



Punjab Disaster Response Plan



Provincial Flood Contingency Plan

2012

Provincial Disaster Management Authority
Government of the Punjab

Prepared by Mr. Faran Naru, Policy Advisor, PDMA

Draft SOPs on Child Protection Incorporated by Ms. K Fatima Saeed, Gender & Child Protection Specialist, PDMA

Punjab Disaster Response Plan

Foreword

The Provincial Disaster Management Authority, Punjab has formulated this Disaster Response Plan to articulate the guidelines that must be followed at the onset of a disaster. The Disaster Management Plan outlines a framework for emergency response at different levels of the Government structure. The roles and responsibilities of various Government departments / agencies and District Governments have been clearly laid down and the plan also delineates the coordination mechanism involving International humanitarian organizations, INGOs / NGOs, civil society organizations, and media. The Disaster Response Plan will be kept relevant to ground realities through regular updating. Government of the Punjab is committed to disaster preparedness, response, relief, and rehabilitation in the Province. PDMA welcomes any suggestion for improvements of the Disaster Response Plan.

Mujahid Sherdil
Director General
PDMA, Punjab

Punjab Disaster Response Plan

Table of Contents

Introduction, Purpose and Scope	6
Floods of 2010.....	6
Punjab Disaster Profile.....	8
Risk of Flooding.....	10
The role of Provincial Disaster Management Authority	11
The Command, Control and Communication Center: 3C	14
Hazard Assessment	15
Disaster Response Functions	19
Evacuation.....	19
Assessment	20
Provision of Medical Services	21
Relief Management - Food and Non Food Items (NFIs)	22
Shelter.....	23
Water and Sanitation.....	25
Roles and Responsibilities of Stakeholders.....	26
Lead Departments.....	26
Irrigation Department.....	26
Health Department.....	32
Communication and Works Department.....	34
Livestock & Dairy Development Department.....	35
Stakeholders responsible for Search, Rescue and Evacuation	36
Rescue 1122 Services.....	36
Civil Defence	37
Home Department.....	37
Pakistan Army	39
District Governments.....	40
Tehsil / Town Municipal Administration.....	42
Additional Stakeholders.....	43
Public Health Engineering Department (PHED).....	43
Education Department	44
Agriculture Department.....	44
Local Government & Community Development Department.....	44
Social Welfare Department	45
Child Protection and Welfare Bureau (CPWB).....	46
Information Technology Department.....	46
Industries Department.....	46
Information Department	47
Food Department	47
Federal Ministries & Departments	48
Templates.....	51
Annex (A): Draft SOPs on Child Protection during Disasters	59

Punjab Disaster Response Plan

List of Tables

Table 1: Flood types and the areas at risk	11
Table 2: PDMA inventory of flood fighting equipment.....	12
Table 3: Specification of facilities provided to displaced persons	23
Table 4: Specifications of facilities provided at tent village camps	24
Table 5: Specifications of water and sanitation facilities provided at relief camps	25
Table 6: Length of embankments	26
Table 7: Sample template of stone procurement in 2012.....	27
Table 8: River Discharge Rates.....	28
Table 9: Flood Limits of Nullahs	28
Table 10: Time lag.....	30
Table 11: Template for collection points of relief goods	51
Table 12: Template for Inventory management at collection points.....	51
Table 13: Template for record keeping of the dispatched relief trucks	52
Table 14: Template for accommodation available in neighboring districts	52
Table 15: Template for human resources available in the affected area	53
Table 16: Template for the record keeping of relief trucks arrived at camps.....	53
Table 17: Template for relief camps.....	54
Table 18: Template for the status of facilities at Control Rooms established in the districts.....	55
Table 19: Template for the registration of NGOS	55
Table 20: Template for the demographic information of the population at a relief camp.....	56
Table 21: Template for the daily management of relief camps.....	56
Table 22: Template for the record keeping of fatalities	56
Table 23: Template for the record keeping of private boat owners	57
Table 24: Template for the IDPs hosted by the local community.....	57
Table 25: Template for the registration of volunteers	57
Table 26: Template for the focal person engaged in disaster response.....	58

List of Figures

Figure 1: Major rivers of Punjab	8
Figure 2: Areas at the risk of river flooding	9
Figure 3: Areas facing an earthquake hazard	9
Figure 4: Areas at the risk of drought	10
Figure 5: The Command, Control and Communication Center: The list of departments / agencies depicted above is not exhaustive	14
Figure 6: Vulnerable Settlements in Bhakkar	17
Figure 7: Vulnerable Settlements in Jhang	17
Figure 8: Vulnerable Settlements in D G Khan.....	17
Figure 9: Vulnerable Settlements in Layyah	17
Figure 10: Vulnerable Settlements in Mianwali.....	18
Figure 11: Vulnerable Settlements in Muzaffargarh.....	18
Figure 12: Vulnerable settlements in Rajanpur	18

Punjab Disaster Response Plan

Figure 13: Vulnerable settlements in Sialkot	18
Figure 14: Headworks & Barrages in Punjab.....	26
Figure 16: Online form for the registration of relief camps.....	54

A Glossary of Acronyms

3C	Command, Control and Communication Center	TMA	Town/Tehsil Municipal Administration
ADIO	Assistant Disease Investigation Officers	UC	Union Council
C&W	Communication and Works Department	UNICEF	United Nations Children's Fund
CBO	Community Based Organization	USAR	Urban Search and Rescue
CDGL	City District Government of Lahore	WASA	Water and Sanitation Authority
CERC	Central Emergency Response Committee	WFP	World Food Programme
DCO	District Coordination Officer	WHO	World Health Organization
DGHS	Directorate General Health Services		
DHQ	District Headquarter Hospital		
EPD	Environmental Protection Department		
FAO	Food and Agriculture Organization		
IDP	Internally Displaced Persons		
LDA	Lahore Development Authority		
LG&CD/RD	Local Government and Community / Rural Development		
LWMC	Lahore Waste Management Company		
MISP	Minimum Initial Service Package		
NFI	Non Food Items		
NLC	National Logistics Cell		
NTC	National Telecommunication Corporation		
OCHA	Office for the Coordination of Humanitarian Response		
PDMA	Provincial Disaster Management Authority		
PHA	Parks and Horticulture Authority		
PHED	Public Health Engineering Department		
PITB	Punjab Information Technology Board		
PRCS	Pakistan Red Crescent Society		
PTA	Pakistan Telecommunication Authority		
RHC	Rural Health Center		
SUPARCO	Space and Upper Atmosphere Research Commission		
THQ	Tehsil Headquarter Hospital		

Punjab Disaster Response Plan

Introduction, Purpose and Scope

Punjab is susceptible to a variety of disasters. Although there have been examples of tornadoes and earthquakes, Punjab's geographic location and climatic conditions make it more vulnerable to monsoon floods. Floods in the Province have caused heavy loss to life, property, infrastructure, and livelihood of the people. The lack of resources, preparedness, planning and institutional or organizational capacity has previously resulted in increased losses. The purpose of this plan is to clarify the roles and responsibilities of different stakeholders, and to introduce coordination mechanisms for immediate response and fast track rehabilitation.

This plan classifies the small, medium, and large-scale disasters to articulate the corresponding response. This plan does not only provide the operational directions at provincial or local level but it also emphasizes an organized integrated support for the International Humanitarian Organizations and the mass media. This plan integrates the standard operating procedures (SOPs) of various departments and proposes a consistent approach for reporting the damage, needs and relief assessments.

Floods of 2010

Pakistan is endowed with major rivers which are connected through a large network of link canals. The Indus water treaty of 1960 gave the water rights of the Ravi, Sutlej and Beas rivers to India. The Government of Pakistan has since then used the canal system to irrigate the agricultural lands. This system has been in use for decades but now it is strained due to higher demand for water in the face of unpredictable shifts in water availability. The rivers of Pakistan originate in the world's largest non-polar glaciers of Himalayas and are sustained by monsoon rains. Increased glacial melting and unpredictably high rains can fill these rivers beyond their capacity. High levels of discharge can flood the adjacent areas and if the rivers flow beyond their capacity there can be several breaches along their length. Pakistan faced a devastating disaster in the year 2010 when monsoon floods inundated an area as vast as the size of England.¹ River and Canal banks ruptured by the water pressure threatened the adjacent areas and the water flowing out of these channels inundated about two million hectares of cropped area. The standing crop losses due to 2010's floods were estimated at five billion dollars in the Damage and Needs Assessment survey conducted by the World Bank. Most of these losses resulted due to the crippling irrigation infrastructure. Pakistan is a semi-arid country with an agriculture based economy. Agro-based products fetch about 80% of Pakistan's total export earnings.² Although the

¹ AFP. (2010, August 10). *Pakistan floods ravage area 'the size of England'*. Retrieved 03 02, 2010, from Sydney Morning Herald: <http://www.smh.com.au/world/pakistan-floods-ravage-area-the-size-of-england-20100818-128r9.html>

² Dept, A. (n.d.). *Agriculture in Punjab*. Retrieved 03 02, 2012, from AGRI Punjab: <http://www.agripunjab.gov.pk/index.php?agri=detail&r=0>

Punjab Disaster Response Plan

economic costs of such a disaster are exorbitant, the social impacts of a disaster are also phenomenal. More than 20 million people were directly affected by the floods of 2010 and a vast majority of them had to be relocated as their houses and belongings had been washed away in the floods. The floods in 2010 occurred primarily along the river Indus with Chenab and Sutlej becoming the source of low to medium level floods for brief periods. The Indus protective infrastructure was damaged at various points such as the breach at the Marginal Bund of Taunsa which engendered a disastrous downstream flow across Muzaffargarh district causing successive breaches in canals and communication infrastructure. Other examples of similar damages during 2010's floods were embankments breaches at Jinnah Barrage, Mianwali, and Jampur, KotMithan, Rojhan areas of Rajanpur District. Apart from these breaches, the river Indus also overflowed at different locations, the most prominent being in the districts of Mianwali and Layyah.

The Government of Punjab promptly responded to the devastating flood of 2010. It was observed that the District Governments, Line Departments and Humanitarian Organizations needed to train their staff and conduct regular mock exercises and drills to counter floods or other emergencies. Despite best efforts, the Government faced significant roadblocks in information gathering for timely decision-making. There was a lack of clarity on a variety of issues such as information sharing between the military authorities and civil departments. Parallel decision-making bodies created confusion about mandates. Disaster response must be a 'one-window' operation and to achieve that, it is imperative to clarify the roles and responsibilities of the designated key agencies. The need had been felt for a set of guidelines that clarifies the mandates of Government Ministries/Departments, military, donors, UN agencies, humanitarian organizations, philanthropists, Civil Defence and the Punjab Emergency Services.

The Provincial Disaster Management Authority of Punjab was established as an overarching Authority to coordinate disaster response of different stakeholders. This department observed the need of developing a coordination group comprising of key personnel from Government ministries/departments, military, civil response agencies such as Punjab Emergency Services, donors, United Nations, media and related humanitarian organizations.

The Government faced a resource constraint after the floods as the stock of supplies for relief operations was severely limited. Disaster Management plans were either not drafted or not updated prior to the floods. There were scarce guidelines to engage the local communities in relief activities. There are examples of communities that encroach upon vulnerable areas, build living spaces and start activity even in the river beds. These communities endanger their own lives and property, and increase the magnitude of a disaster. Communities can be engaged in disaster risk reduction so that they can better understand their own risks and take necessary measures to protect themselves against the threat of a disaster. Efficient systems of obtaining early warnings and disseminating them to the masses need to be adopted as key components of effective response. This Disaster Management Plan seeks to address the shortcomings highlighted during floods of 2010.

Punjab Disaster Response Plan

Punjab Disaster Profile

Punjab is the most densely populated Province of the country consisting of 36 different administrative districts. Punjab covers 205,344 square kilometers and a large proportion of this area is arable owing to the integrated irrigations system of the Province.³ These rivers traverse the Province from north to south and due to the presence of these water channels, the land of Punjab is amongst the most heavily irrigated areas on the planet.

Punjab has a warm climate. The temperatures begin to rise in the middle of February and the spring time continues until mid-April. From April onwards the hot weather sets in and the warm earth heats the air causing it to rise and create a low pressure area in the adjoining atmosphere. Moisture laden winds from Indian Ocean balance the pressure in atmosphere by rushing to the low pressure region directly above Punjab and other Provinces of Pakistan and India. This phenomenon is known as the southwest monsoon. June and July are oppressively hot with temperature rising to over 50°C. The soaring temperatures create the environment for monsoon winds to blow in to the area above Punjab and release their moisture in the form of excessive rains. The monsoon rains are usually observed between July and September. The accumulation of water due to excessive monsoon rains can flood certain areas of the Province. Punjab is vulnerable to three types of flood risks: riverine floods, flash floods and, urban floods caused by incessant rains occurring intermittently in the major cities. Riverine floods pose flood risk to all districts of Punjab lying on the banks of the rivers. Flash Floods pose risk to D.G.Khan and Rajanpur districts and Urban flood is a risk for the cities of Lahore, Rawalpindi, Faisalabad and Sialkot. The floods of 2010 were the worst recorded floods and they were mainly caused by the riverine flooding in the Indus River and flash floods in the Southern Punjab. The following map shows the various barrages and Headworks in Punjab along with areas facing the risk of flash floods.

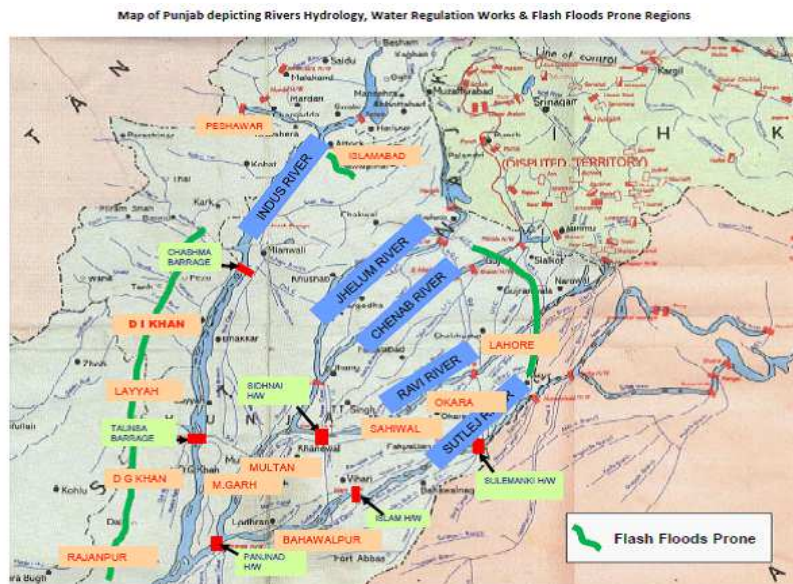


Figure 1: Major rivers of Punjab

³ Commissioner, H. (n.d.). *Basic facts about Pakistan*. Retrieved 03 02, 2010, from High Commission of Pakistan in Dar-es-Salam, Tanzania: <http://www.mofa.gov.pk/tanzania/contents.aspx?type=contents&id=9>

Punjab Disaster Response Plan

The population of Punjab is overly dependent on Agriculture. Agriculture and livestock farming are the main sources of income in the flood prone areas of Punjab. Poverty is yet another factor that worsens the suffering in a disaster stricken area. Poverty hampers the capacity of communities to mitigate, respond and resist the impact of a hazard. Absence of safety nets and limited access to assets shrink people's flexibility to sustain the onslaught of disasters. More than half of the Province faces the risk of riverine floods:

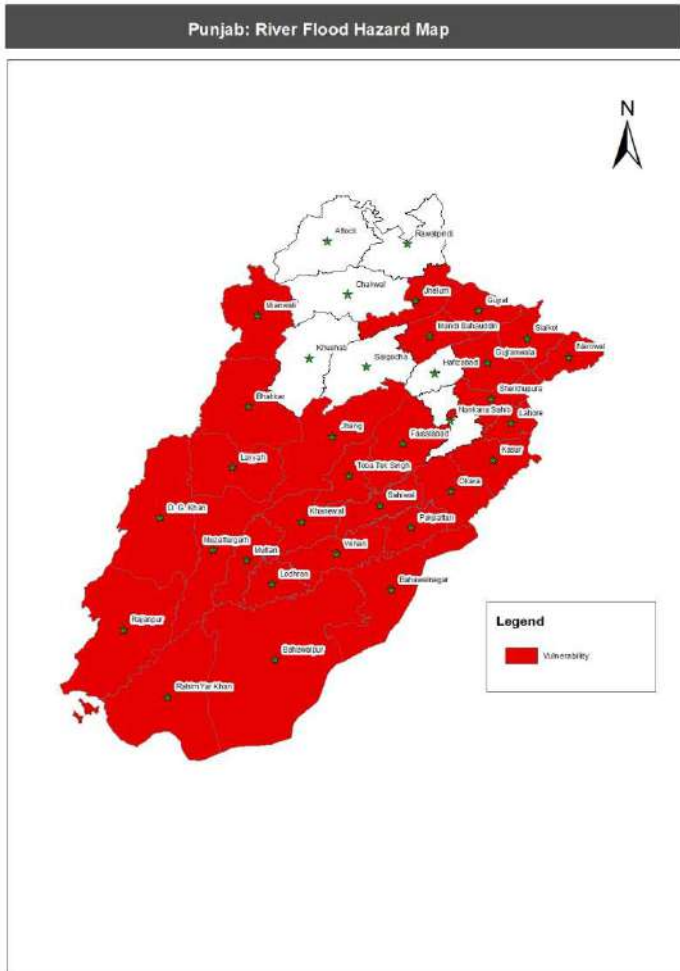
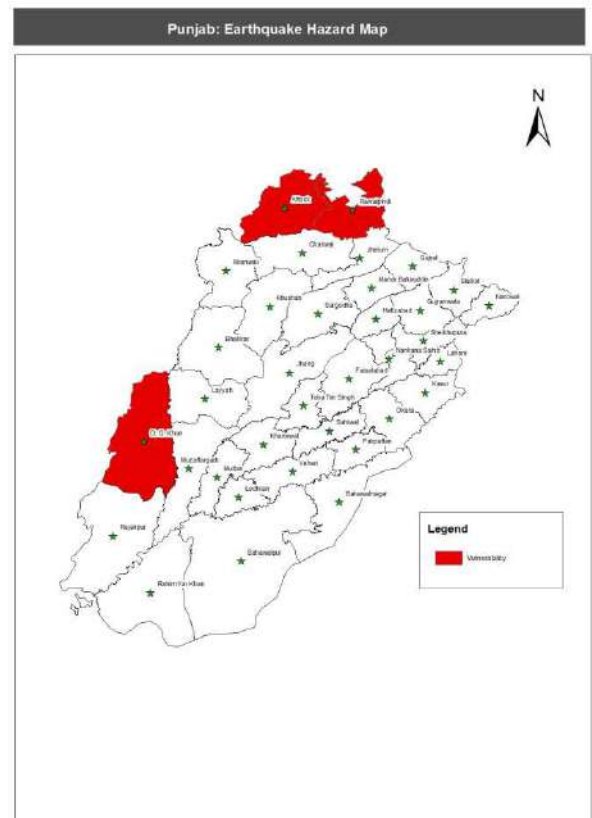


Figure 2: Areas at the risk of river flooding

Apart from floods, Punjab also faces a risk of earthquakes, drought and tornadoes. It is usually the hilly areas of the Province that are prone to earthquake. The foremost being the Murree tehsil of Rawalpindi district.

Figure 3: Areas facing an earthquake hazard

A drought can bring devastation to the entire Province because of Punjab's agriculture based economy; however districts such as Khushab are at a higher risk of drought because of their arid terrain.



Punjab Disaster Response Plan

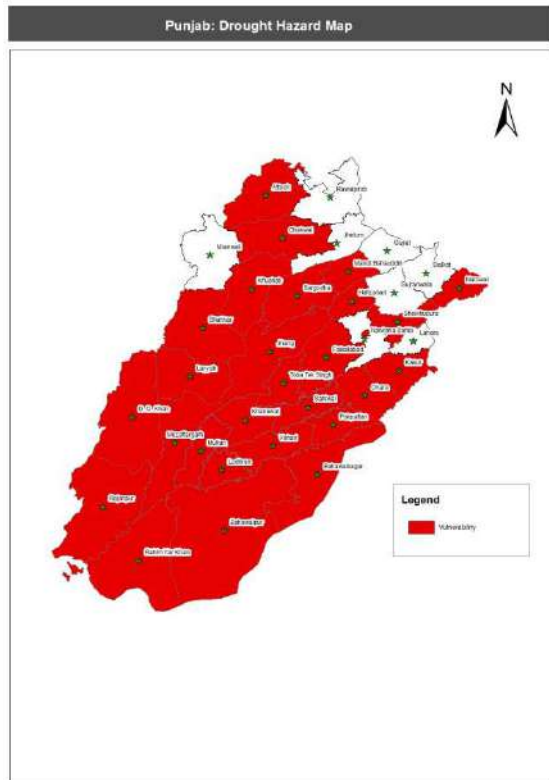


Figure 4: Areas at the risk of drought

Risk of Flooding

The Chief meteorologist communicates any discrepancies in the weather forecasts at the Cabinet Committee Meeting as well as the Pre-Flood Coordination Conference. Indus being the largest of all rivers poses a significant flood threat if the discharge rate exceeds 0.8 million cusecs. An exceptionally high flow rate of 0.8 million Cusecs was recorded at Taunsa Barrage in 1995 and 2010. This particular barrage is designed for a peak discharge of 1.1 million Cusecs and its strength was tested in the year 2010 when the flow rate went up to 0.96 million Cusecs at its peak. The river Indus sustained a discharge of more than 0.95 million Cusecs at the Kalabagh and Chashma, but the flow rate exceeded a million Cusecs during the floods of 2010. A similar example of exceptionally high flow rate is that of 6 million Cusecs at Trimmu Headworks on Chenab River. This flow rate had been recorded in three different years in the 90s. The river Jhelum also merges in Chenab at Trimmu Headworks in Jhang District and cumulatively they pose serious flood risk to the downstream regions. Chenab is one of the most threatening rivers as it flows through heavily populated districts of Gujrat, Sargodha, Jhang, Khanewal, Muzaffargarh and Multan. In 2010 a high flood along the Chenab River posed a serious threat to Multan City. The first Headworks on this river are at Marala, which is immediately south of the Indian occupied territory of Jammu. Any flooding in this river north of Marala would only be informed at a notice of maximum 6 hours, leaving too less a time for protective measures.

Apart from the riverine floods, the western districts of the Province face the risk of flash floods originating in the western mountain ranges. Districts such as Rajanpur, DG Khan, and Mianwali

Punjab Disaster Response Plan

are vulnerable to flash floods emanating from Koh-e-Suleiman ranges. More than five million cusecs of water flowed into the Indus River from these districts during the floods of 2010. Another threat of flash floods is prevalent in areas along the Indian border where the rivers cross into Pakistan. Numerous water channels flowing through the Parmandal range tend to cause flooding across the populous districts of Sialkot, Gujranwala, Sheikhupura, and Lahore.

Urban flooding is yet another hazard that the Government of Punjab has to be prepared for. The Lehi Nullah in Rawalpindi poses a serious hazard to the city as heavy rains along Margalla Hills can fill this water channel beyond its capacity. Lahore, Gujranwala and Faisalabad are similar examples of population centers that face the risk of water accumulation in the population centers.

Table 1:Flood types and the areas at risk

Flood Type		Vulnerable Districts
Riverine	Indus	Mianwali, Layyah, Muzaafargarh, DG Khan and Rajanpur
	Jhelum & Chenab	Jheum, Sargodha , Khushab , Gujrat, Chiniot, Jhang, Khanewal, Lodhran and Multan
	Ravi	Lahore / Shahdara, Gujranwala, Okara and Sialkot
	Sutlej	Pakpattan, Vehari and Bahawalpur
Flash		Dera Ghazi Khan, Rajanpur, Mianwali, Sialkot, Sheikhupura and Lahore
Urban		Rawalpindi, Lahore, Gujranwala and Faisalabad

The role of Provincial Disaster Management Authority

The Provincial Disaster Management Authority (PDMA) is responsible for spearheading the Government response to a disaster. PDMA is the coordinating authority that provides a platform for all departments to come together and strategize the preparedness and response to a disaster. This Disaster Response Plan developed by PDMA clearly articulates the coordination mechanism between key provincial departments. PDMA has set up a Command, Control and Communication Center (3C) to coordinate disaster response. This department maintains a state of readiness with all equipment in working order. All departmental representatives report to the 3C in case of a natural disaster. These departmental representatives are subject experts and they furnish their advices to the Director General of PDMA to help him plan the course of action in response to a disaster. All departments possess equipment that can be mobilized and the PDMA's job is to utilize the cumulative resources of the Government of Punjab to respond to a disaster. The Irrigation, Agriculture and Highway departments have over 400 bulldozers that can be utilized to remove debris and recreate routes in a disaster stricken area. These departments along with the department of Construction & Works and Water and Sanitation Agencies have other similar equipment such as Motor Graders, Road Rollers, Excavators, Scrapers, Cranes, Tractors and Drill Machines. The departments can also facilitate the delivery of relief goods and services by providing equipment such as Loaders, Trolleys, Dump trucks, Water Trailers. The Army and the Disaster Response Force of Rescue 1122 and Civil Defence have the capacity to provide Boats, Life

Punjab Disaster Response Plan

Jackets, Bailey Bridges, Search lights, Sand bags, Ropes and De-watering pumps. All of the above mentioned equipment's utility has to be planned at PDMA's 3C.

PDMA oversees search, rescue, evacuation, provision of relief, and finally the rehabilitation of the affected people. PDMA oversees the deployment of Rescue 1122, Civil Defence and Police for immediate search and rescue operations. PDMA plans and executes the provision of food, drinking water, medical supplies, and non food items to the affected population. The department also provides temporary shelters to the displaced people. These shelters are always provided with basic facilities such as proper water and sanitation. Prior to the incidence of a disaster, PDMA communicates early warning information to all stakeholders and after the Disaster, the department communicates with the media representatives to keep the people of Punjab informed about the extent of the disaster, possible damages, and remedial measures of the Government of Punjab. The PDMA also organizes initial and subsequent assessment of disaster affected areas and determines the extent of damage and the volume of the relief required. After the initial assessment, PDMA plans and sets up rescue and relief sites near the affected area to provide essential food, health, and security cover for all evacuees. A detailed assessment is later conducted to plan the early recovery and rehabilitation work.

PDMA has setup its own high frequency radio network that can be used in case of any disruption in the conventional communication channels. High Frequency Radio technology is not disrupted by most damages caused to the fixed communication infrastructures and it has the capacity to transmit to a number of users simultaneously. HF Radio network is immensely important for the rapid transmission of disaster response instructions. Radio technology is also used by the Police department, Armed Forces, UN agencies, IFRC and ICRC in the emergency operations. Land line or traditional telephone communication suffer degradation during a disaster due to the switching equipment, network disruption or loss of electrical power etc. In this situation, it is important to have alternate plan for land line telecommunication. Telephone service providing company must accord high priority to restoration/repair of land line telecommunication system. In case of disaster, there is also a need to set up complimentary Public Call Offices for affected communities.

Table 2: PDMA inventory of flood fighting equipment

PDMA Inventory of flood fighting equipment		Inventory
Equipment		
Field hospitals with 20 beds each		10
Boats	Army	850
	Rescue 1122	210
	District Governments	86
Out Board Motors		892
Tents (PDMA)		1300

Punjab Disaster Response Plan

Detail of Tents in Districts of Punjab

S.No.	District Name	Existing Inventory of DCOs
1	Mandi Bahudin	40
2	Mainwail	175
3	Jhang	0
4	Pakpattan	49
5	Sheikupura	11
6	Toba Take Singh	85
7	Bahawalpur	0
8	Vehari	50
9	Hafizabad	68
10	Sahiwal	63
11	Nankana Sahib	120
12	Khushab	260
13	Khanewal	0
14	Rajanpur	150
15	Jhelum	3
16	Rawalpindi	38
17	Attok	0
18	Lodhran	100
19	Sargodha	100
20	Chakwal	0
21	Layyah	0
22	Bhawalnager	22
23	Chiniot	0
24	Gujranwala	0
25	Dera Ghazi Khan	364
26	Faisalabad	0
27	Bhakkar	0
28	Rahim yar Khan	388
29	Muzaffargarh	0
30	Sialkot	900
31	Gujrat	45
32	Narowal	800
33	Lahore	0
34	Kasur	386
35	Multan	50
36	Okara	50
TOTAL		4317

Punjab Disaster Response Plan

The Command, Control and Communication Center: 3C

The Command, Control and Communication Center will serve as the hub of coordination for the Government response to a disaster. All the relevant Government departments would be present in this center to plan and coordinate the response activities. This center would receive early warnings and would issue information to the public, media, ministries, departments and humanitarian response agencies. The 3C will coordinate relief and early recovery work in the post disaster scenario. The 3C would be operational around the clock until the affected communities have been rescued, evacuated and aided with relief goods. The 3C oversees the deployment of evacuation, medical, search and rescue teams in the affected area. The following figure provides a visual depiction of the departments that are to be present at the 3C.



Figure 5: The Command, Control and Communication Center: The list of departments / agencies depicted above is not exhaustive

The 3C is supported by a team of GIS specialists, a Province-wide high frequency radio network, high speed internet connectivity and other resources such as telephones (landlines, cellular and satellite phones), fax, internet/emails, computers, printers, photocopiers, TV sets, range of status boards and map boards, generators etc. The 3C is responsible for preparation of alternative communication and transportation plans in case the current facilities are disrupted by a disaster. The Government representatives would plan their interventions based on the maps showing both affected and vulnerable areas and populations. The 3C would also coordinate with all operational humanitarian organizations such as, Pakistan Red Crescent Society (PRCS), and related International humanitarian organization agencies to further sharpen the response. Child Protection has been mainstreamed across disaster response. A Gender and Child Cell (GCC) has been established at PDMA which will assume

Punjab Disaster Response Plan

overall responsibility for ensuring that disaster relief efforts are child friendly. PDMA emphasizes the protection of women and children as about 70% of those affected in the floods of 2010 were women and children. The members of 3C would base their decisions on a rapid assessment of the disaster. This assessment carried out by the district representatives of different departments would be shared among all participants at the 3C. The representative of Irrigation department would, in case of a breach, inform all stakeholders of the current discharge rate in the affected water channel and the estimated area that would be inundated by water flowing out of that breach. This rapid assessment should follow an assessment of the resources that would be required to rescue the affected population, evacuate the vulnerable communities, and provide immediate relief to the victims of the disaster. The members of 3C would compare the resources at their disposal with those required to respond effectively. These members would then take key decision regarding the disbursement of relief goods such as food, drinking water, medical supplies, non-food items etc. During the execution of all such Governmental interventions, a representative of 3C would organize regular media and public information briefings.

The Director General of PDMA would maintain a close working relationship with the Met department and issue warnings to all stakeholders in case the Met department informs of any imminent disaster. After the incidence of disaster, PDMA would immediately inform all pre-assigned departmental representatives to report to the 3C. The representative of the Information department would design the communication strategy for media and public. This representative will organize press briefings and press conferences to inform the public about the extent of the disaster and the coordinated response of the Government. The representative of the Information department would remain present at the 3C to stay informed of local situations about which the public should be provided real-time information and advice. All information would be disseminated to the national news channels and daily newspapers.

Hazard Assessment

The Provincial Disaster Management Authority (PDMA) is collecting the information required to assess the vulnerability of the communities directly exposed to the risk of flooding. PDMA is conducting a detailed study of 5,975 settlements located in a 10 kilometer band parallel to all major rivers in nine vulnerable districts of Punjab. PDMA has marked all of the settlements on the map with the help of Geographic Information System. An Android based data entry application has been developed to help conduct the socio-economic and vulnerability assessment of the residents of these settlements.

PDMA has mobilized the District Disaster Risk Management Coordinators (DDRMCs) for the execution of this comprehensive assessment. The DDRMCs have been equipped with Android phones to accelerate the data entry process in the villages marked by the GIS team. These Android phones allow direct data entry and geo tagged pictures of the important infrastructure in each village. A database of buildings and structures is being created, that can be utilized to provide shelter or any medical aid to people displaced from other areas. Along with the information of buildings and Government structures, the DDRMCs are also collecting information on the number of people residing

Punjab Disaster Response Plan

in the settlements, number of persons that might require extra care in case of evacuation, number of households, number of disabled / elderly, and a variety of other data such as the availability and status of schools, dispensaries, godowns, police check posts, power infrastructure and other facilities. The data collected through this comprehensive survey is being superimposed on the topographical layout of the districts.

The information collected through this comprehensive survey would be used in the designing of a flood routing information system. PDMA has to provide immediate relief to the communities affected by flooding. However, important decisions regarding relief can only be taken once PDMA has knowledge of the extent of damage in the affected communities. After the development of the Flood Routing Information System, PDMA would know about the possible damage at the click of a button through simulation modeling. After the comprehensive survey and the development of this model, PDMA would use the model to predict the approximate number of people that are likely to be affected by the flooding, the approximate households that are expected to be displaced, and the facilities that are expected to be disrupted. The hazard assessment in selected flood prone districts of Punjab would revolutionize the decision making process of PDMA. In phase-2, the assessment shall be expanded to the remaining five flood vulnerable districts of the Province. In phase-3, PDMA will launch seismic hazard and vulnerability assessment. The following maps highlight the villages where the survey is currently being conducted:

Punjab Disaster Response Plan

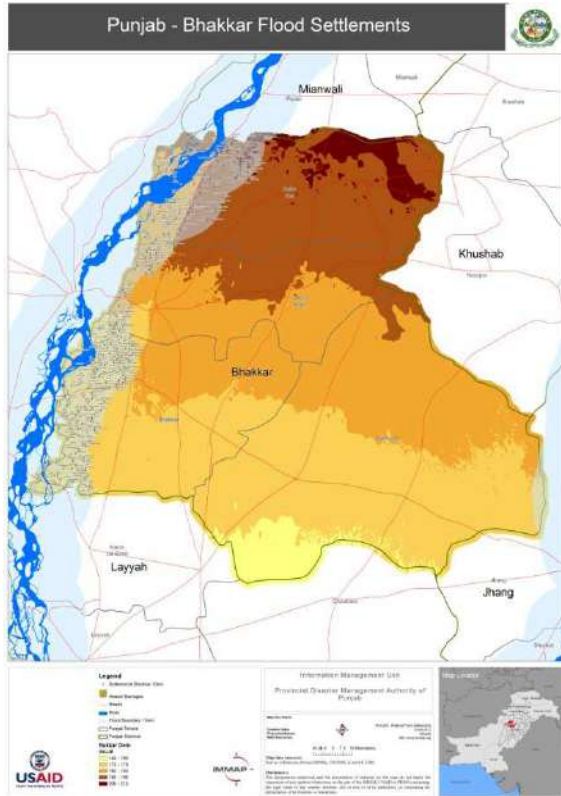


Figure 6: Vulnerable Settlements in Bhakkar

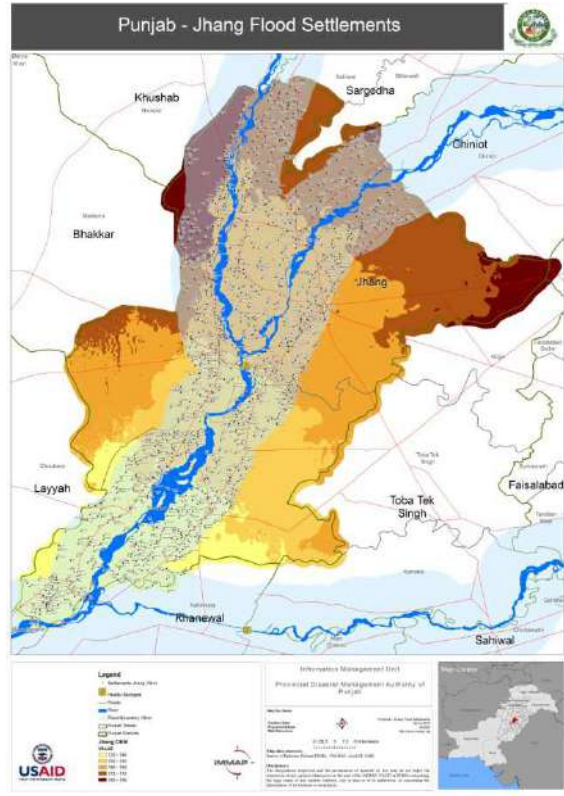


Figure 7: Vulnerable Settlements in Jhang

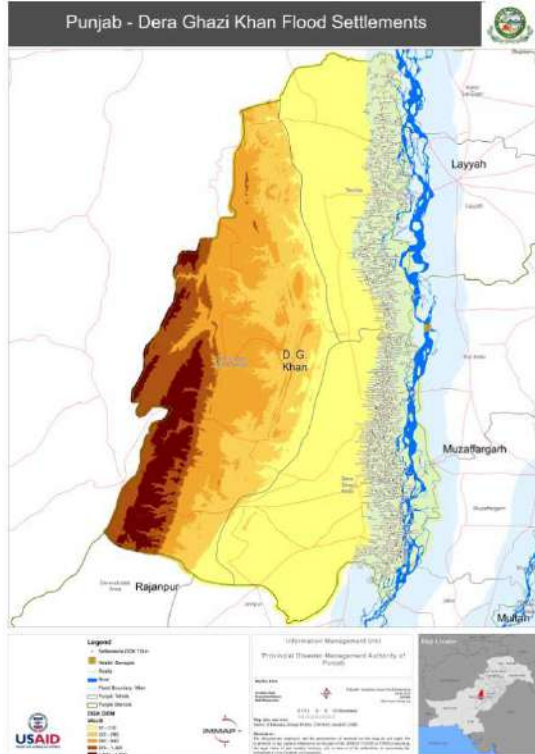


Figure 8: Vulnerable Settlements in D G Khan

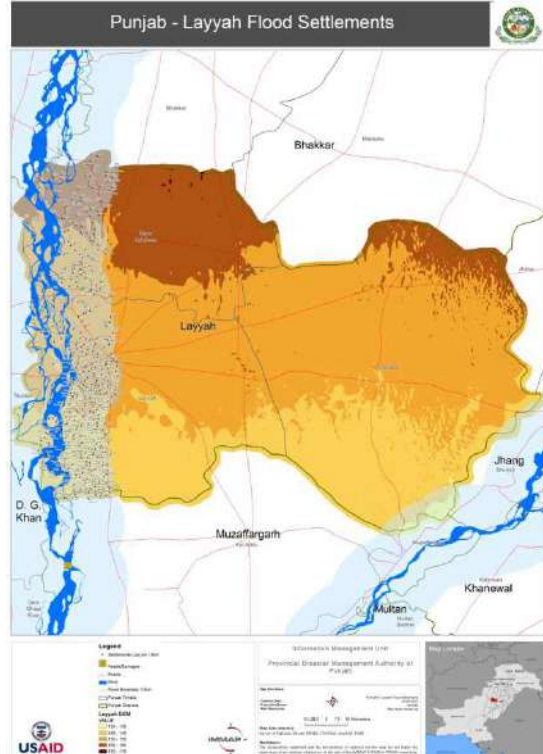


Figure 9: Vulnerable Settlements in Layyah

Punjab Disaster Response Plan

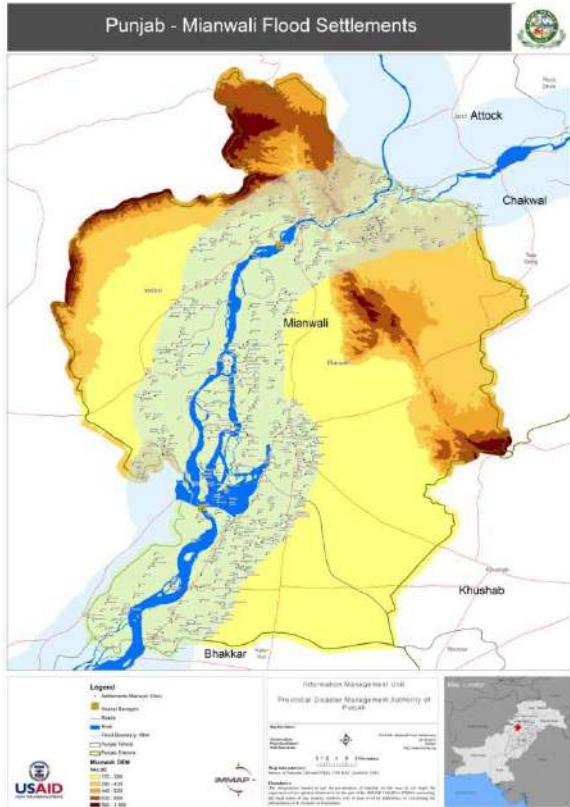


Figure 10: Vulnerable Settlements in Mianwali

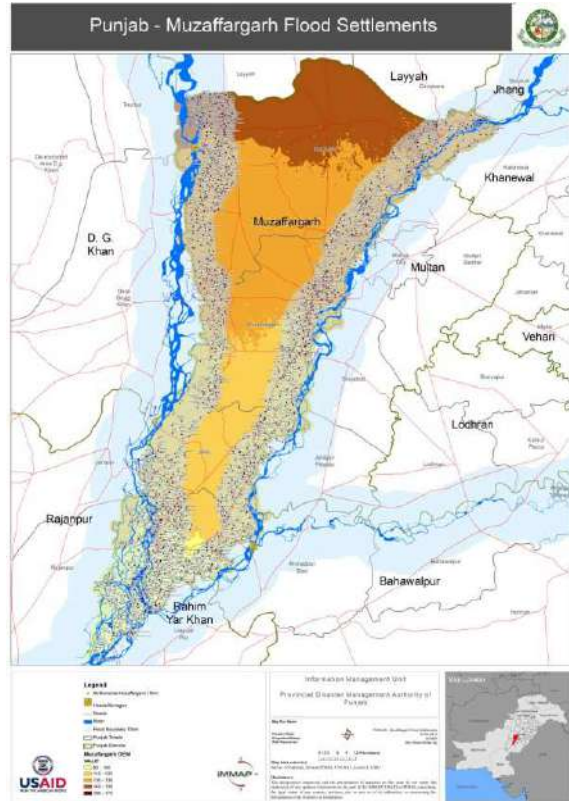


Figure 11: Vulnerable Settlements in Muzaffargarh

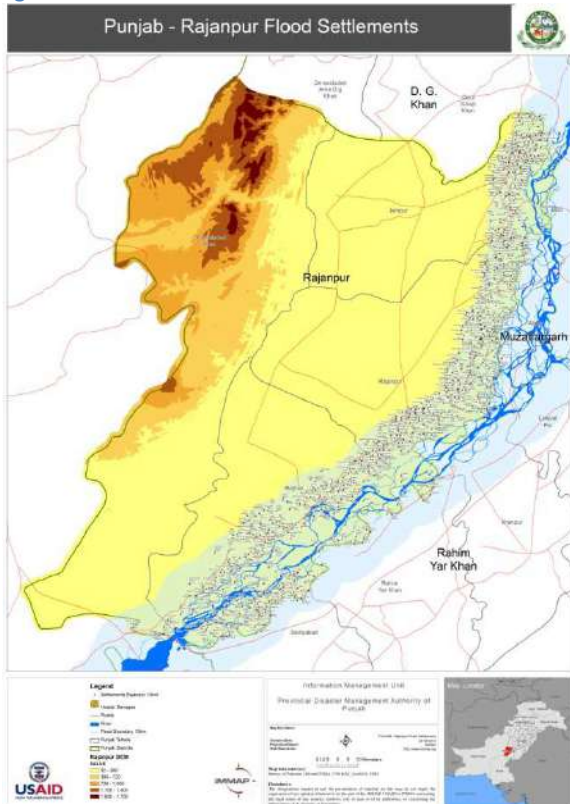


Figure 12: Vulnerable settlements in Rajanpur

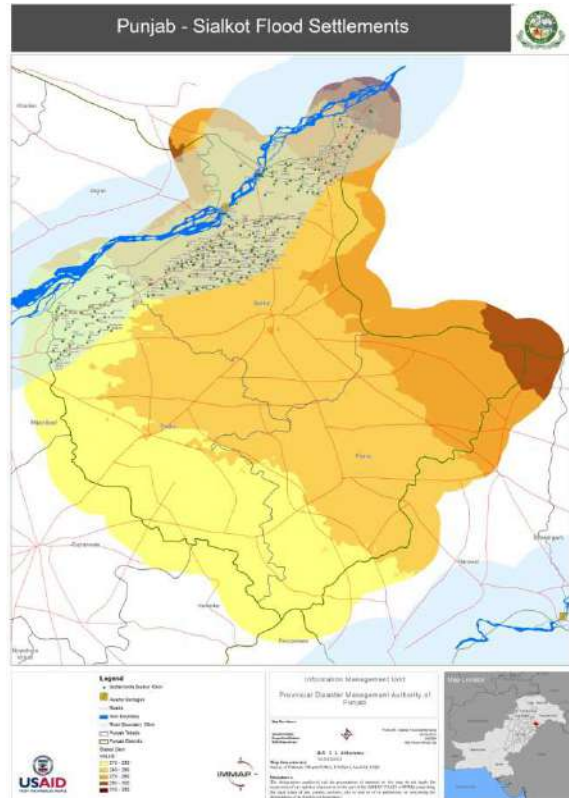


Figure 13: Vulnerable settlements in Sialkot

Punjab Disaster Response Plan

Disaster Response Functions

Evacuation

Emergency evacuation is the rapid removal of people from a threatened environment to a safer place. Punjab Emergency Services and Civil Defence, along with the implementing arms of the Home department are primarily responsible for evacuation of the affected people. Their key personnel should be trained in various evacuation techniques for the different types of disasters. The transportation plan for evacuation would be formulated in close consultation with Punjab Emergency Services, Punjab Police, the Construction & Works department and the Transport department. The department of Civil Defence along with the Education department would mobilize groups of Razakars and Scouts to assist the evacuation process. Evacuation is prioritized on a need basis. The first to be evacuated are seriously injured or bedridden patients followed by handicapped or disabled persons, pregnant women, elderly persons, children and women. The rapid evacuation of injured persons by the concerned agencies has to follow a simple color tagging process that prioritizes the patients that are in most urgent need of medical assistance.

The District Health Department or the paramedic staff of Rescue 1122 must evaluate the medical conditions of multiple victims and then attach a colored tag to each patient. Red, yellow, green, and black tags indicate the urgency of evacuation in a decreasing order. A red tag indicates that the patient suffers life threatening injuries and requires top priority evacuation and immediate medical attention. Patients with yellow tags can sustain themselves for a short while and they should therefore be evacuated after taking due care of red tagged medical emergencies. Patients with green tags should be rehabilitated at site and then evacuated once the red and yellow cases have been taken care of. Black tags are affixed to corpses or cases where resuscitation is impossible.

Evacuations would be coordinated by the PDMA and would be ordered by the DCO considering the on-ground scenario. Forced evacuation can also be ordered by the DCO in the face of clear and present danger. Prior to that, people are informed to evacuate by getting their attention through sirens, drum beatings, radio, cable TV or other local communication means.

Communities that are under the threat of a disaster or that have already been affected by a disaster would be informed by the PDMA and the District Governments about the evacuation routes along with the transportation or shelter arrangements that the Government has made for them. To estimate the social impact of the disaster, all evacuations would be documented.

Guidelines for Efficient Evacuation

Search & Rescue are the foremost activities of the evacuation process. Most of the resources would be dedicated to these activities during the initial 12 hours after the disaster. Alongside, relief camps would be set up in safe areas that are easily accessible from all sides. The locations of relief camps in districts have been duly indicated in the flood contingency plans issued by the District Governments. These camp sites would be equipped with proper medical, water and sanitation facilities by the District Governments. Evacuation routes to the identified camps would be rapidly planned and informed to the personnel undertaking the search and rescue operations. All efforts would also be made to engage Government and private transport vehicles for the evacuation of victims along these identified routes. The staff of Punjab Emergency Services is well trained in carrying out timely and

Punjab Disaster Response Plan

effectively coordinated operations to locate and rescue persons in distress and deliver them to a place of safety. Any harm to a rescuer should be averted as he/she is the most important person in a rescue attempt.

Families would preferably be evacuated together as one unit, minimizing chances of separation in a family. Evacuation of children without families would only be undertaken as a last resort and with the ultimate goal of earliest reunification. The best interest of the child would be considered while making the decision to evacuate.

Urban Search and Rescue (USAR)

USAR focuses on locating and rescuing people trapped in a major structural collapse. Urban search and rescue is considered a "multi-hazard" discipline, as it may be needed after the incidence of a variety of disasters such as earthquakes, tornados, floods, storms, or terrorist activities. The rescuers trained in USAR initiate their operations by a quick site assessment and allocation of resources. They employ search cameras, sensitive listening devices, carbon dioxide detectors, and thermal image cameras etc to identify the victims trapped under the rubble. Trained dogs are also brought in to detect the survivors trapped in the wreckage. After the identification of survivors the rescuers engage hydraulic and electric equipments such as jack hammers, drills, saws, disc cutters, ropes and stretchers etc, for cutting, breaching and lifting the rubble over the victims. The implementation arm of PDMA for Urban Search and Rescue would Rescue 1122, District Police and the District Administration. Army authorities would also be called in aid of civil power to complement the efforts of the civil authorities.

An early warning would allow in-time evacuation of the vulnerable population. The impact of a disaster can be mitigated if its onset can be foreseen. An early warning can substantially reduce the loss of lives, properties, and livelihoods. The warning must be articulated in clear and easy to understand local language. Pakistan Meteorological Department (PMD) is responsible for sharing information through an early warning system during the monsoon period. PMD shares the information on the flood situation from 15 June to 30 September every year. In case an anomaly is observed in the weather patterns during the monsoon season, a warning is dispatched to all the relevant stakeholders such as PDMA which then informs the relevant departments to remain on high alert. A Flood Warning Center has been setup in Lahore to forecast and inform the possibilities of exceptional increases in the precipitation rates. The Federal Flood Commission also strives to improve flood forecasting and early warning systems.

Assessment

Immediate evacuation is followed by an assessment of all that is needed to overcome the effects of the disaster. Available resources have to be deployed to the neediest people and so this strategizing must be based on a reasonable assessment of the disaster, and the subsequent needs of the affected communities.

In case of a disaster, a rapid initial assessment would first be carried out to effectively conduct the Search & Rescue operations. This assessment would then be followed by detailed sectoral assessments to plan, implement and coordinate the response to a calamity. The initial rapid assessment is the exercise of collecting information, in order to identify the basic needs such as food, shelter, water,

Punjab Disaster Response Plan

sanitation, medicines etc. The rapid assessment would be completed in the first 48-72 hours to get an immediate picture of the extent of disaster. This assessment would provide the basis for immediate response during the first 8-10 weeks. After the completion of 4-5 weeks, the expanded rapid assessment would also be carried out to gather detailed information on the affected communities and the feedback on the Governmental interventions in the last few weeks. Expanded rapid assessment guides the medium term response of three to four months. The assessments would be carried out by all concerned line departments; however, it would be spearheaded and coordinated by the 3C at PDMA.

The rapid assessment would evaluate whether the local capacity is adequate or external resources are required to provide immediate assistance. The assessment would be used to prioritize Government interventions. The Government may, if needed approach the International Development Partners to undertake the assessment of the disaster's impact on lives and livelihood.

If the disaster happens in more than one district and it is beyond the capacity of the district administration then PDMA would directly engage in initial rapid assessment within 48-72 hours of the disaster. PDMA would form a team of members from different departments to conduct the initial rapid assessment. The members and composition of the team would be flexible according to the situation and availability of human resource. This team would be supervised and guided by the PDMA. The assessment team would present report to the 3C at PDMA in addition to the concerned DCO and Divisional Commissioner. The assessment would involve field visits of the affected area, collection of information regarding the devastated areas and the affected communities.

Provision of Medical Services

The victims of a disaster would most probably require immediate medical assistance due to injury, psychological trauma or general health problems such as diarrhea, cholera, high fever, flu, cough, eyes infection etc. The main purpose of providing health services in disaster situations is to prevent and reduce the morbidity and mortality, and to control the proliferation of infectious diseases after the disaster. Mobile clinics would immediately be setup in the affected areas. These clinics would be equipped with both clinical and human resource to enable them to cater to medical needs of a large number of victims. The Provincial and District Health Departments would be the lead agencies in this regard. However, the assistance of International Development Partners and I/NGOs would also be solicited. The clinics and hospitals in the vicinity of the affected area would maintain a record of all patients to be able to identify any epidemic outbreaks that would further increase the spread of disease. The Social Welfare department would take all measures to rehabilitate orphans, destitute women and other vulnerable elements of the affected population. There would be an ongoing systematic collection, collation, analysis and interpretation of patient data. A Disease Early Warning System would track the outbreak of diseases such as cholera, typhoid and malaria. The main goal of this system is to minimize the morbidity and mortality by detecting epidemics at the earliest possible stages. The 3C must assess the functional status and capacity of local, public and private health institutions/organizations in the vicinity of the disaster affected area. The 3C would also inquire the availability of skilled health workers, essential drugs and medical supplies and equipment. The capacity of existing logistics system would be determined, especially as they relate to the procurement, distribution and storage of essential drugs and medical supplies. The outbreak of communicable diseases would be prevented in shelters, camps or other areas harboring the displaced persons. This would be achieved through immunizations, vector

Punjab Disaster Response Plan

control or limiting proliferation by providing immediate medical assistance to the affected. The Minimum Initial Service Package (MISP) for saving lives of mothers and newborns will be incorporated into the health sectors response to cater to the health needs of women and children.

Relief Management - Food and Non Food Items (NFIs)

Relief management ensures the sustenance of large numbers of evacuees that are not able to carry the items of everyday use with them. The Government can provide respite by providing certain food and non-food items such as clothes, blankets, cooking utensils, hygiene kits, buckets, plastic sheeting, sleeping mats, water jerry cans, washing powder etc. The main purpose of the relief management is to provide life sustaining commodities to the affected communities in a fair and organized system.

Child headed households and separated/unaccompanied children would be given food distribution cards in their own name in a manner that does not cause further separations. Special attention and priority should be given to the persons with disability, elderly person heading household, women and adolescent heading household. Presence of child protection/social protection actors at distribution points would be ensured as this can serve multiple purposes including identifying of separated unaccompanied children.

An ideal distribution system is safe, accessible and transparent to the intended beneficiaries. Distribution must take into account the recipient's physical capabilities. Food is the foremost relief item that the worst affected communities require on an immediate basis. In the first few days after the disaster, the Government would provide ready to eat food items. Subsequently, food disbursement would shift to provision of dry ration.

Food items

An initial assessment would be undertaken to identify the number and demographics of the affected population to estimate the quantity and type of food required. This assessment would also factor the food available in local markets in the vicinity of the affected regions. The nutritional needs of pregnant women, lactating mothers and malnourished children would be catered to on the highest priority. The food package would be enough to provide 2100 K calories/person/day. Food provided to the communities would be of good quality. Beneficiaries would be informed in advance about the distribution points, date, time and procedure. All measures would be adopted to counter the unethical collection of relief packages by outsiders that portray themselves as victims of a disaster. Special attention would be paid to persons with disabilities, elderly, women and stranded children. Food distribution would be coordinated among all organizations to avoid any duplication or under serving. The distribution points would be decided in consultation with local communities keeping in mind the convenience of recipients and the ease with which supplies can be transported to the point. The distribution points would be accessible to women, elderly persons, person with disabilities and children.

A complaint cell would be established for every ten distribution points allowing the beneficiaries to redress their grievances about the quality, quantity, distribution and targeting procedures. The selection and registration of affectees, distribution methodology, selection of distribution points, and monitoring of the distribution would be transparent, equitable and mindful of local traditions.

Punjab Disaster Response Plan

Non-Food Items

Non-Food Items are provided to the displaced personnel to help them establish themselves in a new environment that they are forced into. Plates, buckets, jerry cans, and water storage vessels can allow the affectees to store and prepare their food for gradual consumption. The immediate provision of clothing and bedding gives a feeling of comfort, dignity and safety. In the same manner as other relief goods, preference must be given to women, children, elderly and the disabled.

Shelter

Natural or man-made disasters often displace large numbers of people, forcing them to inhabit temporary shelters and camps. Temporary shelter is provided by the Government and humanitarian organizations as part of the emergency response. The Government utilizes public buildings such as schools or portable tents to provide immediate cover to the affected communities. The newly established settlements have in some cases continued to host the affected for a significant time after the occurrence of the disaster. In the light of this, the Government would seek to provide all possible amenities in these newly established communities. Provision of basic amenities helps to establish operational communities that are able to sustain for a longer duration. Public facilities such as schools, barracks, warehouses, play-grounds, parks, have historically been utilized to provide shelter to the displaced affectees. Tents are usually provided in case the number of displace person exceeds the number that can be temporarily accommodated in public facilities. Only a set number of people would be allowed to inhabit a public building. This set number would be decided keeping in mind the available space, availability of facilities such as electricity, water, and sanitation, and the time it takes to evacuate all the inhabitants. Temporary shelters would have separate toilets and bathing facilities for men and women and it would maintain healthy standards by conducting anti mosquito sprays etc. The elderly and disabled must be provided with the most comfortable and accessible areas of the public facilities designated as temporary shelters. The temporary shelters should never be overcrowded as it can create unhygienic conditions. The following criteria should be followed while assigning space in the public facilities:

Table 3: Specification of facilities provided to displaced persons

Minimum specifications of facilities to be provided in public facilities and buildings.

Minimum floor area of 3.5 square meters per person.

Minimum air space of 10 square meters per person.

Washing facilities:

One hand basin /10 persons or

One wash bench of 4-5 meters/100 persons.

Toilets

One seat/25 women

One seat plus 1 urinal /35 men

Maximum distance from building should be 50

Punjab Disaster Response Plan

Camps

Camps would be established in areas accessible by metalled roads so that provision of essential facilities is not difficult. Apart from organized camp sites established by the Government or humanitarian organizations there can also be numerous scattered settlements comprising of people living in the immediate vicinity of their homes or village. The scale of these settlements may vary from a few tents to larger groups of 50 tents. These independent settlements are not setup according to any prescribed rules and can be located in remote inaccessible regions; however communities residing in these settlements would be equally entitled to relief good that the Government disburses for the sustenance of affected people.

In case of a mass exodus of people from the affected communities, a tent village would be set up by the district authorities and humanitarian organizations. The basic purpose of these establishments is to provide safety, security and basic amenities such as water, sanitation and medical assistance to the inhabitants of these facilities. The camp sites selected should be safe, accessible and far from other hazards and risks areas. The camps would be designed in a way so as to maximize the protection and security of the displaced persons.

Once the immediate emergency phase is over, the Government would encourage affected population to repatriate to their original place of residence. This encouragement would not compromise the dignity of the affected population. Alternatively, safety of affectees would be a part of the security management. Police and other Law enforcing agencies would maintain law and order during and after the emergency, and provide security to the people affected by the disaster. Appropriate measures would immediately be taken to prevent the children from child labor or sexual exploitation. Disasters can cause the separation of Children from their parents or guardians making them vulnerable to abductions, involuntary involvement in unlawful activities, molestation and exploitation. Children's safety and security would be the responsibility of the Social Welfare Department, the Child Protection Bureau, the Police and similar law enforcing organizations.

The day to day camp management would be the responsibility of the District Government. The following specifications are the minimum standards of the services that are to be provided to the inhabitants of tent villages:

Table 4: Specifications of facilities provided at tent village camps

Land	3.0-4.5 square meter per person
Shelter	3.5 square meter per person
Water	15-20 liters per person per day
Food	2100kcal per person per day
Toilet	One per family of 6-10 persons
Health Centre	One per 20,000 persons
Child Friendly Spaces	2-4 year olds- 15 children:2 facilitators 5-9 year olds-20 children : 2 facilitators 10-18 year olds- 30 children :2 facilitators
Hospital	One for as many as 200,000 persons

Punjab Disaster Response Plan

The District Administration responsible for setting up of the tent villages would select a suitable land of 7-8 acres for every 1000 affectees. This area would then be planned into a community with wide roads dividing the area into accessible tents. The minimum distance between two tents would ideally be at least 8 meters. Water Reservoirs would be set up to ensure that every person has water available within a radius of 100 meters from his tent. A proper mechanism of solid waste disposal would also be provided. A mechanism for incineration or burial of the waste would also be built before allowing people to inhabit it.

Water and Sanitation

Improper management of water and sanitation can lead to outbreak of diseases in camps. Poor sanitary conditions contribute to the proliferation of Diarrhea cases. In emergencies the quality or availability of water becomes a major challenge. Contamination can lead to a manifold increase in water borne diseases. In relief camps; it is important to take the source of water into account. It is important to ensure that the quantity and quality of water meets the standards of potable water. Multiple water points would be planned to ensure the access to everyone. The distance of the water point from the camp/house would ideally not be more than 100 meters. The water sources should be planned in a way that each point caters to a manageable number of users:

Table 5: Specifications of water and sanitation facilities provided at relief camps

250 people per tap	Based on a flow of 7.5 liters/minute
500 people per hand pump	Based on a flow of 16.6 l/m
400 people per single use open well	Based on a flow of 12.5 l/m

In emergency situations, water is normally treated with chlorine purification tablets. The percentage of chlorine should not be increased beyond a certain level to make the water unconsumable. People must also have adequate facilities and supplies to collect, store and use sufficient quantity of water for their own consumption and domestic hygiene. Sanitation includes excreta disposal, vector control, solid waste disposal and drainage. Lack of attention to proper sanitation can lead to a number of diseases. A rapid assessment would gauge the sanitary needs and would help to plan the design of an alternative system in case the original system of sanitation has been disrupted by a disaster.

The community members and sanitation experts would be consulted in the design of the toilets. It is important to construct separate toilets for women as well the disabled. Mechanisms for the regular cleaning of toilets would be developed in advance by the District Government. Hygiene education would also encourage the users to maintain the cleanliness of their toilets themselves. Toilets should be within 50 meters of all affectees and at least one toilet should be provided for every 20 people.

Vector control would be an essential part of the camp maintenance. Vector breeding sites would be monitored and treated by the District Health department. People diagnosed with malaria would be treated on a priority basis so that vector borne diseases do not spread from an affected person to others around him/her.

Punjab Disaster Response Plan

Roles and Responsibilities of Stakeholders

Lead Departments

Irrigation Department

Punjab's irrigation infrastructure consists of 14 Headworks and Barrages that generate 21 different Main Canals. These Canals along with their branches run almost 4000 miles to deliver water to more than 2000 distributaries and minor canals. This vast network of water channels delivers this resource to 20 million acres of irrigable land in the Province.



Figure 14: Headworks & Barrages in Punjab

RIVER	LENGTH OF RIVER (K.M.)	LENGTH OF BUNDS (K.M.)	SPURS / STUDS (NO.)
INDUS	547	811	131
JHELUM	363	155	43
CHANAB	731	1330	309
RAVI	694	630	127
SUTLEJ	515	406	30
TOTAL	2850	3332	640

Table 6: Length of embankments

The Irrigation department continuously monitors the water pressure in the major water channels of the Province. In case of rising discharge rates, the Irrigation department issues early warnings of potential floods or canal breaches through media, TV cable operators, police wireless network etc. The Irrigation department's flood response duties include protection of barrages,

Punjab Disaster Response Plan

settlements, canals, bunds, spurs and communication infrastructure such as railways, highways etc. The Irrigation department monitors the vulnerable embankments throughout the Province. This is an enormous task as the embankments run for more than 3,300 kilometers throughout the Province.

The irrigation network of Punjab is divided into six different zones, each headed by a zonal chief. Each zonal chief prepares a flood fighting plan and submits it to the Chief Engineer, Drainage and Floods. The Chief Engineer reviews the zonal plans and prepares a comprehensive contingency plan for the entire department. The Chief Engineer (Drainage and Floods) mobilizes the Executive Engineers (XEN) for the inspection of flood works. Inspections usually result in the identification of damages to embankments or the encroachment of various people. The Irrigation department has to work in coordination with other civil authorities to take care of the encroachments on embankments and spurs. The Irrigation department maintains a close watch on the discharge rates in the major water bodies and for this purpose, the department has to ensure the functionality of gauges etc. The irrigation department must also maintain a state of readiness and so the department ensures the replenishment of stones and other flood fighting material. Stones can be used to fill breaches or reinforce embankments and so they must be stocked prior to the monsoon season. The Zonal offices also maintain a reserve stock of stones as depicted below.

Table 7: Sample template of stone procurement in 2012

Zone	Sanctioned Stone Limit (Lac Cft.)	Available Stone (Lac Cft.)	Balance stone Required (Lac Cft.)	Cost of balance stone (M.Rs)
Sargodha	89.43	34.08	55.35	220.29
Lahore	45.28	31.49	13.79	63.65
Bahawalpur	45.09	32.97	12.12	61.11
D.G.Khan	168.11	67.98	100.13	270.43
Faisalabad	95.77	25.81	69.96	478.08
Multan	56.6	41.78	14.82	88.32
Total:-	500.28	234.11	266.17	1181.88

The Irrigation personnel are deputed at head works and vulnerable points for timely warning. These personnel are equipped with wireless sets (base & mobile). The discharge rates and other relevant information communicated by these personnel is delivered to the Flood Warning Center at –Jail Road, Lahore. The Police Telecommunication Department Punjab assists the Irrigation department to establish the wireless network at vulnerable points. Police Telecommunication Department installs HF, VHF base sets at all the Barrages, H/Works, Bridges and Nullahs. The irrigation department also coordinates with the Indian Government to receive information on discharge rates in the Indian Territory. The Indian officials communicate the discharge of Ravi below Madhopur, Chenab at Akhnoor, and Sutlej at Bhakra dam.

Punjab Disaster Response Plan

The Irrigation department classifies floods into the five categories of low, medium, high, very high, and exceptionally high. The following table documents the designed capacities of rivers and the discharge rates for different types of floods

Table 8: River Discharge Rates

River	Gauge Site	Designed Capacity (lac Cs)	Flood Limits in Lac Cs.				
			Low	Med:	High	Very High	Exp. High
INDUS	Kalabagh	9.5	2.5	3.75	5	6.5	8
	Chashma	10	2.5	3.75	5	6.5	8
	Taunsa	10	2.5	3.75	5	6.5	8
JHELUM	Kohala	12	1	1.5	2	3	4
	Mangla	10.6	0.75	1.1	1.5	2.25	3
	Rasul	8.5	0.75	1.1	1.5	2.25	3
CHENAB	Marala	11	1	1.5	2	4	6
	Khanki	8	1	1.5	2	4	6
	Qadirabad	9	1	1.5	2	4	6
	Trimmu	6.45	1.5	2	3	4.5	6
RAVI	Punjnad	7	1.5	2	3	4.5	6
	Jassar	2.75	0.5	0.75	1	1.5	2
	Ravi Syphon	4	0.4	0.65	0.9	1.35	1.8
SUTLEJ	Shahdara	2.5	0.4	0.65	0.9	1.35	1.8
	Balloki	2.25	0.4	0.65	0.9	1.35	1.8
	Sidhnai	1.5	0.3	0.45	0.6	0.9	1.3
	G.S.Wala	10 ft.	19.5	21.5	23.3	25.3	
	Suleimanki	3.25	0.5	0.8	1.2	1.75	2.25
	Islam	3	0.5	0.8	1.2	1.75	2.25
	Mailsi	4	0.75	1.1	1.5	2.25	3
	Syphon						

Table 9: Flood Limits of Nullahs

Nullahs	Gauge Site	Flood Limits in Cusecs				
		Low	Med	High	Very High	Exp. High
Bein	Chak Amru	5,000	10,000	20,000	30,000	35,000
Deg	Q.S.Singh	3,600	7,500	15,000	25,000	36,000
Aik	Ura	2,000	9,000	13,000	16,000	33,000
Basantar	Narowal	2,500	4,100	7,500	11,600	17,800
Palkhu	Wazirabad	2,000	30,000	5,000	25,000	26,000

Punjab Disaster Response Plan

Discharge rates have crossed the designed discharges a few times in the recent past. Water either over flows or breaches the water channel when the flow discharge exceeds the designed discharge. Dates when the flow discharge exceeded the design discharge are shown in the following table:

River	Gauge Site	Designed Capacity	PEAK FLOOD FLOWS (Disch. In lac Cs.)			
			2011		Ever Recorded	
INDUS	Kalabagh	9.5	26.7.11	3.06	30.7.10	10.36
	Chashma	10	28.7.11	3.58	1.8.10	10.39
	Taunsa	10	1.9.11	2.28	2.8.10	10.85
JHELUM	Mangla	10.6	16.9.11	1.31	10.9.92	10.9
	Rasul	8.5	17.9.11	0.97	10.9.92	9.52
CHENAB	Marala	11	16.9.11	1.58	26.8.57	11
	Khanki	8	17.9.11	1.66	27.8.57	10.86
	Qadirabad	9	17.9.11	1.65	11.9.92	9.48
	Trimmu	6.45	20.9.11	1.28	8.7.59	9.43
	Punjnad	7	2.9.11	1.38	17.8.73	8.03
RAVI	Jassar	2.75	17.9.11	0.34	5.10.55	6.8
	Ravi Syphon	4	14.8.11	0.42	6.10.55	6.59
	Shahdara	2.5	14.8.11	0.43	22.9.88	5.76
	Balloki	2.25	15.8.11	0.44	28.9.88	3.99
	Sidhnai	1.5	2.9.11	0.24	2.10.88	3.25
SUTLEJ	Suleimanki	3	30.8.11	0.76	8.10.55	5.98
	Islam	4	3.9.11	0.5	11.10.55	4.92

Time lag is the amount of time water takes to reach from one point to the other. Disaster response is often planned in a severe time constraint. If a very high flood is recorded at Tarbela, then according to time lag calculations, the Government only has 24 hours to take preventive measures at the Kalabagh dam. Flood would reach Kalabagh dam within 24 hours. The following table provides time lag for all major sites where the discharge is measured:

Punjab Disaster Response Plan

Site	Designed Capacity (Lac Cs)	Distance (K.M.)	Time Lag (Hrs.)
<u>RIVER INDUS</u>			
Tarbela Dam			
Kalabagh Barrage	9.5	169	24
Chashma Barrage	9.5	58	12
Taunsa Barrage	10	237	60
Guddu Barrage	12	139	30
Sukkar Barrage	12	160	42
Kotri Barrage	8.75	461	144
<u>RIVER JHELUM</u>			
Mangla	10.6	153	
Rasool Barrage	8.5	66	9
<u>RIVER CHENAB</u>			
Marala Barrage	11		
Khanki H/W	8.5	56	12
Qadirabad Barrage	8.07	30	7
Trimmu Barrage	6.45	214	72
Punjnad H/W	7	257	78
<u>RIVER RAVI</u>			
Madhopur			
Jassar Bridge	2.75	94	8
Ravi Syphon	4	73	18
Shahdara Bridge	2.5	24	8
Balloki H/W	2.25	63	24
Sidhnai Barrage	1.5	198	78
<u>RIVER SUTLEJ</u>			
Ferozepur H/W	4.5		
Suleimanki H/W	3.25	126	24
Islam H/W	3	99	72

Table 10: Time lag

Excessive water pressure can rupture the embankments or levees of a water channel and therefore Irrigation department's foremost priority is to release excessive pressure by diverting additional water out of a threatening channel. Irrigation department maintains 19 breaching sections throughout the Province. These breaching sections are vast land areas; dug few feet to store excessive water. A threatening increase in water levels can be managed by diverting excess water into the breaching sections.

Punjab Disaster Response Plan

Total No. of Breaching Sections in Punjab = 19 Nos.

- Related to Punjab Irrigation Department (PID) = 13 Nos.
- Related to Railway Department = 4 Nos.
- Related to Punjab Highways Department /NHA = 2 Nos

As the name suggests, land areas dedicated to store excess water are filled by breaching a section of the threatening water channel. This breaching is conducted under the supervision of a committee consisting of Irrigation department's Chief Engineer and Executive Engineer, Additional District Collector, Additional Superintendent and a senior army officer. The Irrigation department always discourages encroachments in vulnerable areas such as river beds, bait areas and ponds etc.

The Irrigation department receives, collects, and maintains all information related to river discharges and flood situation in Punjab. The Irrigation department utilizes gauges and sounding rods to keep a track of the discharges in rivers. In case, the discharges increase beyond a safe threshold, the department sets up a Flood Emergency Cell that manages the continuous monitoring of vulnerable areas. The Irrigation department identifies weak points in embankments, and gets them repaired before the flood season. The department officials setup camps at all sensitive points of the embankment in order to monitor them on continuous basis. The Irrigation department compiles an inventory of heavy machinery and vehicles that can be used to repair damaged embankments in times of disasters. This department also possesses a list of suppliers and transporters of clay, sandbags, bamboos, stones, and construction material. All breaches are filled with the abovementioned materials. The latest assessment of the disaster, along with the remedial measures taken, is communicated to PDMA's 3C on a regular basis.

Irrigation department's foremost responsibility is the inspection and repair of flood protection bunds / embankments. Along with that the department has to continually monitor the discharge rates in major water channels. The department strives to remove all encroachments or debris from the en-catchment areas of water channels. These initiatives restore the original discharge capacity of the river. The department also procures and stores explosives for the opening of breaching sections whenever needed. The Irrigation department plays a lead role in the strengthening of all vulnerable embankments.

Punjab Disaster Response Plan

Health Department

Government of Punjab is providing primary as well as tertiary health care services throughout the province with infrastructure of 2,456 Basic Health Care units, 290 Rural Health Centers, 81 Tehsil HQs, 36 District HQs and 19 Teaching Hospitals. The public sector health delivery system is composed of four tiers and it will continue to provide services at these four tiers throughout the onset of a disaster:

1. Outreach and Community Based Activities, which focus on immunization, sanitation, malaria control, maternal and child health, and family planning.
2. Primary care facilities include BHUs, RHCs.
3. THQs and DHQs provide inpatient and outpatient care.
4. Tertiary care hospitals located in the major cities for more specialized care.

Health Department's foremost priority is to provide first aid to the injured people and arrange evacuation of serious patients to the hospital for further assistance. The Health department shall create static camps and mobile health teams for prevention and control of communicable disease, immunization against vaccine preventable diseases, provision of essential drugs, treatment of common ailments, nutritional support and safe water supply, and awareness about common health problems. The static camps and mobile health teams would be equipped with the right tools and medicines. The Health department would make a roster of all medical officers and paramedics that would be deployed to these camps and teams.

An emergency control room will be established in the office of Directorate General Health Services and a representative of this emergency control room would be designated to PDMA's 3C. Purpose of the control room is to collect information from the ground level and disseminate it to the concerned quarters. The Health department would allocate medicinal and other resources to maintain sufficient stocks in the hospitals that fall in the area hit by the disaster. A camp office of the Directorate General Health Services would be setup in the field. An advance supply point of medicines and other logistics would be established at a safe population center near the disaster hit area. Additional resources would be mobilized from nearby hospitals, and medical colleges. The Health department would also coordinate with international organizations such as WHO and UNICEF to streamline the relief services such as the provision of medicines, immunization, and nutrition etc.

The Health department would carry out extensive disease surveillance in the disaster hit area through the Disease Early Warning System. The department would mobilize and deploy medical teams and paramedic staff for rapid assessment and quick response in the affected areas. Acute Respiratory Infection, Diarrhea, Malaria and malnourishment are common medical issues that are observed in most of the disasters. The Health department would be well equipped to respond to the onset of such medical issues. The Health department would report on the current status of surgical equipments, human resource, vehicles, ambulances, and medicine stocks, at hospitals both within the affected areas and in its vicinity. The Health department would provide emergency health kits, vaccines, safe delivery kits high energy biscuits, micronutrients and collapsible hospitals to health care providers in or around the area hit by the disaster. The National Disaster Management Authority has designated WHO as the key organization that will fill the gaps in the supply of medicines, rapid diagnostic kits, and

Punjab Disaster Response Plan

vaccinations etc. The Health department would also coordinate with UNICEF and WFP to ensure the supply of nutrition supplements such as energy biscuits in areas affected by the disaster. The department would coordinate with community female health workers to assign health related task in emergency response. Additionally, the department would draw up list of CBOs/NGOs and other social welfare organizations working in health sector in the district and ensure their participation in emergency response.

A Health and Nutrition Cluster for overall management and oversight of Health department's disaster response would be formed at the Directorate General Health Services. This cluster would constitute of the Director General of Health Services, Directors of Program on immunization, Communicable Disease Control, and Management Information System. The Provincial Coordinators of National Program on Primary Health, and Maternal / Neo Natal Child Health, would also participate in the Health and Nutrition Cluster. This cluster would coordinate their activities with the Provincial Disaster Management Authority and would lead the provincial control room for over all guidance and proper mobilization of resources. Upon declaration of an emergency by PDMA, the Health department would mobilize its resources according to this plan.

Monsoon flooding is the most threatening disaster for Punjab. The Health department would ensure prepositioning of two weeks of reserve stocks of medicines etc before the start of the monsoon season. The department would then continually monitor the consumption of these stocks and would replenish them on an ad hoc basis. The department has employed a logistics support system for efficient monitoring of required medicines and kits. The department has already prepared a list of essential medicines that are required in flood like situations. In case the medicine stocks or even the infrastructure is damaged due to floods, the department would draw up a plan for early recovery of health infrastructure and service delivery.

The Health department would also engage medical colleges to create Emergency Response Teams. These teams would comprise specialists such as physicians, pediatricians, public health specialist, pharmacist, bacteriologist and epidemiologist. Health department would coordinate with UNFPA to deliver reproductive health kits in areas where women and children are vulnerable to further damages. The Reproductive health kits would contain various medical instruments and medicines to respond to gender based violence and treat communicable infections. The Minimum Initial Service Package (MISP) developed by UNFPA and advocated by RAF is one example of the reproductive health kit that should be distributed to pregnant women. The department would also develop easy to understand and culturally appropriate; hygiene messages for promoting better hygiene practices among mothers and children.

Punjab Disaster Response Plan

Communication and Works Department

The C&W Department is responsible for installation and maintenance of the communication infrastructure such as roads and bridges. The C&W department takes steps to ensure speedy repair and restoration of transport links. The department dumps stone boulders to avoid erosion at cross drainage structures and bridges. Sandbags are placed along road stretches that might be inundated due to excessive water accumulation. The department coordinates with the Police Telecommunication department to set red flags and berm indicators to identify danger zones. In case the communication infrastructures such as bridges are damaged at a certain place, the C&W department restores the infrastructure by putting up bailey, boat and steel floating bridges at affected sites. The Army's similar resources are called in if the moveable bridges of the C&W fall short. The C&W department has divided its geographic jurisdiction in Provincial Highway Circles, each headed by a Superintending Engineer. The Superintending Engineer would be responsible for the disaster response in his particular area. The Chief Engineers would be overall in-charge at the provincial level and would issue necessary instructions to the sub centers or highway circles for safeguarding the communication infrastructure. The Executive Engineers In-charge would lead the local response efforts and deploy equipment such as torches, lamps, red lights and even the steel floating and bailey bridges. The C&W department would coordinate with the Police and Transport department to prepare the alternative route plan to guide commuters to roads that are still open and safe for thoroughfare. Planning alternative routes would be based on educated estimates of the volume of traffic that would flow from the new routes. All efforts would be made to avoid diversion of a large mass of vehicles to narrow or damaged roads. The position of roads and alternative routes would be informed to the general public through, press, radio and TV.

In case a particular road or bridge is damaged by the disaster, the Sub Divisional Officer along with Executive Engineer In-charge would visit the affected site and report the extent of the damage and possible remedial measures to the Superintending Engineer and Chief Engineer. The Executive Engineer would then inspect the possibility of diverting traffic on other roads and would impose speed and load restrictions on roads that are susceptible to any damage. In case of a breach or damage to road infrastructure, The Sub Divisional Officer will construct barricades and warning on both sides of the road. The Executive Engineer (XEN) would restore traffic on the road by erecting temporary bridges at the affected sites. The C&W department possesses five bailey bridges and six floating or boat bridges. The XEN would also provide the equipment required for immediate restoration work, for e.g. picks, axles, shovels, lanterns, torches, thick jute ropes, and empty cement bags etc. In case the road is blocked by a landslide or falling debris is threatening ongoing traffic, the Sub Engineer and Road Inspector will blast the land mass with explosives and clear the rest of the debris with heavy machinery or manual labor. The Construction and Works department also assists the Irrigation Department and Army with the opening of breaching sections.

Punjab Disaster Response Plan

Livestock & Dairy Development Department

The Livestock Department has to save animals and poultry population from any direct injuries or fatalities and infectious diseases during and after the disaster. The Livestock department would set up mobile veterinary camps and exercise vigilance about disease outbreaks in animals. The department would coordinate with Transport and other relevant departments for rescue operations particularly involving large animals such as cattle. The District Livestock Officers would arrange for the transport required to rescue or evacuate large animals from vulnerable areas. The Director of Animal Disease Reporting and Surveillance will lead the disaster response efforts of the department. The department will mobilize mobile veterinary units to provide immediate medical assistance to injured animals. The Livestock Department would mobilize teams from veterinary hospitals and universities such as University of Veterinary and Animal Sciences in Lahore. About 4,800 animals died during the floods of 2010 and so an immediate and fast response of the Livestock department is absolutely imperative.

The department would conduct a rapid assessment of damages to livestock and provide financial and technical resources to the district livestock departments for immediate provision of medical and material relief. The department would initiate the provision of fodder, de-worming medicines and vaccines for the animals in disaster situations. The department would also ensure a regular supply of feed and fodder to help the livestock sustain hardships that a disaster brings. The department would coordinate with the local feed mills to fulfill any short comings in concentrated feed and wheat straw. A reserve stock of feed and fodder would also be maintained to cover any unforeseen shortage. The four Government owned feed mills at Bohadar-Nagar, Bhuneikay, Rakh Dera Chahl and Kharimourat would provide concentrated feed during the shortage that might arise as the consequence of a disaster. Livestock that survive a prolonged drought would be administered fodder and feed that provides high nutrition. The department can make arrangements for delivery of animal feed on subsidized rates in emergencies such as droughts. The department would also oversee procurement and replenishment of reserve stock of medicines, vaccines and flood fighting mission. The District Livestock Officers would spearhead the vaccination of vulnerable livestock. The Livestock department would mobilize Assistant Disease Investigation Officers (ADIO) for immediate de-worming, treatment and first aid. The ADIOs would manage the disease diagnostic labs in various districts of Punjab and they would be responsible for utilizing the resources of these labs in the local disaster response. The Artificial Insemination Technicians would provide paramedical support to the ADIOs. Human resource from neighboring areas would also be diverted to the affected areas.

Punjab Disaster Response Plan

Stakeholders responsible for Search, Rescue and Evacuation

Rescue 1122 Services

The Punjab Emergency Services (PES) also known as Rescue 1122 has been established for immediate response to emergencies, sophisticated rescue, and provision of emergency medical treatment to persons affected by emergencies. PES evacuated about forty thousand victims from the flood inundated areas during the floods of 2010. PES is trained in sophisticated search and rescue technique and is Punjab's foremost rescue agency. The agency possesses multipurpose rescue vehicles that contain essential rescue equipment such as heavy duty hydraulic cutters, spreaders, and electronic search and rescue devices. Apart from the Rescue vehicles the agency also possesses Ambulances, Fire fighting vehicles, Water Bowsers, Water Rescue vans, Recovery vehicles, Boats, OBM Engines, Life Jackets, Rings and Buoys etc.

Government of the Punjab has notified a Disaster Response Force (DRF) under the PDMA comprising Rescue 1122, Civil Defence, and the District Disaster Coordinators. This force would comprise of 7,500 personnel of Rescue 1122, trained in water rescue and creation of Community Emergency Response Teams. The DRF would be under the operational command of Rescue 1122. PDMA has already provided 210 boats to Rescue 1122 for rescue and evacuation efforts.

In case of a disaster, PDMA would mobilize the Disaster Response Force and the Community Emergency Response Teams (CERTs). The Disaster Response Force would carry out sophisticated search and rescue and evacuate affected and vulnerable people. To manage the high number of operations during a disaster, Rescue 1122 would establish a Provincial Monitoring Cell at its headquarters in Lahore. This monitoring cell along with Rescue 1122's command and control room would be operational around the clock and would also be linked with the 3C at PDMA through video conferencing and radio link.

Rescue 1122 assists the District Administration in setting of tent villages and provision of emergency medical treatment to the victims of a disaster. The District Emergency Officer manages and leads the rescue and evacuation efforts in his jurisdiction. He is responsible for the deployment of fire fighters, cordoning of hazardous areas, provision of first aid and medical treatment, immediate search and rescue of victims and management of the pre-hospital emergency system. Rescue 1122 has established a comprehensive pre-hospital emergency management system with emergency ambulances, rescue and fire services, and community emergency response teams. Rescue 1122 is well trained in setting up medical camps for provision of emergency medical treatment. These camps are setup by Rescue 1122's doctors and paramedic staff. During the floods of 2010, the department setup 52 camps in flood prone areas and provided treatment to thousands of patients. First aid was provided to more than five thousand patients. Apart from immediate treatment, medical experts of 1122 also impart health education to help locals prevent themselves from water borne diseases such as Diarrhea, Dysentery, and Typhoid fever. Rescue 1122's training academy conducts a four months basic rescue course which includes emergency medical treatment, rescue and firefighting. Apart from the basic course, the academy also trains in sophisticated courses such as Medical First Responder and Collapsed Structure Search.

Punjab Disaster Response Plan

Civil Defence

The Directorate of Civil Defence assists in the evacuation of people and their household properties from the disaster affected areas. The Directorate engages a large number of volunteers for search, rescue, evacuation and disbursement of relief goods. These volunteers generally known as “Razakars” are usually trained in swimming, rowing, handling of OBM, basic rescue techniques, first aid etc. Razakars build their skills in simulation and mock exercises. The Civil Defence collaborates with Punjab Emergency Services (Rescue 1122) in sophisticated search, rescue and evacuation operations. The District officer (Civil Defence) organizes mobile squads of Razakars and scouts in collaboration with local wardens and scout organizations to assist local administration/army, Rescue 1122 in evacuation and other disaster response activities. Razakars manage and utilize all boats, oars, out board engines, generators, search lights, and other lifesaving equipment. Razakars that know how to swim and dive are utilized for specialized water rescue. Razakars provide first aid to injured victims before transporting them to hospitals. These volunteers also assist the fire brigade in rescue, and Health department’s representatives in the treatment of injured victims. The Civil Defence also assists the District Administration and Police in setting up information system for members of public, whose relatives, friends and family members are missing.

Home Department

The Home department has four major implementation arms for disaster management activities: Police Telecommunication Department, Police Operations Department, Civil Defence, and Rescue 1122. The Police Department would follow the Standard Operating Procedures issued for a disaster situation. One of the foremost objectives of this department is to make arrangements for traffic control, planning alternative routes and maintaining law and order during evacuation and in relief camps and godowns of relief goods. The primary objective of the Police is to save human lives, and to protect vital infrastructure, installations, machinery, equipments, and stock of resources, from damages caused by a disaster. The department has to control crime against property. The wireless system and control rooms already established by the Irrigation department would be networked with the Police control. The police setup warning posts in and around all hazardous areas. Most of the police staff active in the field would be equipped with mobile wireless sets. DSP/Tele (TP) and Inspector Workshop will be responsible for the supply of these wireless sets to different areas and these officials would also work for prompt repair of all nonfunctional equipment. The police should lay special emphasis on ensuring the security of the personnel of the international humanitarian organizations, donors, and embassies, visiting the affected areas. The police should ideally also be trained in search and rescue, evacuation, first aid and emergency response in collaboration with Civil Defence and Rescue 1122. The police would support district administration in evacuation of affected people and transport to camp sites. The police personnel must maintain law and order situation at the camp sites, relief centers, distribution points and shelter sites. The Police would ensure proper security for godowns housing relief goods and would assist local administration to stop theft and misuse of relief material. The police would also check and deter acts of theft and misappropriation. The department has to keep close watch for any criminal and anti state activity in the area activities.

Punjab Disaster Response Plan

The police would draw up security plan for evacuation routes, warehouses, relief camps, relief centers, distribution points and public/private property for any potential disaster in the district and share it with DDMA. The Home department will setup a Provincial Crisis Management Cell for the coordination of the implementing arms of the Home department. The police has to ensure the security of all key points such as siphons, bridges, link drains etc. All police mobiles would be equipped with extra torches, rubber tubes, shovels, snake bite kits, and life buoys etc.

The Police would plan an active role in the relief disbursement by assisting in the supply and distribution of food and other relief items. An extremely courteous attitude is expected of Police at sites where relief is disbursed in a usually unorganized manner. The primary objective of a police officer deployed to help the affected is to protect the lives and property of the affected population, maintain law and order in the relief camps and godowns, and help the civil administration in the transport of relief goods and medicines. All the police personnel engaged in disaster response must be afforded a proper supply of water, food, and boarding.

SP/Mobile will spread head the patrolling of affected areas and evacuation routes. The SP would plan a shift wise system of patrolling duties to maintain law and order around the clock. Patrolling must be provided on the designated routes of relief supply. The Police would assist the district administration and Rescue 1122 in the evacuation of people at risk. The Police might would also be engaged in forced evacuations in case a disaster becomes imminent and local communities continue to underestimate the destruction that a disaster might cause. In case heavy duty electric lines get ruptured and fall down, the Police would cordon the area before informing WAPDA to take care of the issue.

The Police manages traffic during a disaster situation and develop alternative traffic management plan to avoid inconvenience. The Police has to coordinate with the C&W, or Highways Departments to direct traffic towards alternative routes.

The Police has to provide and install reflective lights / reflectors around the scene of incident at night, to facilitate working of rescue workers, fire fighters etc. The Police may also have to coordinate with the C&W Dept for this. The Police Telecommunications branch will provide the communication support to PDMA, Irrigation department or other departmental personnel responsible for patrolling the vulnerable areas. The Police Telecommunication department would deploy its personnel to the affected areas. These teams would be equipped with high frequency sets, ultra high or very high frequency base sets, battery chargers etc.

The department would create warning posts in key locations related to a disaster, for example constables would be deployed at vulnerable embankments that can collapse and flood the surrounding areas. HF, VHF and UHF sets would be provided by the department to establish the communication network that is absolutely essential for a well coordinated response to a disaster.

Punjab Disaster Response Plan

Pakistan Army

The Pakistan Army's resources are employed for immediate search, rescue and evacuation. The Army is called in the 'Aid of Civil Power' only when a disaster overwhelms the resources at the disposal of the Government of Punjab. Search, rescue and evacuation are the primary responsibilities of the 'Disaster Response Force' so if the resources of this force fall short, the Army is immediately called in. The Army's setup in Punjab is administratively divided into six Corps with a Corps Commander leading each Corps. The District Coordination Officer of the affected district would request the relevant Army Authorities for aid of Army upon the approval of the Home Department. The Standard Operating Procedure of requesting the support of the Army is to route the DCO's request through Home Department, and the Ministry of Defense. The Ministry would inform the General Headquarters (GHQ) and officers at GHQ would request the relevant Corps Commander to activate the Garrison Officer In-charge and the Brigadier responsible for leading the on ground operations. PDMA has equipped the Army with 850 boats for rescue and evacuation. In addition to the on ground movement, the Army can also provide the necessary air support for reconnaissance, relief and rescue missions. PDMA pays for the maintenance expenditures of the 850 boats mentioned earlier. In the same manner, all of Army's expenditures on disaster response are debited to the requisitioning civil authority.

The Army plays a substantial role in the opening of breaching sections. The Irrigation department is responsible for the maintenance of manageable discharge rates in the major rivers of Punjab. If the water flow exceeds a set discharge rate, the breaching section is opened with the help of explosives and excessive water is diverted into a designated area. The Breaching Section Committee responsible for the opening of the section, contains a military representative, which is usually a representative of the respective formation Headquarters not below the rank of Lieutenant Colonel. In case a disaster disrupts the existing telecommunication channels in a certain area, the Army would spearhead or assist the installation of wireless stations. In case of high floods, the respective Corps Commander would setup a Flood Relief Committee, consisting of but not limited to Commander Corps Engineer, Commander Corps Signals, Chief of Staff, Colonel General Staff, Colonel Administration etc.

Punjab Disaster Response Plan

District Governments

The District Governments are the first line of Defense. The District Governments are required to undertake timely action to save the lives and livelihoods of local population. The Districts Government's responsibility is not limited to saving the human life, properties and livestock, it also includes the prevention of epidemic outbreaks amongst both human beings and livestock, to provide timely medical aid to the effected persons and to eventually rehabilitate the affected people. The District Governments would be ready round the clock for providing timely warning to the people and providing assistance to flood victims with all available means and resources. The District Governments would keep sand bags, baskets, belchas, kasies, and other flood fighting materials ready and available. On receipt of a flood warning, the District Government will immediately convey the warning to all the concerned officers. Upon the receipt of warning, immediate action will be taken in each sector / sub sector for evacuation of the population from the low lying areas to safer places or to Relief Camps established for this purpose. An Assistant Commissioner will ensure that announcements in vulnerable areas are made through loudspeakers of the mosques. Further, the Assistant Commissioner will also utilize the services of the Revenue department. Each Patwari will inform the Numbardar, Headmaster of the School, Imam Masjid and Councillor etc. The District Coordination Officer would decide the strategic direction of District Government's response to a disaster. The tactical operations would be headed by the Additional District Collector (ADC). The ADC would be responsible for coordinating and supervising the disaster control and relief measures in the district.

In case of a threat of disaster, the District Government must establish a Disaster / Flood control room at the DCO's office. The Disaster / Flood Control Room has to maintain updated information regarding the threat of disaster. The District Administration would maintain a regular communication with the Flood Forecasting Division or the staff at a dam up stream in case of a flood. As soon as the Control Room receives any information on the imminence of flooding the administration should immediately arrange for announcements to be made through mosques, police, revenue department and other mobile teams. The District Government would immediately mobilize the equipment flood fighting equipment to tackle the challenges created by a disaster. The District Governments have provided comprehensive lists of flood fighting equipment to PDMA as part of their flood contingency plans.

The concerned Assistant Commissioner would be assigned the duty of setting up Relief Camps at safer places. The relief camps have to be well planned and well organized in all respects. The Districts submit their flood contingency plans to PDMA and each district's contingency plan notifies the location of relief camps. Daily Flood situation reports would be sent to PDMA. The Assistant Commissioners will transmit their reports to the DCO or Additional District Collector who will forward the same to the concerned quarters. The Executive District Officer (Health), and the Assistant Commissioner concerned will ensure the availability of adequate medicines stock for treatments, particularly for snake bite cases at each relief camp. EDO (Agriculture) or Livestock would arrange the supply of cattle feed in case of any disruption in the ongoing supply. Such roles and responsibilities of various officers are explained below:

Punjab Disaster Response Plan

EDO Health

The Executive District Officer (Health) is responsible for mobilization of mobile units under the command of medical officers, and the provision of necessary vaccines, medicine, antibiotic drugs, ORS and anti-snake biting vaccine in adequate quantities in addition to all other necessary first aid items. EDO (Health) will ensure that adequate number of Doctors and paramedics are posted at each Flood Relief Camp. These Doctors will also be assisted by trained volunteers. He will ensure the availability of life saving drugs at the Flood Relief Camps/nearest Health Centers. The Medical Superintendent of DHQ/THQ Hospital will ensure availability of Doctors and paramedics round the clock in their respective hospitals with necessary medicines. The health facilities including BHUs and RHCs near the flood / disaster affected area will ensure proper accommodation of patients and sufficient stock of medicines. These facilities would regularly report the availability of required medicines. Mobile teams consisting of doctors, dispensers, and sanitary inspectors will be constituted. EDO (Health) will ensure that all dispensaries in the relief areas are adequately equipped with anti-malaria drugs, antibiotics, antiviral vaccines and life saving drugs. The EDO (Health) will also ensure preventive and curative measures to prevent epidemic outbreaks in the disaster areas.

EDO Agriculture

The Executive District Officer (Agriculture) will ensure that farmers are provided necessary help and assistance in sowing of Rabi crops on recession of the Flood water. He will ensure that seeds, fertilizers and pesticides are readily available to the farmers affected by the Flood. EDO (Agriculture) will also be responsible of the availability of Toori (Husk), dry and green fodder for the livestock at all relief camps.

District Officer (Livestock)

The District Officer (Livestock) will ensure that adequate drugs and Veterinary Officers are available at the relief camps. He would also dispatch Mobile Teams consisting of veterinary officers and assistants. Free vaccination of Livestock will be ensured during the pre-flood season particularly in the vulnerable villages/areas. The District Officer (Agriculture Extension) would assist the DO Livestock for the provision of fodder to the cattle at the relief camps. The Agriculture and Livestock & Dairy Development Departments have to set up stalls / shops for the supply of fodder at the Headquarter of each tehsil in order to meet the need of affected cattle. District Officer (Livestock) shall ensure that adequate stock of vaccine and serum for cattle disease is available in the veterinary hospitals situated in the affected area. The DO (Livestock) would report the availability of adequate stocks of drugs.

EDO Works and Services and DO Buildings

The Executive District Officer (Works & Services) will ensure that breaches of respective district roads are immediately repaired. The District Officer (Buildings) will inspect all the Government buildings affected by a disaster. Immediate measures will be taken to carry out repairs of these buildings or if they are too dangerous then notice for their vacation must be issued and the buildings must be declared dangerous.

District Food Controller

Punjab Disaster Response Plan

The District Food Controller will ensure that adequate flour or wheat is available on demand against payment for providing the same to the Flood affected people. The Food controller would also setup a scheme for the opening of temporary wheat ration depots in the areas affected by the disaster. The Food controller would repackage the available wheat in smaller packages of 5-10 Kgs, so that the limited resource can be divided into a greater population. The food controller will initiate the quick preparation of emergency ration packets comprising necessary available food items.

EDO Education

The school buildings in proximity of the flood affected areas will be used as Relief Camps. The Executive District Officer (Education) will liaison with the respective Assistant Commissioner and ensure presence of Class-IV employees, Scouts, Girls Guides and volunteers to assist the relief operations

Tehsil / Town Municipal Administration

The Tehsil / Town Municipal Administration (TMA) plays an important role of providing clean drinking water facilities, and hygienic atmosphere in and around the relief camps. In addition to these responsibilities, TMA is also responsible for the dewatering of flood/rainy water from inundated areas within minimum possible time. The Tehsil / Town Municipal Administration would provide any assistance to the District Government for management of the relief camps and other relief operations.

The TMAs are responsible for the restoration of water and sanitation facilities in their municipalities. They are also responsible for the disposal of waste or rain water in some cases. The TMAs are equipped with trucks, water bowsers, lorries, tractors, dewatering sets, bulldozers, loaders and dump trucks. All of these equipments are utilized to restore proper sanitary facilities, ensure the delivery of clean water and remove debris or excess water. TMAs mobilize sanitary inspectors along with sanitary workers for cleaning sewer lines and drains, and spaying of insecticides. The TMAs also make efforts to drain out the rain water from low lying areas. The excess water is drained into sewer lines or agricultural water courses. The TMAs employ de-watering sets to remove excess water. All TMAs are required to ensure the maintenance of all dewatering sets prior to the monsoon season. The TMA maintains a list of all the choking points where rainy water accumulates as a result of heavy storms.

The TMA would store clean drinking water in overhead reservoirs and tube wells. This water would be chlorinated fortnightly for the hygienic supply to public. The clean drinking water would be disbursed to the affected areas with the help of water bowsers. The Tehsil Officer Infrastructure and Services would direct a Flood Control Center that has to be established in case that tehsil is seriously affected. In case of a high flood that requires people to displace, the TMA should assist the migration of the affected people in all possible manners.

The Tehsil Municipal Officer (TMO) is also responsible for the survey of dangerous buildings and the issuance of notices to the owners of such building to vacate the dangerous site. The TMO also ensures the availability of Para-medical staff along with first aid kits at each dispensary/emergency center. During the disbursement of relief, the local TMA would depute manpower for the distribution of food and essential commodities among evacuated people. The TMA can also assist in the arrangement of food, clothes, and clean water etc. in the relief camps.

Punjab Disaster Response Plan

Additional Stakeholders

Public Health Engineering Department (PHED)

The Public Health Engineering Department (PHED) is responsible for provision of proper and clean water and sanitation facilities. Disaster can disrupt the existing water and sanitation system putting the affected population at risk of numerous medical issues. In post disaster scenarios, there is usually a high risk of sewer water mixing into clean water channels in areas that are totally inundated. This mixing can lead to epidemic outbreak of various diseases. The department develops plans to protect water from contamination by continuous water treatment and health education awareness in the disaster affected areas. The department conducts an assessment of water and sanitation schemes damaged by a disaster and prepares plan for fast track rehabilitation. The PHED department deploys teams to set up temporary new water supply system for affected population. The Water and Sanitation Agency (WASA) is an agency within the PHED department. It is responsible for the management of 4,900 km long sewer lines, along with primary drains, secondary drains and road side open drains. WASA must take all possible measure to avoid the mixing of contaminated sewer waste into delivery channels of potable water. The Agency can clear the inundated areas by employing heavy machinery such as Jetting units, Suction units, Dump Trucks, Backhoes, Front end loaders, Excavators and Cranes. To avoid the overflow of sewer lines, WASA must ensure the regular dredging and de-silting of trunk and collector sewers. The dewatering sets should be fully functional prior to the monsoon season and the ponding areas should be inspected for any problems. WASA should also arrange spare manhole covers to immediately respond to any such need. The agency should reduce the chances of contamination by identifying and rectifying the leakages in water supply and sewer line. In case of a contamination in a certain area; the agency should conduct the disinfection of water through chlorination or use of bleaching powder. The agency should then regularly monitor the water contamination by testing samples at PHED's water testing laboratories. PHED must conduct random water quality testing on regular basis to ensure the minimum standards of the quality of water. The department must continually ensure that the sanitation system is functioning in relief camps and it should make proper arrangements for drainage in the camps/temporary emergency shelters.

PHED would provide PDMA with a list of public buildings that can be used for temporary shelter in emergency. PHED will coordinate with the DDMA's to get a list of public buildings in the district and at tehsil levels which can be used for emergency shelter. The department would also make sure that proper water and sanitation facilities are available therein. PHED would set up community water supply systems in relief camps with water treatment system. The department is also responsible for the restoration of sewerage systems and sanitary conditions in affected areas. The department conducts rapid assessment of water and sanitation in the affected areas and provides safe drinking water to the affected population in emergency situations. The department will mainstream child protection in Water, Sanitation and hygiene concern in accordance with the draft SOPs on Child Protection during Disasters (See Annex A).

Punjab Disaster Response Plan

Education Department

The Education Department would establish relief camps and distribution points at schools, and would mobilize the teachers and students to help the affected population. The establishment of relief camps for longer durations can create educational shortcomings in the residents of camps and those living around them. For this reason, the Education department would also consider the setting up of emergency mobile schools and provision of teaching material to continue education during the emergency.

The department would compile a roster of the volunteer teachers and students who can be deployed as workforce in emergency response. Teachers and students would also provide voluntary assistance in disaster assessment and distribution of relief goods in the affected areas. Education department would also prepare a list of Government schools and colleges that may be used for relief camps. The department would ensure the provision of water and sanitation at schools being utilized as relief camps. The department would conduct an assessment of all the disaster affected schools and those severely damaged would be rehabilitated on a fast track basis. The department will oversee Child Protection concerns in education according to the SOPs for mainstreaming Child Protection in Education (See Annex A).

Agriculture Department

Agriculture Department is responsible for the assessment of standing crop losses. Punjab is overly dependent upon agriculture as a source of income and a large proportion of its population is employed in this sector. Crop losses affect the livelihoods of a majority of Punjabis. Floods disrupt the livelihoods of millions of people and so the Agriculture department has to immediately report on the standing crop losses and help in the prevention of further damages. The department would conduct an initial rapid assessment to assess the damages to the agriculture crops. The department would immediately provide technical advice to the farmer community to protect standing crop from any further damages. The Agriculture department would also provide farm machinery wherever it might be needed to protect the crops. The water in heavily inundated farms can at time be drained to other areas by removing earth from certain critical areas. The 'Field' section of Agriculture department would provide bulldozers and other such machinery to ensure dewatering of inundated farms. The entomologists of Agriculture department would also exercise vigilance about pest attack on the crop and take effective measures against it. The humid climate of post monsoon season is extremely conducive to the breeding of various insect species and it is fairly common to observe high pest attacks in the monsoon season. The department would furnish its advice to help farmer cope with the increased pest population.

Local Government & Community Development Department

The LG & CD department would ensure the availability of proper equipment and human resources that are required to dispose the waste, and deliver clean water in the disaster affected area. Prior to the onset of a disaster such as floods, the department would de-silt the open drains in the areas threatened by flooding. In case the water accumulates in a specific area, this department would deliver and operate dewatering sets to lower the economic losses due to inundation. If the level of inundation

Punjab Disaster Response Plan

exceeds a certain threshold, the department would create an Emergency Response Squad comprising of sub-engineers, electricians, de-watering sets, and their operators. The LG & CD department would also ensure proper solid waste management to avoid the accumulation of excessive waste that can hinder the rescue or relief services.

A natural disaster can cause disruption in both water and drainage channels. In the worst case scenario, the waste can flow out of the drains and into the water supply. This issue is commonly observed during flooding. The mixing of waste can engender an epidemic disaster due to water borne diseases. In case of contamination the LG & CD department would conduct awareness activities on water purification in the affected rural areas. The department would also have to coordinate with International and national non Government agencies working on water/sanitation activities. The Local Government has to reduce the chances of such medical emergencies by keeping a close watch on the sanitary conditions of the disaster affected area. The Chief Officer for sanitation would dispatch sanitary mates and sanitary inspectors with the required dewatering and de-silting equipment. Their primary objective is to monitor disposal stations and main drains. They would also identify and eliminate the critical ponding points where the excess water would have accumulated. This department would maintain a close coordination with both Water and Sanitation Authority and Solid Waste Management. The Local Government department has the ability to mobilize heavy duty machinery such as tractors, front end loaders, sewer sucker, jetting machines, water bowsers, dewatering sets and generators etc. The Tehsil or Town Municipal Administration's emergency squads must coordinate with the teams of Water and Sanitation Agency and Solid Waste Management Department in all desilting and dewatering activities.

Social Welfare Department

The Social Welfare department has to coordinate with all CBOs/NGOs, INGOs, UN organizations, and Rural Support Networks to provide relief to the victims of a disaster and rehabilitate them. This department must maintain a list of all NGOs and donors articulating their key operations, thematic working areas and key human resources. The Social Welfare department has compiled guidelines on core issues and it can accelerate the adoption of those guidelines by distributing IEC (Information, education and communication) material on child protection, care of separated children, reunification process and care of disabled person in emergencies. The material will be prepared in local language and disseminated widely in affected area.

The Social Welfare department would monitor social protection issues in IDP Camps with a particular focus on the status of women and children. The department would coordinate with the DDMA's to ensure that needs of most vulnerable groups such as minorities, disabled, elderly, and widows are addressed in all possible ways. The department would assist the DDMA's in the management of relief camps, distribution of relief goods and the assessment of damages. The department will also play a major role in child protection by opening Child Welfare Units in the disaster affected areas catering to child victims of gender based violence, psychological trauma and physical harm.

Punjab Disaster Response Plan

Child Protection and Welfare Bureau (CPWB)

The Child Protection and Welfare Bureau (CPWB) will upon receiving an alert designate a representative to the 3C and mobilize resources for setting up temporary centers for provision of services for Separated and Unaccompanied children. It will also run Open Reception Centers for child victims of gender based violence, psychological distress and physical harm. It shall act in accordance with the SOPs on Child Protection during disasters (For details see Annex A).

Information Technology Department

The IT department would analyze the assessment of damages conducted by various departments to create an easy to use web based interface for Government decision makers, journalists and the general public. The interface developed by the IT department would inform the audience about the extent of damages caused by a disaster, and the remedial measures that have been undertaken by the Government of Punjab.

The Information Technology department would maintain a pool of telecom equipment preferably the satellite/wireless based devices, for the provision and establishment of emergency telecom network in the affected area. The National Telecommunication Corporation (NTC) will cooperate with the IT in this regard. The IT department would deploy a team of pre-trained technical staff that can restore the communication channels and establish new links where the prior channels cannot be restored. This team is well trained in establishing connectivity in a remote disaster stricken area.

Industries Department

The Industries department has to ensure the safety of both the industries and the people living in their vicinities. Industries either using a hazardous raw material or producing a hazardous end product require special attention. A disaster can leak the hazardous product to nearby areas or on the contrary a leakage of certain poisonous gas or substance can engender an environmental disaster of substantial magnitude. The industries department would compile a location-wise list of all hazardous industries. All the industries that either consume a hazardous raw material or produce a hazardous end product would be included in that list. This list would be divided into broad types or categories to help articulate industry specific disaster management activities. After the identification of industries dealing with hazardous substance, the department would prepare contingency plans for all of those industries and provide them with equipment such as HAZMAT suits to rescue and evacuate people in case of a disaster at that particular industry. The Industries department would also work in collaboration with the District Emergency Officer to sensitize and inform the local Rescue 1122 workers about the hazardous substance used in the nearby area and the safest way to deal with it.

Industries department would collaborate with the local industries to organize trainings on disaster preparedness and emergency response for factory workers and owners. Such trainings should be developed based on the hazardous material used at the particular factory. The Industries department has established collaboration with the fire departments in different tehsils or towns. This would help in the immediate deployment of fire fighters in case of fire in an industrial unit. The department would also take steps for the protection of industries from flooding or other natural

Punjab Disaster Response Plan

phenomenon. The department would also take steps to immediately rehabilitate the industries adversely affected by disasters.

Information Department

This department articulates the extent of disaster and the measures that Government of Punjab would be undertaking for rescue and relief operations. The information on the extent of the disaster and Government's response would be communicated to all media channels. This department is responsible for collecting information on Government's response from PDMA's 'Command, Control and Communication Centre (3C).

The information department would keep a watch on the sensationalism in the portrayal of disaster facts. All efforts would be undertaken to check and limit any propaganda that defames or ridicules the Governmental response without any proper knowledge of the rescue and relief efforts undertaken by the Government. Constructive criticism of media is immensely important to reorient the Governmental response; hence, the Information department is responsible for differentiating between rightful criticism and baseless negative propaganda that can spread hopelessness at the time of a disaster. The dissemination of information on preparedness and disaster specific safeguards can help save many lives before, during and after a disaster. The Information department would seek media's cooperation in delivering early warnings and information on evacuation routes etc. In case of epidemic disasters, the media can be engaged to relay health messages articulating the means of preventing communicable diseases.

The media inform the unaffected population on the condition of the victims and their basic needs after a disaster. The true picture of a disaster is communicated through it. It also provides information on the relief and recovery efforts of the Government and other humanitarian organizations. The media highlights the gaps in relief and rehabilitation allowing the Government to prioritize its provision of relief services. The Information department would ensure that the news-items relating to a disaster present an accurate picture of the actual position and do not create undue panic. The department would make sure that media is giving the due air time and attention to the Government of Punjab's remedial measures and response efforts. The Information department would continuously communicate the information about the short and long term measures undertaken by different departments for relief and rehabilitation of affected people.

Food Department

The Food Department would ensure the protection of Wheat stocks against all sorts of disasters. The stocks piled in flood prone areas would be protected by the construction of embankments or the deposition of sand/soil bags around the stock. In case a wheat stock has been damaged by flood water or rain / dust storms, the department would drain out the water and cover the stock with polyethylene caps or tarpaulin. The department would coordinate with the operational flour mills in the disaster affected areas to arrange a supply of flour that would then be distributed through mobile ration depots setup in areas suffering from malnutrition. In case the stock is partially damaged or fully threatened, the grain would be moved to a safer location. The food department would keep a watch on the market prices of the wheat and should take all possible steps to prevent an exceptional rise in the prices that could result due to the shortage of food after the disaster.

Punjab Disaster Response Plan

Federal Ministries & Departments

National Disaster Management Authority

National Disaster Management Authority provides a strategic direction to disaster management authorities at the provincial and district level. This department oversees the establishment of early warning system and prepares national contingency and post disaster plans. This department sets up a national emergency operation centre and maintains a state of readiness with all equipments in working order. NDMA coordinates with Nongovernment and UN organizations for sharing of resources and information. NDMA is also responsible for ensuring these organizations the safety and security that they require to work in disaster affected areas. At the onset of a disaster, this department activates the National Emergency Operation Centre which organizes initial assessment of disaster and coordinates all concerned departments to respond with the right amount of resources. This department coordinates with the federal ministries and international organizations based in Islamabad.

Ministry of Interior

The ministry of interior prepares evacuation guidelines for different types of disasters. The ministry is also responsible for the training of police and other security forces in search and rescue operations. The forces mobilized by this ministry evacuate the affected people by transporting them to the camp sites and maintain law and order in the affected areas. The security forces operating under this ministry are also utilized to manage the traffic in the affected area.

Ministry of Information Technology

The Ministry of Information Technology provides technological support to the Provincial Disaster Management Authority and ensures that private telecommunication service providers develop Standard Operating Procedures to provide communication support in disaster situations. This ministry would also maintain a spare pool of preferably wireless telecom equipment to establish emergency communication networks that are essential for the close coordination of rescue and relief efforts.

Ministry of Railways

The Ministry of Railways develops a contingency plan to deal with the degradation of railway's moveable and static assets due to natural or industrial disasters. The ministry must install fire extinguisher in all cars of the different railway routes and Railway's staff should be trained in fire fighting, bomb-disposal and search & rescue. The vast rail network of this ministry is also utilized to transport relief material from ports to the disaster affected areas. This rail network can also be utilized to evacuate the affected people.

Pakistan has an elaborate railway network which connects almost all main cities in the Provinces of Pakistan. However, no railway network exists in Gilgit- Baltistan, FATA and Azad Jammu and Kashmir. The existing railway system should be judiciously utilized as it can be quickly mobilized for economically transportation of relief supplies including heavy machinery, fuel, boats, building material and affected people. For this purpose, Railways Authorities should maintain a close liaison with NDMA, PDMA's and NLC for smooth execution of transportation of relief goods in an emergency. NLC shall exercise over all control with regard to transportation through railways.

Punjab Disaster Response Plan

Ministry of Water and Power

The ministry of Water and Power conducts periodic monitoring and inspection of dams and provides telemetric data from rain gauge stations and flood data from Indus River Basin, to the Flood Forecasting Division of the Pakistan Meteorological Department. This ministry also coordinates with the Indian counterpart to remain informed about the water levels in the shared water channels. The Water and Power Development Authority (WAPDA) collects and transmits rainfall and flood discharge data. This data is collected by Automatic Flood Telemetry Systems maintained by WAPDA.

Ministry of Defence

The Ministry of Defence mobilizes the Armed Forces to provide immediate rescue and relief through massive air and ground efforts. After the immediate response, the armed forces assist the civil administration in setting up camps and tent villages for the affected population. The ministry is also responsible for enhancing DRM capacities of Cantonment Boards especially for fire fighting, casualty, evacuation, search and rescue. The armed forces can also deploy medical doctors to restore the health of victims and professional engineers to restore the communication and infrastructure network in an affected area.

Ministry of Foreign Affairs

The Ministry of Foreign Affairs facilitates in the arrival of foreign humanitarian workers and relief goods from the international community. This ministry is responsible for maintaining a list of international experts of disaster response working at embassies or international organizations. This list must be shared with PDMA to ensure the immediate engagement of international experts at the time of a disaster. The ministry would also communicate the assessment of damages and needs to the representatives of foreign countries contemplating the provision of assistance.

Federal Flood Commission

FFC is a federal department responsible for coordinating efforts aimed at reducing the risk of floods. This department reviews the capacity of flood protection works such as embankments and overcomes the shortcomings by enhancing the physical structures that preclude an over flow of waters from water channels such as rivers or canals. This department engages various contractors to remove the excessive silt in the canals and strengthen areas where a breach might occur. The department must provide PDMA with regular updates on the flow rates and volumes in different rivers of the Province.

Emergency Relief Cell

The Emergency Relief Cell maintains a stock of key items that survivors need to sustain themselves. Examples include tents, medicines, blankets, clothing, plastic sheets and tarpaulins. The stock level in warehouses would be communicated to PDMA on a regular basis to keep them informed of the resources that can be dispatched to the worst affected communities of a disaster stricken area.

National Logistics Cell (NLC)

NLC maintains a fleet of vehicles that can be utilized to transport relief goods. The department should also maintain a comprehensive list of private transport companies that can be engaged at the time of disaster. NLC must designate warehouses throughout the Punjab Province to store the petroleum and lubricants that can keep the vehicles operational despite the disruption of their

Punjab Disaster Response Plan

regular supply during a disaster. This department can also provide a technical appraisal of roads and railways in an affected area.

Initiation of a prompt response and delivery of relief assistance to the affected people in the aftermath of a disaster situation is largely dependent on the efficiency of logistic system. NLC, which is operating the largest fleet of transport vehicles in the country, has been assigned the task of coordinating and executing transportation of relief goods through road, rail and air. NLC will coordinate with all major transport companies and organizations to provide additional support for the transportation of relief goods. In case the goods are to be transported by air, NLC would coordinate with Civil Aviation Authority of Pakistan and the National Airline regarding airport capacity, and aircraft loading/unloading arrangements. NLC would also maintain coordination with the Customs Department to comply with the rules and regulation of clearance of foreign aid relief goods during emergencies. NDMA shall facilitate the exemption of import duty/taxes on relief goods donated from abroad.

Space and Upper Atmosphere Research Commission (SUPARCO)

SUPARCO facilitates in the understanding of disaster affected areas by providing satellite imagery and thematic maps of affected areas. SUPARCO can utilize the satellite imagery to visualize the extent of floods and the population centers inundated by them.

Pakistan Meteorological Department

The primary function of this department is to provide an early warning of a natural hazard. This department continuously monitors various meteorological factors such as rainfall, temperature, atmospheric pressure, etc. The department issues weather forecasts on a regular basis through electronic and print media.

Pakistan Telecommunication Authority

PTA is responsible for the upkeep and maintenance of telephone, cellular and internet connections. This department is also responsible for the restoration of this connectivity in case it is negatively affected by a disaster. PTA would also create uninterrupted and dedicated telephone lines to enable the exchange of information between the disaster stricken area and PDMA or its representatives in the districts. This department can also engage private telecommunication service providers to establish the connectivity required for a well informed emergency response.

Punjab Disaster Response Plan

Templates

All collection points for relief goods should be documented at PDMA's website to track the availability of relief goods at various collection points:

Table 11: Template for collection points of relief goods

Collection Point Identification

Proforma No. 1

Sr. No.	District	City	Location (Address of Proposed Collection Point)	Contact Person's Mobile no.
1	Bahawalnagar	Bahawalnagar	TMA Office, Bahawalnagar	063-9240151
2	Bahawalnagar	Chishtian	TMA Office, Chishtian	063-2503297
3	Bahawalnagar	Haroonabad	TMA Office, Haroonabad	063-2250883

The inventory at all collection points should also be updated for the above mentioned reasons:

Table 12: Template for Inventory management at collection points

Collection Point Inventory / Donation

(To be filled on a Daily basis)

Date: _____

Proforma No.2

Collection Point Name: _____

District _____

Sr.No.	Item Description	Quantity	Donor Name	Donor's Mobile no.	Received By (Initials)

All relief trucks dispatched to the affected areas should be documented to keep a track of the relief in transit:

Punjab Disaster Response Plan

Table 13: Template for record keeping of the dispatched relief trucks

Truck Dispatch

(To be filled on a Daily basis)

Proforma No. 3

Collection Point Name: _____

Date: _____

District: _____

Sr. no.	Destination District	Vehicle Registration No.	Type of Items	Quantity	Departure Time	Driver Name	Driver Mobile No.	Bully signed by

In case a dearth of livable accommodation is observed in the face of increasing numbers of displaced people; the accommodations available in the neighboring districts should be documented in order to plan the redirection of the victims to the neighboring districts.

Table 14: Template for accommodation available in neighboring districts

Neighboring District Accommodation

(To be filled only once)

Proforma No.4

District: _____

City	Type of Accommodation (Hostel / Hotel / Mess, etc)	Address	Capacity (No. of Bedrooms)	Condition (Good / Average)	Contact Person's Name	Contact Person's Mobile Number	Pick & Drop Vehicle Make & Model	Pick & Drop Vehicle Seating Capacity

A template has also been designed to document the names and departments of all Governmental staff present at the site of a disaster. Their respective skills can be utilized in an effective manner if PDMA is able to collect the information on their presence at the affected site.

Punjab Disaster Response Plan

Table 15: Template for human resources available in the affected area

Relief & Rehab Sector

(To be filled in only once)

Proforma No.5

Date: _____ **District:** _____ **Tehsil:** _____
SECTOR _____ **Names of Revenue States:** _____

Name of Sector In-charge (Revenue Officer):	
Name of Qanungo:	
Names of Patwaris:	
Name of UC Secretaries / Name of UCs:	
Agriculture Field Assistant Name:	
Names of All Irrigation Patwaris in Sector:	
Name of Veterinary Officer :	
Names of BHU In-charge:	

In case of high floods in certain districts, the dry districts accommodate an influx of the masses displaced by flooding. The points where the affectees cross into another district are manned by an in-charge and document by PDMA.

The relief in transit is rechecked at all the entry points documented in the above mentioned template:

Table 16: Template for the record keeping of relief trucks arrived at camps

Trucks Arrival At Entry Reception Points

(To be filled in on a Daily basis)

Proforma No. 7

District: _____ **Date:** _____
Location: _____ **Highway:** _____

Vehicle Reg. No.	Items Description	Quantity of Items	Arrival Time	Destination (Relief Camp/ Distribution Area Name)	Sent By (Name of Donors/ NGO / Govt.)	Donor Mobile no.	Driver Name	Driver Mobile no.	Received by (Initials)

A template has also been developed to document the relief camps along with facilities available there in

Punjab Disaster Response Plan

Table 17: Template for relief camps

Relief Camps

(To be filled only once)

Proforma No.8

District: _____

Date: _____

Sr. No.	Name of Camp	Address	Mauza / UC	Tehsil	Facilities Available (Med, Cooked food, Blankets, Mats)	Camp Adopted by (NGO / Donor Names)	Camp In-charge Name	In-charge's Mobile no.
1								
2								
3								

PDMA has also developed an online template on its website for the registration of all relief camps. NGOs and other donor organizations that plan to setup relief camps should visit the website of PDMA and fill the following template:

The screenshot shows the PDMA Punjab website interface for camp registration. The header features the PDMA logo and the text 'Provincial Disaster Management Authority (PDMA) Government of Punjab, Pakistan' along with the emergency contact number '1129'. A navigation menu is present with links for Home, About, Services, News & Alerts, Advertisements, Publication, Data Collection, and Contact. The main content area is titled 'Camp Registration' and includes a 'Back to Menu' link. The registration form contains the following fields: Camp Name (text input), District (dropdown menu with 'Attock' selected), Tehsil (text input), Union Council (text input), Full Address (text input), Contact Person (text input), Contact Number (text input), and GPS Coordinate (Latitude and Longitude text inputs). A 'Send' button is positioned at the bottom of the form.

Figure 15: Online form for the registration of relief camps

PDMA requires all districts to setup a control room at the incidence of a disaster. This control room would plan and execute a well-knit Governmental disaster response by bringing together all representatives of the various Governmental departments. This control room would be operational around the clock and PDMA must be informed about its operation and in-charge by filling the following template:

Punjab Disaster Response Plan

Table 18: Template for the status of facilities at Control Rooms established in the districts

Control Room

(To be filled in only once)

Proforma No.9

District: _____

Sr.No	Type (District / Tehsil)	Location	Phone Numbers	Shift 1 In-charge Name	Shift 2 In-charge Name	Computer Available (Y/N)	Internet Available (Y/N)
1							
2							
3							

All the Non-Governmental Organizations operating in the disaster affected areas should register themselves at PDMA's website. The following template has been developed for NGOs assisting the Government in disaster response.

Table 19: Template for the registration of NGOs

Registration Of N.G.Os

(To be filled only once)

Proforma No. 10

District: _____

Date: _____

Sr. No.	Name of NGO	Local or International	Relief Camps / Distribution Areas	Relief Activities	Names of Persons In-charge	Mobile nos.	Email address
1							
2							
3							

New entrants in the relief camps should be documented on a weekly basis by utilizing the following template:

Punjab Disaster Response Plan

Table 20: Template for the demographic information of the population at a relief camp

Relief Camp's Weekly Victims Registration Update

Proforma No. 11

Relief Camp Name: _____ District: _____ Tehsil: _____

Sub Tehsil: _____ Building Type: _____ Date from: _____ Date to: _____

Date	Men	Women	Children (Under 12)	Infants (Under 2 years)	Old Aged (Above 50 years)	Infected	Expired	Total No. of Victims Registered	Victims in Tents	No. of Tents

A daily camp service report must also be prepared along the following lines:

Table 21: Template for the daily management of relief camps

Daily Camp Service Report

Proforma No. 12

Authority (Full Address): e.g. District/Tehsil/Union Council

Date:

Date	No. of Affectees Present	Joined Today	Total	Victim	Treated	Shifted To/Referred To	Left Camp Today

All fatalities should also be documented along similar lines:

Table 22: Template for the record keeping of fatalities

Death Cases

Proforma No. 13

Authority (Full Address): e.g. District/Tehsil/Union Council

Date:

S.No.	Name & Father's/Husband's Name	Address/Contact	CNIC No.	Date of Birth	Date of Death	Cause of Death	Time and location of death	Kin	Dead Body Handed over to	Contact	Signature

In case of excessive flooding that overwhelms the boating resources of the Government in certain area, the boats of private owners are engage to continue with evacuation, rescue or relief services. The following template is filled to maintain a record a boat owners that might be engaged at the time of a disaster.

Punjab Disaster Response Plan

Table 23: Template for the record keeping of private boat owners

Private Boat Owners

Proforma No. 14

Authority (Full Address): e.g. District/Tehsil/Union Council

S.No	Name/Father Name	Address	# of Boats	Location of Boat	Size of Boat	# of Engines	Functional/ Non-Functional	# of Operators	Contact #

PDMA must assess the needs of all the people that have been displaced by a disaster. For this reason, it also seeks to collect information on Internally Displace Persons that are hosted by the community. They do not utilize the resources disbursed at relief camps; however their needs cannot be ignored:

Table 24: Template for the IDPs hosted by the local community

Proforma No. 17

IDPs hosted by Community

Authority (Full Address): e.g. District/Tehsil/Union Council

Date:

S.No.	IDP				Host					Signature
	Name & Father's/Husband's Name	Address/Contact	CNIC No.	# of Family Members	Host Name/Father's Name	Address/Contact	CNIC No.	Ration Required	NFI	

All volunteers assisting the Government in its rescue and relief operations should also be registered with the PDMA:

Table 25: Template for the registration of volunteers

Proforma No. 19

Volunteer Registration

Name	Father's Name	CNIC	Gender	Occupation	Contact #	Address	Location Interested In	Skills	Equipment	Transport Available
1.										
2.										
3.										

PDMA must possess a directory of all the focal persons engaged in disaster response and for this reason requires all the stakeholders to fill the following template:

Punjab Disaster Response Plan

Table 26: Template for the focal person engaged in disaster response

Focal Person/District Heads

Proforma No. 16

S.No.	District	District Head			2nd in Command			Focal Person		
		Name	Designation	Contact	Name	Designation	Contact	Name	Designation	Contact

Punjab Disaster Response Plan

Annex (A): Draft SOPs on Child Protection during Disasters

Standard Operating Procedures (SOPs) for Child Protection during Disasters

The SOPs for Child Protection during Disasters have been devised in consultation with key stakeholders with a view to setting out clear procedures for protecting children during and after disasters and for mainstreaming Child Protection in various sectors of disaster response.

The objective of the SOPs is to:

- Standardize procedures for protection and rehabilitation of children affected by disasters
- Identify key actors dealing directly or indirectly with child protection during disasters and delegate responsibilities.
- Establish and clarify communications and coordination mechanisms among key stakeholders on child protection issues in disasters.

Child Protection issues during disasters will be mainstreamed into disaster response at the provincial and district level by instating personnel from relevant line departments in the Command, Communications and Control Centre (3C) and the District Disaster Management Authorities (DDMA's). The work of I/NGOs, UN Agencies and Community Based Organizations (CBOs) working in the area of child protection during disasters will be aligned with that of the Government, gaps identified and filled through the Gender and Child Cell (GCC)-Punjab. The GCC –Punjab will also be responsible for enhancing inter cluster coordination between the child protection sub cluster and other clusters. The PDMA Helpline 1129 will also act as a complaints redressal mechanism for complaints relating to child protection issues.

The SOPs are divided into two parts: Part 1 addresses SOPs to be followed for protecting Separated, Unaccompanied and Missing children and children who are victims of Gender based Violence, Psychological trauma and physical harm while Part 2 outlines SOPs for mainstreaming child protection across the Health, Education and Water, Sanitation and Hygiene Sectors response.

SOPs for Separated, Unaccompanied, and Missing children identified during Disasters

In the event of a significant foreseen disaster threat, PDMA will generate a warning which will be communicated to all line departments and humanitarian agencies working in child protection.

As a preparatory measure, the Child Protection and Welfare Bureau (CPWB), as the chief Child Protection Agency of the Govt of Punjab, will designate a representative to the DDMA's and the 3Cs upon receiving a disaster alert/warning. As the lead agency for child protection in the Provinces, the CPWB will take the lead in responding to child protection threats during disasters. It will mobilize resources to set up operations in the affected districts by establishment of Child Protection Centers (CPC's).

The CPWB will be responsible for mobilizing the community around child protection issues and building momentum within the community to report separated, unaccompanied and missing children. They will

Punjab Disaster Response Plan

also appoint patrolling shifts of CPWB personnel in disaster affected areas to identify separated, unaccompanied and missing children.

Any Government official upon coming across a separated or unaccompanied child will be required to make a report to either the PDMA Helpline 1129 or approach the nearest Child Protection Center through their helpline 1121. PDMA's call center team upon receiving the call will tally the information provided with its online database records of reports of missing/found children before contacting the CPWB focal point on the CCC who will follow existing intra-department procedures for child rescue, rehabilitation, establishing identity, verification of birth certificates, compiling emergency documentation, tracing and reunification.

In areas, where the CPWB does not have a centre during an emergency, the SWD or NGO's licensed by the CPWB will be contacted by PDMA personnel.

An online database on Separated and Unaccompanied children established by PDMA will be activated during disaster scenarios and will serve as a databank accessible to key stakeholders on information regarding missing and unaccompanied children. The CPWB, the Social Welfare Department, Women Development Department (WWD), Rescue 1122 and DDMA's/DCO office will have access to PDMA's online database through a pre shared username and password. The department which is the first point of contact will fill out the online form regarding missing/found children on PDMA's online database. The DEO Rescue 1122 under the leadership of the DCO will be given chief responsibility for ensuring that the data regarding separated and unaccompanied children is uploaded to the online database in a timely and efficient manner.

SOPs for reports of Gender based Violence, Exploitation, Psychosocial distress, and Physical Harm during Disasters

In instances where intra family violence, psychological distress and mistreatment is suspected and reported, the PDMA Helpline, Open Reception Centers of the CPWB and Child Welfare Units activated by the SWD in times of emergency on the premises of the district office of the SWD, will be key points of assistance.

The CPWB will operate Open Reception Centers (ORCs) in the affected districts. The ORCs will serve as reporting centers where local populations can bring cases of suspected or confirmed child abuse or exploitation. The management of the ORCs will be required to investigate the reports and provide counseling services as required.

The Child Welfare Units (CWUs) of the SWD will be established upon receiving a disaster alert from PDMA. The CWUs will function as the hub for addressing child welfare issues at the district level during disasters. They will address child protection in disasters as a cross cutting issue and provide referrals to children and their parents across a number of areas including registration of children with disabilities both existing disabilities and those occurring as a result of injuries sustained in disasters.

Institutionalization of the child will only be considered as a last resort.

Punjab Disaster Response Plan

The ORC's and the CWUs will also handle cases relating to psychological trauma and suspected physical harm and will maintain linkages with each other for referral services with the CPWB taking a lead role in inter department coordination.

SOPs for Mainstreaming Child Protection across Disaster Management and Response Integrating Child Protection into Child Health Services:

The GCC -PDMA will coordinate with the Health Department and the health cluster to streamline and monitor child protection in provision and access to health services across the following areas:

- Access to confidential and child friendly and gender specific safe services for child victims of gender based violence, abuse and exploitation.
- Health service providers (Male and Female) are trained in age and gender appropriate clinical management of post sexual violence care.
- Mechanisms for screening and referral of children requiring focused psychological support or clinical mental health support.

The GCC-PDMA will work with the Health department and the Child Protection Sub Cluster to ensure:

- Dissemination of child protection in disasters related messages through the work of health workers
- Ensure that the community is aware of child health services including mental health and psychosocial support, immunization and post violence treatment services.

The Minimum Initial Service Package (MISP), for saving the lives of women and newborn, will be used as a tool to streamline child protection in the Health sectors disaster response and relief.