

# DISTRICT DISASTER MANAGEMENT PLAN 2022

Division: SAHIWAL

District: PAKPATTAN



Flood Relief Camp



Incident of House collapse Pakpattan 2015



پاکپتن۔ ڈپٹی کمشنر امر سہیل کینٹی ڈسٹرکٹ ایمرجنسی ریسپانس کمیٹی کے جائزہ اجلاس کی صدارت کر رہے ہیں۔

Meeting of District Emergency Response Committee



Gas Cylinder Blast & Fire at Pakpattan April 2020

## District Administration Pakpattan



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## XX

Estimated number of people at risk of **floods** in 2022



Risk: Low

## XX

Estimated number of people at risk of Hill Torrent in 2022



Risk: Medium

## XX

Estimated number of people at risk of earthquake in 2022



Risk: Low

## XX

Estimated number of people at risk of epidemic in 2022



Risk: Medium

## EXECUTIVE SUMMARY

The district is bounded to the northwest by Sahiwal District, to the north by Okara District, to the south by the Sutlej River and Bahawalnagar District, and to the southwest by Vehari District. There are 02 Tehsils (Pakpattan and Arifwala).

The district is linked with Okara, Sahiwal and Bahawalnagar districts through metalled roads. The district Pakpattan is linked with Kasur and Vehari districts through railway network.

The source of livelihood in the district is mainly Cotton Ginning & Pressing, Fertilizer, Flour Mills, Oil Mills, Poultry Feed, Rice Mills, Sugar and Textile Weaving Wheat, Cotton, Sugarcane, Maize and Rice. The Pakpattan District is known for the fertility of its soil and most of the population of Pakpattan district makes a living on agriculture.

## AIM AND OBJECTIVES

The plan is aimed to manage emergencies by putting in place requisite mitigation measures and a well-coordinated and integrated response at district level.

The main objectives of the plan include:

- To develop a plan of action for the District Disaster Management Authority and other district stakeholders to set priorities and provide directions for disaster management;
- To define the roles of various stakeholders in disaster management in all the phases pre, during and after disaster;
- To raise awareness of stakeholders about disaster risks and the requirements for disaster management;
- To introduce coordination mechanism for immediate response and rehabilitation at district level;
- To enhance the effectiveness and timeliness of emergency response through the clarification of goals, strategies, roles and responsibilities;
- To strengthen response coordination between government departments and humanitarian organizations (UN agencies, I/NGOs);

# DISTRICT PROFILE

## Socio-Economic Indicators (Average)

| S.No. | Particulars  | Numbers   |
|-------|--|-----------|
| 1.    | Population   | 18,23,687 |
| 2.    | No. of Tehsils   | 2         |
| 3.    | No. of UCs   | 54        |
| 4.    | No. of Revenue Estates   | 16        |
| 5.    | Population Density (people per km <sup>2</sup> )               | 644       |
| 6.    | Family Size  | 6         |
| 7.    | Pop Growth Rate  | 1.86      |
| 8.    | PCI  |           |
| 9.    | District GDP/Annual Income                                     |           |
| 10.   | Poverty Rate   | 50        |
| 11.   | Patient/Doctor Ratio   | 7,000:1   |
| 12.   | AMR  |           |
| 13.   | IMR  | 50        |
| 14.   | MMR  | 171       |
| 15.   | Literacy Rate  | 45%       |
| 16.   | Global Acute Malnutrition (GAM) rate                           |           |
| 17.   | Severe Acute Malnutrition (SAM) rate                           | 5         |
| 18.   | Percentage of population having access to clean drinking water | 35        |
| 19.   | Annual Crime   | 5730      |

### Population

| Total     | Male<br>(above 18) | Female<br>(above 18) | Transgender |
|-----------|--------------------|----------------------|-------------|
| 18,23,687 | 927,881            | 895656               | 150         |

Source/Note: Census 2017

| Number of Dwelling Units | Kaccha (Mud/clay) | Pakka (Bricks& Morter) |
|--------------------------|-------------------|------------------------|
| 304405                   | 0                 | 0                      |

Source/Note: Census 2017

### Area (in acres)

| Total Area of District<br>in Km <sup>2</sup> | Area under cultivation | Cultivation in Settled<br>Area | Cultivation in<br>Baid Area |
|--|------------------------|--------------------------------|-----------------------------|
| 2728   | 611545 Acres           |                                |                             |

## Literacy Rate

| Overall | Rural |        | Urban |        | Total |        |
|---------|-------|--------|-------|--------|-------|--------|
|         | Male  | Female | Male  | Female | Male  | Female |
| 53%     | 62%   | 35%    | 77%   | 72%    | 64%   | 41%    |

Source/Note: PSLM Survey 2013

## Government Schools

|                |             | Number of Functional Schools | Enrollment |
|----------------|-------------|------------------------------|------------|
| Total/ Overall |             | 856                          |            |
| Boys           | Primary     | 326                          | 50336      |
|                | Middle      | 70                           | 23801      |
|                | High/Higher | 60                           | 50231      |
| Girls          | Primary     | 278                          | 43597      |
|                | Middle      | 84                           | 28206      |
|                | High/Higher | 38                           | 34801      |
| Co-Schools     | Primary     | 0                            |            |
|                | Middle      | 0                            |            |
|                | High        | 0                            |            |

## Private Schools

|                |             | Number of Functional Schools | Enrollment |
|----------------|-------------|------------------------------|------------|
| Total/ Overall |             | 539                          |            |
| Boys           | Primary     | 10                           | 336        |
|                | Middle      | 356                          | 96612      |
|                | High/Higher | 136                          | 54144      |
| Girls          | Primary     | 0                            |            |
|                | Middle      | 0                            |            |
|                | High/Higher | 37                           | 9073       |
| Co-Schools     | Primary     | 0                            | 0          |
|                | Middle      | 0                            | 0          |
|                | High        | 0                            | 0          |

## Higher/Technical/Professional Education (Public &amp; Private)

| Particulars       | College | College (Private) | Universities | Professional | Technical | Commerce | Total |
|-------------------|---------|-------------------|--------------|--------------|-----------|----------|-------|
| No of Institution | 05      | 31                | 0            | 0            | 02        | 02       | 40    |

## Health Facilities

| Particulars          | Primary | Secondary | Tertiary | Private Hospital | Total   |
|----------------------|---------|-----------|----------|------------------|---------|
| No. of Facilities    | 72      | 2         | 0        | 19               | 93      |
| Annual OPDs          | 1028583 | 599696    | 0        | 0                | 1628279 |
| No of beds           | 210     | 185       | 0        | 151              | 546     |
| Doctors Available    | 79      | 178       | 0        | 0                | 257     |
| Paramedical staff    | 330     | 50        | 0        | 60               | 440     |
| Ambulances available | 0       | 0         | 0        | 0                | 13      |
| Mobile Medical Units |         |           |          |                  |         |

**Livestock:** Small Animals (goats, sheep etc.) **297,638**

Big Animals (cows, buffalos, camel etc) **910,000**

## Main source of livelihood of the community? (in percentage)

| Agriculture | Livestock | Poultry | Fish Farming | Services (Public & Pvt) | Business | Expatriates | Industrial Labor | Skilled Labor | Unskilled Daily Labor | General Labor |
|-------------|-----------|---------|--------------|-------------------------|----------|-------------|------------------|---------------|-----------------------|---------------|
| 55%         | 10%       |         | 01%          |                         |          |             |                  |               |                       |               |

## Disaster History - Floods (since 1970)

| S# | Year                    | No. of people affected | No. of deaths | No. of Revenue Estates affected | Houses Damaged (Partially) | Houses Damaged (Fully) | Compensation Paid (Rs.) | Financial Impact (including infrastructure damaged) |
|----|-------------------------|------------------------|---------------|---------------------------------|----------------------------|------------------------|-------------------------|---|
| 1  | 1988<br>(500000 Cusecs) |                        |               |                                 |                            |                        |                         |   |
| 2  | 1995<br>(302000 Cusecs) |                        |               |                                 |                            |                        |                         |   |
| 3  | 2008<br>(102000 Cusecs) |                        |               |                                 |                            |                        |                         |   |

## Disaster History – Other disasters (since 1970)

| S# | Year | Disaster Type | No. of people affected | No. of deaths | Remarks |
|----|------|---------------|------------------------|---------------|---------|
| 1  |      |               |                        |               |         |
| 2  |      |               |                        |               |         |
| 3  |      |               |                        |               |         |
| 4  |      |               |                        |               |         |
| 5  |      |               |                        |               |         |
| 6  |      |               |                        |               |         |
| 7  |      |               |                        |               |         |
| 8  |      |               |                        |               |         |
| 9  |      |               |                        |               |         |
| 10 |      |               |                        |               |         |

## General Information

| Particulars                                     | Detail  |
|---|---|
| Neighboring districts and their vulnerabilities | Okara, Sahiwal, Bahawalnagar,   |
| Topographical Features                          | Nil   |
| Weather/Climate pattern                         | Rainy season / Temperature 32-47 centigrade / heat waves occurred during the month May, June / Snowfall NIL / weather Winter, Summer, Spring, Autumn  |
| Major Rivers                                    | Sutlej River and across through Suleimanki Headworks at a distance of 20 KM east Haveli Lakha town. Exceptionally High Flood passed through Suleimanki Headworks during 1988 & 1995 Highest Flood level 1988 i.e. 572.50.<br>A length of River Sutlej in District Kasur 60-KM, District Okara 40-KM, District Pakpattan 35-KM, District Bahawalnagar 80-KM. |
| Major Nullahs / Streams                         | Nil   |
| Motorway/Highway                                | Dehli Multan road, Pakpattan to Sahiwal road, Arifwala to Sahiwal road<br>Vulnerable points of motorway/highway   |
| Railways  | <b>Between Vehari Kasur Section</b>   |

|                     |                                     |
|---------------------|-------------------------------------|
|                     | <b>Vulnerable points of Railway</b> |
| Geological features | <b>Plane land / Tropical Area</b>   |

**Dams (including small dams)**

| Name of Dam                           | Location | GPS Coordinates | Capacity | High Flood Level | Critical Points, if any | Remarks |
|---------------------------------------|----------|-----------------|----------|------------------|-------------------------|---------|
| There is no Dam in District Pakpattan |          | X:<br>Y:        |          |                  |                         |         |

**Major Embankments/Bunds**

| Name of Embankment                 | Length (km)  | Starting Point (Revenue Estate /Tehsil Name) | Ending Point (Revenue Estate /Tehsil Name) | Name of Critical/ vulnerable Points | GPS Location of Critical/ Vulnerable Points | Remarks      |
|------------------------------------|--|--|--|-------------------------------------|---|--------------|
| Ferozpur Flood Protection Bun      | 8.87   | Ferozpur / Pakpattan                         | Ferozpur / Pakpattan                       | -                                   | Latitude: 30.237803<br>Longitude 73.34021   | Satisfactory |
| New Mari Amb Flood Protection Bund | 4.89   | Mari Amb / Pakpattan                         | Mari Amb / Pakpattan                       | -                                   | Latitude: 30.19368<br>Longitude: 73.305733  | Satisfactory |
| Jamlera Flood Protection Bund      | 12.65  | Jamlera / Arifwala                           | Jamlera / Arifwala                         | -                                   | Latitude: 30.077784<br>Longitude: 72.958397 | Satisfactory |
| Noora Rath Bund                    | 7.5 KM 50% in District Pakpattan<br>50% in District Bahawalnagar | Noora Rath/Arifwala                          | Noora Rath/Arifwala                        | -                                   | Latitude: 30.119819<br>Longitude:73.165076  | Satisfactory |

**Breaching Section**

| Name of Bund/ Embankment                                | Name of Breaching Section | Location with GPS Coordinates | Likely Affected Population |        |          | Likely Affected Revenue Estate | Remarks |
|---|---------------------------|-------------------------------|----------------------------|--------|----------|--------------------------------|---------|
|   |                           |                               | Male                       | Female | Children |                                |         |
| There is no Breaching Section in the District Pakpattan |                           |                               |                            |        |          |                                |         |

**Power Houses/Grid Station/Oil Depot/other sensitive installations**

| Name        | Capacity | GPS Coordinates | Name | Capacity | GPS Coordinates |
|-------------|----------|-----------------|------|----------|-----------------|
| Pakpattan   | 132KVA   | X:<br>Y:        |      |          | X:<br>Y:        |
| Noor Pur    | 132KVA   | X:<br>Y:        |      |          | X:<br>Y:        |
| Bonga Hayat | 132KVA   | X:<br>Y:        |      |          | X:<br>Y:        |

## Airport / Landing Strips

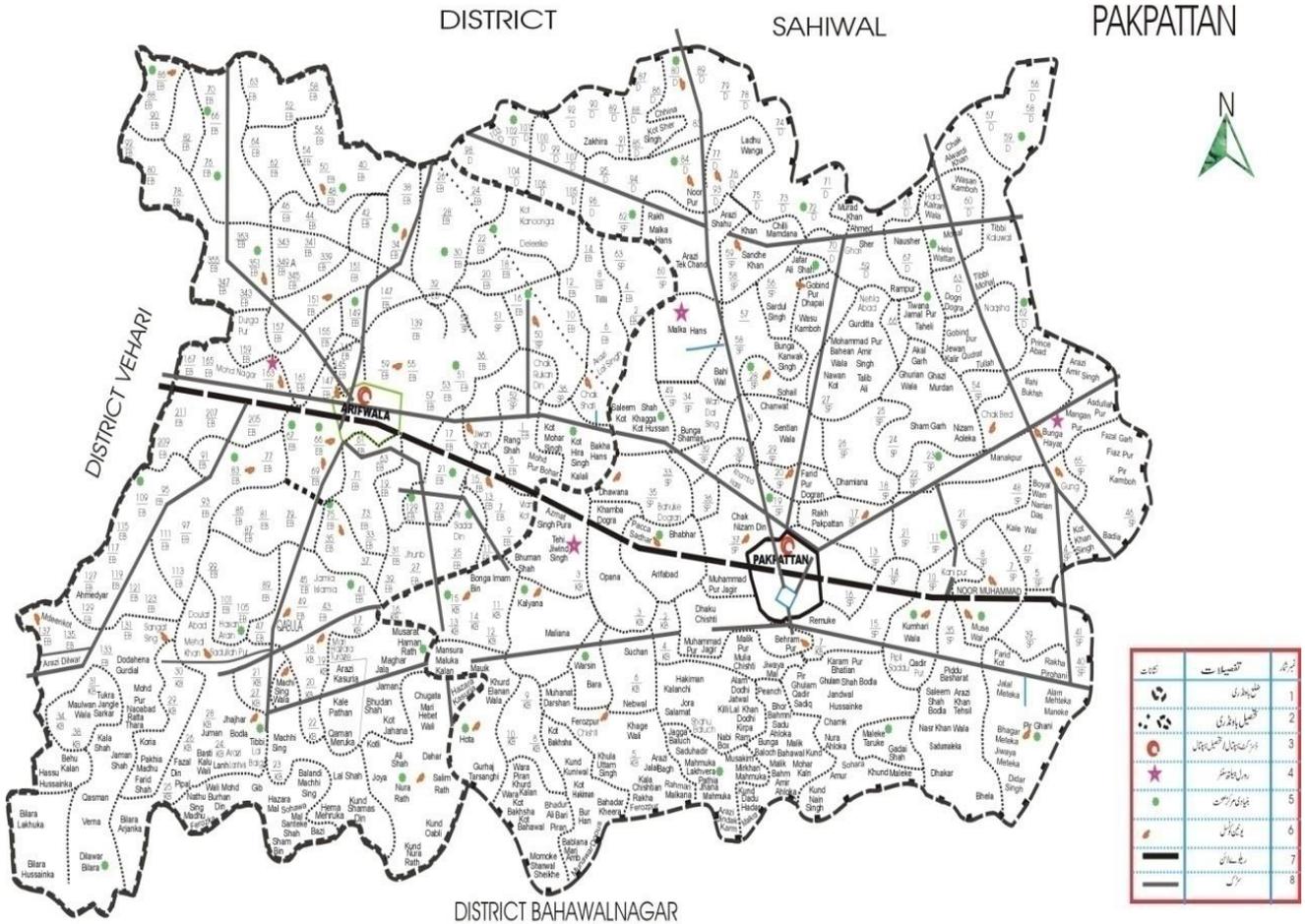
| Type                             | Area Name | GPS Coordinates | Type | Area Name | GPS Coordinates |
|----------------------------------|-----------|-----------------|------|-----------|-----------------|
| No Airport in District Pakpattan |           | X:<br>Y:        |      |           | X:<br>Y:        |
|                                  |           | X:<br>Y:        |      |           | X:<br>Y:        |
|                                  |           | X:<br>Y:        |      |           | X:<br>Y:        |
|                                  |           | X:<br>Y:        |      |           | X:<br>Y:        |

## Govt. storage facilities/warehouses in the district

| Facility Type                          | Capacity (M.Tons) | Location with GPS Coordinates | Facility Type | Capacity | Location with GPS Coordinates |
|--|-------------------|-------------------------------|---------------|----------|-------------------------------|
| BS Arifwala                            | 17082.100         | X:<br>Y:                      |               |          | X:<br>Y:                      |
| PR Ahmad Yar                           | 8967.00           | X:<br>Y:                      |               |          | X:<br>Y:                      |
| FC Chowk Marlay                        | 11657.00          |                               |               |          |                               |
| FC Trikhni                             | 12063.00          |                               |               |          |                               |
| PR Pakpattan (Kutchery Godowns)        | 5658.000          |                               |               |          |                               |
| PR Pakpattan (Ghalla Mandi Godowns)    | 857.000           |                               |               |          |                               |
| PR Noor Pur Godowns                    | 1602.700          |                               |               |          |                               |
| PR Bunga Hayat Godwns                  | 855.000           |                               |               |          |                               |
| FC Adda Jhanb                          | 4629.000          |                               |               |          |                               |
| Ittfaq Rice Mills Qaboola Pvt. Godowns | 4210.200          |                               |               |          |                               |

District baseline/reference map

DISTRICT  
PAKPATTAN



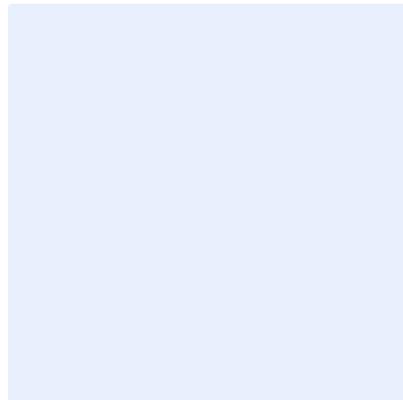
Source:

## COORDINATION MECHANISM

Coordination Organogram (including Sector lead agencies/departments, Military, NGOs and Volunteers)

District Flood Control room has been established in the office of Deputy Commissioner Pakpattan with Telephone number 0457-921020, it remains operational round the clock and one official and naib qasid remain present round the clock. All flood situation reports received in this control room and conveyed to the concerned Assistant commissioner / sub Divisional Control Officer. The daily situation report exchanged on telephone and in case of emergency, police wireless systems also used.

| Sr. No | Flood warning centre  | Source of information  |
|--------|---|--|
| 01     | District Flood control Room Deputy Commissioner Office<br>0457-921011   | <ol style="list-style-type: none"> <li>1. Lahore 042-99200139,99201238</li> <li>2. Divisional Irrigation office at 040-9200217</li> <li>3. Police Wireless control Dist. Pakpattan 0457-921060, 15</li> <li>4. Sector Incharge (NT's /RO's)</li> <li>5. Patwaris</li> <li>6. General Public</li> </ol> |
| 02     | District Irrigation Office Pakpattan<br>XEN-044-2018657<br>0304-0826776 | Pakpattan Subdivision<br>Mian Muhammad Hanif<br>0300-6869519   |



**Powers and functions of District Disaster Management Authority under NDM Act 2010:**

The District Authority shall be as the district planning, coordinating and implementing body for disaster management and take all measures for the purposes of disaster management in the district in accordance with the guidelines laid down by the National Authority and the Provincial Authority.

Without prejudice to the generality of the foregoing provisions, the District Authority may:

- a) prepare a disaster management plan including district response plan for the district;
- b) coordinate and monitor the implementation of the National Policy, Provincial Policy, National plan, Provincial Plan and District Plan;
- c) ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the departments of the Government at the district level as well as by the local authorities;
- d) ensure that the guidelines for prevention, mitigation, preparedness and response measures as laid down by the National Authority and the Provincial Authority are followed by all departments of the Government at the district level and the local authorities in the district;
- e) give directions to different authorities at the district level and local authorities to take such other measures for the prevention or mitigation of disasters as may be necessary;
- f) lay down guidelines for preparation of disaster management plans by the departments of the Government at the districts level and local authorities in the district;
- g) monitor the implementation of disaster management plans prepared by the departments of the Government at the district level;
- h) lay down guidelines to be followed by the departments of the Government at the district level;
- i) organize and coordinate specialized training programmes for different levels of officers, employees and voluntary rescue workers in the district;
- j) facilitate community training and awareness programmes for prevention of disaster or mitigation with the support of local authorities, governmental and non-governmental organizations;
- k) set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public;
- l) prepare, review and update district level response plan and guidelines;
- m) coordinate with, and give guidelines to, local authorities in the district to ensure that pre-disaster and post-disaster management activities in the district are carried out promptly and effectively;
- n) review development plans prepared by the departments of the Government at the district level, statutory authorities or local authorities with a view to make necessary provisions therein for prevention of disaster or mitigation;
- o) identify buildings and places which could, in the event of disaster situation be used as relief centres or camps and make arrangements for water supply and sanitation in such buildings or places;
- p) establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice;
- q) provide information to the Provincial Authority relating to different aspects of disaster management;
- r) encourage the involvement of non-governmental organizations and voluntary social-welfare institutions working at the grass root level in the district for disaster management.
- s) ensure communication systems are in order and disaster management drills are carried out periodically; and
- t) perform such other functions as the Provincial Government or Provincial Authority may assign to it or as it deems necessary for disaster management in the district.

**District Plan:**

- a) There shall be a plan for disaster management for every district of the Province.
- b) The District Plan shall be prepared by the District Authority having regard to the National Plan and the Provincial Plan.
- c) The District Plan shall be reviewed and updated annually.

**Additional Powers of District Authority:**

For the purpose of assisting, protecting or providing relief to the community, in response to any disaster, the District Authority may:

- a) give directions for the release and use of resources available with any department of the Government and the local authority in the district;
- b) control and restrict vehicular traffic to, from and within, the vulnerable or affected areas;
- c) control and restrict entry of any person into, his movement within and departure from, a vulnerable or affected area;
- d) remove debris, conduct search and carry out rescue operations;
- e) provide shelter, food, drinking water and essential provisions, healthcare and services;
- f) establish emergency communication system in the affected area;
- g) make arrangements for the disposal of the unclaimed dead bodies;
- h) direct any department of the Government of the Province or any authority or body under the Government at the district level to take such measures as are necessary in its opinion;
- i) require experts and consultants in the relevant fields to advise and assist as it may deem necessary;
- j) procure exclusive preferential use of amenities from any authority or person;
- k) construct temporary bridges or other necessary structures and demolish structures which may be hazardous to public or aggravate the effects of the disaster;
- l) ensure that the non-governmental organizations carry out their activities in an equitable and non-discriminatory manner; and
- m) take such other steps as may be required or warranted to be taken in such a situation.

**Revenue Department (Functions and Responsibilities)**

In case of any disaster or calamity the head of the revenue department in the district i.e. the DC/DC should ensure that the following measures and steps have been taken:

- Taking everyone on board is perhaps the most important thing to do. Regular meetings of DDMA should be held to clearly highlight the roles and duties of DPOs, EDOs, XENs etc.
- Pre-flood meeting should be held and duties of all concerned officers and departments should be clearly defined and assigned.
- A district disaster management plan should be prepared using the set template and updated regarding any disaster or emergency that may strike the district.
- A focal person for the disaster or calamity should be nominated and his/her number should be communicated to all concerned departments.
- Proper stock taking should be done regarding available stocks of food and rations. Similarly stock regarding machinery and equipment should also be taken and inventories should be prepared. Out of order machinery should be repaired or replaced.
- Committees should be formed and constituted which will deal with various functions during a flood or emergency. Purchasing of food items, food, and machinery should all be done through committees.
- Identification of Low lying, medium and high vulnerability levels with flood level
- In case of evacuation the district administration should be very clear about the places where the relief camps or shelters will be established. Teams should be formulated which will look after these camps and will be in-charge for provision of tents, food, water and maintaining general law and order. Provision of cooked food is also to be ensured.
- Proper ware houses and stores should be made available for storing of aid and donated items that may be received from authorities such as PDMA, WFP etc. A committee should be constituted to look after the record of all the items in the store.
- Proper crop surveys or girdawaris should be conducted through the revenue officials so that crop damage assessment can be made after disaster or flood affects the district. These surveys will also help in determining the identity of the true owners as well.

- Post damage assessment should be carried out by joint teams constituted of patwaris, teachers, and agriculture field assistants. Technology should be involved and android sets should be used to gather accurate data.
- Round the clock active control rooms should be set up and the numbers be circulated to all concerned. The control rooms should be equipped with wireless, telephones and computers. All info gathered or received should be conveyed to the concerned. The control room should have representatives of concerned departments such as police, health, 1122, and revenue.
- Early warning is critical in saving lives. The local revenue officials along with local police should be deployed to warn the people against the oncoming disaster and to urge them to vacate the disaster prone areas and villages. Loudspeakers, mosque speakers and word of mouth should be used. Banners and posters can also be used.
- Data collection is of prime importance and the senior network administrator should be declared as the focal person for collection of relevant information such as number of casualties, damages to infrastructure, injured, perished livestock etc. for onward submission to PDMA etc.
- Mock exercises should be carried out along with all concerned departments specially 1122, Police, civil defence and Pakistan army regarding the action plan during any emergency or flood. This will give a fair idea about the preparedness of the district.
- Availability of vehicles should be ensured for use during any emergency especially off road vehicles like jeeps.
- Suitable locations should be identified for accommodating armed forces like the Pakistan army. Normally schools, colleges or stadiums are allocated for the armed forces

#### Checklist for Revenue Department:

- Survey of entire District (Preparation of Village level information by Patwari)
- Identification of Low lying, medium and high: vulnerability levels with flood level
- Liaison of Patwari with Numberdars of their respective villages
- Contacts of all revenue staff posted near river belts and their output in flood prone areas
- List of Numberdars with their contacts, volunteer from low lying settlements with contact numbers
- Prepare list of vulnerable villages and make an estimate of likely affected population in such villages in the event of flood
- Name and contact numbers of private boat owners and operators Announcement of Flood Warning at settlement level – Patwari responsible Forced evacuation with police
- Rapid assessment for relief goods and ration provision Coordination and reporting
- Carry out survey of entire flood affected areas to assess losses in collaboration with Agriculture, Livestock and Education Department
- Conduct crop damaged/ house damaged surveys

#### Metropolitan / Municipal Corporations

##### Municipal / Town Committees

- Local Bodies play an important role of providing municipal services in the district including clean drinking water, sanitation facilities, maintenance of parks and removal of encroachment etc.
- Local Bodies will provide assistance to the District Administration for setting up and management of relief camps/ operations.
- Local Bodies are responsible for provision & restoration of water and sanitation facilities in their municipalities besides disposal of waste or rain water/sewerage.
- Local Bodies are equipped with trucks, water bowsers, tractors, dewatering sets, bulldozers, loaders and dump trucks. All of these equipment are utilized to restore proper sanitary facilities, ensure the delivery of clean water and remove debris or excess water.
- Local Bodies sanitary workers can be employed for cleaning relief camps, or other such areas which has been affected by any disaster.

- Local Bodies employ de-watering sets to remove excess water. All Local Bodies are required to ensure the maintenance of all dewatering sets prior to the monsoon season. The Local Bodies maintains a list of all the choking points where rainy water accumulates as a result of heavy storms which can cause urban flooding.
- Local Bodies should ensure supply of clean drinking in overhead reservoirs and ensure supply to the affected areas or relief camps through water bowsers. Clean drinking water is a major issue and requirement during any disaster.
- In case of any disaster that requires people to be relocated, the Local Bodies under the concerned Administrator i.e Commissioner / DC / AC will assist in the migration of the affected people.
- During the relief effort and subsequent rehabilitation effort the Local Bodies manpower can be effectively used for the distribution of food and essential commodities among evacuated people or any other relief activity such as provision of cash compensation.

### District Disaster Management Authority (DDMA)

- DDMA's are created under the NDM Act 2010 under Chapter IV Section 18 and the law defines their composition and also outlines their functions, duties and powers.
- District Disaster Management Authorities are the first line of defense and the implementing arm of the government policy and plans. Within the district there are three to four key players/departments that have to put up a joint and coordinated effort in order to fight with and handle any disaster under the leadership and coordination of the DC. The office of the DC fully supported by the DPO and line departments such as Health, Agriculture, Livestock, Civil Defence, 1122, Local Bodies and the Revenue Department form the main disaster management team within any given district. This plan is an effort to highlight their sets of responsibilities followed by the role of provincial departments.
- All district administrations had prepared a detailed contingency plan to face any disaster or hazard specially floods which until recently have become an annual affair for some districts.
- The district administration will divide the area as per district division with the Assistant Commissioner as in charge of his/her tehsil. All disaster related activities in a said tehsil will be coordinated through the concerned AC and the Local Bodies.
- On receipt of a flood warning, immediate warning will be conveyed to all the concerned officers. Immediate action will be taken in each sector / sub sector for evacuation of the population from risk prone areas to safer places or to Relief Camps. An Assistant Commissioner will ensure that announcements are made through loudspeakers of the mosques utilizing the services of the Revenue department. Each Patwari will inform the Numbardar, Headmaster of the School, Imam Masjid and councillors to make announcements etc.
- 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.
- Provincial government had notified the following composition of DDMA's for whole of the province:
  - i. **Deputy Commissioner (Chairperson)**
  - ii. District Police Officer
  - iii. Additional Deputy Commissioner (Rev)
  - iv. Two Elected Representatives to be nominated by the Chair
  - v. Representative of Pak Army
  - vi. Two Representatives of NGOs/Civil Society to be nominated by the Chair
  - vii. Additional Deputy Commissioner (General)
  - viii. Additional Deputy Commissioner (F&P)

- ix. XEN Buildings
- x. XEN Highways
- xi. Chief Executive Officer (DHA)
- xii. Chief Executive Officer (DEA)
- xiii. SP Special Branch
- xiv. XEN Irrigation / Public Health
- xv. District officer Civil Defense
- xvi. Administrators of Tehsil Councils / Municipal Corporations
- xvii. All Chief Officers of Local Bodies in District
- xviii. District Emergency Officer, Rescue 1122 (Secretary)
- xix. Representative of Red Crescent
- xx. Such other District level Officers to be appointed by District Administration

- District Administrations must establish a Disaster / Flood control room at the DC's office, the numbers of which will be circulated to all concerned. The Disaster / Flood Control Room has to maintain updated information regarding the threat of disaster and statistics post disaster. The center will maintain a regular communication with the Flood Forecasting Division or the dam authorities up stream in case of a flood.
- The District Administration would immediately mobilize the equipment needed to tackle the challenges created by a disaster. The District Administrations will provide a comprehensive list of flood fighting equipment to PDMA as part of their flood contingency plans.
- Executive District Officer (Health) will ensure the availability of adequate medicines for treatment of common issues, particularly for snake and dog bite cases and general vaccines at each relief camp.
- DO (Agriculture) and DO Livestock would arrange fodder and feed supplement for livestock and animals displaced.
- District Regional Transport Authorities (DRTA) in all 36 districts of Punjab are managed by Secretaries who would coordinate with local transporters to arrange for arranging transport required for evacuation of people from affected areas. In case of shortfall in transport in a particular district, the adjoining district would mobilize the transporters in his district to assist with the evacuation of people.

#### **Role of Rescue 1122 in districts during disaster**

- The immediate evacuation of people from the disaster prone and vulnerable areas.
- Provision of immediate medical aid during any emergency and at the same time transporting the injured or sick to the nearby hospital through their team of ambulances.
- In flood situations rescuing people from drowning in the strong currents is a specialty of 1122 as it has its own set of divers and boats. Similarly in case of collapsed buildings or structures the 1122 is equipped with heavy machinery to cut through heavy debris.
- Apart from that responsible 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 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.

#### **Pre-disaster Check list for DDMA**

- Meeting of DDMA held
- Identification of vulnerable areas
- Identification of Safe places

- Preparation of contingency plan
- Bunds and encroachments visited
- Sites identified for relief camps Evacuation routes/plan
- Safe custody of Government records and essential equipment and their shifting to safer areas on receipt of flood warning
- Enlistment of department wise available resources
- Preparation of list of required relief goods/ items
- Involvement of Volunteers, NGOs and other CSOs
- Designation of Focal Person
- Preparation of District vulnerability map with varying degrees of floods
- Evacuation well in time from vulnerable areas
- Establishment of Camps – All services under one roof
- Flood warning and weather forecast: Loudspeakers announcements
- Establishment of control rooms
- Cancellation of all type of leaves of all employees Designation of Focal Persons
- Assignment of duties and responsibilities of all officers for flood emergency
- Preparation of Telephone Directories with the cell numbers of all the members of DDMA's and volunteers
- No leave during flood days; No official will leave station

### Disaster Emergency Control Room (functions and responsibilities)

District Flood Control has been established in the Office of District Coordination Officer, Sahiwal with telephone No.040-9200078, it remains operational round the clock and one official and Naib Qasid remain present round the clock. All flood situation reports are received in this control room and conveyed to the concerned Assistant Commissioner / Sub Divisional Control Officer. The daily situation reports are exchanged on telephone and in case of emergency, police wireless system is also used.

### 2.3 FLOOD WARNING SYSTEM

Sr. No Flood Warning Center Source of Information

- 1 District Flood Control Room DC Office, Pakpattan (0457-921011)
1. Met. Dept. Lahore (042-99200139)
2. Divisional Irrigation office at (040-9200217)
3. Police Wireless Control Distt. Pakpattan (0457-921060)
4. Sector Incharges
5. Patwaris
6. General Public
7. District Irrigation Office Pakpattan  
XEN Sulemanki (0304-0826776)  
Sub Division (0457-921073)

**Checklist for Control Room:**

- Dedicated Staff as per magnitude of the disaster
- Duty roaster of the staff
- 2 Dedicated telephone lines
- Dedicated Fax
- Wireless
- Internet and Email or any other source of communication
- Power backup

**Checklist for Relief Camp Incharge:**

- List of staff displayed with name and department teams will work in shifts
- Presence of representatives of all service providers i.e. Health, livestock, Rescue 1122, Civil Defence etc.
- No movement without the permission of Centre Incharge
- Each shift in-charge to contact District Control Room on arrival and then on departure
- In-charge will keep close liaison with SHO of the respective area
- No of affectees in camp (sick, aged and children) shall be communicated daily
- Availability of at least one emergency vehicle at center be ensured
- Keep record of private boat owners and their contacts details
- List of Doctors and private hospital in the vicinity
- List and contact of philanthropists in the vicinity
- Keeping record of donations coming directly to Centre and report the same to Tehsil and District Incharge.
- Centre Incharge shall ensure vaccination of animals and humans against Communicable diseases
- List of missing persons must be displayed at all Relief Camps

**Role of Health Department**

The public sector health delivery system comprises of four tiers and as such will continue to provide services at these four tiers during and after any disaster:

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

In case of any disaster or calamity the health department will ensure that the following measures are in place;

- To provide first aid to the injured people and arrange evacuation of patients for further assistance.
- Medical camps and mobile health teams should be arranged for prevention and control of communicable diseases, immunization and provision of essential drugs.
- Health department would make a roster of all medical officers and paramedics that would be deployed to these camps and teams.
- Drugs and other medical equipment should be available at all these camps and with mobile teams. The medicine should be for relevant flood related issues, **particularly Anti-snake venom, Anti-rabies.**
- The shelters or relief camps established by the district administration should have medical centers with ambulances and special facilities for women and children.
- 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 control room.
- A list of essential medicines would be prepared by the Health department and it would ensure that medicines and other resources are present in sufficient stocks in hospitals in disaster hit areas.
- Medical colleges may be involved to create Emergency Response teams
- Health department would also coordinate with international organizations such as WHO and UNICEF.
- Extensive disease surveillances in the disaster hit areas should be carried out warnings if needed be issued through the Disease Early Warning System.

- Medical teams and paramedic staff should be mobilized and deployed for rapid assessment and quick response in the affected areas.
- A contingency plan will be prepared and submitted regarding preparedness for any disaster or calamity.
- 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 vaccinations etc.
- The department would employ female health workers in emergency areas specially, for spreading awareness regarding health risks in a disaster and for any vaccination or immunization programme that may be needed during any emergency.
- A Health and Nutrition Cluster for overall management and oversight of Health department's disaster response would be formed at the Directorate General Health office.
- 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.

### **Civil-Military Coordination Mechanism**

Military Assistance is solicited formely through Home Department according to the required emergency situations. Past experience reveals that military is requested to come in aid of civil administration during elections and Muharram & Urs. During flood each of the relief centers is provided military personel to ensure relief activities. Quich Relief Force is formed to respond to any untoward situation and mini Head quarters are establsihed at central locations. Logistics like POL, fire wood, vehicles, telecommunication alongwith bording & lodging are provided to the military contigents. During Muharram, military is usually kept at certains vuluerable points and called in to the field only if some untoward incident takes place. However, no such untoward incidents has so far been reported in the past few years in Pakpattan.

**Volunteer Network**

*E.g. how many registered volunteers, how to activate them, who will coordinate with them etc.*

According to the list of NGOs working under social welfare in the district and philanthropists, the volunteers help the district Govt. and relevant department play their own role in any emergency but due to their limited resources they need community's assistance. In this way NGOs /philanthropists/volunteers mobilize the community resource and develop relief centers to collect relief items as per need and deliver/supply where needed. Volunteers of the civil defence office are required for assistance of affected/victim persons during the flood season.

# RISK ANALYSIS

## 1. Potential hazards of the district

| Hazards  | Likelihood<br>(Score 1-5) | Impact<br>(Score 1-5) | Risk |
|--|---------------------------|-----------------------|------|
| Floods   | 2                         | 2                     | 4    |
| Urban Flooding   | 1                         | 2                     | 3    |
| Flash Floods   | 1                         | 1                     | 1    |
| Hill Torrent   | 0                         | 0                     | 0    |
| Glacial Lake Outburst Flood (GLOF)   | 0                         | 0                     | 0    |
| Landslide  | 1                         | 1                     | 1    |
| Tornado  | 0                         | 0                     | 0    |
| Earthquake   | 2                         | 1                     | 2    |
| Drought  | 0                         | 0                     | 0    |
| Epidemic   | 2                         | 1                     | 2    |
| Fire Incidents   | 3                         | 2                     | 6    |
| Other Major Accidents (Building Collapse, road traffic accidents, train accident, Stampede, plane crash) | 3                         | 3                     | 9    |
| Environmental Hazards (industrial accidents, severe pollution etc.)                                      | 3                         | 3                     | 9    |

Risk = Impact x Likelihood

Low : 1-7

Medium : 8-14

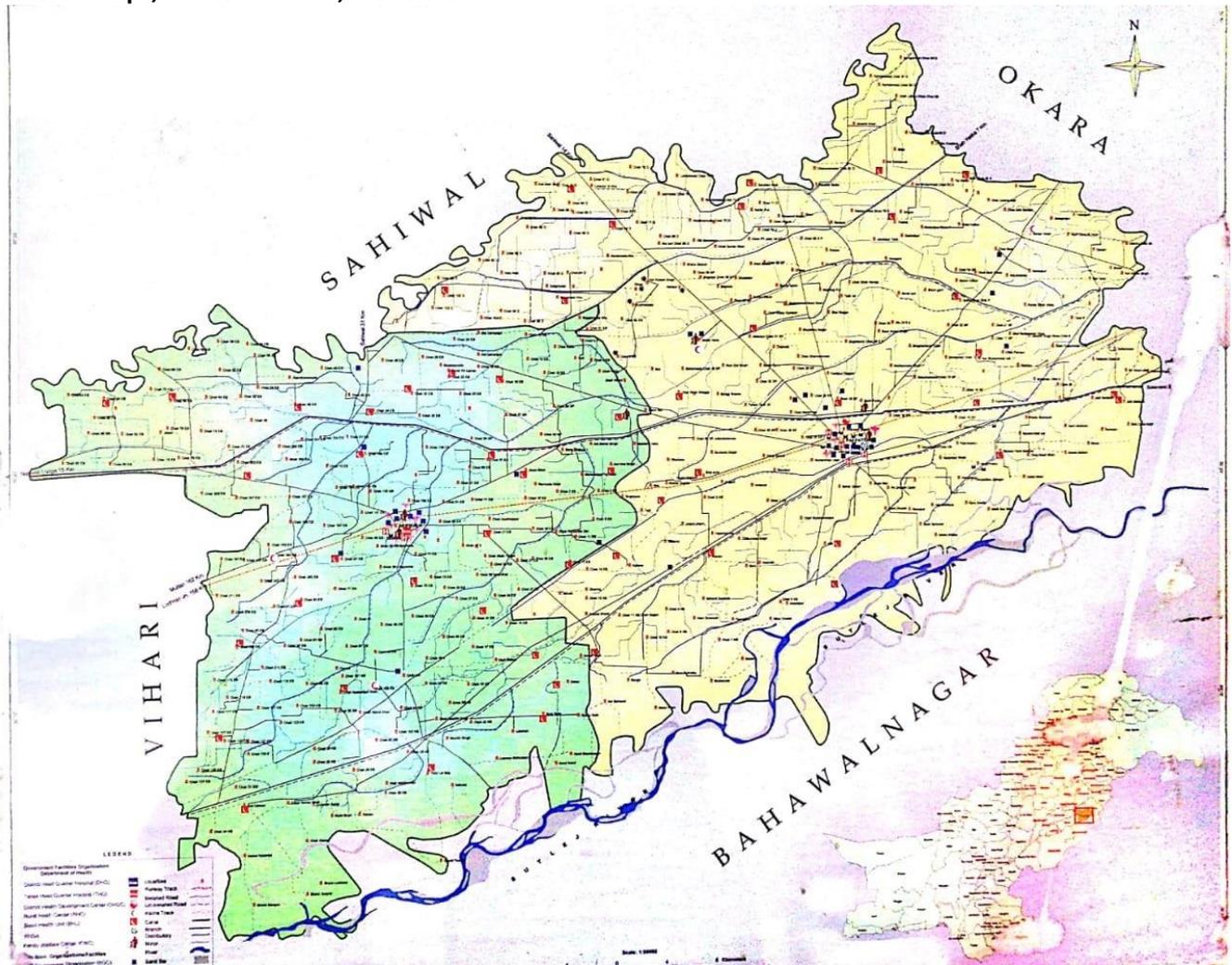
High : 15-25

## 2.Hazards

- *Disasters occurred over the past two to three decades and their impact on communities and development sectors*
- *Provide a brief description of the hazards being planned for (medium and high risks), including potential location that could be affected;*
- *Briefly outline the triggers*

The District Pakpattan surrounded by two Rivers i.e River Satluj and river Khushak Bayas. As there is no water in khushak bayas so it is not vulnerable in context of flood. The river Satluj enters to the district pakpattan from the east side and passes through tehsil Papattan and Arifwala from its southern boundary covers an area of 75-Km approximately. There is history of floods of Satluj river. In 1955 a very high flood was recorded as 597000 Cs. A huge population, area and Government infrastructure were damaged in Pakpattan and Arifwala. Similarly in 1988 & 1995 the river Satluj with its discharge of 500000 Cs & 302000 respectively at Headworks Sulemanki badly effect various villages and cause heavy damages to human, animals lives and crops.

District detail map with vulnerable points including (Rivers, Nullahs, Hill Torrents, Wheat Gowdowns, hazards, planned camps, health facilities, warehouses.



Source:

### 3. Response & Operational Capacity

*Briefly describe the existing response capacities in District (including government and NGO partners)*

The District Pakpattan has got fairly good response capacities both on the on the part of government and its NGO partners. The District has got public hospitals and a number of private health facilities. The urban infrastructure which is sufficient to cope with any likely disaster both natural or imposed by some unwanted human intervention. The district emergency set up is also well-equipped and trained to respond promptly and accurately. Mock exercises are also part of usual training and keep the emergency response in proper shape.

## 4. Strategic Reserves

| Items                                       | Available | Functional | Non-Functional | Extra Demand |
|---|-----------|------------|----------------|--------------|
| Boats                                       | 7         | 7          | 0              | 3            |
| Inflatable Boat                             | 1         | 1          | 0              | 0            |
| OBM   | 8         | 8          | 0              | 0            |
| De-watering sets                            |           |            |                |              |
| Navigators                                  |           |            |                |              |
| GIS devices                                 |           |            |                |              |
| Life Jackets                                | 157       | 157        | 0              | 0            |
| Life Ring                                   | 62        | 62         | 0              | 0            |
| Life Lines (Ropes)                          | 0         | 0          | 0              | 10(100 Feet) |
| Scuba diving suit with complete accessories |           |            |                |              |
| First Aid Kits                              | 10        | 10         | 0              | 0            |
| Rescue Bag                                  | 10        | 10         | 0              | 0            |
| Safety Harnesses                            | 4         | 4          | 0              | 0            |
| Ambulances                                  | 13        | 13         | 0              | 0            |
| Fire Brigade                                | 2         | 2          | 0              | 0            |
| Water Tanks / Bouzers                       | 1         | 1          | 0              | 0            |
| Extendable Ladders                          | 3         | 3          | 0              | 0            |
| Hydraulic Cutter                            | 1         | 1          | 0              | 0            |
| Sonar Rader                                 |           |            |                |              |
| Jumping Sheet                               | 4         | 4          | 0              | 0            |
| Dumpers                                     |           |            |                |              |
| Excavators                                  |           |            |                |              |
| Cranes                                      |           |            |                |              |
| Bulldozer                                   |           |            |                |              |
| Boat Carrier/Trolleys                       | 1         | 1          | 0              | 0            |
| Pickups/Jeeps/4x4 vehicles/Mini Trucks      |           |            |                |              |
| Search light                                | 5         | 5          | 0              | 10           |
| Tent  | 750       | 750        | 0              | 0            |
| Mosquito Net                                |           |            |                |              |
| Plastic Mat                                 | 612       | 612        | 0              | 0            |
| Blanket                                     | 80        | 80         | 0              | 0            |
| Any other main relief/rescue equipment      | 0         | 0          | 0              | 0            |
| Generator Sets (2.5 KVA) with Accessories   | 0         | 0          | 0              | 07           |
| Gas-Cutters                                 |           |            |                |              |
| Sonar Radars                                |           |            |                |              |
| Navigator/GPS Tracker                       |           |            |                |              |
| LED Lamp with Accessories (45 W)            | 0         | 0          | 0              | 14           |
| Floating Rope                               | 0         | 0          | 0              | 0            |
| Pedestal Fans                               | 0         | 0          | 0              | 7            |

## 5.Gaps and Constraints

- *Briefly outline the capacity gaps in the provision of rescue and response;*
- *Describe major obstacles to providing humanitarian assistance (security, access constraints, administrative obstacles, logistics, etc.)*

Due to the budgetary constraints the coverage and quality of municipal service delivery is affected. The major source of receipts of the municipalities is the fiscal transfers from the provincial government of their share in the provincial consolidated fund based on the PFC Award announced by the Provincial Finance Commission. The budget is insufficient and machinery is curcial need for such purpose as well as human resource is also mandatory. To overcome natural disasters there is a dire need for training plan.

## MITIGATION STRATEGY

- ✓ Briefly describe what measure could be taken to reduce the impact of the potential disasters.
- ✓ Strategic pre-positioning of available relief stocks
- ✓ Public education and community awareness

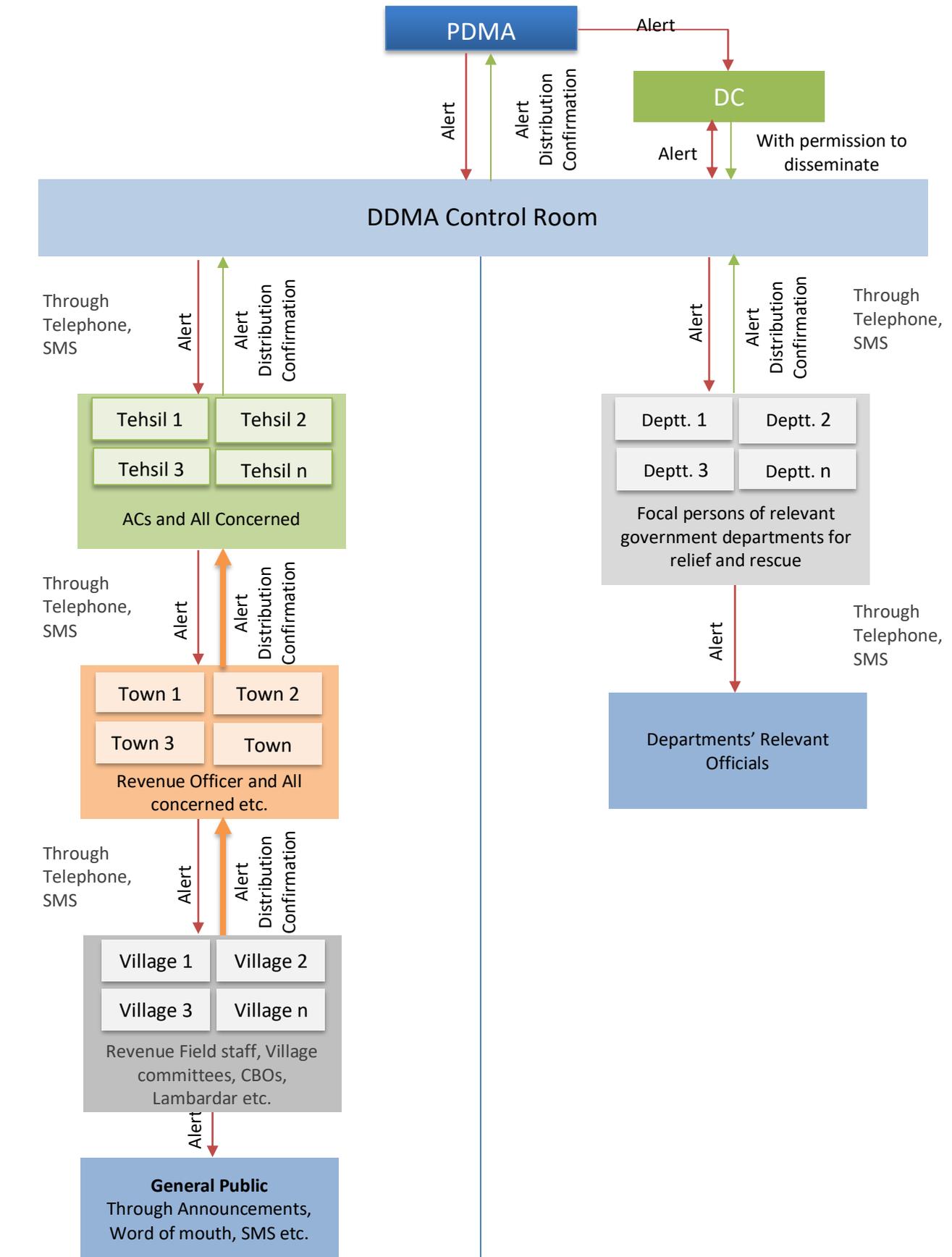
| Hazards                            | Mitigate Actions   | Responsible Department  |
|------------------------------------|--|---|
| Floods                             | <p>Mock exercises regarding flood are conducted with all departments in District.</p> <p>Medical camps may be established in flood affected areas.</p> <p>Public awareness campaign for timely evacuation from flood affected areas.</p> <p>Ensure coordination with all departments for timely response in flood prone areas.</p> | Irrigation, Rescue 1122, Health Department MC, Revenue Department , Live Stock Department |
| Urban Flooding                     | <p>The waste water disposal stations are in bad shape because of out dated and workout structure. The sewage pipe line are also old and work out. The same is meant to catch the rain water as well. Hence, poses great threat towards urban flooding in rainy seasons especiously when power failures occure.</p>                 |   |
| Flash Floods                       | <p>Maximum funds are required for rehabilitation of inhabitants of Dhaki for this purpose major projects is necessary to be made on urgent basis. Owing heavy rain during flood season/ moonson season. A main issue of sliding is generated thefore it is necessary to be arranged at the earliest.</p>                           |   |
| Hill Torrent                       | NII  |   |
| Glacial Lake Outburst Flood (GLOF) | NII  |   |
| Landslide                          | NII  |   |

|  |   |   |
|--|---|---|
|  |   |   |
| Tornado  | NII   |   |
| Earthquake   | NII   |   |
| Drought  |   |   |
| Epidemic   |   |   |
| Fire Incidents   | Small fire incidents become of shot circuits and decanting of liquified petroleum gases do assure of and on in the city but Fire service both of MC and Rescue 1122 is equipped enough to respond to any such situation.  | Rescue 1122, Fire Bregade, MC   |
| Other Major Accidents (Building Collapse, road traffic accidents, train accident, Stampede, plane crash) | Ensure to prevent one wheeling<br>ensure to prevent high speed and overloading<br>ensure to use helmets<br>ensure to use safety belts<br>ensrue to use reflectors behinds trolley and rikshawas<br>ensuree demolishing of old and dengerious buildings<br>ensure safety protcole to be followed in high rise build ings<br>evacuation plan must be ensured<br>enter & exist points must be declared<br>industries should not be situated in residential areas | Rescue 1122, Health Department, Moter way Police, MC, Tariffice Police. |

|  |   |  |
|--|---|--|
|  | <p>ensure to conduct evacuatin drill in all schools, colleges, universities and industries.</p> |  |
| <p>Environmental Hazards (industrial accidents, severe pollution etc.)</p> |   |  |

# EARLY WARNING

## Information Flow Diagram



## Alertness Levels

Following four levels alertness have been established:

|   |   |
|---|---|
| <p><b>Level-D</b><br/>(Disaster threat is perceptible)</p>  | <p>DDMA shall conduct monthly meetings besides atleast 2 mock exercises as per DDMP, well in time, to make the concerned officers/officials understand their role and responsibility for better coordination and testing of rescue and relief equipment. DDMA shall also ensure the physical presence of concerned staff deputed and availability of equipment/resources for all designated vulnerable sites within given time frame during disaster. Vulnerable site's inspections and necessary works/action shall be carried out as mitigation measures.</p> |
| <p><b>Level-C (Alert)</b><br/>(Warning issued but likelihood of occurrence is less than 100%)</p> | <p><b>Activities to be undertaken in level D</b><br/>+<br/>DDMA shall issue "alert" to all concerned for the vulnerable area. DDMA and LDMA (tehsil level) control rooms be made operational 24/7 and ensure availability of all required (available and additional) resources for on call mobilization and monitor the situation 6 hourly. Only DC and DPO shall grant leave according to the situation.</p>   |
| <p><b>Level-B (High Alert)</b><br/>(Disaster threat is imminent)</p>                              | <p><b>Activities to be undertaken in level C</b><br/>+<br/>DDMA shall issue EW to all stakeholders and "High Alert" for the district to ensure that all additional HR and material resources including volunteers has reported to their assigned duties, and all resources for evacuation and disaster management have been mobilized as per DDMP. All emergency (health, fire, rescue 1122, MC etc) facilities shall work 24/7 with full staff strength. DDMA shall monitor the situation on hourly basis.</p>   |
| <p><b>Level-A (Red Alert)</b><br/>(Disaster is materialized)</p>                                  | <p><b>Activities to be undertaken in level B</b><br/>+<br/>DDMA shall respond to the emergency immediately and shall carry out rescue and relief operation as defined in DDMP and shall continuously monitor the situation. Resources of adjoining districts shall be mobilized and Army may be called keeping in view the magnitude of the disaster.</p>   |

## Early Warning

*Briefly describe how the early warning will be received from provincial level?*

*Who is the focal person at district level?*

*Functions of District/Tehsil Emergency Control Rooms in early warning*

*How the early warning will be communicated to relevant departments for different disasters? What actions each relevant department should take after receiving the early warning e.g. evacuation.*

*How the early warning will be communicated to the relevant population? E.g. through Patwaris, SMS, Announcements, Media etc.*

A District Control Room is established throughout the year. The controls rooms at each Tehsil headquarter are established at the start of each flood season or as soon as any severe weather/ disaster alert is generated from the Provincial Headquarter, under the direct supervision of each Assistant Commissioner. Each District department especially police and Rescue 1122 also established their separate control rooms. The District Control Room is directly monitored by the District Coordination Officer or his nominee (ADC or DOC etc).

As soon as some alert situation is initiated the lower revenue formations i.e. upto Patwaris are intimated and directed to respond immediately through landline and cellular networks e.g. evacuation of population of any target area. Safe haven are already identified to more the target population thereto e.g. schools etc. Camps of all emergency services departments are also established therein as required by the magnitude of the emergency situation.

## RESCUE STRATEGY

- *What actions will be taken as an immediate response to the situation? E.g. Evacuation, medical assistance*
- *Who does what and when? Responsible departments/agencies*
- *How and when Pakistan Army will be requested to support the rescue activities*
- *Camp sites identified? List at Annex I.*

1. As an immediate action, information is to be disseminated to the target area/population through announcements on local speakers and drum beats by the lower revenue field staff.

2. Rescue 1122 responds to any emergency situation in minimum possible time and other departments like Health and Civil Defense follow suit. District administration is always alert to make up the deficiencies and fill up the gaps by mobilizing communities through NGOs and its own revenue field formations.

3. Pakistan Army is usually kept on call and invited only when the situation is out of control of the Civil Administration. In Pakpattan, usually two companies of Army are deployed during elections or Muharram processions.

## HUMANITARIAN ASSISTANCE

- *How damage and losses data will be collected and communicated to higher level?*
- *How the priority needs (e.g. food, shelter, health etc.) will be determined?*
- *What activities will be carried-out to provide assistance to the affected population and by whom?*
- *What assistance will be provided?*
- *Standardization of different packages/kits e.g. food, tents*
- *Humanitarian Assistance monitoring mechanism – to avoid duplication and identify gaps*
- *Minimum standards for camps, if camps are established*
- *What is the current capacity in the district? Enough for how much caseload?*
- *Explain how protection, gender and age, environment and other relevant cross-cutting issues that will be addressed or mainstreamed into the humanitarian assistance strategy*

The damage and loss data is collected by registration of affectees of any disaster either in the relief camps established for the displaced people through revenue/ agriculture field formations in case of damage to life or property/crops etc in case of earth quakes, floods etc. Usually, a third party validation is done to authenticate the validity of data either by out sourcing the task to some well renowned national/international firm or a neutral team from some neighbouring district is detailed to conduct the data validation by field visits of the actual disaster stricken area.

Usually, the relief activities are designed and provided as per UN standards regarding food, health, shelter etc which are constantly monitored by PDMA onmitoxs and even independent NGOs, working in aid of the government. Philanthropists provide food hampers and langer petrol diesel and another foodstuff for the assistance of affected / victims persons of the flood .

## ANNEX I: IDENTIFIED SITES FOR DISPLACED PERSONS

| S# | Location   | No. of persons which can be accommodated | GPS Coordinates | S# | Location | No. of persons which can be accommodated | GPS Coordinates |
|----|--|--|-----------------|----|----------|--|-----------------|
| 1  | BHU Pir Ghani Pakpattan                              | 250                                      | X:<br>Y:        | 16 |          |  | X:<br>Y:        |
| 2  | Govt. Elementary School Basti Ghulam Farid Pakpattan | 300                                      | X:<br>Y:        | 17 |          |  | X:<br>Y:        |
| 3  | Govt. Elementary School Malik Bahwal Pakpattan       | 200                                      | X:<br>Y:        | 18 |          |  | X:<br>Y:        |
| 4  | Govt. High School Feroze Pur Chishtian Pakpattan     | 250                                      | X:<br>Y:        | 19 |          |  | X:<br>Y:        |
| 5  | Veterinary Hospital Mari Amb Pakpattan               | 250                                      | X:<br>Y:        | 20 |          |  | X:<br>Y:        |
| 6  | BHU Hotta Pakpattan                                  | 200                                      | X:<br>Y:        | 21 |          |  | X:<br>Y:        |
| 7  | Govt. High School Noora Rath Arifwala                | 200                                      | X:<br>Y:        | 22 |          |  | X:<br>Y:        |
| 8  | BHU Arazi Dilawar Arifwala                           | 300                                      | X:<br>Y:        | 23 |          |  | X:<br>Y:        |
| 9  | Al-Farid Oil Mill Chowk                              | 250                                      | X:<br>Y:        | 24 |          |  | X:<br>Y:        |

|    | Marly Arifwala                                     |     |          |    |  |  |          |
|----|--|-----|----------|----|--|--|----------|
| 10 | Govt. Boys Primary School 25/KB Arifwala           | 200 | X:<br>Y: | 25 |  |  | X:<br>Y: |
| 11 | Union Council Office Goharabad Jamu Bodla Arifwala | 150 | X:<br>Y: | 26 |  |  | X:<br>Y: |

## ANNEX II: LIST OF HAZARD PRONE VILLAGES/REVENUE ESTATE (NAMES REQUIRED)

| Hazards        | Tehsils | UCs | Names of Revenue Estates  |
|----------------|---------|-----|---|
| Floods         | 02      | 6   | 40<br>Bhella, Dhakkar, Malay Kay Taroo Kay, Kund Malay Kay, Ameer Ahlu Ka, Kund Saddu Haider Malkana, Chak Ameera Ahluka, Mustaqeem Mamuka, Meer Khan Mauka, Meer Khan Mamuka, Kund Mahaar Kalan, Kund Nain Singh, Rakh Feroze Pur, 5/KB, Rehmani Malkana, Chak Khaggay Wala, Arazi Jhajhal Bhag, Bahadar Ali, Shaikhay Kay, Mumay Kay, Tirsangi, Sahanwali, Belari Peeran, Bablana, Munawar, Kadoos, Mari Umb, Kund Noora Rath. Kund Shamas Din, Kund Kabal, Belari Kasooria, Belara Delawar, Belara Lakhu Ka, Kalia Shah, Belara Hassan Ka, Hassu Hassan Ka, Sohawa-Mal, Natha Singh, Sham Din, Shahbazi, Bilara Arjun Kay, Madhu Feroz Kay, Mouza Santhy Kay |
| Urban Flooding | Nil     |     |   |
| Flash Floods   | Nil     |     |   |
| Hill Torrent   | Nil     |     |   |
| Tornado        | Nil     |     |   |
| Earthquake     | Nil     |     |   |
| Drought        | Nil     |     |   |

---

|   |     |  |  |  |
|---|-----|--|--|--|
|   |     |  |  |  |
| Epidemic  | Nil |  |  |  |
| Environmental Hazards (industrial accidents, severe pollution etc.) | Nil |  |  |  |

## ANNEX III: LIST OF HEALTH FACILITIES AND THEIR VULNERABILITY TO HAZARDS

| S# | Name and Location   | GPS Coordinates          | Health Facility Type (Primary, Secondary, Tertiary ) | Name and Contact No of Focal Person | Hazard Vulnerability (Floods, Earthquake etc.) |
|----|---------------------|--------------------------|--|-------------------------------------|--|
| 1  | Pir Ghani           | X: 30.3777<br>Y: 73.5932 | BHU  | Dr.M.Asif<br>0303-9379539           | Flood  |
| 2  | Malika Taroo        | X: 30.3386<br>Y:73.4992  | BHU  | Dr.Hamaad Subhaani<br>0304-4652202  | Flood  |
| 4  | Hota                | X: 30.1948<br>Y: 73.2023 | RHC  | Dr.Anum Nasir<br>0302-4176656       | Flood  |
| 5  | Noora Rath          | X: 30.1537<br>Y:73.1635  | BHU  | Dr.Sidra<br>0334-7462989            | Flood  |
| 6  | Behli Dilawar       | X: 30.095<br>Y:72.953    | BHU  | Dr.M. Faisal<br>0300-5170533        | Flood  |
| 7  | Tibbi Lal Baig      | X: 30.1148<br>Y:73.0823  | BHU  | Dr.Hassam Ali<br>0321-7001607       | Flood  |
| 8  | Gadai Shah          |                          |  | Sikandar Ali<br>0345-7971556        | Flood  |
| 9  | Malik Bahawal       |                          |  | Dr. Arslan Javed<br>0332-0755564    | Flood  |
| 10 | Feroz Pur Chishtian |                          |  | Dr. Umar Hameed<br>0331-7163007     | Flood  |
| 11 | Hassuu Hasan Ka     |                          |  | Dr Nadeem Khalid<br>0306-5105977    | Flood  |
| 12 | Kot Baksha          |                          |  | Mr.M.Yousaf<br>0304-2891408         | Flood  |
| 13 | Didar Singh         |                          |  | Mr. Muneer Ahmad<br>0305-6314971    | Flood  |

## ANNEX IV: LIST OF VULNERABLE EDUCATIONAL INSTITUTIONS

| SR.NO | NAME                       | Primary/<br>Middle/<br>High | GPS<br>COORDINATES | ENROLL<br>MENT | IN-CHARGE                | CONTACT. NO  |
|-------|----------------------------|-----------------------------|--------------------|----------------|--------------------------|--------------|
| 1     | GHS PIR GHANI              | High                        | -                  | -              | Jamshed Iqbal<br>Kamboh  | 0301-7383982 |
| 2     | GHS Feroz Pur<br>Chishtian | High                        | -                  | -              | Hamad Ullah<br>Chishti   | 0302-6780740 |
| 3     | GHS Hotta                  | High                        | -                  | -              | Fakhar Hayyat            | 0300-6942873 |
| 4     | GHS Noora Rath             | High                        | -                  | -              | M.Ashraf                 | 0301-7240427 |
| 5     | GHS Tibbi Lal Baig         | High                        | -                  | -              | Muhammad<br>Rafique Saqi | 0303-7782782 |
| 6     | GES Basti Ghulam<br>Farid  | Middle                      | -                  | -              | M.Sarwar                 | 0300-6946273 |
| 7     | GES Malik Bahawal          | Middle                      | -                  | -              | Muhammad Afzal<br>Khan   | 0312-6051529 |

## ANNEX V: LIST OF INDUSTRIES WITH THEIR RISK LEVEL

| Sr# | Category of Units        | Number |
|-----|--------------------------|--------|
| 1   | Cotton Ginning Factories | 34     |
| 2   | Oil Mills                | 5      |
| 3   | Rice Mills               | 71     |
| 4   | Cold Storages            | 43     |
| 5   | Ice Factories            | 43     |
| 6   | Flour Mills              | 7      |
| 7   | Brick Kilns              | 140    |
| 8   | Poultry Feed             | 3      |
| 9   | Agricultural Implements  | 1      |
| 10  | Dairy Products           | 1      |

## ANNEX VI: LIST OF NGO WORKING IN THE DISTRICT

| S.No | NAME OF NGO                           | NGO TYPE<br>(LOCAL,<br>NATIONAL,<br>INTERNATIONAL) | LOCATION WHERE<br>THEY ARE<br>WORKING                   | SECTOR/CULUSTER<br>OF WORK (e.g<br>WASH, HEALTH,<br>EDUCATION | CONTACT<br>PERSON<br>NAME     | CONTACT<br>PERSON MOBILE     |
|------|---------------------------------------|--|---|---|-------------------------------|------------------------------|
| 1    | 2                                     | 3  | 4   | 5   | 7                             | 8                            |
| 1    | Public Welfare Society Arifwala       | Local  | Moh. Muzaffar Abad Arifwala                             | Education   | Ch. Abdul-Ghani               | 0301-7240678                 |
| 2    | Public Welfare Society Pakpattan      | Local  | Basi Street Pakpattan                                   | Health  | Huraria Nawaz                 | 0345-4536247                 |
| 3    | Sahara Welfare Foundation             | Local  | GaliTaameer-E-Millat School WaliTibbaSherkot Pakpattan. | Education   | Mrs. Mehr-Un-Nisa             | 0331-7179460                 |
| 4    | Arifwala Development Program Arifwala | Local  | Chowk Kumharan Wala Arifwala                            | Education   | Nighat Rana Raja Fida Hussain | 0300-4600187                 |
| 5    | DehiTarqiati Council                  | Local  | MozaKalyana Pakpattan                                   | Student, Child and Women Welfare.                             | Muhammad Umar                 | 0301-4829107                 |
| 6    | HamdaradAnjuman Basti Seal Gaon       | Local  | Basti Seal Gaon Chak No 23/SP Pakpattan                 | Education   | Muhammad Islam                | 0300-8753912                 |
| 7    | AnjumanIslah-e-Moushara Arifwala      | Local  | Chak No. 38/E.B Arifwala                                | Education   | Muhammad Shafique Bhatti      | 0301-6934238<br>0301-6929300 |
| 8    | Deaf & Dumb Association               | Local  | Gala Mandi Bazar Pakpattan                              | Disabled Person's Welfare & Education                         | Syed Zafar Ullah Shah         | 0300-8755061                 |
| 9    | AnjumanIslah-e-Moushara Pakpattan     | Local  | College Road Pakpattan                                  | Education   | Dr. Iqbal Ahmad               | 0333-6944251                 |
| 10   | AZAM Foundation Pakpattan             | Local  | Mohallah Islam Colony Pakpattan                         | Health, Education,  | Muhammad Jameel Fareedi       | 0300-6940751                 |
| 11   | Social Development Foundation         | Local  | Saddat House Sahiwal Road Pakpattan                     | Education   | Syed Hamad Raza Bukhari       | 0300-8750508                 |
| 12   | Human Rights Society                  | Local  | Opposite Distgriect courts Road Pakpattan               | Education, Health,  | Rao Naseem Hashim             | 0300-6949000                 |

|    |  |       |   |                    |   |                            |
|----|--|-------|---|--------------------|---|----------------------------|
| 13 | District T.B. Association                  | Local | By Pass Road Madina Town Pakpattan                          | Health             | Hakim Lutaf Ullah                           | 0300-6947003               |
| 14 | Roshni Welfare Society Pakpattan           | Local | Moh. PirKaryaan Pakpattan                                   | Education, Health, | Iftikhar-ul-Hassan                          | 0300-4906098               |
| 15 | Waqar Women Welfare Association            | Local | Chak No. 28/EB Arifwala                                     | Education          | Waqar-Un-Nisa Shazia Saleem                 | 0300-8969128, 0340-6154801 |
| 16 | One Welfare Society                        | Local | Adda Rang Shah Tehsil Arifwala District Pakpattan           | Health             | Muhammad Insha.                             | 0346-2584708               |
| 17 | Khidmat-E-Khalaq Welfare Society           | Local | Khawaja Aziz Makki Road Pakpattan                           | Health             | Nazir Ahmad Faridi                          | 0302-6940879               |
| 18 | Skill 4 Success Welfare Society Pakpattan  | Local | Daha Street, Gali No. 02 Khawaja Aziz Maki Chowk Pakpattan  | Educatkion         | Shafique Anwar                              | 0300-7253499               |
| 19 | Pakpattan Development Foundation Pakpattan | Local | 571/A Hospital Road Pakpattan                               | Education          | Pir Saeed Ahmad Chishti                     | 0300-8640581               |
| 20 | Al-Mustafa Welfare Society Pakpattan       | Local | Near Madina Masjid Street Nadar Khan Wali Pakpattan.        | Education          | Muhammad Safdar                             | 0300-8750401               |
| 21 | Fazeela Welfare Foundation Arifwala        | Local | Vukla Housing Colony, Qaboola Road Arifwala                 | Health             | Miss Walija Fatma M. Lutf Ullah             | 0300-6913572               |
| 22 | Punjab Skills Vocational Council Pakpattan | Local | House No. 3542, Mohallah Tahli Wala Pakpattan.              | Education          | Muhammad Jamil                              | 0300-4433385               |
| 23 | UKS Welfare Foundation Pakpattan           | Local | Office # 1, First Floor, UKS Plaza, Nagina Chowk Pakpattan. | Education          | M. Umer Khan                                | 0333-0450333               |
| 24 | Maan Welfare Foundation Pakpattan          | Local | Gailani Free Dawakhana, Khawaja Aziz Maki Chowk Pakpattan.  | Education          | Noreen                                      | 0300-8754838               |
| 25 | Social Development Council Malka Hans      | Local | Main Bazar Malka Hans Pakpattan                             | Education          | Gulam Nabi Dhudi                            | 0300-7531467               |
| 26 | Rehmat-e-Aalim Welfare Society Pakpattan   | Local | Near Model Public School ,Ghalla Mandi pakpattan Pakpattan  | Health             | Urooj Eishrat Adeel Ahamed , Muhammad awais | 0310-7621800,0301-7251183  |
| 27 | Anjuman Falah-e-Marizan Pakpattan          | Local | Araian Chowk Pakpattan                                      | Health             | Dr. Shahid Murtaza                          | 0300-6940116               |

|    |   |       |  |                   |                   |              |
|----|---|-------|--|-------------------|-------------------|--------------|
| 28 | Jinnah Welfare Association Chak No.167/EB Arifwala    | Local | Chak No.167/EB Arifwala                          | Health            | Ameer Ali         | 3064777167   |
| 29 | Orphans Welfare Society Arifwala                      | Local | 4-KM Sahiwal Road Arifwala                       | Education         | Dr. Saeed Shaikh  | 0300-6949398 |
| 30 | Sanjh Welfare Society for Human Development Pakpattan | Local | Excise Office WaliGaliMohallah Eid Gah Pakpattan | Education, Health | Ali Hasnain       | 0344-4555311 |
| 31 | Society For the Advancement of Human Rights Arifwala  | Local | Arifwala   | Education         | Rana Imran Haider | 0302-7240605 |

## ANNEX VII: CONTACT LIST OF MAIN STAKEHOLDERS/ DEPARTMENTS

| S# | Designation                | Person Name                 | Telephone (Office)                        | Telephone (Residential) | Mobile       |
|----|----------------------------|-----------------------------|---|-------------------------|--------------|
| 1  | Focal Person for Disasters | Maham Asif Malik            | 0457-921093                               | -                       | 0321-9828414 |
| 2  | Commissioner               | Ali Bahadur Qazi            | 040-9200491                               | 040-9200499             |              |
| 3  | RPO                        |                             | 040-9200011                               | 040-9200080             |              |
| 4  | DC                         | Ahmer Sohail Kayfi          | 0457-921003                               | 0457-921004             | 0304-0920087 |
| 5  | DPO                        |                             | 0457-3741106                              | 0457-921106             |              |
| 6  | ADC (R)                    | Maham Asif Malik            | 0457-921093                               | -                       | 0321-9828414 |
| 7  | DEO Rescue 1122            | Dr. Ahtesham Mazhar         | 0457-383547                               | -                       | 0316-4369988 |
| 8  | DO Civil Defence           | Asghar Ali                  | 0457-921077                               | -                       | 0331-7407343 |
| 9  | SNA                        | Fayyaz Masood               | 0457-921020                               | -                       | 0321-4630359 |
| 10 | AC Pakpattan               | Sharjeel Shahid             | 0457-921095                               | -                       | 0321-7058171 |
| 11 | AC Arifwala                | Azhar Tariq Wattoo          | 0457-920074                               | -                       | 0300-8689777 |
| 12 | Tehsildar Pakpattan        | Mehar Muhammad Iqbal Sanpal | -   | -                       | 0300-6901618 |
| 13 | Tehsildar Arifwala         | Ch. Ghazanfar Naveed        | 0457-920074                               | -                       | 0300-8100875 |
| 14 | Chief Officer -MC Pak      | Javed Aslam                 | 0457-352415<br>0457-374472<br>0457-372415 | -                       | 0300-6969121 |
| 15 | Chief Officer – MC Arf     |                             | 0457-92006                                | -                       | 0303-5845460 |

| S# | Designation                | Person Name          | Telephone (Office) | Telephone (Residential) | Mobile       |
|----|----------------------------|----------------------|--------------------|-------------------------|--------------|
| 16 | CEO Education              | Mehar Ali Sher Smore | 0457-921085        | -                       | 0345-7435956 |
| 17 | Chief Engineer. Irrigation | Abdul Shakoor        | 040-9200221        |                         | 0300-8416196 |
| 18 | XEN Irrigation Eastern Bar | Zafar Iqbal Bodlah   | 0457-921073        | -                       | 0300-7955608 |
| 19 | XEN Irrigation Sulemanki   | Faheem Farid         |                    | -                       | 0320-4101301 |
| 20 | XEN Buildings              | Zulifqaar            | 0457-921047        | -                       | 0344-7202000 |
| 21 | XEN Highways               | Mehmood Iqbal Gujar  | 0457-921048        | -                       | 0307-4442727 |
| 22 | DD Agriculture             | Riaz Ahmad           | 0457-921046        | -                       | 0307-2499761 |
| 23 | CEO(DHA)                   | Dr. Ahmad Shahzad    | 0457-921122        | -                       | 0307-3875541 |
| 24 | DMO                        | Abid Shoukat         | 0457-383144        | -                       | 0321-4208615 |
| 25 | Incharge DHQ Hospital      | Dr. Ahmad Shahzad    | 0457-373486        | -                       | 0307-3875541 |
| 26 | Addl. Director Livestock   | Dr.Saleem Anjum      | 0457-352691        | -                       | 0300-7007580 |

## ANNEX VIII: LIST OF VOLUNTEERS

| Sr.# | Volunteer Name   | Address                          | Contact Number and Email | Blood Group | Time required to be on-board |
|------|------------------|----------------------------------|--------------------------|-------------|------------------------------|
| 1    | MUHAMMAD ISHAQ   | O/O DEO (SE), PAKPATTAN          | 0301-7243973             |             | 30 minute                    |
| 2    | MUHAMMAD AKHTER  | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0304-2482776             |             | 45 minute                    |
| 3    | MANSOOR AHMED    | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0304-5012768             |             | 60 minute                    |
| 4    | MUHAMMAD ZEESHAN | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0312-6940925             |             | 45 minute                    |
| 5    | FAHEEM ANWAR     | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0302-4041757             |             | 60 minute                    |
| 6    | SAJID UR REHMAN  | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0300-6943467             |             | 45 minute                    |
| 7    | AHMED RAZA       | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0301-7508815             |             | 60 minute                    |
| 8    | ABDUL QADIR      | O/O DEO (EE-M), TEHSIL PAKPATTAN | 0301-7191806             |             | 45 minute                    |

|    |                      |                              |              |  |           |
|----|----------------------|------------------------------|--------------|--|-----------|
| 9  | MUHAMMAD IMRAN       | AEO (EE-M), TEHSIL ARIFWALA  | 0301-6580705 |  | 30 minute |
| 10 | MUHAMMAD AMEER       | AEO (EE-M), TEHSIL PAKPATTAN | 0308-7249768 |  | 60 minute |
| 11 | SHABBIR AHMED        | AEO (EE-M), TEHSIL PAKPATTAN | 0301-4820500 |  | 30 minute |
| 12 | FAKHAR ZIA           | AEO (EE-W), TEHSIL PAKPATTAN | 0300-8754078 |  | 45 minute |
| 13 | IMDAAD FAREED        | AEO (EE-W), TEHSIL PAKPATTAN | 0303-9895212 |  | 60 minute |
| 14 | MUHAMMAD AHMED SADIQ | AEO (EE-W), TEHSIL PAKPATTAN | 0348-7116667 |  | 45 minute |
| 15 | SHAKEEL HUSSAIN      | AEO (EE-W), TEHSIL PAKPATTAN | 0301-7248421 |  | 60 minute |
| 16 | MUHAMMAD YOUNAS      | AEO (EE-M), ARIFWALA         | 0306-6971424 |  | 45 minute |
| 17 | AFTAB ZIA            | AEO (EE-M), ARIFWALA         | 0300-7893193 |  | 45 minute |
| 18 | HABIB UR REHMAN      | AEO (EE-M), ARIFWALA         | 0300-6931956 |  | 60 minute |
| 19 | MUHAMMAD SHAFQAT     | AEO (EE-M), ARIFWALA         | 0300-0798806 |  | 45 minute |
| 20 | REHAN IDREES         | AEO (EE-M), ARIFWALA         | 0306-7871638 |  | 45 minute |
| 21 | ABDUL QADIR          | AEO (EE-M), ARIFWALA         | 0300-7696843 |  | 30 minute |
| 22 | MUHAMMAD IMRAN       | AEO (EE-M), PAKPATTAN        | 0301-6580705 |  | 60 minute |

## ANNEX VIII (B) : LIST OF SWIMMERS/DIVERS

| S# | Name            | CNIC            | Address  | Contact # and Email | Blood Group | Time Required to be on-board |
|----|-----------------|-----------------|--|---------------------|-------------|------------------------------|
| 1  | Masood Farid    | 36402-0746958-5 | H. No. 94/292 b-3 Moh. Jhajranwala. Pakpattan. | 0304-8310820        | AB +ve      |                              |
| 2  | Muhammad Farooq | 36402-9415894-7 | Chak Chanwat, Pakpattan.                       | 0300-8141920        | B +ve       |                              |
| 3  | Kashif Yasin    | 36402-5193704-1 | H. No. 20 E Block Alfarid Garden, Pakpattan.   | 0300-8861867        | B +ve       |                              |
| 4  | Shahzad Ahmad   | 36402-7054069-3 | H. No. 40 L Block Joyia                        | 0300-               | A +ve       |                              |

|    |                     |                 |   |              |       |  |
|----|---------------------|-----------------|---|--------------|-------|--|
|    |                     |                 | Colony, Pakpattan Road Arif Wala.       | 4839981      |       |  |
| 5  | Ali Ahmad           | 36402-1481037-7 | Chak No.6KB Feroz Pur Road, Pakpattan.  | 0344-6681427 | B +ve |  |
| 6  | Muhammad Altaf      | 36402-8703897-5 | Chak No.27/SP, Pakpattan.               | 0344-7290600 | A +ve |  |
| 7  | Ahmad Nadeem Sharif | 36402-8598166-1 | Chak Azmat, Pakpattan.                  | 0321-7559241 | O +ve |  |
| 8  | Shahbaz Farid       | 36402-4652651-7 | H No 359/16 St Baba Sb Wali, Pakpattan. | 0301-7251351 | O -ve |  |
| 9  | Inam Ullah          | 36402-1980709-7 | Adda Noor Pur, Pakpattan                | 0346-7101424 | B +ve |  |
| 10 | Muhammad Sufyan     | 35302-9254113-1 | Chak No.49/A2-L, Depalpur Road Okara.   | 0303-6975851 | A +ve |  |
| 11 | Ejaz Ahmad          | 36402-5986104-1 | Chak Moose waal, Pakpattan.             | 0307-6175920 | A +ve |  |

## ANNEX IX: POLITICAL CONSTITUENCIES

| National Constituencies |                                 |           |                | Provincial Constituencies |                                 |           |                |
|-------------------------|---------------------------------|-----------|----------------|---------------------------|---------------------------------|-----------|----------------|
| Name of constituency    | Name of Sitting Parliamentarian | Portfolio | Contact Number | Name of constituency      | Name of Sitting Parliamentarian | Portfolio | Contact Number |
| NA-145                  | Mian Ahmad Raza Maneka          | -         | 0300-8452073   | PP-191                    | Mian Farukh Mumtaz Maneka       | -         | 0300-3750813   |
| NA-146                  | Rana Aradat Sharif              | -         | 0345-8446949   | PP-192                    | Mian Naved Ali                  | -         | 0300-5554446   |
|                         |                                 |           |                | PP-193                    | Pir Ahmad Shah Khagga           | -         | 0301-8649512   |
|                         |                                 |           |                | PP-194                    | Naeem Ibraheem                  | -         | 0300-6949249   |
|                         |                                 |           |                | PP-195                    | Pir Kashif Ali Chishti          | -         | 0300-9447415   |

## ANNEX X: LOCAL GOVERNMENT

### District and Tehsil Level

| S# | Designation | District/Tehsil Name | Name | Contact Number | Mobile Number |
|----|-------------|----------------------|------|----------------|---------------|
| 1  | District    |                      |      |                |               |
| 2  | District    |                      |      |                |               |
| 3  | Tehsil      |                      |      |                |               |
| 4  |             |                      |      |                |               |
| 5  |             |                      |      |                |               |
| 6  |             |                      |      |                |               |
| 7  |             |                      |      |                |               |
| 8  |             |                      |      |                |               |
| 9  |             |                      |      |                |               |
| 10 |             |                      |      |                |               |
| 11 |             |                      |      |                |               |
| 12 |             |                      |      |                |               |
| 13 |             |                      |      |                |               |
| 14 |             |                      |      |                |               |

### Town Level

| S# | Tehsil | TC | Chair | Chair Contact | Vice Chair | VC Contact |
|----|--------|----|-------|---------------|------------|------------|
| 1  |        |    |       |               |            |            |
| 2  |        |    |       |               |            |            |
| 3  |        |    |       |               |            |            |
| 4  |        |    |       |               |            |            |
| 5  |        |    |       |               |            |            |
| 6  |        |    |       |               |            |            |
| 7  |        |    |       |               |            |            |
| 8  |        |    |       |               |            |            |
| 9  |        |    |       |               |            |            |
| 10 |        |    |       |               |            |            |
| 11 |        |    |       |               |            |            |
| 12 |        |    |       |               |            |            |
| 13 |        |    |       |               |            |            |
| 14 |        |    |       |               |            |            |
| 15 |        |    |       |               |            |            |

| S# | Tehsil | TC | Chair | Chair Contact | Vice Chair | VC Contact |
|----|--------|----|-------|---------------|------------|------------|
| 16 |        |    |       |               |            |            |
| 17 |        |    |       |               |            |            |
| 18 |        |    |       |               |            |            |
| 19 |        |    |       |               |            |            |
| 20 |        |    |       |               |            |            |
| 21 |        |    |       |               |            |            |
| 22 |        |    |       |               |            |            |
| 23 |        |    |       |               |            |            |
| 24 |        |    |       |               |            |            |
| 25 |        |    |       |               |            |            |
| 26 |        |    |       |               |            |            |
| 27 |        |    |       |               |            |            |
| 28 |        |    |       |               |            |            |
| 29 |        |    |       |               |            |            |
| 30 |        |    |       |               |            |            |
| 31 |        |    |       |               |            |            |
| 32 |        |    |       |               |            |            |
| 33 |        |    |       |               |            |            |
| 34 |        |    |       |               |            |            |
| 35 |        |    |       |               |            |            |
| 36 |        |    |       |               |            |            |
| 37 |        |    |       |               |            |            |
| 38 |        |    |       |               |            |            |
| 39 |        |    |       |               |            |            |
| 40 |        |    |       |               |            |            |
| 41 |        |    |       |               |            |            |
| 42 |        |    |       |               |            |            |
| 43 |        |    |       |               |            |            |
| 44 |        |    |       |               |            |            |
| 45 |        |    |       |               |            |            |
| 46 |        |    |       |               |            |            |

# ANNEX XI: DATA COLLECTION PERFORMAS

## P1: House Damage Assessment

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Name | Father Name | CNIC | Address | Revenue Estate | Union Council | Tehsil | Partially/Completely | Katcha/Pakka | %age of Damage | Contact No. | GPS Coordinates | Picture Taken (Y/N) |
|----|------|-------------|------|---------|----------------|---------------|--------|----------------------|--------------|----------------|-------------|-----------------|---------------------|
|    |      |             |      |         |                |               |        |                      |              |                |             |                 |                     |

## P2: Deceased Person Reporting Performa

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Name of deceased | Father's name | Address | Domicile | Gender | Age | CNIC | Cause of death | Date of death | Place of death | Marital status | Next of kins (Name and Contact and CNIC etc.) | Verifying Officer (Name, Designation and Contact) | Compensation Paid or not |
|----|------------------|---------------|---------|----------|--------|-----|------|----------------|---------------|----------------|----------------|---|---|--------------------------|
|    |                  |               |         |          |        |     |      |                |               |                |                |   |   |                          |

## P3: Injurd Person Reporting Performa

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Name of injured | Father's name | Address | Domicile | Gender | Age | CNIC | Cause of injury | Date of injury | Injury Type (Permanent or Temporary) | Compensation Paid or not |
|----|-----------------|---------------|---------|----------|--------|-----|------|-----------------|----------------|--------------------------------------|--------------------------|
|    |                 |               |         |          |        |     |      |                 |                |                                      |                          |

**P4: Cattle Head Perished**

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Name of Farmer | Father Name | CNIC | Mauza | Tehsil | Type of Animals | Number of Animals (Cow, sheep etc.) | Vaccinated/ Unvaccinated | Witness 1 name and contact No. | Witness 2 Name and Contact No. |
|----|----------------|-------------|------|-------|--------|-----------------|-------------------------------------|--------------------------|--------------------------------|--------------------------------|
|----|----------------|-------------|------|-------|--------|-----------------|-------------------------------------|--------------------------|--------------------------------|--------------------------------|

**P5: Crop Damages**

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Tehsil | Qanoongoi | Union Council | Mauza | Farmer Name | Land owner/Tenant | CNIC of farmer | Contact number | Type of Crops | Total land affected (acres) | % of mauza affected |
|----|--------|-----------|---------------|-------|-------------|-------------------|----------------|----------------|---------------|-----------------------------|---------------------|
|----|--------|-----------|---------------|-------|-------------|-------------------|----------------|----------------|---------------|-----------------------------|---------------------|

**P6: Relief Distribution Tracking Performa**

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Location/ Destination | Arrival Date and time | Items | Quantity | Items short (if any) | Items sent by | Driver name | Received by | Bilty no |
|----|-----------------------|-----------------------|-------|----------|----------------------|---------------|-------------|-------------|----------|
|----|-----------------------|-----------------------|-------|----------|----------------------|---------------|-------------|-------------|----------|

**P7: Private Machinery (Boats, Bulldozers, cranes etc.)**

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

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Name of boat owner | Father name | Contact Number | Age | CNIC | Location of boat/Machinery | Type of Machinery (Boat, Bulldozers, Cranes etc.) | Engine type | Boat capacity | Equipment Condition | Number of Machinery |
|----|--------------------|-------------|----------------|-----|------|----------------------------|---|-------------|---------------|---------------------|---------------------|
|----|--------------------|-------------|----------------|-----|------|----------------------------|---|-------------|---------------|---------------------|---------------------|

**P8: Relief camp registration Performa**

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

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Nationality | Domicile | Male | Female | Age | Children Under 12 | Infants under 3 | Sick | Injured | Pregnant |
|----|-------------|----------|------|--------|-----|-------------------|-----------------|------|---------|----------|
|----|-------------|----------|------|--------|-----|-------------------|-----------------|------|---------|----------|

**P9:NGOs registration performa**

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.

District: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Name of NGO | Local /INGO | Relief activity | Relief camp if any | Focal person in the district | Registered with PDMA | Foreigners to be visiting or not. |
|----|-------------|-------------|-----------------|--------------------|------------------------------|----------------------|-----------------------------------|
|----|-------------|-------------|-----------------|--------------------|------------------------------|----------------------|-----------------------------------|

**P10: Control Room**

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:

District: \_\_\_\_\_

Focal Person: \_\_\_\_\_

Date: \_\_\_\_\_

| S# | Location of control room | Shift I Incharge Name and Contact | Shift II Incharge Name and Contact | Shift III Incharge Name and Contact | Phone Numbers | Fax Numbers | E- Mail Address |
|----|--------------------------|-----------------------------------|------------------------------------|-------------------------------------|---------------|-------------|-----------------|
|----|--------------------------|-----------------------------------|------------------------------------|-------------------------------------|---------------|-------------|-----------------|

## ANNEX XII: CAMP MANAGEMENT SOPS

- Camps would be established in areas accessible by metalled roads so that provision of essential facilities is not difficult
- Basic facilities such as food, clean drinking water, health, hygiene and sanitation should be available at these shelters.
- Proper registration mechanism should be in place to differentiate between those actually affected and cunning opportunists
- Proper security system should be in place in coordination with the local police as the presence of police always acts as deterrence for criminals who may be attracted to such places.
- Emergency medical care should be available as well as a proper firefighting system as fire out breaks are common in such tents
- Proper camp management should be announced and notified and there should be a complaint cell as well
- A proper distribution mechanism should be in place to ensure that the needy get what they deserve.
- Scattered camps should be catered for and encouraged to join the main camp.
- At times shallow hand pumps are not safe for drinking as the water underground has been affected. In such cases clean medicated water should be provided through water bowsers.
- Vector control is an essential part of the camp management and steps should be taken to remove rats, snakes and mosquitoes etc.
- Un-accompanied and missing children shall be placed separately with proper care and fulfilment of their physical and psycho-social needs.
- Needs of women as per local and cultural environment shall be considered for establishing separate relief camps for ladies with provision of proper security and light arrangements.

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

## ANNEX XIII: FLOOD BUNDS

### INFORMATION REGARDING FLOOD BUND CATEGORY A

| SR:#                       | NAME OF DIVISION             | NAME OF EMBANKMENT / BUND     | LENGTH (ft)     |
|----------------------------|------------------------------|-------------------------------|-----------------|
| <b>SARGODHA ZONE</b>       |                              |                               |                 |
| 1                          | Rasul Head works Division    | Right Guide Bund              | 2,121           |
| 2                          | -do-                         | Left Guide Bund               | 3,360           |
| 3                          | -do-                         | Right Guide Spur              | 2,762           |
| 4                          | -do-                         | Left Marginal Bund            | 17,170          |
| <b>Total in feet.</b>      |                              |                               | <b>25,413</b>   |
| <b>Total in Miles.</b>     |                              |                               | <b>4.81</b>     |
| <b>PMO BARRAGES</b>        |                              |                               |                 |
| 1                          | Kalabagh H/Works Division    | Jinnah Barrage                | 25,080          |
| <b>Total in feet.</b>      |                              |                               | <b>25,080</b>   |
| <b>Total in Miles.</b>     |                              |                               | <b>4.75</b>     |
| <b>FAISALABAD DIVISION</b> |                              |                               |                 |
| 1                          | Khanki Division              | Left Marginal Bund            | 21,000          |
| 2                          | -do-                         | Right Marginal Bund           | 29,000          |
| 3                          | Jhang Division               | Jhang Flood Protection Bund   | 43,875          |
| 4                          | Qadirabad Barrage Division   | Left Marginal Bund            | 20,000          |
| 5                          | -do-                         | Right Marginal Bund           | 20,000          |
| <b>Total in feet.</b>      |                              |                               | <b>133,875</b>  |
| <b>Total in Miles.</b>     |                              |                               | <b>25.36</b>    |
| <b>BAHAWALPUR ZONE</b>     |                              |                               |                 |
| 1                          | Punjnad Head works Division  | Right Marginal Bund           | 15,000          |
| 2                          | -do-                         | Left Marginal Bund            | 15,000          |
| 3                          | -do-                         | Colony Protection Bund        | 15,000          |
| 4                          | Khanpur Canal Division       | Minchin Flood Bund            | 10,000          |
| <b>Total in feet.</b>      |                              |                               | <b>55,000</b>   |
| <b>Total in Miles.</b>     |                              |                               | <b>10.42</b>    |
| <b>MULTAN ZONE.</b>        |                              |                               |                 |
| 1                          | Trimmu Division              | Right Marginal Bund           | 20,000          |
| 2                          | -do-                         | Left Marginal Bund            | 20,000          |
| 3                          | Sulemanki Division           | Left Marginal Bund            | 10,000          |
| 4                          | -do-                         | Right Marginal Bund           | 10,000          |
| 5                          | Shuja Canal Division         | Right Bank of Shujabad Branch | 10,000          |
| 6                          | -do-                         | Akbar Flood Bund              | 10,000          |
| <b>Total in feet.</b>      |                              |                               | <b>80,000</b>   |
| <b>Total in Miles.</b>     |                              |                               | <b>15.15</b>    |
| <b>D.G.KHAN ZONE</b>       |                              |                               |                 |
| 1                          | Taunsa Barrage               | Right Guide Bund Upstream     | 15,000          |
| 2                          | -do-                         | Left Guide Bund               | 20,000          |
| 3                          | -do-                         | Shahwala Groyne               | 10,000          |
| 4                          | Muzaffargarh Canal Division  | Muzaffargarh Flood Bund       | 50,000          |
| 5                          | -do-                         | Doaba Flood Bund.             | 5,000           |
| 6                          | -do-                         | Khargarh Flood Bund           | 5,000           |
| 7                          | -do-                         | Khanwah Flood Bund            | 5,000           |
| 8                          | Jampur Construction Division | Jampur Flood Bund             | 5,000           |
| 9                          | -do-                         | Rojhan Flood Bund             | 20,000          |
| <b>Total in feet.</b>      |                              |                               | <b>1,35,000</b> |
| <b>Total in miles</b>      |                              |                               | <b>25.57</b>    |

| <b>LBDC(IP)</b>             |                                |  |                |
|-----------------------------|--------------------------------|--|----------------|
| 1                           | Balloki Head works Division    | Left Marginal Bund   | 15,000         |
| 2                           | do                             | Right Marginal Bund  | 15,000         |
| <b>Total in Feet</b>        |                                |  | <b>30,000</b>  |
| <b>Total in miles</b>       |                                |  | <b>6</b>       |
| <b>LAHORE ZONE</b>          |                                |  |                |
| 1                           | FLOOD Bund Division<br>Narowal | Jassar Highway Bund  | 10,000         |
| 2                           | do                             | Rayya flood Bund   | 5,000          |
| 3                           | Pasrur Link Division Sialkot   | City Flood Protection Bund along<br>Aik Nullah   | 7,340          |
| 4                           | do                             | Hajoipur Flood Protection Bund<br>along Aik Nullah   | 86,00          |
| 5                           | do                             | Left Flood Protection Bund over<br>deg Nullah from defence<br>embankment to Zafarwala Kingra<br>road | 10,000         |
| 6                           | Marala Division UCC            | Left Marginal Bund   | 50,000         |
| 7                           | do                             | Right Marginal Bund  | 10,000         |
| 8                           | Lahore Drainage Div.           | Shahdara Flood Protection Bund   | 15,000         |
| <b>Total in Feet</b>        |                                |  | <b>115,940</b> |
| <b>Total in miles</b>       |                                |  | <b>22</b>      |
| <b>Grand total in miles</b> |                                |  | <b>114</b>     |

**INFORMATION REGARDING FLOOD BUND CATEGORY B**

| S#                     | Name of Division           | Name of Embankment / Bund      | Length (ft.)   |
|------------------------|----------------------------|--------------------------------|----------------|
| <b>SARGODHA ZONE</b>   |                            |                                |                |
| 1                      | Rasul Headworks Division   | Important / Vulnerable Reaches | 10,000         |
| 2                      | Bhakkar Division           | -do-                           | 10,000         |
| 3                      | Layyah Division            | -do-                           | 10,000         |
| 4                      | Jhelum Division            | -do-                           | 5,000          |
| <b>Total in feet.</b>  |                            |                                | <b>35,000</b>  |
| <b>Total in miles</b>  |                            |                                | <b>6.63</b>    |
| <b>FAISALABAD ZONE</b> |                            |                                |                |
| 1                      | Khani Division             | -do-                           | 20,000         |
| 2                      | Jhang Division             | -do-                           | 50,000         |
| 3                      | Qadirabad Barrage Division | -do-                           | 60,000         |
| 4                      | Burala Division            | -do-                           | 35,000         |
| <b>Total in feet.</b>  |                            |                                | <b>165,000</b> |
| <b>Total in miles</b>  |                            |                                | <b>31.25</b>   |
| <b>BAHAWALPUR ZONE</b> |                            |                                |                |
| 1                      | Punjad Headworks Division  | -do-                           | 90,000         |
| 2                      | Khanpur Canal Division     | -do-                           | 100,000        |
| 3                      | Bahawalpur Canal Division  | -do-                           | 50,000         |
| 4                      | Rahimyar Canal Division    | -do-                           | 50,000         |
| <b>Total in feet.</b>  |                            |                                | <b>290,000</b> |
| <b>Total in miles</b>  |                            |                                | <b>54.92</b>   |
| <b>MULTAN ZONE</b>     |                            |                                |                |

|                      |                                |      |                |
|----------------------|--------------------------------|------|----------------|
| 1                    | Trimmu Division                | -do- | 80,000         |
| 2                    | Suleimanki Division            | -do- | 50,000         |
| 3                    | Shujabad Canal Division        | -do- | 60,000         |
|                      | <b>Total in feet.</b>          |      | <b>190,000</b> |
|                      | <b>Total in miles</b>          |      | <b>35.98</b>   |
| <b>D.G.KHAN ZONE</b> |                                |      |                |
| 1                    | Taunsa Barrage                 | -do- | 80,000         |
| 2                    | Kot Adu Canal Division         | -do- | 90,000         |
| 3                    | Muzaffargarh Canal Division    | -do- | 180,000        |
| 4                    | River Diversion Division       | -do- | 80,000         |
| 5                    | Jampur Construction Division   | -do- | 140,000        |
| 6                    | D.G.Khan Construction Division | -do- | 60,000         |
|                      | <b>Total in feet.</b>          |      | <b>630,000</b> |
|                      | <b>Total in miles</b>          |      | <b>119.32</b>  |
| <b>LBDC (IP)</b>     |                                |      |                |
| 1                    | Balloki Headworks Division     | -do- | 40,000         |
| 2                    | Okara Division                 | -do- | 40,000         |
| 3                    | Sahiwal Division               | -do- | 20,000         |
|                      | <b>Total in feet.</b>          |      | <b>100,000</b> |
|                      | <b>Total in miles</b>          |      | <b>18.94</b>   |
| <b>LAHORE ZONE</b>   |                                |      |                |
| 1                    | Flood Bund Division Narowal    | -do- | 40,000         |
| 2                    | Pasrur Link Division Sialkot   | -do- | 10,000         |
| 3                    | Chakbandi Division             | -do- | 20,000         |
| 4                    | Marala Division UCC            | -do- | 50,000         |
| 5                    | Lahore Drainage Division       | -do- | 80,000         |
| 6                    | Kasur Division                 | -do- | 80,000         |
| 7                    | Gujranwala UCC                 | -do- | 100,000        |
| 8                    | Rachna Drainage                | -do- | 42,000         |
|                      | <b>Total in feet.</b>          |      | <b>422,000</b> |
|                      | <b>Total in miles</b>          |      | <b>79.92</b>   |
| <b>PMO BARRAGES</b>  |                                |      |                |
| 1                    | Jinnah Barrage                 | -do- | 20,000         |
|                      | <b>Total in feet.</b>          |      | <b>20,000</b>  |
|                      | <b>Total in miles</b>          |      | <b>3.79</b>    |
|                      | <b>Grand Total (in miles)</b>  |      | <b>350.76</b>  |

## ANNEX XIV: RIVER DISCHARGE RATES

| River  | Gauge Site    | Designed Capacity<br>(lac Cs) | Flood Limits in Lac Cs. |      |      |           | Exp. High |
|--------|---------------|-------------------------------|-------------------------|------|------|-----------|-----------|
|        |               |                               | Low                     | Med: | High | Very 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         |
| CHENAB | Mangla        | 10.6                          | 0.75                    | 1.1  | 1.5  | 2.25      | 3         |
|        | Rasul         | 8.5                           | 0.75                    | 1.1  | 1.5  | 2.25      | 3         |
|        | 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         |
| SUTLEJ | Ravi Syphon   | 4                             | 0.4                     | 0.65 | 0.9  | 1.35      | 1.8       |
|        | 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       |
| SUTLEJ | 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 Syphon | 4                             | 0.75                    | 1.1  | 1.5  | 2.25      | 3         |

## ANNEX XV: LIST OF BASIC TERMS

### **Acceptable risk**

The level of loss a society or community considers it can live with and for which it does not need to invest in mitigation

### **Biological hazard**

Biological vectors, micro-organisms, toxins and bioactive substances, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

### **Capacity**

A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster.

Capacity may include physical, institutional, social or economic means as well as skilled personnel or collective attributes such as leadership and management. Capacity may also be described as capability.

### **Capacity building**

Efforts aimed to develop human skills or societal infrastructure within a community or organization needed to reduce the level of risk. In extended understanding, capacity building also includes development of institutional, financial, political and other resources, at different levels of the society.

### **Climate change**

The climate of a place or region is changed if over an extended period (typically decades or longer) there is a statistically significant change in measurements of either the mean temperature or variability of the climate for that region.

### **Coping capacity**

The means by which people or organizations use available resources and abilities to face a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions.

### **Disaster**

A serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. It results from the combination of hazards, conditions of vulnerability and insufficient capacity to reduce the potential negative consequences of risk.

### **Disaster risk management (DRM)**

The comprehensive approach to reduce the adverse impacts of a disaster. DRM encompasses all actions taken before, during, and after the disasters. It includes activities on mitigation, preparedness, emergency response, recovery, rehabilitation, and reconstruction.

### **Disaster risk reduction/disaster reduction**

The measures aimed to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

### **Early warning**

The provision of timely and effective information, through identified institutions, to communities and individuals so that they could take action to reduce their risks and prepare for effective response.

### **Emergency management**

The management and deployment of resources for dealing with all aspects of emergencies, in particularly preparedness, response and rehabilitation

### **Forecast**

Estimate of the occurrence of a future event (UNESCO, WMO). This term is used with different meanings in different disciplines.

### **Geological hazard**

Natural earth processes that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. For example earthquakes, tsunamis, volcanic activity and emissions, landslides, rockslides, rock falls or avalanches, surface collapses, expansive soils and debris or mud flows.