MONSOON CONTINGENCY PLAN- 2011

PROVINCIAL DISASTER MANAGEMENT AUTHORITY – KP

June 2011

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Executive Summary

Given the complexity of relief operations and the multitude of preparedness mechanisms within the government and humanitarian agencies, contingency planning is required to define what preparedness mechanisms will be used, when and where. Before a response is required, contingency planning affords agencies both government and humanitarian the opportunity to define when, where and why their emergency response resources will be deployed, when emergency funds will be used and what kind of responses, materials and types of personnel they will need.

As seen during 2010 floods, quick and effective actions are required to control the situation and above all save lives. However, effective action depends on the existence of ready-made and well tested contingency plans. The provincial contingency plan has been formulated for translating recommendations from district governments and other stakeholders into action. However, in the context of 2010 flood response the need is taking on board all agencies for an integrated contingency planning, involving government departments, districts, humanitarian actors and Pak Army. Thereby ensuring coordination and optimizing the use of resources among agencies in the field while complementing each other with appropriate linkages and better coordination to support actions along lines of command.

PDMA continues to emphasise upon the contingency planning process as a preparedness measure for response to natural hazards. Following catastrophic floods in 2010, this plan focuses on planning for the upcoming 2011 monsoon hazards to identify and analyze related risks for not just their humanitarian impacts but also the associated adverse affects on private and public infrastructure, and to define roles and responsibilities of diverse stakeholders for preparedness and response. The document also provides timely planning inputs for undertaking similar exercises down the implementation chain i.e. districts.

It is worth mentioning here that NDMA and UNOCHA carried out joint sessions for 2011 Monsoon contingency planning involving PDMA, provincial irrigation department, the military and relevant departments primarily for anticipating likely scenarios and perceiving threat levels. While further drawing conclusions from the inputs through the technical experts and relevant departments. Although this document in many ways has benefitted from the exercise mentioned, however it largely focuses on developing a practical and action oriented preparedness planning mechanism at provincial level. It mainly involves identifying gaps and challenges in effective emergency response and then planning and implementing a series of actions to increase response capacity and reduce potential gaps. Unlike former simple or generic scenarios were used as a basis for developing preparedness plans. The key anticipated outcomes are (1) awareness for building capacities for response, (2) depict anticipated threat perception for earmarking required resources, (3) build integrated planning capacities, and (4) define required gaps ensuing preparatory measures.

Monsoon Contingency Plan - Khyber Pakhtunkhwa

1. **General**

Province Khyber Pakhtunkhwa - KP, formerly known as North-West Frontier Province –NWFP is the smallest Province of Pakistan in terms of geographic area; it is 9.4% of the country's total area. Khyber Pakhtunkhwa covers an area of 74,521 sq. km and is located on both banks of the river Indus and stretches from the Himalayas in the north to deserts of DI Khan in the south, where it is bordered by the Baluchistan and Punjab provinces. Province has a total of 25 districts which are further divided into 43 sub-divisions and 47 Tehsils and 957 UCs. The total number of *Mouzas* /villages is 7,335 as per 1998 census.

There are two major river systems in KP (i) the Indus River, which forms the boundary with Punjab and passes from Attock to Dera Ismail Khan in the south; and (ii) River Kabul flows down to join the Indus River from Afghanistan. Rainfall in KP generally occurs in two distinct crop-growing seasons: rabbi (winters, December – March) and kharif (summers, June – September). Normally the monsoon arrives in first or second weeks of June. During the monsoons riverine floods that occur in rivers Kabul, Swat and Indus tend to impact the populated districts of central and western KP, while flash floods also occur astride these rivers, sometimes resulting in colossal losses.

The floods in KP are generally caused by heavy concentrated rainfall in the catchments of River Indus during the monsoon season, which are also augmented by snowmelt flow. Major floods in the Indus basin occur in late summer (July to September) when the South Asian region is subjected to heavy monsoonal rains. Major floods in the province have occurred in 1976, 1982, 1988, 2005, 2006 2007 and 2010.

Almost every year, *more frequent in monsoon* the province also suffers from flash floods, although there are no systematic records. However, in 2006 several mountainous areas were subjected to flash floods i.e. Charsada, Mardan, Mansehra, and Battagram districts. Flash floods tend to occur more in recent years owing to changing weather patterns and are characterized by near absence of early warning cover to warn vulnerable communities. While such floods are on the rise over the last couple of years because of changing weather patterns, its humanitarian consequences are accentuated owing to absence of any viable local early warning system and the sudden onset nature of the hazard. Moreover, most regions vulnerable to flash flooding lie outside the coverage of the early warning system deployed for riverine floods. Flash floods are experienced commonly in Swat, Upper and Lower Dir, Chitral, Shangla, Kohistan, Peshawar, Mardan, Kohat and D.I Khan.

2. The Great Floods - 2010

Floods of 2010 are among the worst disasters that have hit Pakistan in recent history. The Province of Khyber Pakhtunkhwa - KP already recovering from the consequences of militancy and resulting IDP's crisis, was the most affected. The deadly water surge started from the mountainous North while the peculiar terrain of province gave this surge an enormous force which ultimately resulted in total destruction of whatever stood in its path.

2.1 Key Losses during 2010 Floods

- Dead: 1,070
- Injured: 1,056
- Population Displaced: 0.912 Million
- Pop Cut-off / Inaccessible: 0.66 million
- Villages Affected: 544
- Houses Destroyed: 82,551
- Livestock: 50,7423

Table No 1: Worst Affected Districts

District	Pop	Died	Relief CL	HHs Affected	Pop Isolated	Villages Affected	Houses Destroyed	Livestock Damage
Nowshera	1.226	167	3,50,336	71,403		27	67,892	
Swat	1.863	95	101,220	90,665	350,000	42	14,460	34,470
Charsada	1.431	66	1,45,810	71,819		34	33,000	
Kohistan	0.478	85	32,122	66,133	150,000	38	2400	
Upper Dir	0.795	77	100,000	30,071	100,000	14	655	25,000
Shangla	0.636	162	12,439	11.950	60,000	7	13,000 appox	
DI Khan	1.247	31	20,468	56,373		26	4000 approx	180252
Tank	0.343	11	35,000	21,270		16		
Lower Dir	1.068	35	100,000	25,812		7	260	
Mansehra	1.526	36	28,644	3267		12	4092	89232
Haripur	0.895	37	20, 629	8092		42	4000 approx	
Chitral	0.428	21	1155	9881		12	550	150
Total	**25.228**	**1068**	**9,12,999**	**546,003**	**6,60,000**	**544**	**1,91,215**	**5,07,423**

- ***Affected Areas:*** All the 24 Districts of Khyber Pakhtunkhwa were affected by the floods. However, ten Districts including Nowshera, Charsada, Peshawar, D.I. Khan, Swat, Kohistan, Shangla, Dir-U, Dir-L, and Tank were most severely affected.

- ***Affected Population:*** The population affected by the floods including Dead and Injured is given as follows:
  - Total number of persons affected : 3.8 million
  - Total number of families affected : 545,739

- Total number of Dead : 1,070
- Total number of Injured : 1,056

- ***Damages:*** In order to ascertain damages to the houses, a rapid housing survey was conducted by the PDMA, which identified **295,684** damaged houses, of which around **119,000** are completely damaged.

2.2 ***DNA:*** For ascertaining public and private sector damages, a DNA exercise was carried out by WB and ADB. The summary of their findings for Khyber Pakhtunkhwa is given as below:

Table No2: Ssummary of Flood 2010 DNA

S. No.	Category	Description of Damages
1	Education	870 schools, 30 colleges
2	Health	190 health facilities
3	Governance	880 buildings
4	Transportation	6511 km Road
5	Irrigation	13 canal systems; 7 embankments
6	Water & Sanitation	2812 WSS; 1,111 Sanitation schemes
7	Housing	295,684 houses
8	Agriculture	Crop area: 121.5 thousand ha Large animals: 72,500 Small animals: 67,800 Poultry: 6,213,000 Water Courses: 1790 No.
9	Business	89 industrial units, 17,702 shops & hotels

The estimated direct damage costs as per DNA are ***Rs. 100 billion or USD 1,176 million,*** *while the minimum reconstruction requirements amount to* ***Rs. 106 billion or USD 1,247 million.***

2.3 ***Compensation:*** Rs. 426 million was released to the DCOs to pay compensation at a special rate to the families of dead and injured people.

2.4 ***Watan Cards:*** In order to compensate to some extent private losses, *Watan* cards were issued throughout the country. In Khyber Pakhtunkhwa, *Watan* cards were issued on the basis of rapid housing survey completed by PDMA by the end of September 2010. Out of a total caseload of 290,552 NADRA has verified 281,851beneficiaries and so far 265,934 cards have been issued to the beneficiaries. The Provincial Government has disbursed around

Rs. 5.183 Billion for giving first tranche of housing compensation @ Rs. 20,000/- per family through Watan Cards. For the second tranche of Rs. 40,000/-, a strategy is being finalized at the national level in consultation with the provinces.

2.5 ***Relief:*** Provincial Government through PDMA and DCOs spent around Rs. 3.9 billion on relief activities. The humanitarian community and Pakistan Army also contributed towards relief efforts. The relief phase ended on 31st January 2011. Summary of the relief expenditure made by Provincial Government is given below:

- Funds used by DCOs — Rs. 1, 223 million
- Funds given to Commissioners — Rs. 51.87 million
- Funds used by other line Depts. — Rs. 112.9 million
- Funds given to Pak Army — Rs. 57.58 million
- Funds spent by PDMA for Purchase of FIs & NFIs — Rs. 639 million
- Share in *Watan* Cards Program — Rs. 2,905 million

Total: Rs. 4,990 million

2.6 ***Early Recovery:*** The NDMA in collaboration with the PDMA has put in place a coordination mechanism for early recovery activities being carried out by the humanitarian community. Eight Sectoral Working Groups and four thematic have been formed. PDMA and UNDP at the Provincial level will lead the process. This Early Recovery activity is planned to be completed by 31st December 2011. Early Recovery activities will provide a foundation for long-term reconstruction and rehabilitation.

3. Shortfalls in 2010 Flood Response

3.1 **Inadequate Flood Protection Arrangements:** Except for protection arrangements to protect DI Khan City along Indus, the protective arrangements across KP and FATA are not adequate in terms of extending safeguards to vulnerable populations against the flood hazard;

Table No 3: Flood Protection Arrangements -KP

#	Description	Number	Length (Km)
1	Spurs (Earthen) along Indus river in D.I.Khan	44	62.7
2	Marginal Bunds Indus river in D.I.Khan		
	i. Chashma to Villager Khanpur	1	12
	ii. Khanpur to Thathal village	1	6
	iii. From Spur No 31 to 33	1	8
	Total		26
5	Spurs in other areas of the Province	497	23.6
6	Other Bunds	49	133.6
7	Retaining walls in gabions	96	40.4
	Total	**689**	**286.3**

3.2 **Inadequate Flood Early Warning Arrangements:** Owing to non deployment floods early warning radars the existing arrangements rely on flood gauging through WAPDA's telemetry system and basic system of gauges deployed by the KP Irrigation Department.

No. of Gauge Sites	126
No. of Rain gauge sites	58

According to Irrigation Department it can provide: 24 – 48 hours warning along Swat River, 5-7 hours along Kabul and 36 – 48 hours along Indus at DI Khan. Such forecasting, however, did not result into to evacuation of vulnerable communities to safer locations during the 2010 Floods. There are no arrangements in place to forewarn vulnerable communities of flash flooding across the mountainous regions. Moreover, Community EW mechanisms remained largely ineffective during the 2010 Floods due to temporary suspension of cell and line communication; The comparison of 2010 rains with average annual rainfall is as below:

Area	**Annual Rain**	**Rain from 28 July to 3rd August (in mm)**
Peshawar District	400 mm	333 mm
Khyber Pakhtunkhwa	962 mm	3462 mm

Source: Pakistan Metrological Department –KP

3.3 **Encroachments**: Most of the losses (life and property) occurred during 2010 floods as a result of encroachments and intrusion of population along Swat and Kabul rivers, partly along Indus and the flood prone hill torrents in north. Moreover, blocked and heavily encroached drainage systems of settlements especially in Peshawar Valley played major role in inundation and consequent destruction.

3.4 **Lack of Monsoon Preparations and Coordination (Provincial Departments and Districts):** The resource inadequacies coupled with not putting in place requisite monsoon preparedness and coordination mechanism tested the nerves and response capacities of provincial and district administration from 28 July 2010 onwards. The reactive response strategies at district and provincial level did manifest into life saving and consolation of the flood affectees; however, glaringly pre monsoon preparedness and coordination mechanism was lacking in 2010.

3.5 **Non observance of Early Warning by General Public:** An important aspect witnessed especially in Charsada, Nowshera and Peshawar was the lack of seriousness to observe the flood early warning (s) by general public. People had tendency to stay till flood waters completely overwhelmed and marooned them. Consequently, scarce rescue resource (boats and helicopters) were over burdened by salvage missions.

3.6 **Reduced Water Storage and Regulation Capacity**: The storage capacities water storage facilities in KP have reduced to a varying range .i.e. from 30-70%, mainly due to silting, thus reducing their flood impact mitigation capacities. In addition the regulatory facilities i.e. Munda and Amandara on Swat River sustained damages in 2010 Floods and have yet to be rehabilitated. In spite that the Munda Head works has been restored partially, its water regulation capacity remains questionable[1].

4. Monsoon Hazards in KP

Upper regions of the Province along with adjoining regions of Afghanistan and Gilgit Baltistan constitute the catchment area of River Indus, the main river of the province. Indus along its course is joined by its tributaries i.e. Shoyok, Hunza and Yasin in Northern Areas and some in KP like River Kabul, Swat and Kurram and numerous minor mountain channels. River Swat merges into Kabul River at Munda to flow through the densely populated Peshawar Valley, comprising of Charsada, Nowshera, Mardan and Swabi districts. Kabul River merges into River Indus at Attock, and flows southwest to DI Khan into Punjab. Both river systems are not covered by the flood monitoring mechanism and, therefore, any major water overflow is detected late, practically close to Tarbela only. The districts of Peshawar, Charsada, Nowshera and Mardan, falling in Peshawar valley, are primarily affected by floods in the tributaries of Kabul and Swat rivers. River Indus after receiving water from these two rivers causes floods in the district of D.I Khan in the Southern part of the province.

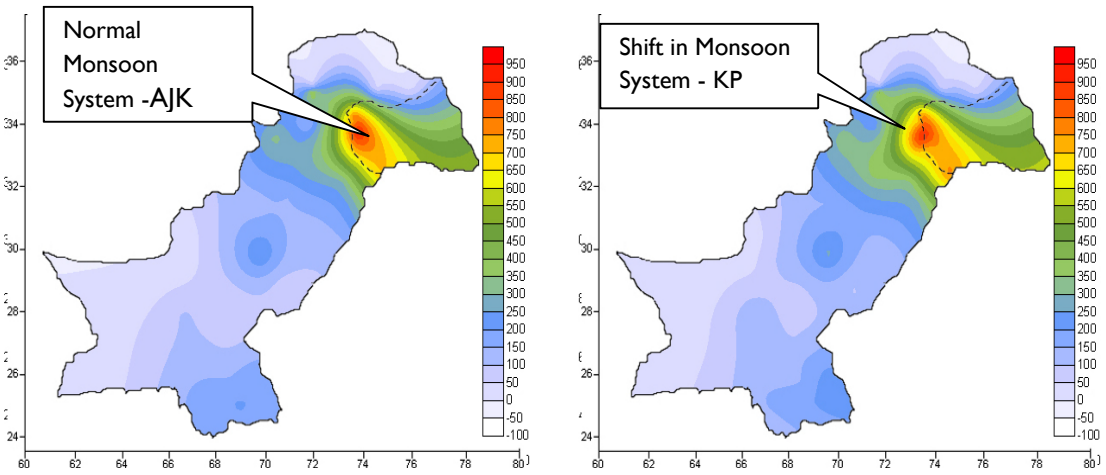
Monsoon hazards in KP emerge as a result of heavy precipitation and subsequent flooding along the Swat, Kabul and Indus rivers and through flash flooding in numerous hill torrents across the Province. However, the simultaneous occurrence of riverine and flash floods, heavy precipitation and cloud burst phenomenon can worsen the impacts of monsoons instigated disasters in province.

5. Monsoon Risks & Risk Enhancing Factors

KP's peculiar physical configuration makes it vulnerable to diverse range of summer and monsoon hazards. Heavily populated districts constitute catchment areas of major rivers where their tributaries proliferate, thus creating flash floods vulnerability. Some districts are traversed by fully formed, mature rivers and they are vulnerable to spill over impact during floods. Physical configuration of northern and north-eastern portion of the province is excessively mountainous spanning from Chitral up in the north to districts of Upper and Lower Dir, Shangla and Swat and Mansehra which are prone to flash flooding, cloud bursts, sliding activity. Therefore, depending on the intensity of monsoon precipitation and ice melt, KP is vulnerable to both sudden and expected hydro-meteorological disasters which require integrated surge and quick response.

[1] NDMA and OCHA Contingency Planning exercise document

5.1 **Spatial Shift in Monsoon Impact**2: Studies conducted by Sustainable Development Policy Institute - SDPI indicate that with a doubling of CO2, average rainfall in South Asia would increase between 17-59 percent3. This can be associated with a doubling in the frequency of high rainfall events and variable monsoons. Over the last 8-10 years the Monsoon Impact has shifted nearly 100 KMs westwards: from the lower Kashmir regions to the Swat, Kabul and Indus catchments. In KP, therefore, flooding, in terms of severity of impact, occurs in Kabul, Swat and Indus river systems and across the mountainous regions of Hazara Division;



Source: Pakistan Metrological Department

5.2 **Changes in the River Morphology**: The unprecedented nature of 2010 Floods caused occurrence of unregulated river flow patterns resulting in widened spans and erosions, at places; most pronounced along the lower Swat River which flows through populated areas. During Monsoons these trends are likely to render populations residing close-by at risk; undermine the effectiveness of the protective arrangements; and, risk severance of bridges and communication infrastructure; therefore, river training or regulating river flows to defined channels is considered essential for flood impact mitigation[4].

5.3 **Depleted Performance of Water Regulatory Infrastructure:** The unprecedented floods of 2010 in addition to their colossal humanitarian impacts exposed the water regulatory infrastructure to tremendous pressures. The water which flowed surpassed the earlier records by many folds; a detailed comparison is given in the table below. The performance of these

[2] Source: Pakistan Metrological Department
[3] Dr. Shaheen R. Khan, " Does Climate Change Matter in Pakistan".
[4] NDMA and OCHA Contingency Planning exercise document

regulatory facilities is doubtful even if subjected to slightly higher pressures than their design capacity.

Table No 4: Water Flow Comparison

Area Head Works	**Design Capacity** (in cusecs)	**Earlier Record** (in cusecs)	**2010 Floods** (in cusecs)	**Comparison with Earlier Record (Ratio)**	**Comparison with Design Capacity (Ratio)**
Amandara	50,000	170,000 (1929)	260,000	1.53	5.20
Munda	50,000	119,500 (1929)	200,000	1.67	4.00
Kabul River (Nowshera)	180,000	169,600 (2005)	450,000	2.65	2.50

Source Irrigation Department KP

5.4 **Remaining Effects of 2010 Floods**: Physical vulnerability of communities at large is compounded by the remaining effects of last year's floods. Weak or weakened structures, placement of houses, especially that are less resistant to flood waters particularly in the low lying areas in form of encroachments and intrusion in flood water plains has further enhanced the vulnerabilities of the people across province. Possession of wealth and assets gives an individual, households or community a wider range of options in times of crisis, and speeds their recovery from disasters. In 2010 floods most of the flood affectees lost everything they had worked for during their lives. Therefore the degree of impact of the floods in 2011, *if they happen* will heavily influenced by the enhanced vulnerability of people to the hazard.

6. Aim

To manage monsoon emergencies by putting in place requisite mitigation measures and a well coordinated and integrated response.

7. Objectives:

While encouraging stakeholder's participation, following are the objectives set for the monsoon Contingency Plan:-

(1) To enhance the effectiveness and timeliness of emergency response.

(2) To ensure that emergency response is coordinated, through the clarification of goals, strategies, roles and responsibilities.

(3) To anticipate and overcome difficulties.

(4) To strengthen response coordination between Provincial Government Departments, District Governments, humanitarian organizations (Un Agencies) and INGOs/NGOs.

8. **Scope**

(1) Stakeholder's participation, awareness and mobilization through Monsoon CP.

(2) Determine disaster scenarios and corresponding caseloads.

(3) Resource Mapping for response and identifying deficiencies.

(4) Define sectoral response strategies, plans and coordination measures

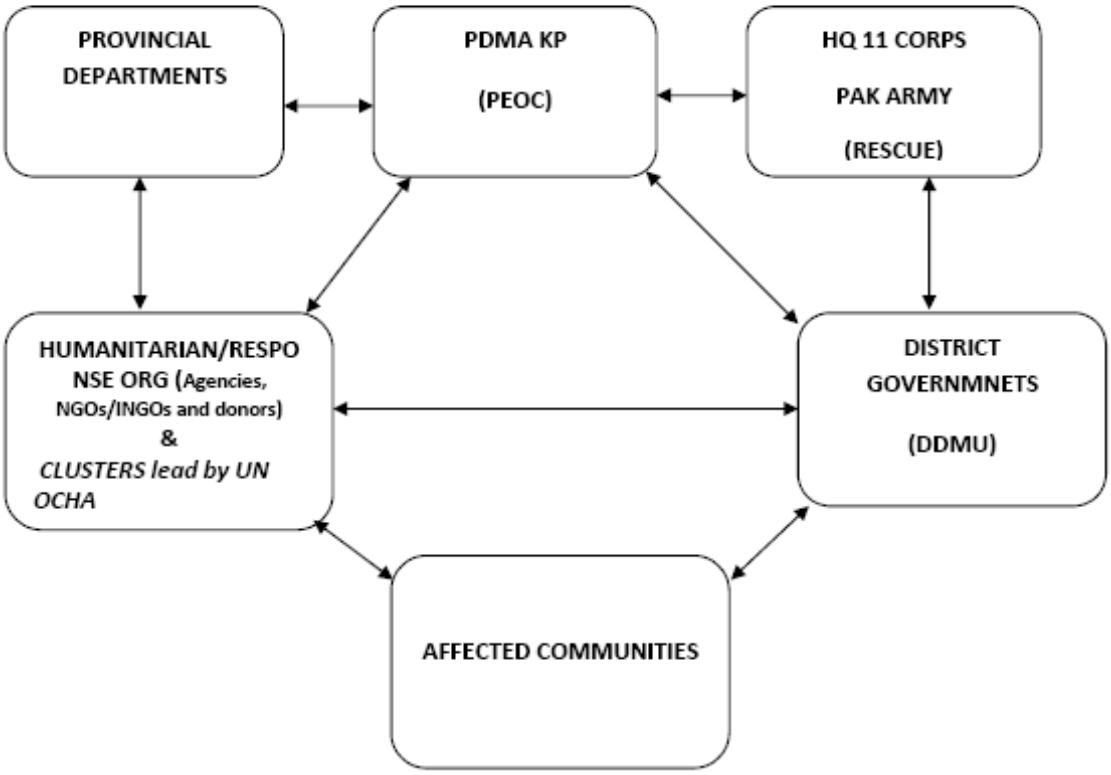
9. **Coordination Arrangements**

Under the supervision of Ministry of Water and Power, Federal Flood Commission- FFC is responsible for coordination of flood impact mitigation, prevention, preparedness and response in Pakistan. Pakistan Metrological Department –PMD assumes responsibility for ascertaining and communication of early warning to relevant national and provincial stakeholders. Armed forces coordinate response (Search and rescue) related measures. NDMA assumes responsibility for coordinating the overall response and relief at national level. Provincial governments pivot provincial coordination for flood preparedness which includes inputs form districts and Provincial Irrigation Department for flood prevention and mitigation and host of measures involving numerous provincial departments and ministries for preparedness and response.

PDMA- KP constitutes the focal point for coordinating provincial preparedness and response to disasters besides post disaster recovery and rehabilitation functions. Its functions include coordination, hazard risk reduction, preparedness and response related measures related to planning for floods and flash floods, need assessments, resource mobilization and generating required response.

This entails horizontal coordination with host of government line departments and autonomous bodies that furnish early warning, undertake search and rescue, conduct relief operations and meet needs of vulnerable segments, while vertical coordination occurs with Districts. PDMA- KP coordinates execution of these functions with all provincial entities and federal agencies i.e. Pak Armed Forces, NDMA, Emergency Relief Cell, National Logistic Cell, Pakistan Metrological Department etc. PDMA- KP also constitutes the point of contact for deploying external assistance for disaster response through Humanitarian Country Team- HCT (Comprising UN agencies, NGOs and donors) and also through agencies, NGOs/INGOs and donors (not committed to HCT coordination mechanism) consistent with provincial and national policies. Similar processes are followed at the district tier by DCOs assisted by the newly formed DDMUs.

Monsoon 2011 Coordination Arrangements



10. **Scenarios and Corresponding Caseloads**

To understand the process that how flood's projected scenarios impact communities is vital for obvious reasons that information from this process will assists in identifying (1) the pre-impact vulnerability conditions (2) groups and segments of community that will be affected disproportionately e.g. certain occupations, income level of households, location and age & gender groups (3) the event-specific conditions that establish the level of disaster impact and (4) suitable emergency management actions required. The flood impacts have mainly two dimensions i.e. physical and social. The physical impacts of disasters include casualties (deaths and injuries) and property damage. The physical impacts of floods are usually the most noticeable, easily measured, and first reported, as seen in the damage and need assessment reports by the government and rapid need assessment surveys by humanitarians. However, social impacts, which include psychosocial, demographic, economic, and political impacts, can develop over a long period of time and can be difficult to assess when they occur. Despite the difficulty in measuring these social impacts, it is nonetheless important to monitor them, and even to predict them if possible, because they can cause significant problems for the long-term functioning of specific types of households and businesses in an affected community. The fact that how and why people who live in flimsy houses in hazardous locations are impacted by disastrous events is not just to

be considered, but *why* they live there and what could be the justification of such life style is equally important.

However, this contingency plan only highlights the physical impact of the anticipated flood scenario on the population; the later does not fall within the scope of the document.

Partial input in this scenario planning section is taken from NDMA and OCHA Contingency Planning exercise document. However, the corresponding caseloads to the scenario are result of extensive consultation with district governments.

10.1 **The Worst Case Scenario:** It reflects 2010 Floods with a similar caseload for KP, though its realisation seems improbable going by the empirical evidence. Nonetheless, its occurrence cannot be ruled out. However, the planning parameters will be based on the 2010 experiences;

10.2 **Anticipated Scenario:** As planned by NDMA with the provincial Irrigation Department the anticipated scenario's flood flow assumptions approximate the 1929 Flood levels as they relate to the three rivers: Kabul, Swat and Indus. According to the Districts the Planning caseload for relief support is estimated at 180,550 HHS, a population of 1,080,000 and a population of 150,000 is likely to be cut off / isolated for 10-15 days; it entails the following:

- Floods / precipitation occur consistent with or remaining below the 1929 recorded levels; and planning assumptions with reference to the major river systems are as explained below:

10.3 **Planning Assumptions**: River Water Flow Assumption during 2011 Monsoons

Table No5: River Water Flow Assumption during 2011 Monsoons

Rivers	**1929 Flow Levels**	**2010 Floods Levels**	**Assumed Flow Levels For 2011**
Swat - Amandara	160,000 cusecs	259,000 cusecs	150,000 cusecs
Munda	170,000 cusecs	367,000 cusecs	150,000 cusecs *(plus)*
Kabul River Nowshera	169,000 cusecs	500,000 cusecs	200,000 cusecs
Indus	900,000 cusecs	11,000,000 cusecs	750,000 cusecs

Source Irrigation department KP

10.4 **Planned Relief Caseloads for 2011 Monsoons KP**

Table No 6- Relief Caseloads 2011 Monsoons -KP

Districts	Affected HH 2010 Floods	Anticipated Affected HH 2011
Peshawar Valley		
Peshawar	33,867	10,000
Charsada	71,819	20,000
Nowshera	71,403	25,000
Mardan	2,856	Nil
Swabi	2,198	Nil
Total	**182,143**	**55,000**
Southern Districts		
Tank	21,270	16,500
D I Khan	56,373	40,000
Lakki Marwat	4,013	3,000
Kohat	5,531	1,550
Total	**81,655**	**61,050**
North and Hazara		
Mansehra	3,267	2,000
Dir Lower	25,812	8,000
Malakand	6,441	3,000
Shangla	11,950	4,000
Dir Upper	30,071	10,000
Kohistan	66,333	20,000
Swat	90,665	12,500
Total	**241,070**	**59,500**
Others		
Karak	7,276	1,000
Hangu	6,549	1,000
Chitral	9,881	5,000
Total	**23,706**	**7,000**
Grand Total	**545,739** *including all*	**182,550**

Cut-off / Isolated Population: In Northern Districts especially astride River Swat for 10-15 days;

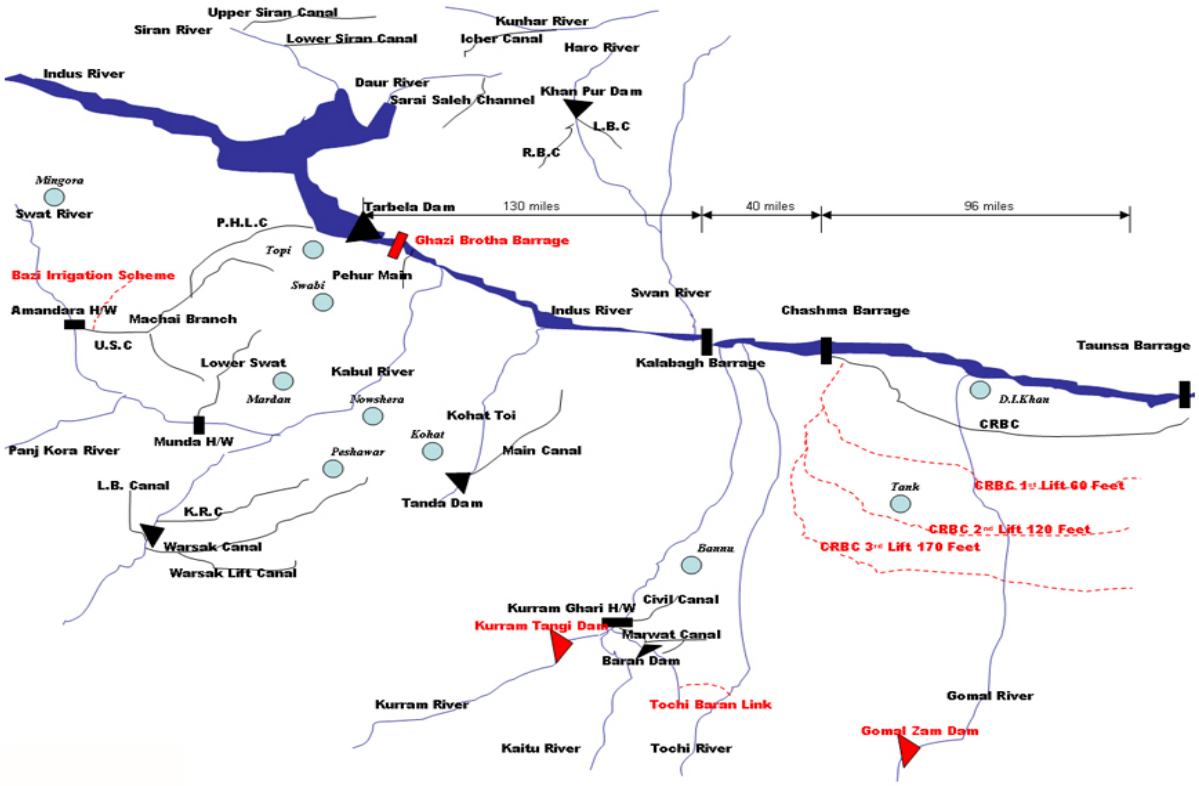
Table No 7: Population Isolated - 2011 Monsoons KP

Districts	Population Isolated due to severed road links and damaged Bridges 2010	Anticipated Population Isolation 2011
Swat	350,000	50,000
Kohistan	150,000	50,000
Upper Dir	100,000	30,000
Shangla	60,000	20,000
	Total	**150,000 - 25,000 HHs**

10.5 **Triggers for Response**:

- **Kabul and Indus River System**
  - Flooding / overtopping of Warsak Dam; early warning through WAPDA and Irrigation Department
  - Early Warning through the existing mechanisms;
  - PMD Flood Forecasts /Warnings and Weather Forecasts;
  - Flood Warnings by the Local Administration and community based mechanisms.
- **The Swat River System**
  - Early warning through WAPDA and Irrigation Department's early warning systems;
  - PMD Monsoon forecasts of heavy precipitation in Swat River catchments that extend also into GB
  - Flood Warnings by the Local Administration and community based mechanisms

Main Rivers and water Channels - KP



Source: Irrigation Department KP

11. **Provincial Hazard Risk and Vulnerability Mapping**

11.1 **Peshawar Valley (Priority Districts)**

Districts	**River Systems and potential threat water ways**	**Anticipated Relief Caseload HHs 2011**	**Relief Caseload HHs in 2010 (Approx)**
Charsada, Peshawar Nowshera	Adezai, Swat River and Jindi River Kabul River ,Budnai Nullah, Shahikata, Sangu Sarband River Kabul , , Bara, Chinkar Nullah, Chillah, Spin Khak Khawar, Dagai Khawar, Amangarh Khawar, Surya Khawar And Kalpani Nullah	**55,000**	**182,143** Including Swabi and Mardan

The details are below:

Charsada: The district covers an area of 996 km sq. The total population of the district is approximately 3 Million[5] . The district is administratively subdivided into two Tehsils Charsada and Tangi which contain a total of 49 UCs.

- Floods. The area experiences regular flooding from River Kabul, in 2006, approx 15,300 families were displaced owing to sudden onset floods in the Kabul River. In 2010 floods the affected HHs were 71,813 .The area also remains vulnerable to flash flooding in river Swat which tends to meander across the district emerging from mountains in *Tangi* area in the upper part of the district. The area is vulnerable to flash floods along Jindi Nullah and Shuban Nullah.

Following are the most vulnerable population centres along the waterways in district:

- **Adezai River**: Vino Garhi, Bunyadi, Dab Killi, Rashakai, Tarkha, Garhi Mukhkam Shah, Jamate, Garhi Chiragh Shah, Ghurambak
- **Swat River (Khiyali) :** Abazai village,Sadar Gharai, Mian Wali, Turlandi , Sara Sang,Dildar Gharai, Biyar Gharai, Isugai, Shahai, Chiti Shahai, Maruzai, Nahqai, Bela No. 4, Mula Khela, Srikh Maurzai, Agra Bala & Payan,

[5] The 2011 population calculated @ 2.1% annual growth rate of Pakistan, reference Census Organization, GoP

- **Jindi River**: Umerzai, Turangzai, Utmanzai, Rajjar, Charsadda
- **River Kabul** (Sardaryab)

The list of waterways which have tendency to spill over is as under:

- River Kabul (Sardaryab)
- L/bank of Adezai River
- Subhan Khwar ,
- Khiyali river ,
- Jindi River,
- Soor Khatkai Drain,
- Gilgichi Khwar ,
- Hisarar Drain,
- Dab Drain & Musa Killi drain,
- lower Swat canal section of Disty No.5,6
- Nisatta Branch and Nisatta Minor

Peshawar. Peshawar is a rapidly growing city with a population of 6.4 Million. In 2010 approximately 33,867 HHs were affected by floods. Following are the most vulnerable population centres in the district:

- Mian Gujjar
- Jugnai
- Qissa Khawani
- Kohati gate,
- Kakshal
- Yakatoot

The list of waterways which have tendency to spill over other than Kabul River is as under:

- Budnai Nullah,
- Shahikata
- Sangu Sarband

Nowshera: The total area of district is 1,748 sq-km, it has one Tehsil and 47 UCs. The total population of district is 2.57 Million.

- Riverine Floods .It is excessively vulnerable to Riverine floods in River Kabul. In 2006 approx 20,000 families were temporarily displaced due to floods in the River. In 2010 floods affected population was 499,818/ HHs, 71,403 people. Following are the most vulnerable population centres along the River Kabul and other water channels in the district:

Jungle,	Khuni	Ali Shah
Jabba Daudzai	Launda	Mufti
Momin Check	shendi	Dua
Agra Zakhai	Payan	Tarkha
Banda Mullah Khan	Shamsa	Titara
Banda Mohib	Shendi Bala	Balu
Kurvi	Mesri Pura	Ali Baig
Banda Sheikh Ismail	Daman	Babi,
Babi Jadeed	Jabba Khalisa,	Taru
Qasim Wazir Garhi	Dag Besud	Dheri Ishaq
Chowk Drub	Aman Kot	Pashtoon Garhi
Dagai	Banda Nabi	Khudrazi
chowki Mumriz	Aman Garh	Nowshera Khurd
Nowshera Kalan	Nowhera cantt	Hakim abad
Pir Sabaq	Surya Khel	Ismail khel
wattar	Akora khatk	Essori
Adamzai	shaidu	Misri Banda
Ali Muhammad	Mehsak	Mughlkai
Mian	Essan	Nandrak
Dheri Khatta	Kund	Narri
Nehal Puran	Khairabad	

The list of waterways which have tendency to spill over other than Kabul River is as under:

- Bara Nullah,
- Chinkar Nullah,
- Chillah,
- Spin Khak Khawar,
- Dagai Khawar,
- Amangarh Khawar,
- Surya Khawar
- Kalpani Nullah

11.2 **Northern Mountainous Region and Hazara Division - Priority Districts**

Districts	River Systems and potential threat waterways	Anticipated Relief Caseload HHs 2011	Relief Caseload HHs in 2010 (Approx)
Mansehra,	River Siran and Kunhar, Ichar, Shinkian, Perhan, Boli, Satbani, Saroori, Moli, Batakas Nullahs	**59,500**	**241,070**
Shangla	Barani and Khwars Nullah		
Swat	River Swat, Kadam, Cham Ghrai, Torwal, Ramait, Mankyal, Daral, Gurnai, Najva, Beshigram, Chail, Dabargay, Shagram, Shankoo, Tirat, Shah Gram, Darilai. Jalband, Utror, Dahmaka, Shahoo, Matiltan, Kando Hazara Khwar, Malooch Khwargai , Sigram Khwar, Kanju Khwar, Kotlai Khwar, Ningolai and Dherai Khwar Barikot Khwar, Terang Khwar and Chamgarai Khwar		
Dir Upper	Dir Khawar, Barawal Khawar,Usherai Khawar, Nihag Khawar, Kohistan khawar		
Dir Lower	River Panjkora and River Swat: Talash and Rudh Khuwarh		
Malakand,	Plai Khawar		
Kohistan	Dir Khawar, Barawal Khawar, Usherai Khawar, Nihag Khawar, Kohistan khawar		

The details are below:

Mansehra: Its population is 3.2 Million. Tehsils are Mansehra, Balakot and Oghi with 59 UCs.

- Floods. Indus River, Siran and Kunhar are well known rivers of the district. River Indus enters into the jurisdiction of Kala Dhaka and flow 84 up to Tarbela dam. 100 families

were affected by flash floods in Kunhar and Siran Rivers in 2001, about 75 families were affected and 5 died, owing to sudden change in the course of *Kunhar* River in 2006. In 2010 floods about 3200 HHs were affected, population of 22,870.

Following are the most vulnerable population centres along the river Kunhar and nullahs in district:

- **Siran River:** Munda Gucha, Sabir Shah, Dhodial , Haroonabad ,Tarangri, Bedadi Baghwar, Sherpur, and Khaki
- **Ichar Nullah:** Kotkay ,Hamsherian, Behr Kund
- **Shinkian Nullah:** Guffan(Shinkian)
- **Batakas Nullah:** Kotli/Koray
- **Moli Nullah:** Jabori
- **Saroori Nullah**: Dogai
- **River Kunhar:** Balakot, Shohal Najif , Jagir
- **Satbani Nullah, Magli Nullah:** Balakot
- **Boli Nullah:** Hassa
- **Perhan Nullah:** Hassa

The list of waterways which have tendency to spill over is as under:

- Siran River
- Ichar Nullah
- Shinkian Nullah
- Batakas Nullah
- Moli Nullah
- Saroori Nullah
- River kunhar
- Satbani nullah ,
- Magli Nullah
- Boli Nullah
- Perhan Nullah

Shangla: The district consists of 1,800 sq Kms. Its population is 1.3 Million with 2 x Tehsils and 28 x Ucs. It is a mountaious and difficlut to access disitrct, it has no major river which flows through it and it lies between Disitrct Swat and River Indus.

- Flash Flood: Due to mountainous nature of terrain the district is it is vulnerable to flash flooding along river Shangla and smaller tributaries of Indus.

Following are the most vulnerable population centres in district:

- Damorai
- Dherai
- Kuz Kana
- Opal
- Pir Khana
- Pirabad

- Pirabad
- Shah Pur

The peculiar terrain of district makes it vulnerable to land sliding resulting in severing population pockets. Following roads are susceptible to blocks due to land sliding.

- Khwazakhela-Alpurai
- Alpurai-Besham
- Alpurai-Yakhtangay-Puran-Marung
- Karora-Ajmir-Olandar
- Karora-Chakisar
- Dehari-Chakisar

The list of waterways which have tendency to spill over is as under:

- Barani Nullah
- Khwars Nullah

Swat: The district has an area of 5,337 sq kms. Its population is 3.9 Million; the 4 Tehsils are Kabal, Barikot, Klam and Bahrain it has further 65 UCs.

- Floods: It is vulnerable to flooding along River Swat and its tributaries. In addition, flash floods also spread destruction in monsoon; *Kanju* Bridge in 1976 was washed away by flash floods. 2010 Floods resulted in destruction of more than 45 bridges on river swat alone.

Following are the most vulnerable population centres along the river Swat and its tributaries in district:

Aka Maroof Bamikhel
Islampur
Kokarai
Manglawar
Mingora
Odigram
Qambar
Tindodag
Bahrain
Bashigram
Madyan
Terat
Barikot
Ghalegay
Kota
Shamozai
Bara Bandai
Kala Kalay
Roringar Gwalerai
Kanjoo
Kuz Abakhel Kabal
Tootano Bandai
Balakot
Kalam
Mankyal
Utror
Pir Kalay
Khwaza Khela
Asharay
Baidara
Chuprial
Darmai
Durushkhela
Matta Kharerai
Sakhra
Arkot
Barthana

The list of waterways which have tendency to spill over other than River Swat is as under:

- **Tehsil Behrain**:- Kadam, Cham Ghrai, Torwal, Ramait, Mankyal, Daral, Gurnai, Najva, Beshigram, Chail, Dabargay, Shagram, Shankoo, Tirat, Shah Gram, Darilai.
- **Tehsil Kalam**:- Jalband, Utror, Dahmaka, Shahoo, Matiltan, Kando
- **Tehsil Kabal**:- Hazara Khwar, Malooch Khwargai , Sigram Khwar, Kanju Khwar, Kotlai Khwar, Ningolai and Dherai Khwar
- **Tehsil Barikot**:- Barikot Khwar, Terang Khwar and Chamgarai Khwar

Upper Dir: The district has an area of 3,699 Sq Kms. Its population is 1.66 Million. Six Tehsils are Dir, Barawali, Sheringal, Wari and Khar with 28 x UCs.

- Floods .It is vulnerable to flooding along River Swat and its tributaries. It is also vulnerable to flash flooding in distributaries of Swat River.

Following are the most vulnerable population centres in district:

- Barawalbandai
- Bibyawar
- Darikand
- Palam
- Qulandai
- Shahikot
- Barikot
- DoagDara
- Gawaldai
- Kalkot
- Patrak
- Sawnai
- Sheringal
- Akhagram
- Bandai (Nihag)
- Kotkay
- Nihag
- Pashta
- Wari

The list of waterways which have tendency to spill over is as under:

- Dir Khawar,
- Barawal Khawar,
- Usherai Khawar,
- Nihag Khawar,
- Kohistan khawar

Lower Dir: The district has a total Area of 1582 sq Km with a population of 2.2 Million; it has 2 Tehsils and 37 Union Councils. .

- Floods .It is vulnerable to flooding along River Panjkora and Swat and its tributaries and is also vulnerable to flash flooding in Talash and Rudh Khwars and other distributaries of Swat River.

Following are the most vulnerable population centres in district:

- **River Panjkora**:Khal, Rabat, Shalpalam, Hajiabad,Timergara and Shagokus
- **River Swat**: Badwan,Kamala and Taudachina
- **Talash and Rudh Khuwarh** : Munda and Khazana

Following are the threatening water Channels and Rivers in the district:

- River Panjkora
- River Swat
- Talash and Rudh Khuwarh

Kohistan: The district has an area of 7,492 Sq Kms. Its total population is 1 Million. The district has 4 Tehsils and 38 UCs.

- Flood: It is a mountainous and poorly accessible district astride Indus. Being a mountainous district it is vulnerable to flash floods to local nullahs that constitute tributaries of Indus.

  Following are the threatening water channels in the district:

  - Dir Khawar,
  - Barawal Khawar,
  - Usherai Khawar,
  - Nihag Khawar,
  - Kohistan khawar

11.3 **The Southern Region- Priority Districts**

Districts	**River Systems and potential threat water ways**	**Anticipated Relief Caseload HHs 2011**	**Relief Caseload HHs in 2010 (Approx)**
DI Khan	Indus River	**61,050**	**81,655**
Tank	Gomal Zem, Tank Zam Shuza Algad, Galarah Algad, Suheil Alged		
Bannu	River Kurram and Gambilla		
Lakki Marwat	River Kurram and Gambilla, and Kharoba , Garaban Lorah and Chunia Nullah		
Kohat	River Indus ,Tolang, Ghorzai Raisan,Usterzai ,Usterzai, Chenna, Sheikhan		

The details are below:

DI Khan: The district has an area of 7,326 km² and a population of 2.6 Million. The district is subdivided into three Tehsils which contain a total of 48 UCs.

- Riverine Floods. It is vulnerable to flooding along River Indus, in particular *Paharpur* Tehsil which is mainly affected by Indus. However, the peculiar physical layout of the district makes it vulnerable to the flash flooding from five hill torrents; Tehsil *Kolachi* is the most vulnerable. In 2005, 70 villages were flooded, affecting 5000 households. In 2010 about 56, 374 HHs were affected by the floods. Following are the most vulnerable population centres in district :
    - **Tank Zam –** Yarik and Kech
    - **Gomal Zam –** Kolachi Tehsil
    - **Zam Shiekh Hiader-** Kolachi Tehsil
    - **Zam Darbban -** Tehsil Darbban
    - **Zam Chowdwain-** Kolachi Tehsil
    - **River Indus**- Tehsil Paharpur (More than 150 Villages) , DI Khan and Parowa

The list of waterways other than River Indus which have tendency to spill over is as under:

- Tank Zam
- Gomal Zam
- Zam Shiekh Hiader
- Zam Darbban
- Zam Chowdwain

These Zams are particularly infamous for spilling over along the siphons of CRBC Canal.

Tank: The district has an area of 1,679 km² and a population of .72 Million. The district has I Tehsil and 16 UCs.

Following are the most vulnerable population centres in district:

- **Gomal Zam**:
    - Gomal: Gomal Town , Kot Murtaza
    - Loni: Kot Azam, Raghza, Sheikh Sultan, Mamrez Jamal
    - Warren Canal :Diyyal, Chaddar, Sheikh Uttar, Kot Allahdad
- **Tank Zam**
    - Takwara: Tajori, Chinni Michankhel, Tati mianwali
    - Sidqi: Shah Alam, Kot Pathan, Kot Ali Khel, Janaki, Kiri Haider, Kiri Pak
    - Chowa: Tank City , Umar Adda
    - Warooki Bahara: Janadar, Aba Khal, Tank City,Kauro Khan, Ranawal Warooki Kalay
    - Pir kach: Tank City, Gara Baloch
    - Lowra
    - Kiryani
- **Shuza Algad**: Shuza Tajori, Abizar
- **Galarah Algad:** Galarah: Umar Khel, Mullazai

- **Suheil Alged**: Rodh Suheil: Amma Khel, Pai, Mohammad Akba, Wanda Zalo, Daraki

The list of waterways which have tendency to spill over is as under:

- **Gomal Zem:** Gomal, Loni, warren Canal
- **Tank Zam :** Takwara,Sidqi,Chowa,Warooki Bahara,Pir kach,Lowra,Kiryani
- **Shuza Algad**: Shuza
- **Galarah Algad**: Galarah,Rodh Suheil
- **Suheil Alged**

Bannu: The district has an area of 1227 Sq Kms. Its total population is 1.9 Million. The district has one Tehsils and 49 UCs. The list of waterways which have tendency to spill over is as under:

- River Kurram
- River Gambilla

Lakki Marwat: The district has an area of 3,164 Sq Kms. Its total population is 1.4 Million. The district has 2 Tehsils and 33 UCs. The list of waterways which have tendency to spill over is as under:

- River Kurram
- River Gambilla
- Kharoba Nullah
- Garaban Nullah
- Lorah Nullah
- Chunia Nullah

Kohat: The district has an area of 952 Sq Kms. Its total population is 1.7 Million. The district has 2 Tehsils and 28 UCs.

- Floods: Following are the most vulnerable population centres in district:
  - **Tolang, Ghorzai Nullah** -Ali Muhammad Zai,
  - Shahput
  - **Aurakzai Nullah** -Germa
  - **Indus River**- Shakardara,Sheraki, Rokhwan,Mulawali, Faqirabad, Bangirabad,Boisobari, Khushal Garh
  - **Usterzai Nullah** -Hafizabad
  - **Chenna Nullah** - Jungle Khel, Cantt, Bahadarkot, Bahawal Nagar , Togh Payan
  - **Shiakhan Hill Nullah** Togh Bala

The list of waterways which have tendency to spill other than Indus over is as under:

- Tolang, Ghorzai Nullah
- Raisan,Usterzai Nullah

- Usterzai Nullah
- Chenna Nullah
- Sheikhan Hill Torrent

11.4 **Chitral:** The district has an area of 14,850 km² and a population of .89 Million. It has six tehsils with 26 UCs.

District	**Potential threat RiverS and water ways**	**Anticipated Relief Caseload HHs 2011**	**Relief Caseload HHs in 2010 (Approx)**
Chitral	River Chitral, Chitral Gol Molen Gol, Uchust Gol Jughoro Gol, Bomborate Gol, Birir Gol, Arkri Gol Jingerate Gol, Laldam Gol Shishikoh	**5,000**	**10,000**

- Floods. The main river Chitral flows in deep ravine, hence chances of its overflowing are minimal, however flash floods vulnerability is fairly high. Following are the most vulnerable population centres in district:
  - Booni
  - Sonoghar
  - Chuinj
  - Brep
  - Owir
  - Terich

  The list of waterways which have tendency to spill over is as under:
  - River Chitral
  - Chitral Gol
  - Molen Gol
  - Uchust Gol
  - Jughoro Gol
  - Bomborate Gol
  - Birir Gol
  - Arkri Gol
  - Jingerate Gol
  - Laldam Gol
  - Shishikoh

12. **Provincial - Need and Gap Analysis (District wise)**

District level - Need and Gap Analysis

Regardless of the various strategies to remodel the river (s) course and to carry river(s) training, construction of flood protection infrastructure along with installation of early warning systems for catering to the mid and long term flood disaster vulnerabilities in KP. The contingency planning consultations with district governments and provincial departments resulted in pinpointing immediate risk reduction measures both structural and non-structural. Primarily the exercise aimed at (1) identifying pre- monsoon structural and non structural measures for reducing the adverse impact (s) in addition to (2) highlighting resources available vis-à-vis the anticipated response (rescue) and humanitarian relief needs, thereby pinpointing the gaps which are enumerated in the tables below. From this exercise, it is possible to pick out appropriate type and areas (district) of response activities to support people. The results of the exercise are given in Table 20-25.

In addition, the information reflected in Table 6 & 7 (anticipated caseload) is utilized to calculate in a spreadsheet minimum assistance likely to be necessary to restore normalcy (this can be updated as necessary), and an estimate of overall quantities is gauged, see tables 20 to 25. The quantities of material assistance (Food and NFI) worked out will serve as a contingency planning baseline for the entire province and even at district level. This can be, if required converted to budgetary allocations and / or stockpiling decisions and will also guide initial planning and budgeting estimates.

Table No 8: Need and Gap Analysis Monsoon 2011 - Peshawar Valley

Region/ Districts	Anticipated Needs Pre- monsoon		Anticipated Needs during and after Floods			Funds Required Rs Million
	Structural	Non Structural	Rescue	Relief	Public services Health etc	
Peshawar	Excavation works Shahikata, Removal of Encroachments Redesigning of Charsada road bridge (*Khiali* Bridge)	Sand bags Improvement in flood warning system against river flooding, Regular updating of weather and flood forecasting	Boats and vehicles	Funds for cooked food Animal fodder, Vaccination, medicines	Water supply, restoration of damaged sewerage system Machinery for Removal of carcasses and debris from drainage system	100
Nowshera	Repair and maintenance of drainage system	Sandbags, Procurement of local available boats Improvement in Early warning Training of civil defence employees on rescue boats	Helicopters , boats and vehicles	Tents, Cooked food , Safe drinking water, POL	Water supply, restoration of damaged sewerage system, Machinery for Removal of carcasses and debris from drainage system	100
Charsada	**Restoration of damage flood protection works**: Village **Adezai River** : Mian Killi , Dalazak, Nooran, Rashakai, Tarkha Tozi Band, Garhi Mukaram Shah, Ghurambak, Veno Garhi on L/bank of Adezai River , **Swat River** : Shabqadar area (Graveyard) along River bank of Subhan Khwar, Khiyali village Mian Wali and Turlandi, Village Abazai, Sarasang, Banda Saidan on Swat River, Soor Khatkai Drain & Gilgichi Khwar near Abbas Killi , Village Kalyas on Hisarar Drain, eroded land at Munda Head, Dag Khattakan & Bridge near Shah Afzal Abad at village Utmanzai on Dab Drain & Musa Killi drain, Various drains in PF-18, Canal section of main lower Swat canal, canal section of Disty No.5,6 Nisatta Branch and Nisatta Minor	Sand Bags Strengthening of Civil Defence training and rescue equipment	Helicopters , boats, tents, and vehicles	Cooked food 3 days	Machinery for Removal of carcasses and debris from drainage system, Water supply, restoration of damaged sewerage system	45.5

Total Funds 245.5 Million

Table No 9: District Need Quantification Monsoon 2011 – Peshawar Valley

District	Requirement before Flood/Monsoon		Requirement During Flood/Monsoon					After Floods			
	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
Peshawar	15,000	Required	Excavator	15	Required	Required		Cooked food for 3 days	Required	Required	
Nowshera	150,000	Required		100	Required	Required		Dry food 3 days	50,000	Required	
Charsada	300,000	First aid boxes, Mega Phones and Sirens	350	80	Required	Required	4		Required	Required	POL

Table No 10: District Flood Stores Held – Peshawar Valley

District	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
Peshawar											
Nowshera		20 Spades			13 *Water filter 3*	3					37 Spray Pumps
Charsada											

Evacuation Centers: Peshawar: Colleges and schools have been identified as evacuation purpose
Nowshera: 5000 Tents camp along with 800 Govt Buildings Colleges and schools have been identified as evacuation purpose
Charsada: 300 schools identified to be used for evacuation purpose

Table No 11: Need and Gap Analysis Monsoon 2011 - Northern Mountainous Region and Hazara Division

Region/ Districts	Anticipated Needs Pre- monsoon		Anticipated Needs during and after Floods			Funds Required Rs Million
	Structural	Non Structural	Rescue	Relief	Public services	
Mansehra	Improvement in flood mitigation works over river Kunhar and Siran Checking and removal of encroachment	Improvement in flood warning system against flash flooding, Regular updating of weather and flood forecasting, Availability of dewatering equipment in urban areas, Enhanced capacity of flash flood rescue, Water monitoring system by communities	Boats	Tents, Cooked food , Safe drinking water	Removal of carcasses and debris, Water supply, restoration of damaged sewerage system, Water supply	.5
Shangla	Repair and maintenance of drainage system	Sandbags, Improvement in Early warning against flash flooding	Helicopters, boats	Tents, Food for Alpurai, Shahpur, Besham, Chakisar, Karora, Aloch and Martung, Isolated population ,POL	Restoration of roads and bridges and Water supply	
Swat	46 irrigation channel to be reconstructed Pre positioning of steel bridges Consruction of protection walls -Gabian mesh walls/ Retaining walls Khwazakhela, Shakardara to Rahat Kot,Matta to Beha and Baghdherai to Nowkhara -54 Km Removal of encroachments - River Swat at Bahrain, Mankial, Chamgarai, Kalam Mingora area (Kokrai to Margazar Town, Mingora and Parn Dangram to Haji Baba Mingora).	Sand bags, Improvement in flood warning system against river flooding, Regular updating of weather and flood forecasting Water monitoring system by communities	Sandbags , Helicopters, boats *Local Jallas (Boats),*	Tents, Cooked food , Safe drinking water, POL, food for isolated population	Water supply, restoration of damaged sewerage system, Restoration of roads and bridges	45
Dir Upper			Helicopter	Food for isolated population		

Lower Dir						5
Malakand			Sandbags ,Helicopters, boats and vehicles		Restoration of roads and bridges	10
Kohistan		Need for enhanced capacity of flash flood rescue , Improvement in flash flood warning system , Regular updating of weather and flood forecasting		Cooked food , Safe drinking water, POL, food for isolated population	Restoration of roads and bridges	

Total Funds: 60.5 Million

Table No 12: District Need Quantification Monsoon 2011 – Northern Mountainous Region and Hazara Division

District	Requirement before Flood/Monsoon		Requirement During Flood/Monsoon					After Floods			
	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
Shangla		Required	10			Required		Required	Required	Required	
Swat	150,000	Required		300		Required		Required	Required	Required	5000 (water cooler/ jerry cans)
Malakand	100,000	Required	20	10		Required	1	Required	Required	Required	

Table No 13: District Flood Stores Held – Northern Mountainous Region and Hazara Division

District	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
Mansehra			23		Tents 1460, Tarp 14,807, Blankets 11,888, CGI Sheet 355, Oil Heater 95, Plastic Roll 3, containers 7, Ker: Oil Heater 2,352, Oil Stove 530, heat sheet Thermal Blankets 77,000, Heat Sheet Roll 62, Bedding 345, Pit Latrine Tents 13, Flammable liquid: 5, coffin cloths 36, Jerry cans 297						
Shangla		Medicine	10						350		
Dir Lower									800	Stoves 140, water cooler 140 , blankets 3000, Kitchen set 10,000, buckets 400	
Swat									700	buckets 50, lotas 150, jugs 3, Water coolers 29, chittai 25, mosquito nets 18	
Dir Upper									100	water coolers 140, stove 140, kitchen sets 20, blankets small size 500, blankets large size 300	
Swabi									25	mosquito nets 1600, quilts 15, parats 48, pedestal Fans 44, Kanats 288	

Evacuation Centers:

Mansehra: 30 Schools
Shangla: Government building (School, Collages)
Swat: Government building (School, Collages and in some areas BHUs
Dir Upper: Government Degree Colleges in upper Dir & Technical College
Lower Dir: School s and health centers
Malakand: School s and health centers
Kohistan: School s and health centers

Table No 14: Need and Gap Analysis Monsoon 2011 – Chitral District

Region/ Districts	Anticipated Needs Pre- monsoon		Anticipated Needs during and after Floods			Funds Required Rs Million
	Structural	Non Structural	Rescue	Relief	Public services	
Chitral	Improvement in flood mitigation works over Ayun Gol, Chitral River Juti Lasht, Chuinji, Shogran to Reshune,GreenLasht Purish, River Balach Airport Excavation of Sonoghor,Molen, Chinji.Balch,Seen Lasht, Brep,Kaldam, Miragram No2, Gazaian, Parakusap, Warimum Gols Checking and removal of encroachment	Improvement in flood warning system against flash flooding, Regular updating of weather and flood forecasting, Community response Plans, Community Response Kits	Rescue equipment for first response	Food, financial aid	Water Supply, restoration of damaged sewerage system, restoration of roads and bridges	200

Total Funds 200 Million

Table No 15: District Need Quantification Monsoon 2011 – Chitral

District	Requirement before Flood/Monsoon		Requirement During Flood/Monsoon					After Floods			
	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
Chitral		Mobile emergency response unit first aid kits, life vests, generators, search lights, torches, rope, digging equipments, mask, safety helmets, emergency tube boats, fire extinguishers, oxygen cylinders, glows, walkie talkies	Required	Required		Required	Required	Required	Required	Required	

Table No 16: District Flood Stores Held – Chitral

District	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
Chitral									506		Mats 13,424, Blankets 2,512, Used clothes 50

Evacuation Centers: Government Buildings (Schools and Colleges)

Table No 17: Need and Gap Analysis Monsoon 2011 – Southern Districts

Region/ Districts	Anticipated Needs Pre- monsoon		Anticipated Needs during and after Floods			Funds Required Rs Million
	Structural	Non Structural	Rescue	Relief	Public services	
DI Khan		Capacitating DDMU		Required	Medicines, Water supply, restoration of damaged sewerage system	100
Tank	Excavation of Pirkach and Chuwa Merger of Rodh Sidqi and Warooki Bhari, Zam Wandarajat , Restoration work on Tank Pezu road and Shah Alam bridge	Capacitating DDMU		Required		15
Karak				Required		5
Lakki Marwat				Required		3
Kohat	Removal of encroachment near Gumbat bridge in of the waterways in Hafizabad and Shakaradara.			Required	Water supply, restoration of damaged sewerage system	62

Total Funds: 185 Million

Table No 18: District Need Quantification Monsoon 2011 – Southern Districts

District	Requirement before Flood/Monsoon		Requirement During Flood/Monsoon					After Floods			
	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
DI Khan	600,000	Required		Required	Required	Required		Required	2000	Required	Anti Snake Venom
Kohat		Required			Required	Required	Required	Required		Required	
Tank	5,000	Required		Required	20	Required	Required	Required		Required	
Karak	1,000	Required				Required		Required	200	Required	Blankets
Lakki Marwat	10,000	Pick axes 40, Emg: Lights 8 Stretchers 20, Rope 500 Meter, life jackets 5, Shovels 40	2	2	5	Required		Required		Required	

Table No 19: District Flood Stores Held – Southern Districts

District	Sand Bags	Rescue Equipment	Vehicles	Boats	Dewatering Pumps	Generator	Heli	Food	Tents	NFI	Misc
DI Khan									2,900	kitchen sets 722, mattresses & pillows 1800	
Kohat											
Tank											
Karak									200		Blankets 200
Lakki Marwat		Life jackets 16, Rope 04, Stretcher 10, Pickaxes 02, Electric Siren 02, Stores 02			1				440		

Evacuation Centers:

DI Khan: School, Health Centers
Kohat: School, Health Centers
Tank: Dabbara Township, Fields, Patches, School, Colleges
Karak: Colleges, School, Health Center
Lakki Marwat: Colleges, School, BHUs, & RHCs

Table No 20 - PDMA KP NFI Stock Positions Held Ware House

Items	PDMA WAREHOUSE
Generator Sets various capacities	**160**
Water Filtration Plants	**2**
Dewatering / Sludge Pumps	**0**
Quilts / Blankets	**857**
Tents	**7,048**
Cotton/Foam Mattresses / sleeping Bags	**534**
Utensils/ kitchen sets	**396**
Bucket	**10**
Mats plastic various size	**6,507**
Water Tanks	**10**
Mosquito Nets	**115**
Water Coolers	**-**
Tarpaulin	**91**
Life Jackets	**89**
Plastic *Lotas* (mixed old & new)	**3,000**
Stoves	**85**
Transformers	**2**

Table No 21 - Pakistan Army NFI Stock Position with Locations -KP

Items	Peshawar	Nowshera	Risalpur & SSG	Khuwaza Khella	DI Khan	Total
Generator Sets	16	2	3	12	-	**33**
Water Filtration Plants	26	-	-	-	23	**49**
Dewatering / Sludge Pumps	5	-	-	-	-	**5**
Quilts / Blankets	1,011	2,238	2,250	1,579	358	**7,436**
Tents	275	816	1,209	876	45	**2,038**
Cotton Mattresses / sleeping Bags	30	149	-	480	15	**674**
Utensils/ kitchen sets	62	678	-	337	-	**1,077**
Bucket	62	5		240	-	**307**
Mats	-	208	-	-	500	**708**
Water Tanks	2	-	2	-	-	**4**
Mosquito Nets	-	-	500	1500	400	**2,400**
Water Coolers	-	4	-	250	-	**254**
Tarpaulin	-	-	10	-	-	**10**

Table No 22 – Summary of NFI Stock Positions Held PDMA & Districts KP

Items	Peshawar Valley	Northern Districts	Southern Districts	Chitral and Others	PDMA WAREHOUSE	Total
Generator Sets various capacities					160	**160**
Water Filtration Plants	3				2	**5**
Dewatering / Sludge Pumps	13		1		0	**14**
Quilts / Blankets		15,700		2,512	857	**19,069**
Tents		1460	3,540		7,048	**12,048**
Cotton/Foam Mats / sleeping Bags			1,800		534	**2,334**
Utensils/ kitchen sets		10,020	7,22		396	**11,138**
Bucket		450	200		10	**660**
Mats plastic various size				13,424	6,507	**19,931**
Water Tanks					10	**10**
Mosquito Nets		1,618			115	**1,733**
Water Coolers /jerry can		606			-	**606**
Tarpaulin		14,807			91	**14,898**
Life Jackets			16		89	**105**
Plastic *Lotas* (mixed old & new)		530			3,000	**3,530**
Stoves		280			85	**365**
Transformers					2	**2**

Table No 23: Estimated Humanitarian Response (relief items) Required Monsoon 2011

Districts	Anticipated Affected HH 2011	FOOD	Shelter and NFIs									WASH	Health
		FOOD HH 3 Months	Tents	Plastic Sheet	Blankets	Kitchen Set	Hygiene Kits	Jerry can	Buckets	Tarpaulin	Stoves	Drinking water Population	Anti Cholera Population cover IEHK- MEHK Population cover Immunization Measles Vaccination Static Clinics Mobile Health Teams
Peshawar	10,000	10,000	3,333	3,333	13,333	3,333	6,667	6,667	6,667	3,333	2,500	20,000	
Charsada	20,000	20,000	6,667	6,667	26,667	6,667	13,333	13,333	13,333	6,667	5,000	40,000	
Nowshera	25,000	25,000	8,333	8,333	33,333	8,333	16,667	16,667	16,667	8,333	6,250	50,000	
Tank	16,500	16,500	5,500	5,500	22,000	5,500	11,000	11,000	11,000	5,500	4,125	33,000	
D I Khan	40,000	40,000	13,333	13,333	53,333	13,333	26,667	26,667	26,667	13,333	10,000	80,000	
Lakki Marwat	3,000	3,000	1,000	1,000	4,000	1,000	2,000	2,000	2,000	1,000	750	6,000	
Kohat	1,550	1,550	517	517	2,067	517	1,033	1,033	1,033	517	388	3,100	
Mansehra	2,000	2,000	667	667	2,667	667	1,333	1,333	1,333	667	500	4,000	
Dir Lower	8,000	8,000	2,667	2,667	10,667	2,667	5,333	5,333	5,333	2,667	2,000	16,000	100% Population Coverage with Priority to the vulnerable
Malakand	3,000	3,000	1,000	1,000	4,000	1,000	2,000	2,000	2,000	1,000	750	6,000	
Shangla	4,000	4,000	1,333	1,333	5,333	1,333	2,667	2,667	2,667	1,333	1,000	8,000	
Dir Upper	10,000	10,000	3,333	3,333	13,333	3,333	6,667	6,667	6,667	3,333	2,500	20,000	
Kohistan	20,000	20,000	6,667	6,667	26,667	6,667	13,333	13,333	13,333	6,667	5,000	40,000	
Swat	12,500	12,500	4,167	4,167	16,667	4,167	8,333	8,333	8,333	4,167	3,125	25,000	
Karak	1,000	1,000	333	333	1,333	333	667	667	667	333	250	2,000	
Hangu	1,000	1,000	333	333	1,333	333	667	667	667	333	250	2,000	
Chitral	5,000	5,000	1,667	1,667	6,667	1,667	3,333	3,333	3,333	1,667	1,250	10,000	
Grand Total	**182,550**	**182,550**	**60,850**	**60,850**	**243,400**	**60,850**	**121,700**	**121,700**	**121,700**	**60,850**	**45,638**	**365,100**	

The humanitarian response (relief items) calculated at 1/3 of estimated caseload. However, this is bare essential. The Health needsnare calculated at the 100% of the population.

Table No 24: Overview of NFI Need and Gap Analysis

Items - NFI	Army	PDMA & Districts	Total Held	Need / Requirement	Deficiency/Gap
Tents	3,260	12,048	15,308	60,850	**45,542**
Mattresses / Sleeping Bags	674	2,334	3008	243,400	**240,392**
Mats Plastic various size	708	19,931	20,639	60,850	**40,211**
Plastics Sheets/Tarpaulin	10	14,898	14,908	60,850	**45,942**
Quilts / Blankets	7,436	19,069	26,505	243,400	**216,895**
Water cooler /Jerry Cans	575	606	1,181	121,700	**120,519**
Buckets	307	660	967	121,700	**120,733**
Utensils / Kitchen Sets	1,077	11,138	12,215	60,850	**48,635**
Stoves	0	365	365	45,638	**45,273**
Hygiene Kits	0		0	121,700	**121,700**
Net Mosquito	2400	1,733	4,133		
CGI Sheets	0	355	355		
Heat/Asbestos Sheets	0	75,390	75,390		
Lotas Plastic	0	3,530	3,530		
Misc Stores					
Dewatering pumps	5	14	19		
Filtration Plants	49	5	54		
Gen Sets Misc Capacity /KVA	33	160	193		
Transformers		2	2		
Thermal Lights		1,707	1,707		
Oil Heaters		95	95		
Spray Pumps		37	37		
Anti Mosquito Spray (lits)	6,418	0	6,418		
Kerosene oil (lits)		1,835	1,835		
Thermal Blankets		77,000			
Pit Latrine Tents		13			
Oil Heater		95			
Kerosene Oil Heater		2,352			

Table No 25: Overview of Food Items Need and Gap Analysis

Food Items	Army	PDMA & Districts	Total Held
Atta	651 Tons		651 Tons
Dhal / Pulses/Beans		55.88 Tons	55.88 Tons
Rice		33.86 Tons	33.86 Tons
Ghee		797 kg	797 kg
Tea		1067 x bags	1067 x bags
Sugar		120.15 Tons	120.15 Tons
Milk		855 x packets	855 x packets
Salt		728 kg	728 kg

Planning Figures to Determine Food Needs for Survival Food Rations for Populations in Protracted Crisis Situations (food quantity in MTs, based on 540 g/person/day [2,100 Kcal option])

Protracted Needs –Whole Province

- Number of persons per day × .540/1,000 kgs = 594 Metric tons per day for 1100,000 population
- 3 Months Food Rations approximately = **53, 460 Metric Tons**

Immediate Needs for Pre-positioning -Madyan, Kalam, Bahrain and Kandiya Valley (Swat, Shangla and Kohistan)

- Number of persons per day × .540/1,000 kgs = 81 Metric tons per day for 150,000 population
- 30 Days Food Rations approximately = **2,430 Metric Tons**

13. **Monsoon Preparedness and Planning - Functions /Actions**

13.1 **Districts:**

1) Formulation of District level contingency plans
2) Establishment of District level flood control rooms and dissemination of contact details
3) Arrangements for Quick dissemination of flood warning and establishment of Observation Posts (OPs)on the likely flood areas (threatening)
4) Activation of Civil defence staff and volunteers for rescue and relief operations
5) Identification of flood disaster prone areas and threatening water channels in respective districts
6) Earmarking evacuation arrangements routes, building and guidance etc
7) District level food stock (wheat) and NFIs quantities and locations
8) Coordination with humanitarian agencies i.e. INGOs, NGOs and UN agencies
9) Need and gap analysis of funds and stores.
10) Formulation of comprehensive health response plans in coordination with EDO health.
11) Carry out necessary liaison with Pak Army, Frontier Constabulary and Scouts for initiation of rescue operations.
12) Tasking of local police authorities in evacuation and keep law and order situation
13) Identification and removal of encroached areas along with BOR staff and TMAs
14) Excavation work of threatening water channels
15) Maintenance of flood protection works in respective district with sand bags and locally available material (Except in DI Khan Irrigation Dept is not mandated to stage active flood fighting)
16) The training of human resource, especially for operating rescue boats
17) Coordination and tasking of all relevant departments for putting in place requisite preparedness measures before the monsoons

13.2 **Provincial Irrigation Department**

1) Establishment of Provincial and district level Flood Emergency Cell
2) Formulate and execute flood emergency response plan
3) Establishment of Flood/water Monitoring Network
4) Provide early warning:
    a. 24 – 48 hours warning along Swat River
    b. 5-7 hours along Kabul
5) Identification of high flood extents in river plains for removal of encroached areas by DCOs and TMAs
6) Necessary liaison with Pak Army, Frontier Constabulary and Scouts for initiation of flood fighting operations (DI Khan Only)

13.3 **Provincial Communication and Works Department**

1) Establishment of Provincial Flood Emergency Cell
2) Formulate and execute flood emergency response plan
3) Preposition available machinery/ plants at vulnerable areas
4) Restore severed land communication
5) Liaison with local Army Authorities

13.4 **Provincial Health Department**

1) Establish a Health Emergency Preparedness and Response Cell- HEPR
2) Carry out detailed planning with district officials (EDOs) and formulate district level health plans for execution
3) Carry out need and gap analysis for medicines and required stocks
4) Coordinate with humanitarian agencies i.e. INGOs, NGOs and UN agencies to make up the short falls

13.5 **Provincial Food Department**

- Keeping stock of wheat available as per the requirement at various places in the province

13.6 **Provincial Information Department**

1) Notifying the establishment of a flood emergency control room/unit
2) Broadcast advance warnings to sensitize the public
3) Guide the public about the nearby safer places, routes and other precautionary measures
4) Publication of the flood-related reports on daily-basis in the local, regional and national newspapers
5) Arrange press briefings/press conferences for any officer/official

13.7 **Provincial Disaster Management Authority -PDMA**

1) Carry out flood preparedness coordination meetings with districts and provincial departments
2) Formulate provincial monsoon contingency plan
3) DG PDMA in consultation with Chief Secretary KP will be responsible for Response & Relief Operations.

4) Director Relief PDMA on his behalf will head a Composite Team (comprising representatives of Lead Agency/Department and focal persons of support organizations) to coordinate response & relief operations
5) Establish Provincial Emergency Operation Centre
6) Make available requisite funds and resources for DCOs to make up the gaps in preparedness measures
7) Undertake need based coordination with all UN Agencies and other humanitarian partners to fill in the response and relief gaps before, during and after floods
8) Undertake coordination with Pak Army for initiating emergency response if required

13.8 **Local Government & Public Health Engineering Department**

1) Notifying the establishment of a provincial flood emergency control room/unit
2) Arrange potable drinking water and sanitation facilities for flood affected areas
3) Preparation of TMA-wise list/ stock position of flood emergency response equipments and machineries (LGD)
4) Arrange for the removal of carcasses and debris after floods
5) Contingency plans for immediate restoration of water supply, sanitation, cause ways, culverts, links roads, street lights and public latrines (LGD)
6) Coordinate with humanitarian agencies i.e. INGOs, NGOs and UN agencies to make up the short falls
7) Arrange for requisite *Water and Sanitation* in all the earmarked evacuation centres in coordination with education department

13.9 **Provincial Education Department**

1) Notifying the establishment of a provincial flood emergency control room/unit
2) Provide support to the District Admin for establishing evacuation centres in schools /colleges
3) Provide a list of all schools/ colleges earmarked for evacuation centres to PDMA before 15th June 2011
4) Arrange continuation of education in flood affected areas
5) Coordinate with humanitarian agencies i.e. INGOs, NGOs and UN agencies to make up the short falls

13.10 **Provincial Agriculture Department**

1) Notifying the establishment of a provincial flood emergency control room/unit
2) Arrange for live stock fodder and vaccination cover of live stock
3) Arrange for provision of seeds and agriculture inputs after floods

4) Arrange for de-silting of channels and levelling of Agri- land
5) Coordinate with humanitarian agencies i.e. INGOs, NGOs and UN agencies to make up the short falls

13.11 **TMAs**

1) TMOs to be declared focal person for his respective TMA
2) Ensure to remove the encroachments through close coordination with Revenue, Irrigation and other relevant departments
3) Keep close liaison and coordination with respective DCO's and DDMU's round the clock during the emergency
4) TMO's and their staff should be trained/sensitized by the respective DCO's/ DDMU for monsoon emergency response and role and responsibilities
5) Cleanliness of sewerage and Nullah by the respective TMA

13.12 **Provincial Home Department**

1) Facilitate DCOs through Police Wireless Net in case of communication failure of other networks i.e. provision of necessary hardware and a dedicated frequency for emergency use of DCOs before during and after floods/monsoon.
2) Facilitate the irrigation department flood monitoring / gauging persons in communication and transmitting of water flow and discharge information through Police Wireless Network. Where ever wireless equipped police station or post exists in vicinity of irrigation department gauge.

13.13 **Provincial Police -KP**

1) Maintain law and order situation in the districts and assist district administration for an orderly evacuation if such situation arise
2) Facilitate DCOs through Police Wireless network in case of communication failure of other networks.
3) Facilitate the irrigation department flood monitoring / gauging persons in communication and transmitting of water flow and discharge information through Police Wireless Network. Where ever wireless equipped police station or post exists in vicinity of irrigation department gauge.

13.14 **Pakistan Meteorological Department (*Provincial Chapter)***

1) Establishment of Flood Emergency Control Cell
2) Provide reliable and in time weather forecasts for KP and its catchment areas

3) Coordinate, liaison and exchange (credible and comprehendible) information with Irrigation Dept and PDMA for early warning as agreed

13.15 **Provincial Forest Department**

1) Minimize the cutting of trees before and during monsoons
2) Arrange for removal the logs from Nullah and stock them at safe places.

13.16 **Provincial Social Welfare, Transport, Civil Defence, Rescue 1122, and others**

1) Formulate their organizational Flood Contingency and Response Plans
2) Keep the flood response stocks available and carry out need and gap analysis
3) Provide support to the Provincial / District Governments

13.17. **Humanitarian Community- UN Agencies, Pakistan Red Crescent Society PRCS, INGO & NGOs**

1) Formulate their organizational Flood Contingency and Response Plans consistent with provincial and national policies, to cater for the unmet response needs as given in tables 20-25.
2) Share their organizational Flood Contingency and Response Plans with PDMA KP.
3) Coordinate with PDMA KP for deploying humanitarian assistance and flood response consistent with provincial plan, if the situation demands or tasked to do so.
4) The communities across KP are anticipated to be affected by monsoon floods / flash floods and rains, see table 6 & 7. The immediate relief need of the community will be food & water, shelter, health and NFIs during and after the monsoon season see table 20 to 25.
5) Follow-up relief measures should preferably include support for repair of houses, repair/replacement of health infrastructure, repair/replacement of community damaged infrastructure, replanting of Rabi crops, education and to immediately recover main source of income to support in meeting their needs.
6) The experience of past indicate that mostly it is the weaker and vulnerable groups in society that suffer worst from floods, especially, the young and the very old, women, the disabled and certain occupational groups. Identification and extension of appropriate relief packages for such groups will also be a priority.

13.18 **Pakistan Army (HQ 11 CORPS)**

1) Establish flood Coordination Centres as per Army's Plan
2) Assist provincial government in search & rescue and response operations when called in aid of civil administration

3) Coord with PDMA and other departments to make up the short falls

14. **Provincial Monsoon/Floods Preparedness Strategies**

14.1 **District Level Flood Preparedness**

Districts across KP reflect diverse capacity to respond. However, basing on the experience of 2010 floods all the districts across KP have already put in place a comprehensive mechanism for prevention, mitigation and response of floods. The DCOs assisted by the District Disaster Management Officers will spearhead response; the salients are as below:

- District level contingency plans have been made and notified.
- District level control rooms will be operational (24 hours) from 15th June 2011 till 15 September 2011.The control rooms will be district focal points for flood response and will essentially perform coordination and information management functions. (Details of control rooms/ focal persons are appended as Annexure A)
- To receive real time information about water levels, a network of community level organizations and community volunteers have been organized in the catchment areas, especially for mountainous districts.
- For quick dissemination of flood warning revenue department and irrigation departments have joined efforts. Moreover, mosques schools and other community networks will also be utilized.
- Irrigation departments have been tasked to establish Observation Posts on the likely areas and forewarn the emerging threat.
- District level food stock (wheat) quantities and locations have been notified
- The NFIs stocks available with district government are accounted for and notified.
- Civil defence staff and volunteers where they exist have been made fully functional.
- All sensitive flood disaster prone areas and threatening water channels have been identified and notified.
- DCOs have taken on board all the humanitarian agencies i.e. INGOs, NGOs and UN agencies present in the district.
- The evacuation centres are earmarked with the assistance of education department and have been notified
- For sensitive government buildings and record each department has made its own SOPs
- Requisite funds and stores have been requested by the districts from PDMA.
- District level coordination meetings have been held resulting in clear roles and responsibilities of all relevant departments in case of any emergency
- DCOs along with district health have formulated comprehensive health response plans.

- DCOs have directed the works and services staff to keep strict vigilance on the roads and bridges and initiate necessary measures whenever required.
- Necessary liaison has been done/ underway with Pak Army, Frontier Constabulary and Scouts for initiation of rescue operations.
- The local police authorities have been directed to assist in evacuation and keep law and order situation in case of any situation.
- The encroached areas are identified and DCOs along with BOR and TMA staff are initiating the requisite measures. In addition at some places excavation work of threatening water channels is also under way.
- The training of human resource is underway, especially for operating rescue boats with the assistance of Pak Army.

14.2 **Pakistan Army Response Measures**

The Army has established six regional disaster management hubs all over Pakistan for monsoon 2011. For Northern region hubs have been established at Rawalpindi and Peshawar. Regional hub Peshawar will work directly under Head Quarters 11 Corps and stores/ equipment will be stored at Risalpur/ Peshawar.

Army will only assist civil administration in rescue phase of floods. On formal requisitioning of Army in flood relief operation, all available resources will be mobilized. The main flood relief centre will be established at Peshawar and regional centres at *Khawazakhela*, Nowshera and DI Khan. Fwd placement of stores held with Army will be done in 2nd week of June. The assets available at regional Hubs are as under:

Table No 26: Pakistan Army Water Rescue Assets Available

Items	Peshawar	Kohat	Swat	D I Khan	Akora Khattak	Nowshera	Risalpur Engr Centre	**Total**
Boats (All Types)	49	5	8	13	15	5	5	**100**
OBM (All Types)	51	8	11	16	18	8	8	**120**
Life Jackets (All Types)	120	18	130	28	105	-	-	**401**

Army has offered to train civil defence and other district staff in operating rescue boats. Two boat operator courses will be run in *Akora Khattak* in mid June. However, for the deployment of troops Army has requested formal requisitioning of troops by the Provincial Government in first week of June before the employment of troops. The additional (demanded) 31 boats and 73 OBMs (Out Board Motor) are been procured and will be

placed at the disposal of Army Headquarters 11 Corps by PDMA before 15 June 2011. The details of Pak Army flood rescue stores placed at various locations is as under:

14.3 **Provincial Irrigation Department Flood Preparedness Measures**

- The provincial irrigation department has established a Flood Emergency Cell, Hydrology Department. The XEN Hydrology will be the focal person of the department details attached as Annexure B. The emergency cell will be operational 24 hours from 1st June 201. The cell will collect and transmit the information thrice daily in flood season and hourly in emergency situation. The contact details are appended as Annexure B.
- Flood monitoring network with the gauges present at various locations has been established. The department has 126 river water and 58 rain water gauging sites. The department will issue early warning as under:
    - 24 – 48 hours warning along Swat River
    - 5-7 hours along Kabul
    - 36 – 48 hours along Indus at DI Khan
- District level Flood Emergency Cell will also be established in flood prone district from 15th June onwards till recession of floods.
- The encroachments identified shall be removed with the assistance of DCOs, TMA and C&W Department.
- In D I Khan flood advisory committee headed by Chief Engineer will be reactivated.
- **Challenges**:
    - **Irrigation Department Pre Monsoon Flood Mitigation Strategies**

      As per Damage Need Assessment (DNA) November 2010, damages sustained by the Flood Protection infrastructure in KP are estimated at PKR 5,810 million or USD 68 million[6]. The Provincial Government has created 'Floods Damages Restoration Directorate' under the Irrigation Department. The directorate has formulated response strategy to minimize and mitigate the flood impact. In short term which spans 6-8 weeks it emphasizes on restoration of agricultural water distribution network: repairing damages to key canals, distributaries and water distribution infrastructure with livelihood restoration focus etc ; however, the medium term response measure which extends till March 2011 focuses on repairing water distribution network; Flood Protective Infrastructure; remodeling / long term rehabilitation of the damaged / vulnerable irrigation infrastructure; and reinforces early warning for vulnerable communities. The rather ambitious aspect of long term measures to be done within two years includes remodeling of Flood Protection works to the hydrological parameters

[6] Pakistan Floods 2010, Preliminary Damage and Needs Assessment, November 2008. Pg 28.

that have emerged as the consequence of 2010 Floods and deployment of Doppler Radars based Flood Early Warning Arrangements. The aspect which needs underlining is scarcity of resources. Against needed PKR 38 billion to implement these strategies, the KP government has mobilized only Rs 19 billion through internal and external sources[7].

- The floods of 2010 have exposed the water regulatory infrastructure to tremendous pressures. The water which flowed surpassed the earlier records by many folds. The performance of these regulatory facilities is doubtful even if subjected to slightly higher pressures than their design capacity.
- The department however lacks needed communication facilities with field monitoring units and has requested for necessary arrangements.

14.4 **Provincial Communication and Works Department Preparedness Measures**

- The provincial C& W Department will establish a Flood Emergency Cell in the office of DG FDRD, Peshawar. It will be operational 24 hours from 1st June 201.The contact details are appended as Annexure B.
- Available machinery/ plants i.e. 52 units have been prepositioned at vulnerable areas in Shangla, Dir lower/Upper, Swat and Buner to restore the accessibility. The details of plant/ machinery are attached at Annexure C.
- 8 ACROW bridges were donated by USA for launching bridges at the sites damaged in 2010 floods. Bridges reached Swat (Mingora) in December 2010 and work is in progress for installation. About 40 % of work has been completed, at Nokhar, Sakhra, Shaheen abad, Chil Shagai, Dongram and Batora. However due to lack of requisite funds five abetments could not be completed. 3 bridges launching sites of NHA in Swat (Madyan, Asrait-1&II) are also incomplete. Pakistan Army has pressed for the completion of these by 15 June.
- Out of 50 Steel bridges given by DFID 12 have reached Swat and work is in progress for installation of 12 bridges. About 40 % of work has been completed, however due to lack of requisite funds five abetments could not be completed.
- Survey has been completed of 46 Km road for accessibility to *Kandia* Valley Shangla, however due to scarcity of resources the road cannot be completed before 2011 monsoons.
- PC-1 form has been submitted for reconstruction of destroyed 50 foot bridges.
- If needed the department will provide Pakistan Army with Plant machinery and POL while the operators will be given by Army.

[7] Office of the Director General Flood Damage Restoration Directorate, "Proposed Strategy" disseminated vide Notification dated 5 August 2010.

- **Challenges**:
    - The unprecedented floods of 2010 have exposed the communication infrastructure to tremendous pressures. The water which flowed surpassed the earlier records by many folds; the strength of communication infrastructure is doubtful even if subjected to slightly higher pressures than their design capacity.
    - The lack of funds is hampering the progress of work and targets required to be achieved before 2011 June.

14.5 **Provincial Transport Department Response Measures**

- The department shall coordinate the evacuation of affected population in an orderly manner. The RTAs in all respective divisions have been directed to coordinate with respective DCOs for needful arrangements.

14.6 **Provincial Health Department Flood Preparedness Measures**

- The Health Department has established a Health Emergency Preparedness and Response Cell- HEPR in Peshawar. The contact details are appended.
- The department has carried out detailed planning with district officials (EDOs) and district level health plans are in place for 2011 monsoon.
- **Challenges**:
    - The reduced presence of NGOs and INGOs in districts is adversely affecting the outreach of health facilities and in case of 2011 flood emergency the department will not be able to perform as in 2010 floods.
    - The potential of 2011 floods to deteriorate the health situation of population summons special attention. Severe floods can not only cause destruction to health care infrastructure (already scarce health facilities in KP which were adversely affected in 2010 floods) but it will also affect health indicators of the affected population.
    - The vulnerability to endemic diseases stands enhanced after the floods due lack of safe water and sanitation facilities, poor hygiene, conditions conducive for vector borne diseases. These conditions amplify the risk for spread of acute watery diarrhoea (AWD), typhoid fever, malaria, measles, relapsing fever and acute respiratory illnesses.
    - In addition the damaged/blocked roads /infrastructure decrease access to health services and increase the challenges for timely and effective delivery of preventive and curative health services for flood victims.

14.7 **Provincial Food Department Flood Response Measures**

- The department is keeping stock of wheat available as per the requirement at various places in the province. The detail of wheat stock held is attached as Annexure D.

14.8 **Provincial Information Department Flood Response Measures**

- The Directorate of Information during the upcoming monsoon season 2011 in the interest of the people has arranged following:
    - The Pakhtunkhwa Radio FM 92.2 MHz Peshawar and Pakhtunkhwa Radio FM 92.6 MHz Mardan will broadcast advance warnings to sensitize the public as soon as they are received. Both the FM Radios will also guide the public about the nearby safer places, food stuff, health-care facilities, health tips and other precautionary measures.
    - Besides ensuring the publication of the flood-related reports of the Irrigation Department on daily-basis in the local, regional and national newspapers, the Directorate will also arrange press briefings/press conferences for any officer/official.
    - The FM Radio Stations, whenever needed, will broadcast special programs to facilitate the flood-affectees and officers from the health, irrigation, population.
    - The directorate will liaison with all other concerned departments to participate in such programs to share their views.
    - **Challenges:** To achieve and undertake above, the department needs updated information. Therefore, PDMA, Irrigation Department and others will have to liaise with the focal person of this Directorate and keep him abreast of the flood situation, imminent dangers and remedial measures, which will be consequently passed on to the people of the province through mass media in order to avoid possible losses both to life and property.

14.9 **Provincial Disaster Management Authority - PDMA Flood Preparedness Measures**

- PDMA has undertaken a series of flood preparedness meetings with districts and provincial departments. This contingency plan is the outcome of the consultations.
- **Articulation of Command and Control:** DG PDMA in consultation with ***Chief Secretary*** KP will be responsible for Flood Response & Relief Operations. Director Relief PDMA on his behalf will head a Composite Team (comprising representatives of Lead Agency/Department and focal persons of support organizations) to coordinate response & relief operations.
- All relevant departments/Agencies to provide focal person / representative to form part of the provincial response team when requested.

- **Provincial Emergency Operation Centre** has been established and notified. The cell will be functional from 1 June 2011 till the recession of floods. The cell shall receive and transmit flood / water level information thrice in flood season and on hourly basis during emergency. The contact details are appended as Annexure E.
    - **Purpose:** The coordination and collection of information and resources to support disaster/emergency/ incident management activities
    - **Location:** PDMA KP
    - **Functions:** The PEOC will be a central coordination, command and control facility responsible for carrying out emergency preparedness and emergency management functions at a strategic level in an emergency situation, and ensuring the continuity of response operations. PEOC will perform following core functions:
        - Coordination and communications;
        - Policy / Plan /Decision making
        - Operations
        - Resource dispatch and tracking; and
        - Information collection, analysis, and dissemination
        - Preparing operational updates situation reports and
        - Hosting Visitors (VIPs) briefings and debriefings

- **Early Warning**: Early Warning (EW) especially resulting in evacuation of an area or areas will not be issued by any single provincial department. However, local DCO has the authority to do so if the condition/ situation demands. For issuing timely EW and evacuation advisory a joint cell of Provincial irrigation department, Metrological department and PDMA has been established. PEOC after consultation with all relevant parties will only issue Early Warning and evacuation advisory if required in coordination with local DCO at provincial level.

- To make up for the deficiencies in Flood Early Warning System and to receive real time information on water levels for onward dissemination, Metrological Department and Irrigation Departments along with PDMA KP have arranged following:
    - Finalization of arrangements to provide reliable and in time weather forecasts for KP and its catchment areas and putting in place a practical system for flood early warning
    - Reaching standardization on flood threat levels for evacuation of area (s)

- Making the information received from Metrological and Irrigation departments i.e. water level and weather forecasts comprehendible and impending threat related
- In addition, the DCOs are also tasked for putting in place a network of community level organizations and community volunteers in the catchment areas, especially for mountainous districts, to receive real time information on water levels resulting in early warning.

- PDMA has placed requisite funds at the disposal of all DCOs. The DCOs are directed to utilize the funds to make up any deficiency in preparedness measures for 2011 monsoons.
- 31 boats and 73 OBMs (Out Board Motor) are been procured, to be placed at the disposal of Army Headquarters 11 Corps by PDMA before 15 June 2011.
- PDMA shall undertake need based coordination with all UN Agencies and other humanitarian partners to fill in the response and relief gaps before, during and after floods. If needed a separate coordination mechanism will be notified for this purpose.
- PDMA will coordinate with all UN agencies and humanitarian partners to maintain a stock of at least 1/3 of required humanitarian needs (Food and NFI including shelter) for the 2011 monsoons.
- **Challenges**:
  - The focus is to restore social services delivery, livelihoods and bringing normalcy after meeting the basic shelter, health and food security needs. This is where general inadequacy in both resources and planning has been identified in most of the districts.
  - Sectors that need to be supported substantially by both provincial resource mobilization and through humanitarian / federal support are housing, health, livelihood regeneration, agriculture and livestock, restoration of road access and above restoration public services i.e. water supply, communication and education.
  - Given the frequent incidences of floods in Khyber Pakhtunkhwa during monsoon season the government has taken adequate measures for flood control and management down to district level. The resource and technical inadequacy in response will be made up by the Pakistan Army which is expected to play a significant role by providing search and rescue services and emergency relief in affected areas.
  - The civil unrest has played a vital role in enhancing the vulnerability of the populace across province. The post insurgency adverse security situation has

particularly hampered the provision of social services like health and emergency care to the victims of emergencies and disasters. Pakistan Army and security agencies are expected to assist in creating favorable humanitarian relief space so that government and humanitarians can assist those affected.

List of Annexure

1) Annexure A - District Focal Persons and District Flood Control Room
2) Annexure B - Provincial Departments Focal Persons Monsoon 2011- KP
3) Annexure C - Details of Plant/ Machinery C&W Department
4) Annexure D - Wheat Stock Position KP – May 2011
5) Annexure E – Provincial Emergency Control Room – PDMA
6) Annexure F – EDO Health KP Contact Details
7) Annexure G- TMO KP Contact Details

List of Maps

1) Monsoon 2011 Hazard Map KP
2) KP Water Shed Map
3) Summary of Relief Case Road Monsoon 2011
4) Hazard and Vulnerability Map Peshawar Valley
5) Hazard and Vulnerability Map North and Hazara
6) Hazard and Vulnerability Map Southern Districts
7) Hazard and Vulnerability Map Chitral

Annexure A

District Focal Persons

DCOs

S#	District	Office Number	Fax Number	Cell Number
1	Peshawar	091-9212302	091-9212303	0342-9719366
2	Nowshera	0923-9220099	0923-9220061	0345-9401402
3	Mardan	0937-9230048	0937-9230303	
4	Charsada	091-9220021	091-9220061	0345-4477788
5	Swabi	0938-221300	0938-221917	
6	Kohat	0922-9260031	0922-9260032	0343-9744944
7	Haripur	0995-613391	0995-915412	
8	Abbotabad	0992-9310200	0992-9310372	
9	Hangu	0925-621175	0925-620050	
10	Bannu	0928-9270032	0928-9270081	
11	Karak	0927-210825	0927-210925	0333-9251328
12	Lakki Marwat	0969-538330	0969-538331	0300-3376811
13	Kohistan	0998-407001	0998-407139	0312-5914021
14	Malakand (Batkhela)	0932-411482	0932-412254	
15	Mansehra	0997-304148	0997-305513	
16	Swat	0946-9240340	0946-9240329	0336-3363300
17	Tank	0963-510200	0963-510300	0301-8085985
18	Shangla	0996-850005	0996-850006	
19	Buner	0939-510450	0939-510427	0333-8884462
20	Chitral	0943-412055	0943-412421	0300-9591117
21	D.I.Khan	0966-9280116	0966-9280110	0346-7840579
22	Battagram	0997-310030	0997-311879	
23	Dir Lower	0945-9250001	0945-9250004	0346-9841343
24	Dir Upper	0944-880394	0944-881130	
25	Tor Ghar	0997-3200529		0300-5615660

Contact Details Flood Control Centers Districts- DDMUS

S#	District	Name of officer	Office Number	Fax Number	Cell Number	Email
1	Abbottabad	Mir Khawas Khan Wazir	0992-9310372		0333-9324224	razmian_2001@yahoo.com
2	Bannu	Mr. Basharat Ahmad	0928-9270052 0928-9270361		0300-2272456	basharat_ahmad86@yahoo.com
3	Battagram	Mr. Muhammad Ishaq			0332-9757607	m.ishaqbannu@yahoo.com
4	Buner	Mr. Musarrat Zaman			0301-8820120	musaratzaman@yahoo.com
5	Charsadda	Mr. Muhammad Naeem	091-9220026	091-9220026	0300-9033544	dcochd@yahoo.com
6	Chitral	Mr. Javed Iqbal	0943-412931		0333-9874049	javedpms@yahoo.com
7	D.I.Khan	Mr. Muhammad Sheraz	0966-9280541		0334-9213192	shiraz_pms@yahoo.com
8	Dir Lower	Mr. Hakmatullah	0945-9250130		0345-9774280	hikmatpms@gmail.com
9	Dir Upper	Mr. Kashif Iqbal Jilani	0944-890438		0300-5921001	kanz24@yahoo.com
10	Hangu	Mr. Wajid Ali Khan	0925-622366		0313-9840050	alikhan_wajid@yahoo.com
11	Haripur	Mr. Muhammad Ijaz Khan			0333-9851304	mohammad.ijaz7@gmail.com
12	Karak	Malik Manzoor Ahmad	0927-211020	0927-210825	0333-9284264	manzooraup@yahoo.com
13	Kohat	Mr. Shahid Ali	0922-9260011		0346-9293209	shahid_pms@yahoo.com
14	Kohistan	Mr. Muhammad Sher			0314-9048137	
15	Lakki Marwat	Mr. Muhammad Tahir	0969-538335		0300-5733739	tahirpms@yahoo.com
16	Malakand	Mr. Arshad Ali	0932-412502		0333-9954931 0966-626862	arshadjehan@hotmail.com
17	Mansehra	Mr. Muhammad Anwar Khan Sherani			0345-5922497	annosherani@yahoo.com
18	Mardan	Mr. Khalid Iqbal			0332-9604323	khalidkhattakpms@yahoo.com
19	Nowshera	Mr. Said Nawab	0923-922034		0333-9482423	snawabpk@yahoo.com
20	Peshawar	Mr. Sadaqatullah	091-9211559		0345-9889092	sadaqat_sk25@yahoo.com
21	Shangla	Mr. Muhammad Iqbal Khan	0996-851163	0996-850709	0345-9110072 0307-5230491	
22	Swabi	Mr. Muhammad Tufail	0938-224345	0938-221917	0333-9717008	tufailkhattak24@yahoo.com
23	Swat	Mr. Zia-Ur-Rehman		0946-9240329	0333-9217091	zia_marwat@yahoo.com
24	Tank	Mr. Ashfaq Ahmad	0963-513417	0963-510300	0332-9451610	afaq_khan22@yahoo.com

Annexure B

Provincial Department Focal Persons Monsoon 2011- KP

S. No	Name	Designation	Department	Contact
1.	Lt. Col. Khalid Siddiqi	GSO-I	HQ 11 Corps	0321-9143033
2.	Lt. Col. Rashid Iqbal	**Flood Focal Person-Pak Army Peshawar**	HQ Engineers 11 Corps	091-20132353 office 0331-3853411 Mobile 20132354 Residence
3.	Khanzada Wazir	Asstt. Secretary	Revenue Department	0300-5840943
4.	Dr. Zia ul Hasnain	DD PH	Department of Health	0346-8606060
5.	Mr. Ghulam Haider	AD. Food	Food Department	0333-9334101
6.	Asif Malik Afridi	Asstt. Director	Population Welfare	091-9211542
7.	M. Imran	Manager (MIS)	Transport Department	091-9214185
8.	Bahadur Nawaz	DS / AS	Energy & Power Deptt	091-9212716/ 9212723
9.	Said Rehman	CWC	LG & RDD	0300-5904093
10.	Abdul Basir	D Director Planning	Environment Department	091-9211477
11.	M. Hizbullah Khan	Director	Industries Department	091-9210287 0333-9155638
12.	Shah Jehan	S.O	Excise & Taxation Department	091-9212717
13.	S.M. Ilyas Shah	Dy. Director (FDRD)	C&W Department	
14.	Shakir Habib	Dy. Secretary (T)	C&W Department	091-9210373
15.	Ishrat Ali	Dy. Secretary	PHED	0300-5905979
16.	Maqbool Hussain	SO-IV	Establishment	091-9210461
17.	Khushal Khan	DG Rescue 1122	Home Department	091-9210047 0333-9305972
18.	Amir Zeb Khan	Asstt. Director	Housing / PHA	0333-9462295
19.	Dr. Asal Khan	Veterinary Officer	Livestock & Dairy Develop	0300-9357981
20.	S. Ghulam Murtaza	D.D (Planning)	Agriculture Department	091-9210433 0300-9351520
21.	Firdus Khan	Asstt. Director	Information Department	091-9210199 0301-8598666
22.	Mujahid Saeed	SE (Hq)	Irrigation Department	091-9212174
23.	Hidayatullah	Statistical Officer	Forest Department	091-9213233
24.	Hashmat Ali	Senior Planning Officer	E&S Education Department	091-9210037

Flood Emergency Center Established by Provincial Irrigation Department Hydrology Division (24 Hours till 15 September 2011)

Engr. Zahoor Khan Executive Engineer Hydrology Division Warsak Road Peshawar	0919212114, 9211907 03009152983
Emergency Preparedness and Response Cell- HEPR	0919210851, Fax 9210187 E mail : heprkp@yahoo.com

Annexure C

Details of Plant/ Machinery C&W Department

District	Equipment	Quantity	Location	Condition
Swat	Bulldozer 160k.w	2	Pak Army	Working
	Bulldozer 100k.w	1	Gulibagh	
	Bulldozer 160k.w	3	Pak Army	
	Excavators 124 k.w	2	Pak Army	
	Excavators 180 k.w	2	Pak Army	
	Truck with Crane	2	Gulibagh	
	PTR	4	Gulibagh	
	Total	**16**		
Upper Dir	Bulldozer 160k.w	1	Xen office Dir upper	Working
	Bulldozer 100k.w	1		
	Excavators 124 k.w	1		
	Excavators 180 k.w	0		
	Truck with Crane	1		
	PTR	0		
	Total	**4**		
Lower Dir	Bulldozer 160k.w	1	Xen office Lower Dir at Timergarah	Working
	Bulldozer 100k.w	1		
	Excavators 124 k.w	1		
	Excavators 180 k.w	0		
	Truck with Crane	1		
	PTR	0		
	Total	**4**		
Buner	Bulldozer 160k.w	1	Near Xen Buner office at Daggar	Working
	Bulldozer 100k.w	1		
	Excavators 124 k.w	1		
	Excavators 180 k.w	1		
	Truck with Crane	1		
	PTR	0		
	Total	**5**		
Shangla	Bulldozer 160k.w	1	Near DCO office Shangla at Halpuari	Working
	Bulldozer 100k.w	1		
	Excavators 124 k.w	1		
	Excavators 180 k.w	0		
	Truck with Crane	0		
	PTR	0		
	Total	**3**		
Chitral	Bulldozer 160k.w	0	Chitral Town	Working
	Bulldozer 100k.w	1		
	Excavators 124 k.w	2		

	Total	**3**		
Peshawar	Bulldozer 160k.w	2	Peshawar	Working
	Bulldozer 100k.w	0		
	Excavators 124 k.w	1		
	Excavators 180 k.w	2		
	Truck with Crane	2		
	PTR	6		
	Total	**13**		
G.Total		**48**		

Annexure D

Wheat Stock Position KP – May 2011

S.No	Station	Tentative Target Metric Tons	Balance Metric Tons	Available Metric Tons
1	Peshawar	40,000	30,073	9,927
2	Nowshera	9,000	8,638	362
3	Charsadda	5,000	3,102	1,898
4	Azakhel	124,500	124,500	-
5	Mardan	36,000	33,636	2,364
6	Kohat	7,500	-	7,500
7	Hangu	500	304	196
8	Bannu	7,000	(745)	7,745
9	S. Naurang	1,500	-	1,500
10	D.I Khan	42,000	42,000	-
11	Tank	1,000	1,000	-
12	Swabi	2,000	2,000	-
13	Haripur	30,000	20,758	9,242
14	Havelain	32,000	26,635	5,365
15	Manshera	25,000	23,895	1,105
16	Dargai	10,000	10,000	-
17	Dir Lower	14,000	14,000	-
18	Karak	3,000	1,844	1,156
19	Swat	10,000	10,000	-
	Total	**400,000**	**351,640**	**48,360**

Annexure E

Provincial Emergency Control Room –PDMA

Fax Numbers PEOC PDMA	Telephone Numbers PEOC PDMA
• 091- 5273353 • 091-9214025 • 091-2651546 • 091-9212167	• 091- 9213959

Important Contact Details- PDMA

S #	Name	Office No	Mobile No	Email Address
1	Mr. Shakeel Qadir Khan, DG PDMA	091-9213855	0333-9107979	sqk28@yahoo.com
2	Mr. Asghar Ali, Director HR/Admn	091-9213890	0333-9400455	asghar@pdma.gov.pk
3	Mr. Zulfiqar Ali Shah, Director Relief	091-9211805	0300-6349337	director.operaions@pdma.gov.pk
4	Mr. Amjad Ahmad Expert/Coordinator	091-9211854	0345-4002555	amjad@pdma.gov.pk
5	Mr. Sana Ullah, Project Direcor ERALP	091-9213337	0300-5709180	eralpswat@gmail.com
6	Mr. Muhammad Javed Siddiqui, AD (Admn)	091-9212060	0301-8829514	javed_siddiqis@hotmail.com
7	Mr. Nadir Khan, Assistant Director C&OP-II	091-9210975	0301-8321929	
8	Mr. Tashfeen Zaman Afridi, Assistant Director	091-9213867	0333-9264866	
9	Syed Asmat Shah, Assistant Director Ops	091-2651547	0345-9201581	banoori2010@gmail.com
10	Mr. Shakeel Iqbal, Program Manager	091-9211828	0322-9053054	shakeeliqbal01@yahoo.com
11	Mr. Wasim Kundi, Senior Planning Officer	091-9213250	0344-9860066	waseemkundi@gmail.com
12	Mr. Kamran, Administrator	091-9213488	0333-9665156	kamran@pdma.gov.pk
13	Mr. Rafaqat, Database Specialist	091-9211854	0314-5123628	rafqat.gakhar@pdma.gov.pk
14	Mr. Adnan, Media & Communication Specialist	091-9213867	0321-5195517	adnan@pdma.gov.pk
15	Mr. Muhammad Islam, Assistant	091-9211805	0334-9173298	islam.pdma@gmail.com
16	Mr. Sajjad Qaisar, PA to D.G	091-9213855	0321-9008615	guljee1973@yahoo.com
17	Mr. Arif Ullah, PA to Director Admn	091-9213890	0334-9007855	arifullah.86@gmail.com

Annexure F

EDOs (Health) Khyber Pakhtunkhwa Contact Details

S.No	Name/Designation	Email Address	Cell Nos
1.	Dr. Zafeer EDO (H) Abbottabad Dr. Minhajulhaq DDHO	edohabd@yahoo.com minhajulhaq@doctor.com	03009112148 03335057383
2.	Dr. Nek Nawaz Khan EDO (H) Bannu	drnek@hotmail.com	03339207237
3.	Dr. Ayub Khan EDO H Battagram		0346-5617395
4.	Dr. Riaz Mohammad EDO (H) Buner		03319288207
5.	Dr. Fazal Akbar EDO (H) Charsadda		0346-9160536
6.	Dr. Sher Qayum, EDO (H) Chitral Dr. Saadullah DDHO Chitral	drsaadullah@hotmail.com	03025488812 03449052860
7.	Dr. Ashiq Saleem EDO (H) D I Khan		03339961771
8.	Dr. Shaukat Ali EDO (H) Dir Lower		03005779559
9.	Dr. Hidayat Rehman EDO(H) Upper Dir	edohdiru@yahoo.com drhiday33@yahoo.com	03339147278
10.	Dr. Mohammad Ishaq, EDO (H) Hangu		03339687317
11.	Dr. Mazhar Shah EDO (H) Haripur		03145002372
12.	Dr. Abdur Rashid EDO (H) Karak		03339618049
13.	Dr. Shad Ali Khattak EDO (H) Kohat Zeeshan comp oprtr	edohkohat@yahoo.com zeeshan2003@gmail.com	03339616370
14.	Dr. Gulberg EDO (H) Kohistan		03065637712
15.	Dr. Falak Naz EOD (H) Lakki Marwat		
16.	Dr. Bakht Zada EDO (H) Malakand	edohmkd@gmail.com roghaani@gmail.com	03005744430
17.	Dr. Mohammad Javed EDO(H) Mansehra		03005641455
18.	Dr. Ayub Rose EDO (H) Mardan	drayubrose@yahoo.com	03005010742
19.	Dr. Sabz Ali EDO (H) Nowshera	drsabzali@yahoo.com	03459073440
20.	Dr. M Sharif EDO (H) Peshawar Dr. Noor ul Mahbood DDHO Peshawar		03005956912 03459060272
21.	Dr. Said Ali Khan EDO H Shangla	edohshangla@gmail.com	03018525447
22.	Dr. Gul Mohammad, EDO (H) Swabi		0345-9684549
23.	Dr. Bakht Jamal EDO (H) Swat	bakhtjamal30@yahoo.com	0347-5102342 03005747242 03018528564
24.	Dr. Shuja Alam EDO (H) Tank		03459849003

Annexure G

List of TMO's with Telephone Nos of TMAs in Khyber Pakhtunkhwa

S.#	District	TMA	Name of TMO	Office #	Cell #
1	Peshawar	Town-I	Azmatullah Wazir	9210327	03339456789
		Town-II	Riaz Khan	9213583-84-85-86-87	03366818304
		Town-III	Noor Daraz Khattak	9218209	03339107172
		Town-IV	Javed Amjad	9211364-65	03339104225
2	Charsadda	Charsadda	Mian Anis ur Rehman	9220042-43-44	03005865512
		Tangi	Fazl-e-Maula	6555206	03339298206
		Shabqadar	Bakhtiar Muhammadzai	6281002	03349851517
3	Nowshera	Nowshera	Alam Zeb	0923/9220069-200-201	03018852065
4	Mardan	Mardan	Muhammad Aqeel	0937/9230103-104	03005717112
		Takht Bhai	Asadullah	0932-552807	03149731116
5	Abbottabad	Abbottabad	Zahid Qureshi	0997-9310373	03339162001
		Havelian	Sarfaraz Khan	0992/810825	03339333335
6	Bannu	Bannu-I	Faridullah	0928/9270062	03339733432
		Bannu-II	Raufullah	0928/9270134-134-188	09018088015
7	Battagram	Batagram	Sajid Khan	0997/310176	0300-5633900
		Allai	S.Saqib Husain	0997/319012	03219815226
8	Buner	Dagger	Liaqat Khan	0939/510247	03439636370
		Sowari	Mir Aslam	0939/55564-65	03348693171
9	Chitral	Chitral	Qasid Naseer	0943/413500	03025566936
		Mastuj	Zahir Khan	0943/470285	03025253125
10	Dir Lower	Timergara	Hayat Shah	0945/9250115	03459362321
		Samara Bagh	Abdul Samad	0945/850003	03025540992
11	Dir Upper	Dir	Muhammad Sardar	0944/880119	03009023778
		Wari	Naeem Khan	0944/841254	03159465363
12	DI Khan	DIKhan	Umer Khan Kundi	0966/9280173-174	03009098218
		Paharpur	Abdul Qadir	0966/775312	00
		Kulachi	Muhammad Ismail	0966/760312	03326566759
		Darban	Munir Akhtar	0966/790009	03467867663
		Parova	Ihsanullah	0966/754282	03028093613
13	Hangu	Hangu	Akhtar Munir	0925/621530	03453060713
		Thall	Zahidullah	0925/	03319111010
14	Karak	Karak	Abdul Ghaffar	0927/210109	03469503972
		B.D. Shah	Noor Shehbaz	0927/333174	03339714148
		Takht-e-Nusrati	Abdul Wahid	0927/250593-596	03018756322
15	Kohat	Kohat	Muhammad Shoaib	0922/9260038	03339618735 03459237050
		Lachi	Muhammad Amin	0928/550027	03339640775
16	Kohistan	Dassu	Mir Baz		03449494110
		Palas	Owais Khan	0998/405104	03219820123 03469522285
		Pattan	Abdur Razzaq	0998/405021	03459610039
17	Lakki Marwat	Lakki Marwat	Qalam Badshah	0969/511580	03339988924 03469245670
		Serai Naurang	Hamidullah	0969/352090	03129849364
18	Malakand	Batkhela	Hamid Islam	0932/413673	03339848182
		Dargai	Mohabat Shah Afridi	0932/331670/331160	03449135664
19	Swat	Mingroa	Nisar Khan	0946/9240150-151-152	03339471650
		Matta	Ihsanullah	0946/792202	03459417779

20	Mansehra	Mansehra	Barkatullah	0997/920061-62	03339612776
		Oghi	Ijaz Rahim	0997/	03009094344
		Balakot	Arif Baloch	0997/360631	03005677393
21	Swabi	Swabi	Zishan Arif	0938/222285	03028094090
		Lahor	Isarullah	0938/300244	00
22	Shangla	Alpuri	Arshad Ali Zubiar	0996/850672	03005659090
		Purran	Muhammad Afzal	0996/853314	03088882442
23	Haripur	Haripur	S.Farman Ali Shah	0995/613478-612166	03338899321
		Ghazi	Sajjad Haider	0995/661200	03005958563
24	Tank	Tank	Muhammad Ayub	0963/510760	03005765735

Annexure H

Flood Communication Cell

Office of the Chief Engineering Adviser/Chairman, Federal Flood Commission- FFC

S#	Name of officer	Telephone No. Office
1	Mr.Alamgir Khan Chief , Engineer (Floods)	051-9244613 -(Focal Person)
2	Mr.Ather Hameed DG(Technical/Monitoring)/ Principal River Engineer	051-9244615
3	Mr.Ashok kumar , Superintending Engineer (Floods)	051-9244628
4	Qazi Tallat Mehmood Siddiqui Superintending Engineer (Floods)	051-9244625
5	Mr.Zafar Iqbal Senior Engineer (Floods)	051-9244620
6	Mr.Muhammad Amin Assistant Engineer (Floods)	051-9244616