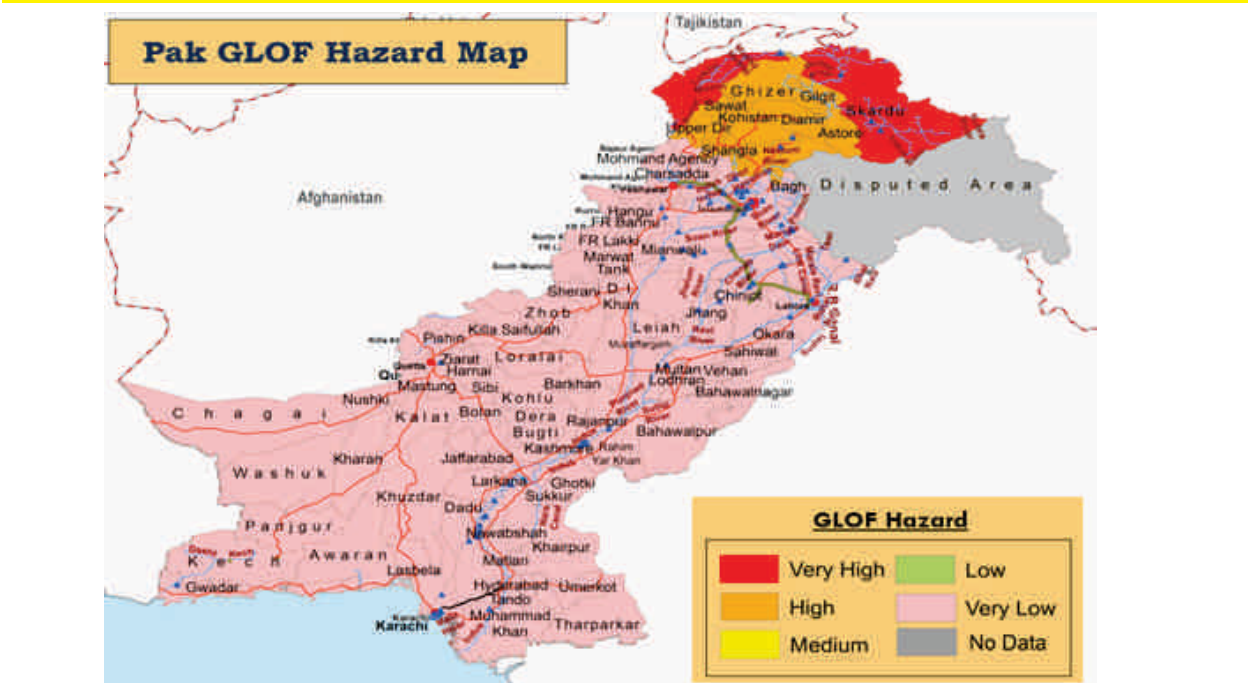
Annex R

Cyclone Hazard Map-Pakistan



Annex S

GLOF Hazard Map-Pakistan



Annex T

Landslide Hazard Map-Pakistan





Relief Stores UN System

Ser	Items	Location	Quantity
1.	Family Tent (4x4/3x4m)	KP/FATA,Sindh,Punjab	1,105
2.	Tarpaulin /plastic sheets	In-country (Islamabad/ Sindh/ KP)	32,833
3.	Jerry Cans	KP/FATA,Balochistan,Sindh,Punjab	37,428
4.	Blankets	KP/FATA,Sindh, Punjab, Balochistan	96417
5.	Sleeping Bags/Mats	KP/FATA,Balochistan	4,100
6.	Plastic Mats	Sindh,Punjab, Khyber Pakhtunkhwa	17,003
7.	Folding Bed (steel)	HI Islamabad	8
8.	Kitchen Sets	Khyber Pakhtunkhwa /FATA	25,000
9.	Mosquito Nets	UNICEF Islamabad	8,571
10.	Dignity Kits	UNFPA, KARACHI	22
11.	Auxiliary Crutch(Small)	HI Islamabad	70
12.	Auxiliary Crutch(Med)	HI Islamabad	73
13.	Auxiliary Crutch(Large)	HI Islamabad	103
14.	Elbow Crutch	HI Islamabad	196
15.	Toilet Chair(Pots only)	HI Islamabad	98
16.	Walker with Wheel(Child)	HI Islamabad	178
17.	Walker with Wheel(Medium)	HI Islamabad	8
18.	Walker with Wheel(Adults)	HI Islamabad	58
19.	Child Friendly Spaces kit	includes mats, first aid kit, water cooler, and recreation / learning items	75
20.	Recreation & Learning Kit	Procured Locally	600
21.	Clean delivery kit (UNICEF)	UNICEF	1088
22.	Newborn Care Kit (UNICEF)	UNICEF	1088
23.	Solar Lights /Hurry Can Lamps	Sindh	8078
24.	School in Box (SIB)	In-country (Islamabad/ Sindh)	59
25.	School Bags	In-country (Islamabad/ Sindh)	17090
26.	In-countenance Kit	HI Islamabad	8
27.	Transfer Board	HI Islamabad	72
28.	Warehouse	UNICEF/ Save the Children /PVDP	10



Consolidated State of Flood Relief Equipment of Army

Ser	Items	Punjab	Sindh	KP	Balochistan	Quantity
1.	Boats (Yamaha)	851	130	71	18	1,070
2.	Rubber Boat	27	10	-	-	37
3.	OBM 15 HP	303	26	2	-	331
4.	OBM 25 HP	147	143	35	-	325
5.	OBM 30 HP	126	32	94	16	268
6.	OBM 40 HP	98	15	5	-	118
7.	OBM 45 HP	29	-	-	-	29
8.	OBM 55 HP	69	-	-	-	69
9.	Life Jackets (All Types)	4,863	1,666	247	200	6,976
10.	Generator Sets (All Types)	38	-	11	-	49
11.	Search Light	288	60	45	07	400
12.	Sand Bags	2,618	-	1,726	-	4,344
13.	De – Watering Pumping Set (All Types)	59	131	06	06	202
14.	Life Ring	499	693	17	32	1,241
15.	Walkie Talkie	2	-	-	-	2
16.	Bailer	234	-	-	-	234
17.	Paddle	1,881	162	126	36	2,205
18.	Anchors	53	143	04	-	200
19.	Buoy	280	-	-	-	280
20.	Rope	-	-	200	-	200



Standardized Food/Ration Packs-NDMA

Ser	Items	Unit	Small Packing	Medium Packing	Remarks
1.	Wheat flour(Atta)	Kg	10kg	20kg	
2.	Rice	Kg	2kg	5kg	
3.	Ghee/ Oil	kg/litres	2kg / litres	3kg / litres	
4.	Sugar	Kg	1kg	2kg	
5.	Lentils (Dal Masoor/ Chana/Moong)/Red beans	Kg	1kg	3kg	
6.	Red Chili Powder	Packet	Up to 100g	Up to 200g	
7.	Milk Powder-standard packet	Packet	400g	Up to 1kg	
8.	Black Tea/Tea bags	Packet	Up to 400g	Up to 1kg	
9.	Mixed Pickle (Mango/Carrot)	Packet	Up to 1 / 2kg	Up to 1kg	Bottle/pouch/ Plastic Jar
10.	Salt-standard packing	Packet	Up to 1kg	Up to 1kg	
11.	Match Box 10/box	Box	1 box	1 box	
12.	Biscuits- (box of 6half roll)	Half roll	2 box	4 box	1box of 6 half roll = 3 standard pack
13.	Dates	Kg	1kg	1kg	Optional
14.	Aqua Tablets(1 strip of 10 tablets)	Strip	1 strip	1 strip	Optional
15.	Candles	No	10 No	20 No	Optional
Net Weight(Approx.)			20kg	40kg	



Annex X

NDMA (HRFs/Flospans)-Strategic Locations

Ser	HRFs SITES	FLOSPAN SITES
Federal		
1.		Islamabad CMT& SD Golra (4 x numbers)
Punjab		
1.	Lahore	Bahawalpur
2.	Muzaffargarh	Bhakkar
3.	-	D.G. Khan
4.	-	Gujrat
5.	-	Mianwali
6.	-	Rajanpur
7.	-	Rawalpindi
8.	-	Sialkot
Sindh		
1.	-	Tharparkar
2.	-	Umerkot
3.	-	Larkana
4.	-	Khairpur
5.	-	Badin
6.	-	Thatta
7.	-	Dadu
8.	-	Jacobabad
9.	-	Sanghar
10.	-	Benazirabad
Balochistan		
1.	Quetta	Gwadar
2.	-	Kalat
3.	-	KillaSaifullah
4.	-	Zhob
5.	-	Jafferabad
6.	-	Naseerabad
Khyber Pakhtunkhwa		
1.	Peshawar	Battagram
2.	-	Chitral
3.	-	Kohistan
4.	-	Shangla
5.	-	Torghar
Azad Jammu & Kashmir		
1.	-	Muzaffarabad
2.	-	Neelum
Gilgit Baltistan		
1.	-	Gilgit
2.	-	Skardu
3.	-	Hunza-Nagar
FATA		
1.	-	Hangu
2.	-	Jamrud

■ Total Flospans -40

■ Total HRFs-04



Drought Mitigation Action Plan Matrix

Sector	Policy / Governance Issues	Long to Medium Term Developmental / Mitigation Measures	Short Term Emergency Response Interventions
Water Security	<ol style="list-style-type: none"> 1. Enhance water storage infrastructure capacity; 2. Promote water conservation; 3. Promote integrated water resource management; 4. Reinforce legislative framework; 5. Promote remote sensing driven capacities; 6. Reinforce communities participation, and public awareness on water conservation; 7. Promote sustainable use of water; 8. Ecological approaches promotion; 9. Wetlands capacity optimisation; 10. Climate change mainstreaming; 	<p>Supply side developmental interventions :</p> <ol style="list-style-type: none"> 1. National water storage capacity enhanced; 2. Thar Canal; 3. Flood water storage along Sutlej; 4. Extension of Raine Canal; 5. Transferring piped water in Thar and Kohistan; 6. RO plants installation; 7. Fresh water extraction; 8. Tube wells; 9. Extension of water distribution network <p>Water demand management:</p> <ol style="list-style-type: none"> 1. Awareness raising on water conservation; 2. Promote participatory approaches; 3. Legislative and administrative measures; 4. Community based sustainable solutions <p>Ecological Solutions:</p> <ol style="list-style-type: none"> 1. Revive natural water basins; 2. Promote rain water harvesting 4. Water storage promotion; 5. Small and check dams; 6. Reverse osmosis plants 7. Water spreading; 8. Recycling of used water 9. Promote participatory approaches in public interventions; Create Water Management Boards regionally and in provinces 	<ol style="list-style-type: none"> 1. Water contingency planning; 2. Water tankering / bottled distribution; 3. Water purification; 4. Cloud seeding (artificial rains); 5. Hygiene and sanitation promotion;
Food and Agriculture	<p>Policy inputs:</p> <ol style="list-style-type: none"> 1. Introduce drought and heat resistant crops; 2. Horizontal expansion of cultivated lands; 3. Crops risks management; 4. Avoid monoculture; 5. Efficient food chain management; 6. Coordinated and inclusive policy implementation; 7. Awareness raising and community capacity building in arid zone practices; 8. Arid zone agriculture research institutes in Sindh and Balochistan; 9. Water loss reduction; 10. Integrated water basin management; 	<p>Arid Zone Agricultural practices: Promote:</p> <ol style="list-style-type: none"> 1. Promote sailaba and khushkaba practices; 2. Introduce drip irrigation; 3. Cropping calendars adapted to avoid heat losses; 4. Conjunctive use of surface and ground water; 5. Shift to less water demanding crops; 6. Saline water agricultural practices; 7. Soil conservation: reduction in soil tillage, mulching; 8. Rain water harvesting & storage; 9. Watershed agricultural management; 10. Soil fertilisation; 11. Best practices to be widely shared; 	<p>Food Security Short Term Responses:</p> <ol style="list-style-type: none"> 1. Deployment of wheat reserves in the vulnerable districts; 2. Food security vulnerability assessment; 3. Food distributions to the vulnerable population; 4. Efficient and equitable distribution mechanisms; 5. Exit strategy



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Health	Policy Inputs: 1. Promote health security through improved health service delivery; 2. Reinforce preventive and curative health focus; 3. Mainstreaming reproductive health standards; 4. Infrastructure and human resource development; 6. Health awareness raising;	Developmental: Gap filling in health infrastructure; Health Service Delivery and Emergency Responses: Following to be reinforced: 1. Preventive health care; 2. Emergency health outreach; 3. Reproductive health care; 4. Community based mal nutrition programme; 5. Disease early warning, epidemic control and responses; 6. Reinforce health referral system; 7. Human resource deficiencies addressed; 8. Health advocacy and capacity building	
Rangeland and Livestock Management	Policy Inputs: 1. Policies aligned with environmental sustainability; 2. Promote collaborative rangeland management; 3. Governance and ownership issues streamlined; 4. Incentive driven community based management; 5. Reinforce forestation efforts; 6. Mitigate against desertification; 7. Renewable energy solutions to check deforestation; 8. Research institutes; 9. Sustainable livestock population; 10. Promote livestock and rangeland research; 7. Private sector's inclusion in veterinary service provision;	Rangeland Management: Promote: 1. Vegetative barriers to prevent erosion; 2. Mapping / stock taking; 2. Introduction of exotic grasses, trees varieties; 3. Water storage and rainwater harvesting; 4. Sustainable usages; 5. Revival / reinvigoration; 6. Heat tolerance promoted; 7. Desertification measures; 8. Watershed management; 9. Check deforestation through participatory methods; 10. Artificial fertilization techniques; 11. Controlled rangeland burning; Livestock Management: 1. Census, audit; 2. Veterinary cover extended; 3. Disease surveillance and responses 4. Multi Nutrient Blocks; 5. Promote de-stocking; 6. Life stock sanctuaries; 7. Communities capacity building in livestock management; 8. Advocacy, awareness generation; 9. Value addition of livestock products	Livestock Emergency Management: 1. Mapping and monitoring of vulnerable caseloads; 2. Emergency response planning, management; 3. Livestock sanctuaries deployed with fodder and water; 4. Fodder banks to be deployed; 5. Introduce briquettes / MNBs as emergency fodder;
Climate Change Adaptation		1. Climate change hazards, risks and Vulnerability mapping; 2. Scenarios development; 3. Adaptation strategies and actions; 4. Generate awareness	
Community Resilience		CBDRM approach recommend the following for reinforcing resilience: 1. Structural solutions; 2. Non -structural solutions; 3. Ecological solutions; 4. Climate change adaptation;	



Annex Z

Daily Situation Report (Normal)

Date: _____

Time: _____

- a. Weather Outlook (In Next 24 Hours):
- b. Actual Rainfall Situation in the Province:
- c. Dams Level:
- d. River Flows
- e. Roads Blockade (If Any):
- f. Any Important incident to Report:

Reported By:

Name: _____

Designation: _____

Phone no: _____

Annex AA

Daily Situation Report (Critical)

Date: _____

Time: _____

- a. Flows in the river
- b. Dam level
- c. No of districts affected
- d. Total number of people affected
- e. No of boats used for the rescue operation
- f. No of helis used for the rescue operation
- g. Detail of relief goods provided so far
- h. Any critical requirements

District (Specific areas)	Deaths	Injured	Population affected	Houses Damaged	Crop Affected	Cattle Head Perished	Relief camps estb(area)	No of Persons in The camps	Persons Treated

Any other important event to report _____

Reported By:

Name: _____

Designation: _____

Phone no: _____

**Annex BB****Important Telephone Numbers**

SER	DEPARTMENT	CONTACT NUMBER
1.	National Emergency Operations Centre (NEOC), NDMA, Islamabad	051-9205037 111-157-157 (UAN No)
2.	Provincial Emergency Operations Centre (PEOC) PDMA Punjab, Lahore	042-99204404 36375528
3.	Provincial Emergency Operations Centre (PEOC) PDMA Sindh, Karachi	021-99239524
4.	Provincial Emergency Operations Centre (PEOC) PDMA Balochistan, Quetta	081-2881168
5.	Provincial Emergency Operations Centre (PEOC) PDMA Khyber Pakhtunkhwa (KP), Peshawar	091-9213845
6.	State Disaster Management Authority (SDMA) Emergency Operation Centre, AJ&K, Muzaffarabad	0522-921643
7.	GBDMA Emergency Operations Centre, Gilgit Baltistan, Gilgit	05811-920874 05811-920875
8.	FATA Emergency Operations Centre, Peshawar	091-9216864, 9218351
9.	Pakistan Meteorological Department (PMD)	0519250367, 051 9250595
10.	Flood Forecasting Division (FFD)	042-99200139 / 99205367
11.	Army Flood Control Centre	051-9270532
12.	Director General NHEPRN	051-9255709
13.	Federal Flood Commission	051-9244604 Control Room - 051-9244621
14.	IRSA, Islamabad	051-9108013 - 14
15.	SUPARCO, Islamabad	051-9075260
16.	Nullah Lai Control Room	051-9250566
17.	Rescue 1122, Rawalpindi	051-9291185
18.	DG, Rescue 1122, Punjab	042-37421122
19.	DG, Rescue 1122, Khyber Pakhtunkhwa	091-9222483 - 4
20.	DG, Rescue 1122, Azad Jammu & Kashmir	05822-920122, 05822-920176
21.	DG, Rescue 1122, Gilgit Baltistan	05811-922137
22.	Geological Survey of Pakistan, Islamabad	051-9257182
23.	COMKAR, Karachi	021-48506113
24.	Pakistan Maritime Security Agency, Karachi	021-48508850, 99214624
25.	Marala Headworks Observatory	052-35021027
26.	Federal Flood Commission Islamabad (Dams)	051-9244621
27.	Marala Headworks	052-3502102
28.	PCIW (Pakistan Commission Indus Water), Lahore	Control Room - 042-99212783
29.	GM, Pakistan Railways, Lahore	042-99201700
30.	Punjab Irrigation Department	042-99212117 - 8
31.	Balochistan Irrigation Department	081-9201074
32.	Sindh Irrigation Department	021- 99211445
33.	Azad Jammu & Kashmir Irrigation Department	05822-921596
34.	Khyber Pakhtunkhwa Irrigation Department,	091-9210845
35.	Capital Disaster Management Authority, Islamabad	051-9253001, 051-9253003
36.	Civil Defence, Punjab	042-99212104
37.	Civil Defence, Sindh	021-99215667
38.	Civil Defence, Peshawar	091-9212176
39.	Civil Defence, Balochistan	081-9203514



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