



**SPECIAL STUDY ON THE  
PREPAREDNESS OF  
PDMA KHYBER PAKHTUNKHWA  
TO DEAL WITH THE EFFECTS OF  
CLIMATE CHANGE  
Audit Year 2016-17**

**AUDITOR GENERAL OF PAKISTAN  
Directorate General Audit (Disaster  
Management)  
Islamabad**



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## ACRONYMS AND ABBREVIATIONS

AJ&K	–	Azad Jammu and Kashmir
CBDRM	–	Community Based Disaster Risk Management
CCA	–	Climate Change Adaption
CMS	–	Content Management System
CRI	–	Climate Risk Indicator
DDMA <sub>s</sub>	–	District Disaster Management Authorities
DDMU	–	District Disaster Management Unit
DEOC	–	District Emergency Operation Centre
DMIS	–	Disaster Management Information System
DRM	–	Disaster Risk Management
DRR	–	Disaster Risk Reduction
EQs	–	Earthquakes
ERC	–	Emergency Relief Cell
ERP	–	Enterprise Resource Planning
ERRA	–	Earthquake Reconstruction and Rehabilitation Authority
EWS	–	Early Warning System
FATA	–	Federally Administrated Tribal Area
FFD	–	Flood Forecasting Division
GB	–	Gilgit Baltistan
GIS	–	Geographic Information System
GCC	–	Gender and Child Cell
GLOF	–	Glacial Lake Outburst Flood
HP	–	Horse Power
HRF	–	Human Relief Facility
IDPs	–	Internally Displaced Persons
KP	–	Khyber Pakhtunkhwa
KVA	–	Kilo Volt Ampere
MHVRA	–	Multi Hazard Vulnerability and Risk Assessment
MoU	–	Memorandum of Understanding
NDMA	–	National Disaster Management Authority
NDMC	–	National Disaster Management Commission
NGO	–	Non-Governmental Organizations
OBM	–	Out Board Motor
O&C	–	Operation and Coordination
PMD	–	Pakistan Meteorological Department
PDMA <sub>s</sub>	–	Provincial Disaster Management Authorities
PDMC <sub>s</sub>	–	Provincial Disaster Management Commissions
PDMF	–	Provincial Disaster Management Fund
PEOC	–	Provincial Emergency Operation Centre

SBDRM	–	School Based Disaster Risk Management
SOP	–	Standard Operating Procedure
T&A	–	Training and Awareness
UC	–	Union Council
UNISDR	–	United Nations International Strategy for Disaster Reduction
UNDP	–	United Nations Development Program
USAID	–	United States Agency for International Development
VOIP	–	Voice over Internet Protocols

## **ACKNOWLEDGEMENT**

The audit team expresses its gratitude to the Management and staff of Provincial Disaster Management Authority (PDMA) Khyber Pakhtunkhwa (KP) for the assistance and cooperation extended during this study.





## **PREFACE**

The Auditor General conducts audit under Articles 169 and 170 of the Constitution of the Islamic Republic of Pakistan 1973, read with Sections 10 of the Auditor- General's (Functions, Powers and Terms and Conditions of Service) Ordinance 2001.

The Directorate General Audit, Disaster Management conducted the special study on the preparedness of Provincial Disaster Management Authority (PDMA),KP to deal with the effects of climate change. The scope of the study is limited to pre-disaster activities of PDMA,(KP) such as preparedness, mitigation, and prevention. The relative financial and procurement data for the financial year 2014-15, 2015-16 and 2016-17 (up to February 2017) has been considered to check the trends in Disaster risk reduction and preparedness of the organization. The Special Study indicates shortcomings, specific actions and recommendations that will help the management to achieve the objectives of pre-disaster phase of disaster management cycle.

The Special Study is submitted to the Governor, (KP) in pursuance of the Article 171 of the Constitution of the Islamic Republic of Pakistan 1973, for causing it to be laid before Provincial Assembly.

-s/d-

**(Javaid Jehangir)**

Auditor General of Pakistan

Dated: 14<sup>th</sup> February, 2019



## EXECUTIVE SUMMARY

In 2010, Pakistan was hit by the worst floods in its history. The country spent USD 03 billion in relief and recovery and suffered over USD10 billion in damages. According to the Chairman, National Disaster Management Agency, "Had we spent only USD 40 million in making sure our flood infrastructures are maintained, these losses would have been reduced to one-tenth. We would have been able to save a lot of lives, properties and the trauma the affected population went through."<sup>1</sup>

Many studies have indicated that disaster risk reduction is highly cost-effective: a dollar invested in disaster risk reduction can save two to ten dollars in disaster response and recovery costs.<sup>2</sup>

To cope with the disasters proper disaster management system is necessary, which deals with managing the complete disaster spectrum including prevention, mitigation, preparedness, (pre-disaster), response, recovery, rehabilitation and reconstruction (post disaster).

The main cause of heavy losses and damages during disasters in Pakistan is lack of preparedness, planning and the country's limited institutional and organizational capacity for disaster management. To cope with such natural and manmade disasters, it is important to strengthen institutional and organizational capacity, provide for robust preparedness and response planning, clarify the roles and responsibilities of different stakeholders, and strengthen the coordination mechanisms for emergency preparedness and early warning systems.

The Director General Audit, Disaster Management conducted special study on the preparedness of Provincial Disaster Management Authority (PDMA) KP to deal with the effects of climate change during financial year 2016-17 and financial period selected for the study was from Jul 2014 to Feb 2017. The overall objective of this study is to assess the preparedness and internal control of PDMA (KP) to deal with the effects of climate change.

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<sup>1</sup><http://www.trust.org/alertnet/news/interview-pakistan-flood-rebuilding-to-take-at-least-3-5-years>

<sup>2</sup><http://www.ifre.org/global/global-alliance-reduction.pdf> and David Rogers and Vladimir Tsirkanov. The costs and benefits of early warning system (ISDR and World Bank 2010)

## **Key audit findings**

During the study certain issues of potential significance were observed i.e PDMA has not utilized IT based disaster management programs which were provided by UNDP. Provincial Disaster management plan and District Disaster management plan to cope with the disasters related to climate change were not being prepared. It was also observed that there was weak project management of PDMA because of non-functioning of project steering committee and continuous lack of coordination between PDMA and DDMUs and other disaster related departments for disaster activity. Furthermore, there is high tendency of expenditure on post disaster activities rather than pre disaster activities due to poor planning. Moreover, improper and underutilization of financial allocations reflects weak financial management on part of PDMA. Lastly there is dearth of capacity building, training, and awareness in PDMA KP.

## **Recommendations**

In view of the highlighted significant issues of the study, disaster management at PDMA and provincial line departments need further improvement i.e required resources may be provided to PDMA/DDMAs well in time for pre disaster activities, appointment of professional staff, logistic etc. Available IT based software of disaster management may be properly utilized which needs proper training /hiring of staff. Strengthening of PDMA/DDMAs working environment, internal control, public awareness programs etc. Investment in water storage small DAMs, reforestation, embankment near flood points need to be prioritized. Disaster management awareness i.e prevention, mitigation and preparedness may be introduced in academic curriculums at all levels of education.

# 1 Introduction

KP is prone to multiple and frequent disasters of various types, predominantly floods, due to its geographical and topographical conditions, and droughts in some areas. Climate change is making extreme climate events more frequent. Some recent hazards in KP are highlighted as under:

- Floods
- Storm/ Semi Cyclone
- Avalanche/GLOF/Landslide
- Droughts
- Earthquakes

## Climate Risk Index of Pakistan

The German watch Global Climate Risk Index<sup>3</sup> is an analysis based on one of the most reliable data sets available on the impacts of extreme weather events and associated socio-economic data. The German watch Climate Risk Index identified Pakistan as 7<sup>th</sup> most affected country in the past 20 years period.

CRI 1997-2016 (1996-2015)	Country	CRI score	Death toll	Deaths per 100 000 inhabitants	Total losses in million US\$ (PPP)	Losses per unit GDP in %	Number of events (total 1997-2016)
1 (1)	Honduras	12.17	301.65	4.28	561.11	1.968	62
2 (3)	Haiti	13.50	280.40	2.96	418.77	2.730	72
3 (2)	Myanmar	14.00	7 097.75	14.55	1 277.86	0.694	43
4 (4)	Nicaragua	19.33	162.45	2.96	234.60	1.127	44
5 (5)	Philippines	20.17	859.55	0.98	2 893.41	0.611	289
6 (6)	Bangladesh	26.50	641.55	0.44	2 311.07	0.678	187
7 (7)	Pakistan	30.50	523.10	0.33	3 816.82	0.605	141
8 (8)	Vietnam	31.83	312.60	0.37	2 029.80	0.549	216
9 (10)	Thailand	33.83	139.60	0.21	7 696.59	0.967	137
10 (11)	Dominican Republic	34.00	210.90	2.32	243.53	0.262	49

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<sup>3</sup><https://www.germanwatch.org/en/cri>

Disaster means a catastrophe or a calamity in an affected area, arising from natural or man-made causes or by accident which results in a substantial loss of human life or suffering or damage to, and destruction of property. Earthquakes, landslides, floods, droughts, hurricanes and volcanic eruptions can be classified as naturally occurring hazards. Without proper risk reduction, mitigation and adaptation methods, these natural hazards can turn into catastrophic disasters.

Climate change refers to a change in the climate that persists for decades or longer, arising from either natural causes or human activity (UNISDR, 2009)<sup>4</sup>.

Pakistan is a large country with around 881,913 Square Kilometer area (including AJK & Baltistan) and population of over 207 million people. It is a country with diverse topographical and climatic contrasts. It has all kinds of topographical features from coastal beaches, sandy deserts, plateaus, fertile plains, high mountains and snow covered peaks and glaciers. One of the largest river systems i.e. Indus runs through the length of Pakistan. Therefore, it is faced with a number of hazards such as Floods, Earthquakes (EQs), Droughts, Glacial Lake Outburst Flood (GLOF), Landslides, and Tsunami etc.

Hazards related to weather, climate, or water, such as droughts, floods, windstorms, tropical cyclones, storm surges, extreme temperatures, landslides and wildfires, or health epidemics and insect infestations directly linked to meteorological and hydrological conditions caused 90 per cent of natural disasters, around 73 per cent of the casualties and 75 per cent of the economic losses worldwide<sup>5</sup>.

### **The important climatic change threats to Khyber Pakhtunkhwa**

- a. Considerable increase in the frequency and intensity of extreme weather events, coupled with erratic monsoon rains causing frequent and intense floods and droughts;
- b. Decrease in already, scanty forest cover due to deforestation;
- c. Projected recession of the Hindu Kush-Karakoram-Himalayan (HKH) glaciers due to global warming

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<sup>4</sup>UNISDR(2009).pdf

<sup>5</sup><http://www.itu.int/net/newsroom/wre/2012/feature/natural-disaster.aspx>

- d. Emission of toxic gases and CFCs from industries and vehicles along with carbon deposits from trans-boundary pollution sources;
- e. Rising temperatures resulting in enhanced heat and water-stressed conditions, leading to reduced agricultural productivity and droughts;
- f. Loss of species diversity
- g. Increase in insect infestation on plants
- h. Water scarcity

### **1.1 Study Defined**

Recurrent floods and flash floods have resulted in many deaths, damaged standing crops, left many more homeless, killed hundreds of livestock, and caused riverbank cuttings, surface runoff, soil erosion, avalanches, and landslides, damaged houses, roads and infrastructure to the tune of billions of rupees. The main cause of such heavy losses and damages is lack of preparedness, planning, and the country's limited institutional and organizational capacity for disaster management.

Keeping in view the importance of preparedness related to climate changes, the special study on the preparedness of the PDMA, KP to deal with the effects of climate change was approved by Auditor General of Pakistan during a presentation on Audit Plan 2016-17.

This study relates mainly to the assessment of the pre-disaster activities carried out by PDMA, KP regarding prevention, mitigation and preparedness to deal with the effects of climate change. Response of organization for developing policies and actions particularly concerning activities such as:

#### **i. Mitigation and Prevention**

- a. Risk assessment
- b. Prevention
- c. Hazard mapping
- d. Assessing vulnerability
- e. Structural works

#### **ii. Preparedness**

- a. Contingency planning
- b. Warehousing
- c. Early warning
- d. Evacuation to safe places

- e. Consolidation of preparedness for next disaster

## **1.2 Purpose of Study**

Objectives of the study are as under:

- a. To assess the preparedness of the PDMA and DDMUs for climatic related hazard.
- b. To assess internal controls, Provincial Emergency Operation Centre, DRM activities, roles and responsibilities during the pre-disaster/preparedness phase.
- c. To determine the requirement and procurement of goods.
- d. To check the available store keeping of NFIs/FIs and wastage (if any)
- e. To suggest possible remedial measures.

## **1.3 Scope of Study**

The scope of the study is limited to pre-disaster activities of PDMA, KP and preparedness phase of Disaster management cycle to deal with the effects of climate change. The relative financial and procurement data of last three years has been analyzed to check the trends in Disaster risk reduction/management and preparedness activities of the organization.

### **a. Responsible authorities**

Provincial Disaster Management Authority, KP

District Disaster Management Authorities of KP

### **b. Sources of Information**

National Disaster Management Authority, Provincial Disaster Management Authority and District Disaster Management Authorities of KP.

### **c. Sources of financing**

Provincial/Federal Government, USAID, UNDP and donations

### **d. Beneficiaries of Study**

The beneficiaries of study will be Provincial Government, PDMA, DDMUs in KP, Pakistan Audit Department and relevant Ministries.



## **1.4 Study Design**

### **i. Time Period**

The time period selected for the study is from July 2014 to February 2017. The preparedness and pre disaster activities carried out by PDMA KP in the above mentioned period and previous PC-Is/projects/data has also been consulted for this study. The working days allocated for the study were 40.

### **ii. Data**

Most of the data relating to this study was qualitative; however quantitative data in the form of budget, expenditure, store and stock of the organization was also consulted.

#### **a. Primary Data**

Primary data like details of budget release /expenditure, bank statements, reconciliation statements of expenditure, details of procurements, stock registers, details of stockpiles available at warehouse, details of equipment available at PEOC, details of job description, sanctioned and working strength at PDMA, KP has been consulted/obtained in preparation of this study.

#### **b. Secondary Data**

The secondary data like NDMA Act, National Disaster Response Plan, National Disaster Management Plan, Road Map to Disaster Risk Management 2014-19, Monsoon Contingency Plans, Provincial Disaster Planning Guidelines, District Disaster Planning Guidelines as available at respective website of NDMA and PDMA was also consulted.

## **1.5 Methodology**

The methodology adopted for obtaining data from the department is as under:

- a. Review for relevant record, files and documents from the department.
- b. Study of different booklets, contingency plans and national and provincial climate change policies.
- c. Analysis of targets achieved by various PC-Is like:
  - i. Revamping of PEOC & MIS Section of PDMA

- ii. Establishment of DRM Strategic Management Unit in PDMA
- iii. Capacity enhancement of PDMA and DDMUs including purchase of land for provincial warehouse in KP
- d. Analysis of pattern of budgets and expenditures
- e. Questionnaire prepared in line with ISSAI-5510 of Disaster Risk Reduction to obtain replies from the concerned Assistant Directors of various sections of PDMA.
- f. Interviews and discussions with Management
- g. Evaluation of replies, responses and information
- h. Interview with Assistant Directors of key sections of PDMA
- i. Visit of PEOC, MIS and DRM-I and II sections
- j. Visit to HRF Warehouse facility at Jalojai, Nowshera

## **1.6 Data Analysis**

The analysis of targets of various PC-Is, i.e. revamping of PEOC & MIS Section of PDMA, establishment of DRM Strategic Management Unit in PDMA and capacity enhancement of PDMA and DDMUs including purchase of land for provincial warehouses in KP was made. Further analysis of pattern of budgets and expenditure, interviews and discussions with management, evaluation of replies, responses and information, visit to PEOC, MIS and DRM-I and II sections and HRF Warehouse facility at Jalojai, Nowshera was made in connection with the study.

### **a. Questionnaire**

The interview questionnaire was developed during the course of study in accordance with the international standard ISSAI 5510 regarding audit of disaster risk reduction. The replies and available data/record provided by different sections of PDMA was analyzed to know the version/details of the PDMA regarding preparedness, mitigation and prevention of climatic/weather prone disasters, disaster risk reduction and disaster risk management activities at PDMA, KP.

### **b. Response to questionnaire**

Total fifty three questions were floated out of which fifty question were responded by the PEOC, DRM-I, DRM-II, Warehouse, Operation &

Coordination-I, Finance and Training & Awareness, Procurement and Establishment Sections of PDMA. Three questions were either partially responded or not responded at all. The percentage of department response to the questionnaire was 94.34%. The detail of questionnaire are attached at appendix-A.

## **2 Disasters in Khyber Pakhtunkhwa.**

Khyber Pakhtunkhwa is a province burdened with an alarming and diverse portfolio of natural and human-induced disaster including a prone to multiple and frequent disasters of various types, predominantly floods, due to its geographical and topographical conditions, and droughts in some areas. Climate changes have increased the intensity and frequency of these hazards. Some recent hazards in KP are discussed as under:

### **i. Floods**

KP has a complex river system, with many smaller rivers draining into the Indus River running through the province. The major rivers that cross the region are Kabul River, Swat River, Pajkora River, Kurram River, Gomal River and Zhob River. The Indus River and its tributaries have a capacity of 154 MAF (Million Acre Feet) of water annually.

The main regions prone to flooding in KP are the Himalayan moist temperature forests located 1525-3660meter. It is most likely that this region will experience intense precipitation especially in lower Kaghan Valley, Galiat and southern parts of Kohistan. Therefore KP is at high risk of flooding and needs necessary actions to be taken to mitigate the impact of disasters resulting thereof.

Floods in 2010 was a climatic phenomenon that played havoc with the lives in large area of Khyber Pakhtunkhwa<sup>6</sup>. The magnitude of the calamity can be gauged from data compiled by the Federal Flood Commission, which states the combined flow of rivers Swat and Kabul touched a new historical height of 400,000 cusec as compared to the previous figure of 250,000 cusecs recorded in 1929<sup>7</sup>.

### **ii. Storm/Semi Cyclone**

On 26<sup>th</sup> of April 2015, a severe storm struck Peshawar city and other areas of the Khyber Pakhtunkhwa Province. It resulted in to 49 casualties besides injury of 267 people. The Provincial Meteorological Department described the storm as a “mini cyclone”. The severe weather disrupted power supply and suspended transport and air traffic. According to an official statement of PMD, they could

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<sup>6</sup> <http://www.pakmet.com.pk/>

<sup>7</sup> <http://www.ffc.gov.pk>

not issue any forecast for the cyclone-cum-thunderstorm, as it was a rare phenomenon in these areas. The PMD further elaborated that such uncertain cyclones cannot be predicted well before time. The torrential rains and hailstorm caused damages both to life and infrastructure.

### **iii. Avalanche/GLOF/Landslide**

Most of the population in Chitral lives invulnerable areas surrounded by giant almost vertical mountains. The fragile nature of mountains are not able to withstand any minor natural hazard like rain, snow, earthquake, hail storm, river rise or high speed wind due to extensive deforestation.

On July 16, 2015 District Chitral was struck by an unusual and unprecedented torrential rain and series of GLOF (Glacial Lake Outburst Flood) incidents on the western side of the Chitral River. This continued till 19th July, 2015. The heavy rains followed by thunderstorm and cloudbursts, triggered the GLOF events which caused massive destruction. The floods devastated their houses caused human casualties besides enormous destruction of infrastructure comprising, bridges, irrigation channels, water supply schemes, valley roads in different areas of District Chitral.

### **iv. Droughts**

Droughts in the southern parts of KP are more common as compared to the North. The central valley plain, Piedmont plain and Suleiman Piedmont are areas dedicated mostly to agriculture. The cultivated area in south is 1,115,000 hectare, whereas in north cultivable area is 626,000<sup>8</sup> hectare. These numbers signify the magnitude of impact of a drought on food scarcity in the province. With rising temperatures and decrease of rainfall in dry regions, the southern regions become water stressed. Dera Ismail Khan is the area which will be most prone to droughts. Although, drought is a less common hazard compared to floods but the implications on food scarcity cannot be ignored.

### **v. Earthquakes**

Although earthquakes are not caused by climate change, they have severe impacts on communities and can alter natural ecosystems. Moreover, they can

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<sup>8</sup>Climate change policy for KP, 2016

be the cause of many other natural hazards such as landslides, floods (due to cracks in dams, altering of river pathways), infrastructure damage which can pose as a challenge for rehabilitation efforts. List of major earthquake incident<sup>9</sup> given below:

YEAR	MAGNITUDE	AREA	REPORTED STATUS
April 10, 2016	7.1	parts of KP and Punjab	6 people died from landslides, 27 injured, 20 houses damaged.
October 26, 2015	8.1	KP and GB	At least 272 people died and 1773 people injured
July 12, 2012	6.1	northern areas of Islamabad, Rawalpindi, KP and Punjab	No losses were reported.
May 15, 2011	4.7	parts of KP and federal capital	No lives were lost.
October 8, 2005	7.6	Kashmir and Northern areas/Islamabad	80,000 fatalities, 200,000 people injured and four million people left homeless approx. 978 aftershocks until October 27.

## 2.1 Disaster Management Organizations in (KP)

After the devastating earthquake of October 08, 2005 the Government of Pakistan established the Earthquake Reconstruction and Rehabilitation Authority (ERRA) on October 24, 2005 to take up the mammoth task of rehabilitation and reconstruction in the earthquake affected regions of (KP) and Azad Jammu & Kashmir (AJ&K). However, the authority deals with the rehabilitation and reconstruction after October 8, 2005 earthquake. Therefore, this exhibited the need for establishment of an organization to deal with policy and institutional arrangements to reduce losses from disasters in future.

The need for strong institutional and policy arrangements has been fulfilled with the promulgation of National Disaster Management Ordinance, 2006 subsequently enacted by the parliament in 2010. The objective of the act is to provide for an effective national disaster management system for matters related herewith or incidental thereto.

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<sup>9</sup> <https://www.dawn.com/news/1215521>

Following organizations/authorities deal with disaster management at federal/provincial and District level:

**a. National Disaster Management Authority (NDMA)**

The NDMA, under the National Disaster Management Commission (NDMC), is responsible for devising guidelines and implementing programmes on disaster risk reduction, preparedness, capacity building, response and recovery. During disasters the NDMA acts a central hub for implementing, coordinating and monitoring disaster management. They communicate with all stakeholders to facilitate a collaborative response to the disaster (including Disaster Management Authorities, Army, Governmental Ministries and Departments, NGOs). The power and functions of NDMA are laid down in NDMA Act.

**b. Provincial Disaster Management Authority (PDMA)**

The Government of (KP) established PDMC and PDMA on 27 October 2008 to deal with the challenges and to manage the disasters in more professional manner. Provincial Disaster Management Authority (PDMA) KP, operates under a Provincial Disaster Management Commission (PDMC). The power and functions of PDMA are laid down in NDM (KPK) Act, 2012.

**c. District Disaster Management Unit (DDMU)**

The DDMU, under the District Disaster Management Commission, is involved in executing disaster risk reduction programmes at a district and tehsil level (second-lowest tier of local government). The power and functions of DDMU are laid down in NDM (KPK) Act, 2012.

**d. Pakistan Army**

The Pakistan Army's Corps of Engineers is responsible for providing assistance to civil authorities in rescue and relief operations during national disasters. The Pakistan Army is involved in all phases of flood mitigation from pre, during and post floods. During the pre-flood preparatory phase, the Commander, Corps of Engineers make regular inspections of flood protection structures. During floods the Corps of Engineers are stationed at the FFD to monitor the flood situation and provide regular situational updates, forecasts and warnings to the designated Director General (DG) and all other Commanders, Corps of Engineers. Units of the Army are deployed to target areas to carry out rescue

and relief operations. It is the responsibility of the PDMAs to provide army with the equipment needed during disasters (e.g. rescue boats, life-jackets, tents, vehicles etc.).

## **2.2 Guidelines to deal with climatic disasters:**

The guidelines for disaster preparedness in National<sup>10</sup> and Provincial<sup>11</sup> climate change policies were studied and important points are narrated below:

- a. Chalk out a Provincial DRR policy with a special emphasis on climate induced extreme events and disasters.
- b. Clearly define roles and responsibilities of each concerned department, highlighting supervisory roles for public servants and representatives (local and provincial levels) during natural disasters.
- c. Undertake hazard and risk mapping of existing infrastructure and ensure their resilience against climate related hazards.
- d. Strengthening, forecasting and monitoring, early warning systems and evacuation planning during extreme weather events, for both humans and biodiversity (including livestock and fisheries).
- e. Maintain accurate records of seasonal patterns, temperature and precipitation for each agro-ecological zone and use this data and information to project climate change scenarios.
- f. Develop an assessment and compensation mechanism, including insurance of losses and damages in the aftermath of disasters and measures for rehabilitation.
- g. Plan, design, construct and strengthen appropriate flood embankments, dykes, protective bunds to protect flood prone plains and populations keeping in view likely floods.
- h. Ensure storm drainage system in major cities during intense rainfalls.
- i. Ensure that the elderly, children, disabled and women get particular priority in evacuation strategies;
- j. Undertake GIS mapping of all existing irrigation infrastructure especially flood embankments for efficient monitoring and flood management;

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<sup>10</sup>National\_Climate\_Change\_Policy\_2012.pdf

<sup>11</sup>Final\_Climate\_Change\_Policy\_for\_KP\_Province\_25\_October,\_2016\_WebSec\_Comments.pdf



- k. Undertake formulation and enforcement of “River Flood Plain” regulations and laws;
- l. Ensure that infrastructure, including telecommunication, power, utilities and transport are resilient to the impact of climate change, particularly to extreme weather events.

### **2.3 Act, Rules and Regulations Governing Organization**

In 2006, the National Disaster Management Ordinance (NDMO) 2006 was introduced by the Government of Pakistan to provide a legal framework for disaster risk reduction at a federal, provincial and district level and included nine priority areas from the Hyogo Framework for Action. In 2010 the framework was enacted under the National Disaster Management Act 2010. Under the Act, National Disaster Management Commission (NDMC) had been established under the Chairmanship of the Prime Minister as the highest policy making body for disaster management in the country.

Further, pursuant to the Amendment XVIII (the Eighteenth Amendment) in the Constitution of Pakistan under which the provinces have been given autonomy, KP had promulgated the Disaster Management (Khyber Pakhtunkhwa) (Amendment) Act 2012. Under PDMA Act, PDMA, KP had to coordinate and monitor the implementation of the national and provincial policies at different levels.

#### **i. Hyogo Framework for Action (2005-2015)**

The Hyogo Framework for Action (HFA) is a 10 years disaster risk reduction plan that has been adopted by 168 member states of the UN. It was established in 2005 and describes strategies aimed to reduce losses caused by disasters (e.g. lives, social, economic and environmental) by 2015. The guidelines list key activities to build national resilience and outline five priorities for action:

- a. “Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.”
- b. “Identify, assess and monitor disaster risks and enhance early warning.”
- c. “Use knowledge, innovation and education to build a culture of safety and resilience at all levels.”
- d. “Reduce the underlying risk factors.”

e. “Strengthen disaster preparedness for effective response at all levels.”

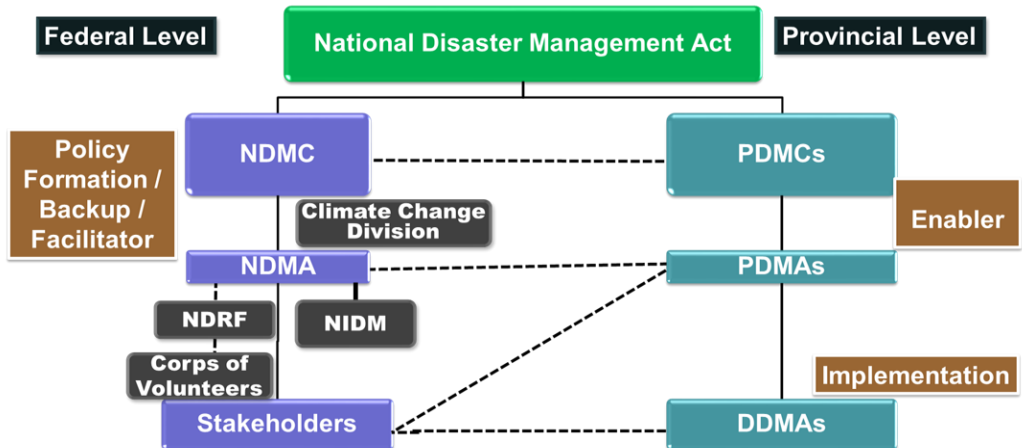
Pakistan became a signatory of the framework after the 2005 earthquake exposed vulnerabilities of the existing disaster risk management strategies adopted by the country.

## 2.4 Organizational Set-up of Disaster Management Organization in Pakistan and layout.

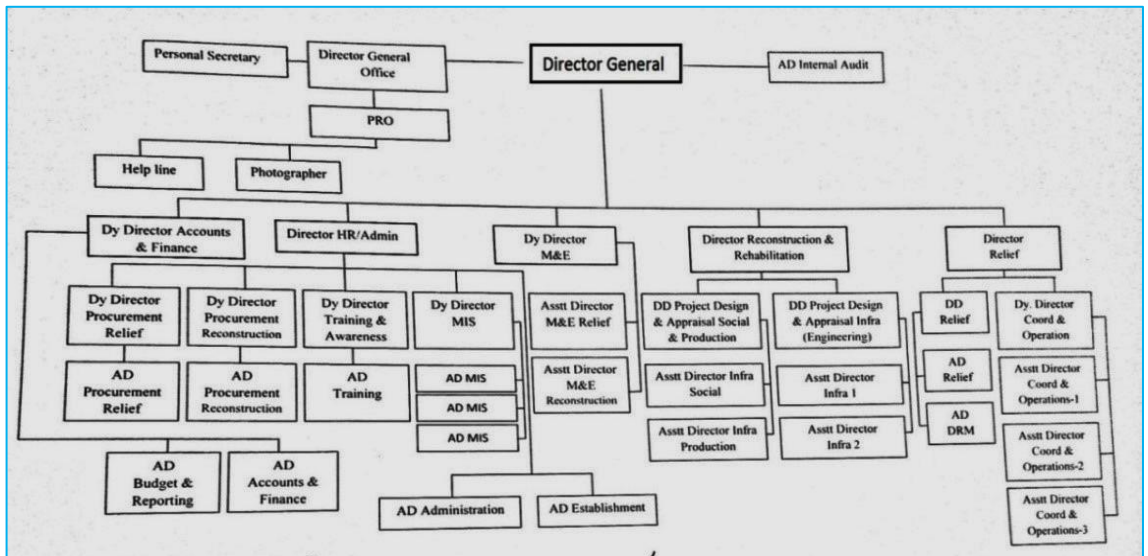
The organizational setup of disaster management organization in Pakistan and organogram PDMA KP is reflected below. At district level the working setup of DDMA is as under:

- District Disaster management Officer (DDMO)
- Computer Operator
- Naib Qasid

### *Organizational Set-up of Disaster Management in Pakistan (PIC-I)*



## ORGANOGRAM OF PDMA (PIC-II)



### 3 Special Study Findings

#### 3.1 Organization and Management

##### 3.1.1 Non-Implementation of Disaster Risk Management Reconstruction Road Map 2014-19 in KP Province.

The PC-I for establishment of DRM Strategic Management Unit in PDMA costing Rs 500 million was approved by the provincial government in ADP 2014-15, which was later revised to Rs 372 million to oversee the implementation of the Road Map for Disaster Risk Management 2014-19. The Road Map was designed to address the numerous risks and vulnerabilities in the province aligned with the National Disaster Management Act 2010, National Climate Change Policy 2012, and National Disaster Management Plan 2012.

Rupees 10 million were allocated to PDMA by the KP Government during first year (2014-2015)<sup>12</sup> for setting up the Strategic Management Unit. However, the project was dropped due to inadequate planning initially and lack of seriousness

<sup>12</sup>DRM Road Map (2014-19)

of the management to carry out the project further. The allocated funds were also not utilized.

This resulted non-establishment of Strategic Management Unit and non-implementation of Disaster Risk Management Road Map 2014-19 raised question on the approach and working capacity of the PDMA to meet the disaster management challenges.

### **3.1.2 Non Development of ERP System**

The PC-I “Revamping of PEOC & MIS section of PDMA & Development of MIS for PDMA” costing Rs 350 million was approved by PDWD in 2015 with proposed completion date as 30<sup>th</sup> June 2017. This MIS included development of ERP system of PDMA, Disaster Management Information System, Strengthening of PEOC, GIS and Installation of Early Warning System to improve the disaster management response capacity of PDMA. Enterprise Resource Planning (ERP) System with following main components:

- a) Finance and Accounts (FMIS)
- b) HR & Admin Management Module
- c) Procurement Management Information system
- d) Warehouse and Inventory Management Information System
- e) Work flow and Document Management System

As per PC-I the cost of ERP system was Rs 15 Million. It was to be made operational by the end of June-2016, however no action on this part was taken by the management upto the audit period up to Feb,2017 despite availability of funds to the tune of Rs145 million.

Audit observed that the procurement process for ERP system has not been initiated as per deadline provided in the PC-I. Hence an opportunity/initiative for prompt reporting mechanism for timely decision making within organization was lost.

### **3.1.3 Non-establishment of Project Steering Committee**

The PC-I “Revamping of PEOC & MIS section of PDMA & Development of MIS for PDMA” costing Rs 350 million was approved by PDWD in 2015 and proposed completion date 30<sup>th</sup> June 2017, which included establishment of

Project Steering Committee as per clause 6(v) of this PC-I. This Committee was required to implement and monitor the project activities, to make timely decisions and gear up efforts to complete the project in time.

Non-establishment of the Project Steering Committee has resulted in;

- Project Implementation status was not reviewed as upto march, 2017 only 6.911% of budget allocation utilized.
- Policy advice to PMU to achieve project objectives was not provided.
- Timely decisions were not taken to ensure smooth functioning of the project activities in line with the guidelines of Govt. of KPK.
- Supervision of the allocation and re-appropriation (upto 40 million) of project resources was not done.

Audit is of the view that non-establishment of Project Steering Committee adversely affected the performance of the PDMA and slowed down progress of the project.

### **3.1.4 Shortage of Human Resource at PDMA/DDMAs**

According to Section 15A of PDMA Act<sup>13</sup>, the organization is authorized to appoint such officers, advisors, experts, consultants and employees as it may consider necessary for the efficient performance of its functions on such terms and conditions as it may deem suitable.

It was observed that the sanctioned strength of PDMA is 190 posts. The PDMA has further demanded 86 specialist/professional/ordinary posts through two (02) PC-Is. Job descriptions of different posts at PDMA (HQ) for Directors/Deputy Director/Assistant Directors is same and sanctioned strength shows more managerial staff at PDMA (HQ) as compared to DDMA level. Moreover, there is no sanctioned post of support staff at DDMA level. Thus Disaster Management set up in KP is like an inverse pyramid organization having more management and support staff at PDMA as compared to DDMA as shown below:

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<sup>13</sup>PDMA, KPK ACT

Entity	Sanctioned managerial Staff	Working Managerial Staff	Vacant	Sanctioned Support Staff	Working Support Staff	Vacant
PDMA	38	24	14	127	88	39
DDMAAs	25	4	21	0	0	0

The DDMAAs need to be strengthened by recruiting managerial and support staff. PDMA should re-visit job description according to scope of work and also its sanctioned strength by converting some of its sanctioned managerial posts into the specialist posts.

### 3.1.5 Non Identification of Relief Centers

Para 3(c)(bb)(viii) of National Disaster Response Plan<sup>14</sup> provides that PDMA has to identify and prepare a list of public buildings which can be used as relief centers in the event of disaster and prepare plans for water supply and sanitation for these buildings.

During study it was observed that PDMA / DDMA did not prepared temporary shelters or demarcated any such places to evacuate the affectees from the disaster hit and risky areas except Chitral and Dir (Upper) tent villages during earthquake.

The management of PDMA may issue clear instructions for identification of buildings to be used as relief centers. The list prepared be circulated and advertised for the information of general public

### 3.1.6 Non Implementation of Provincial Disaster Management Plan

Section 17 of PDMA amendment Act 2012<sup>15</sup> states; “there shall be a plan for disaster management in the province to be called Provincial Disaster Management Plan”.

It is laid down in the Provincial Plan that it will be prepared in the light of guidelines issued by NDMA and in consultation with District Governments. The provincial plan shall include vulnerability of different parts of province to different forms of disasters, measures to be adopted for prevention and

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<sup>14</sup>NDRP-2010.pdf

<sup>15</sup>PDMA ACT 2012

mitigation of disasters, the manner in which mitigation measures shall be integrated with development plans and projects, the capacity building and preparedness measures to be taken, the role and responsibility of each department of the provincial government in relation to previously specified measures and the role and responsibilities of different departments of provincial governments in responding to any threatening disaster situation or disaster. The provincial plan shall be reviewed and updated annually.

The PDMA intimated that Provincial Disaster Management Plan (PDMP) has not been prepared. It was also stated that negotiation with humanitarian organizations is underway to prepare PDMP. However, Monsoon contingency plan has been prepared annually.

Non-preparation of PDMP may create hindrance in Disaster Management.

### **3.1.7 Non Preparation of District Management Plan**

Section 21 of PDMA amendment Act 2012 states that there shall be a plan for disaster management for every district of the Province.

It is laid down that the District Management Plan (DMP) will be prepared by the District Unit having regard to the National and the Provincial Plan. The district plan will include vulnerability of different parts of a district to different forms of disasters, measures to be adopted for prevention and mitigation of disasters, the manner in which mitigation measures shall be integrated with development plans and projects, the capacity building and preparedness measures to be taken, the role and responsibility of each department of the district government in responding to any threatening disaster situation or disaster. The district plan shall be reviewed and updated annually.

The PDMA intimated that DDMP of only two districts namely Nowshera and Swat was developed; and for remaining 23 districts, DDMPs have not been prepared it was also stated that NGOs/INGOs/Organization have been involved in the preparation/design of the DDMPs. However, monsoon contingency plan is prepared annually.

Non-preparation of DDMP may create hindrance in Disaster Management.

## 3.2 Financial Management

### 3.2.1 Slow Progress in Revamping of PEOC and MIS

The PC-I “Revamping of Provincial Emergency Operation Center (PEOC)& MIS section of PDMA & Development of MIS for PDMA” costing Rs 350 million was approved by PDWD in 2015 which included development of ERP system of PDMA, Disaster Management Information System, Strengthening of PEOC, GIS and Installation of Early Warning System to improve the disaster management response capacity of PDMA.

It was observed that the management failed to achieve the project targets as set out in the PC-I. The detail of the funds utilization is as under:

Year	Budget Allocation(Rs)	Expenditure Incurred(Rs)	Balance Unutilized(Rs)	% utilization of funds
2014-15	50,000,000	7,137,914	42,862,086	14.3%
2015-16	50,000,000	1,399,078	48,600,922	2.8%
2016-17 up to 03/2017	45,000,000	1,484,119	43,515,881	3.3%
<b>Total</b>	<b>145,000,000</b>	<b>10,021,111</b>	<b>134,978,889</b>	<b>6.911%</b>

In last three years only 6.911% funds were utilized out of the available budget of Rs 145 million, which shows the lack of commitment on the part of management to complete the project in time and its preparedness for any disaster event.

## 3.3 Asset Management

### 3.3.1. Non Utilization of Existing Facilities at PEOC Already Provided by UNDP

UNDP provided and activated the Provincial Emergency Operation Center on 18.06.2012 in the premises of PDMA, KP in the Peshawar. The PEOC is aimed to provide a platform and to act as a bridge for timely and accurate coordination between provincial government line departments and district administrations in time of emergencies and calamities. The detail of software and communication facilities of PEOC is as under:

- Sahana Eden DMIS<sup>16</sup>

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<sup>16</sup>See <http://sahanafoundation.org/eden/>



- ArcGIS<sup>17</sup>
- 3CX VOIP<sup>18</sup> and Emergency call center servers
- Telenor corporate SMS alert service
- Whatsapp group communication, UAN 1700 which have been routed through NTC and PTCL land line numbers and android remote security camera vigilance application for warehouse.

It was observed on 10.05.2017 that the equipment along with different software was available at PEOC. These facilities were not utilized at their optimal level at PEOC because capacity building of PDMA staff to modern approach and technology was not enhanced to utilize the existing facilities.

The existing facilities were available but were not utilized at optimum level since inception of PEOC due to non-availability of specialist staff and the whole resources were wasted without providing any service delivery to the public of the province.

### **3.3.2. Insecure Existing Disaster Management Information System**

PDMA was already provided Disaster Management Information System (Sahana Eden) by UNDP having more than 20 modules for disaster management. In addition to that PDMA acquired another Disaster Management Information system having three modules related to compensation paid for death, injury and houses partially damaged or fully damaged.

The data related to the recent disasters has not been uploaded so it is not being utilized properly. The login facility has only been provided to the DDMUs but audit was unable to ascertain their input in the DMIS. The current DMIS has been running through the web portal/server of the Government of Khyber Pakhtunkhwa.

It was observed that the PDMA Disaster Management Information System website was hacked and showing contact information (Main city, Kabul, Afghanistan with telephone number of +93777848486 Fax No. +93777848486 and email address [info@microsystem.ad](mailto:info@microsystem.ad)).

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<sup>17</sup>See <http://www.esri.com/software/arcgis/arcgisserver/>

<sup>18</sup>See <http://www.3cx.com/>



Screen shots of PDMA DMIS system having contact info of Afghanistan on website<sup>19</sup>

All information systems may be secured through firewalls and other security software's to avoid hackers attack and loss of information.

### 3.3.3. Non Maintenance of Minimum Stock Level as Per NDMA Guidelines

As per NDMA guidelines at page 24-26, on stock<sup>20</sup> maintenance and supply of relief and rescue items, scale for case load of NFI items, the Minimum stock level to be maintained of non-food and rescue stores has been ascertained for 500,000 people. Caseload (0.25% of population of Pakistan and AJ&K) and minimum stock level was set at 70% of caseload i.e. 350,000 people. The provinces/regions are further directed to maintain stocks of relief items on similar grounds at regional level keeping in view the respective historical

<sup>19</sup> See <https://dmis.pdma.gov.pk/contact.aspx#>

<sup>20</sup> NDMA guideline on stocking, maintenance and supply of relief and rescue items

caseloads<sup>21</sup>. Planning will be based on district-wise population to be supported as per hazard vulnerability as per 4-5% of population for Khyber Pakhtunkhwa.

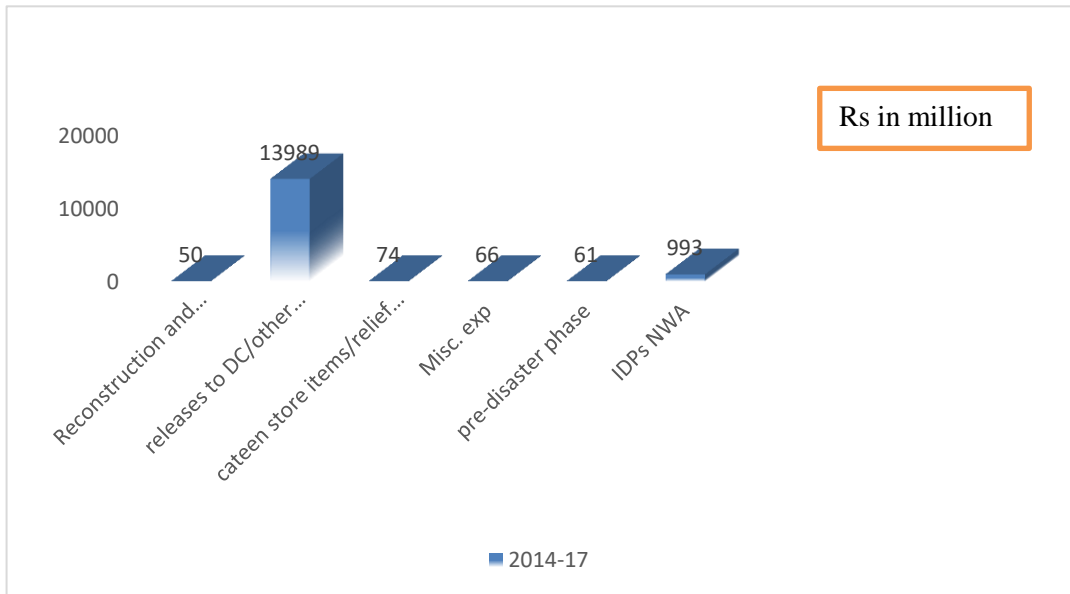
It was observed that no mandatory stock level had been worked out in the light of NDMA guidelines on stock, maintenance and supply of relief and rescue items. The record of the warehouse was not computerized and Items number were not mentioned on the store to distinguish the items.

The mandatory stock level is an essential pre-requisite of the preparedness for disaster, which may leads to effective disaster management. Absence of a standard for minimum stocking level at the central and regional warehouse shows the in-efficiency of the management towards disaster risk management.

### 3.4 Over All Assessment

#### 3.4.1. Disaster Risk mitigation ignored during Utilization of Funds by PDMA, KP during period 2014 to 2017(upto Feb 2017)

Audit analyzed the trends of expenditure incurred during last three year from different accounts maintained by PDMA, KP. Which are highlighted and placed



at Annexure-I.

<sup>21</sup> NDMA guideline on stocking at page-26

The graphical representation of data also shows the trend of utilization of funds during last three years.

The analysis of funds utilization clearly shows that most of the funds were used on relief measures and post disaster compensations as compared to expenses incurred on pre disaster activities. Which shows PDMA was not proactive in their approach to reduce the effects of disasters.

#### **3.4.2. Non conducting of Multi Hazard Vulnerability and Risk Assessment (MHVRA) for KP**

As per para 4.5.3 of NDMP 2012<sup>22</sup> the strategy number two states that detailed multi hazard vulnerability and risk analysis/assessments be conducted at local level in the province. The multi hazard vulnerability assessment is required to be carried out for the following tasks:-

- a. Compile Meta Database & Catalogue of Natural Disasters in the province;
- b. Assess Vulnerabilities of Physical, Economical and Social Elements;
- c. Develop Risk profiles for the districts in (KP)Province;
- d. Hazard and Risk Atlas of (KP)Province;
- e. Train and build capacities of stakeholders for the application of MHVRA database.

During study it was observed that Multi Hazard Vulnerability Risk Assessment will enable PDMA and other relevant stakeholders to develop effective district management plans for the concerned districts. So far Multi Hazard Vulnerability and Risk Assessments (MHVRAs) for the districts of DI Khan and Chitral have been drafted, which is under the approval process at NDMA (not approved by competent forum till date of study) since the launching of NDMP in 2012.No efforts have been made to prepare MHVRA for the remaining 23 districts of KP.

Audit is of the view that a serious effort may be made for truly implementation of National Disaster Management Plan (NDMP) and also MHVRAs of other district may be drafted and approved from the competent forum.

#### **3.4.3. Inadequate Flood Early Warning and water storage system**

As per PDMA Monsoon Contingency Plan 2016, the department admitted that the available system for early warnings and forecasting of floods

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<sup>22</sup>NDMP 2012

is telemetry system by Irrigation Department. The Indus along its course is joined by its tributaries originating from the Northern Areas and some in the province like the River Kabul, Swat and Kurram and numerous minor mountain water channels. The existing flood early warning system of Irrigation Department can forecast the floods 24-48 hours in advance in river Swat, 5-7 hours in Kabul River and 36-48 hours in Indus River in DI Khan<sup>23</sup>. Gauging through telemetry system installed by Provincial Irrigation Department is the only source of early warning system. This system provides insufficient time for evacuation of vulnerable communities as witnessed in Floods 2010 and onwards. There are no arrangements to warn vulnerable communities of flash flooding across the mountainous regions.

PDMA also admitted that there has been very little investment on water storage projects that can otherwise reduce the vulnerability of floods. There are only two notable reservoirs in KP, Warsak and Tarbela. This limited storage capacity has further been undermined by massive silting that naturally reduces the flood mitigation capacities of dams.

It is suggested that the Government may equipped the departments with latest early warning system besides investment in small dams for water storage.

#### **4 Conclusions**

In view of the study, it has been noted that preparedness, mitigation and prevention phase regarding effect of climate change at PDMA-KPK needs improvement. There is a continuous need of improvements in the areas of risk assessment, prevention, hazard mapping, assessing vulnerability, contingency planning, warehousing, early warning and evacuation planning for vulnerable population. There is a dire need to invest resources on forestation and DRR to deal with the effects of climatic changes.

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<sup>23</sup>Moon Soon Plan 2016 chapter 2(2.1)

## **5 Recommendations**

### **5.1 Recommendations for organization**

In view of the results of the study, the recommendations for the organization are as under:-

- a. It is recommended that DRM strategic management unit in PDMA may be established to address the various risk and vulnerabilities in the province. The PDMA should show its commitment to the implementation of the Road Map and making the province disaster resilient.
- b. The progress of the project “Revamping of PEOC and MIS” may be improved.
- c. The ERP system under the project is required to be developed properly according to project objectives for disaster related integration.
- d. The Project Steering Committee be made functional so that performance of the project may be enhanced and utilization of funds may be earmarked for the pre-disaster activities and to meet emergency situation effectively.
- e. The PDMA may re-visit its sanctioned strength by re-designated some of its sanctioned posts into the specialist posts. Moreover, job description of all posts may also be revised according to scope and nature of work.
- f. The management of the PDMA may issue clear instruction for identification of buildings to be used as safe places.
- g. Already installed servers of Sahana Eden DMIS software, Arc GIS software, 3CX VoIP and emergency call center provided by UNDP may be utilized to its optimum level.
- h. DMIS may be secured through firewall and other security software.
- i. Provincial and District Disaster Management Plan may be prepared
- j. MHVRAs as required under NDMP be prepared to implement proper disaster risk management and risk reduction by PDMA KP.
- k. The management of PDMA needs to observe NDMA guidelines for maintenance of minimum stock level.

1. PDMA may install adequate early warning apparatus for floods/flash floods in collaboration with PMD and irrigation department and make arrangements to forewarn vulnerable communities across the mountainous region.

## **5.2 Recommendations for policy makers**

The recommendations for the policy makers are as under:-

- a. The provincial government may plan to invest in water storage and small dams to mitigate/prevent climatic hazards in the province. The check dams may be constructed/built in the entire hilly terrain of the province.
- b. Disaster and emergency management planning is of paramount importance and may be integrated at provincial level
- c. Introduce concepts of climate change mitigation, adaption and natural resources management in academic curriculums at all levels of education.

# APPENDIX & ANNEXURE

## *Appendix-A*

**Question No. 1** What type of climatic related disaster affects Khyber Pakhtunkhwa?

**Response** **Answer by AD DRM-II:** Climate change is affecting (KP) in terms of drought at southern districts, Flood/flash flood/riverine flood/GLOFs/Land sliding and avalanches at Northern districts whereas windstorm, riverine flood is in central districts.

**Question No. 2** What is the probability of each type of climatic disaster?

**Response** **Answer by AD DRM-II:** Drought like situation and flood/flash flood/riverine flood/GLOF may occur due to climate change. The probability of each type of climatic disaster varies due to variation in climatic change. However, floods, GLOF and landslides probabilities are higher in northern districts than southern belt. The actual disasters reported in KP so far regarding climatic change are:

- Flash and riverine flood
- Land sliding and GLOFs
- Avalanches and windstorm

**Question No.3** Which event/situation is accepted as disaster in provincial disaster plans?

**Response** **Answer by AD DRM-II:** The situation is accepted as disaster when an event effects the population on large scale and is not controllable by the local population and results into loss of human life/property.

**Question No. 4** What is the KP government approach to prepare for climatic disasters?

**Response** **Answer by AD DRM-II:** Approach of KP government is active and positive regarding preparedness for climatic disasters. Some initiatives have been taken in the agriculture and environmental sectors. In relief sector, Rescue 1122 services have been extended to 06 districts to provide preparedness trainings and immediate rescue services to vulnerable population. PDMA also believes in active



approach of preparedness and mitigation for climatic disasters by ensuring the contingency planning and awareness campaigns /trainings etc.

**Question No. 5** Please highlight and give status as to funds, location, type etc. of projects carried out by KP government/PDMA regarding mitigation, prevention, protection of climate related disasters/vulnerable areas and population during last three years?

**Response** **Answer by AD DRM-II:** Currently, KP government has allocated Rs 60Million for ADP scheme “Revamping of PEOC”out of the total PC-I cost of Rs 350 million. In this scheme, there are a number of initiatives such as installation of Early Warnings System, Training components, DMIS and ERP system development etc. The components of EWS and training/awareness are the good tools for mitigation, prevention, protection of climate related disasters. Besides it, humanitarian organizations extended support in preparation of MHVRAs and DDMPs. Also, their support in conducting of SBDRM/CBDRM trainings. Progress details as per Annex-II

**Question No. 6** What are the plans/projects of KP government/PDMA to increase forest cover to mitigate climate related disasters?

**Response** **Answer by AD DRM-II:** Currently, the KP government has initiated a “Billion Tree Project” under the ministry of Forest to mitigate the climate related disasters.

**Question No. 7** What are the plans/projects of KP government/PDMA to mitigate/protect the vulnerable river banks and population from floods?

**Response** **Answer by AD DRM-II:** Monsoon Contingency Plans, DDMPs and SOPs have been devised by PDMA to mitigate/protect the vulnerable river banks and population from floods. Provincial Government has taken a step to develop protection walls on the river banks. An example is the protection wall at Nowshera river bank by Irrigation Department.

**Question No. 8** What are the plans/projects of KP government /PDMA regarding preparedness, mitigation/protection against heat wave, droughts, melting glaciers, avalanches, landslides, storms etc.?

**Response** **Answer by AD DRM-II:** Monsoon Contingency Plans 2012 to 2016 have been published whereas monsoon contingency plan 2017 shall be published in-time before monsoon i.e. 25<sup>th</sup> May, 2017. DDMPs of District Swat and Nowshera have been developed. SOPs have been devised by PDMA to mitigate / protect against heat wave, droughts, melting, glaciers, avalanches, landslides, storms etc.

**Question No. 9** Whether provincial disaster management plan prepared? If yes provide a copy.

**Response** **Answer by AD DRM-II:** Not yet. However, negotiation with humanitarian organization is underway to prepare PDMP.

**Answer by AD DRM-I:** MoU for provincial Disaster Management plan (PDMP) with Care International and Islamic Relief is in pipeline.

**Question No.10** Whether any emergency preparedness plan was designed/prepared? If yes please provide a copy

**Response** **Answer by AD DRM-I:** Yes, this section is working on monsoon contingency plan, 2017, however, a copy of the contingency plan for the year 2016 is enclosed.

**Answer by AD DRM-II:** SOPs have been devised for emergency response.

**Question No. 11** Are the NGOs/INGOs/Organization involved in the preparation/design of the provincial plans?

**Response** **Answer by AD O&C-I:** Yes, NGOs/INGOs/Organization involved in the preparation/design of the district disaster management plans, however negotiation with humanitarian organizations are in process for preparation of provincial disaster management plan.

**Answer by AD DRM-I:** Yes. Roles of NGOs/INGOs/ organizations is very important and their inputs have been

reflected in last year plan. Moreover, these have also been taken on board for this year contingency plan.

**Question No. 12** Whether any risk assessment activity carried out taking into account the following aspects?

- Specific Vulnerabilities
- Specific Geographic locations
- Disaster Management capacities

**Response** **Answer by AD DRM-II:** Yes, Evacuation Plan of SherShal village, UC Karimabad, Chitral and Slope instability Study of Pind Kargu Khan, District Abbottabad provided. Copy at annex-I.

**Answer by AD DRM-I:** During preparation of District Contingency Plan, these aspects are taken care of and vulnerable areas are properly reflected with evacuation centers etc.

**Question No. 13** Whether any Multi Hazard vulnerability and Risk Assessment has been carried out? If yes please provide details

**Response** **Answer by AD DRM-II:** Multi Hazard Vulnerability and Risk Assessments (MHVRAs) for DI Khan and Chitral have been drafted.

**Answer by AD DRM-I:** Multi Hazard Vulnerability Risk Assessment will enable PDMA and other relevant stakeholders to develop effective district management plans for the concerned districts. So far, MHVRA study of districts Chitral and DI Khan is in pipeline.

**Question No. 14** Has the government is signatory to any International/bilateral or multilateral treaties or agreements on reducing disaster risk?

**Response** **Answer by AD DRM-II:** Federal government is the signatory of international treaties or agreements such as Hyogo and Sendai framework on reducing disaster risk.

**Question No. 15** Has the PDMA developed effective and appropriate mechanism/ instruments to guide the local authorities in

making the risk assessment in their own areas in accordance with the national strategy and policies?

**Response** **Answer by AD DRM-II:** PDMA has developed SOPs manual wherein it has been clearly mentioned the roles and responsibilities of all stakeholders. Copy attached at Annex-III.

**Question No. 16** Whether steps have been taken for shifting/evacuation the people from most risky area such as flood prone/slide areas? If yes provide documentary evidence.

**Response** **Answer by AD DRM-II:** District Administration of Chitral and Dir Upper set up the tent village.

**Question No. 17** Whether any SOPs regarding roles and responsibilities of officers/staff at PDMA has been prepared? Please provide copy

**Response** **Answer by AD Establishment.** Job Descriptions of Different officers/Staff provided.

**Question No. 18** Whether any SOP has been devised for declaring emergency? Please provide copy

**Response** **Answer by AD DRM-II:** Not Applicable (Emergency is declared by Government)

**Questions No. 19** Whether any mechanism has been devised for distribution of relief goods in case of disaster (food/non-food items)? Please provide copy

**Response** **Answer by AD DRM-II:** In monsoon contingency plan, resource mapping proforma of all districts is there; showing the available and required relief stock / resources with district administration. PDMA KP distributes the relief items from main warehouse on the basis of district's demands during eventuality.

**Question No. 20** Whether any SOPs regarding coordination/actions mechanism with parallel and line departments has been prepared? Please provide copy

**Response** **Answer by ADO&C-I:** Yes, PDMA has developed SOPs regarding coordination/actions mechanism with parallel and line departments has been prepared (copy attached).

**Question No.21** Has the expected level of coordination between and among the agencies concerned been achieved during the occurrence of recent disasters?

**Response** **Answer by AD O&C-I:** Yes all the line departments, district administration and humanitarian organizations have played their role in early relief and rehabilitation in recent disasters, such as Earthquake 2015 and Avalanche 2017 in District Chitral.

**Question No. 22** Has PDMA developed Accounting Rules/Procedures governing the Government /PDM Fund? If yes please provide copy

**Response** **Answer by AD Finance:** Yes, PDMA has developed Accounting procedures for operation and utilization of PDM fund. Copy Attached.

**Question No. 23** From which sources are the funds provided for disaster risk reduction?(Federal/Provincial/Foreign Governments, foreign or local non-government organizations(NGOs), International institutions/donors, and international financial institutions etc.)

**Response** **Answer by AD Finance:** No funds have been provided for Disaster Risk Reduction to PDMA.

**Question No. 24** Please give details for monsoon contingency/climatic funds available and disbursed to line authorities during last three years?

**Response** **Answer by AD Finance:** At the moment, funds to the tune of Rs. 1000.00 million are available under the head Monsoon Contingency 2016. The disbursement made to the line departments during last three years is hereby attached.

**Question No. 25** What types of Procurement has been carried out regarding preparedness to climatic disasters during last three year? Please provide details

**Response** **Answer by AD Procurement:** Details of procurement provided.

**Question No.26** Whether mandatory stock of food, non-food items and medicine are available in warehouse. Give details?

**Response** **Answer by AD Warehouse:** Yes, mandatory stock of non-food items is available in warehouse (List Attached). However, as food items being perishable in nature, the PDMA has signed MoU with Utility Stores Corporation of Pakistan for the provision of food items as and when required in emergencies.

**Question No. 27** Whether any equipment relating to climatic disaster such as de-watering pumps, boats, vehicles etc. available in warehouse. Please give details

**Response** **Answer by AD Warehouse:** Yes, the following items are available in the warehouse:

- i. 12 boats
- ii. 02 Mini Trucks
- iii. 01 Large Truck
- iv. 685 shovels
- v. 379 life jackets
- vi. 52 saw cutters etc.

**Question No. 28** Whether any system regarding stock control has been devised/in place at warehouse?

**Response** **Answer by AD Warehouse:** Yes, there is a mechanism to control stock. However, we are in the drive to further improve the mechanism in consultation with MIS section.

**Question No. 29** Whether relief /rescue items were identified in case of a disaster, if yes provide copy of the approved items?

**Response** **Answer by AD Warehouse:** Yes, copies of approved items attached.

**Question No. 30** Whether early warning system is in place?

**Response** **Answer by AD DRM-II:** Yes, Corporate SMS service has been purchased from Telenor Company to disseminate, weather advisory and other warnings to all stakeholders with PDMA KP mask.

**Answer by AD PEOC:** Yes, PDMA PEOC collect data from technical Departments i.e. Irrigation and Pakistan Meteorological Departments to disseminate further through

Corporate SMS service, which has been purchased from Telenor Company to disseminate weather advisory and other warnings to all stakeholders with PDMA KP mask.

**Question No. 31** Whether any mechanism for early information from other departments regarding disaster/weather/floods/rains in place?

**Response** **Answer by AD DRM-II:** Yes, PDMA KP is receiving river flow information from Irrigation Department and weather pattern information is taken from PMD Website/official.

**Answer by AD PEOC:** Yes, PDMA KP is receiving river flow information from Irrigation Department through fax two times a day i.e. morning and evening and weather pattern information is taken from PMD website/official.

**Question No. 32** What type of disaster management tools are available at PDMA? Please list down with details.

**Response** **Answer by AD DRM-II and PEOC:** Disaster Management tools:

- Disaster Management Information System: DMIS consists of relief modules to maintain data regarding disasters, compensation and relief provided.
- Corporate SMS service to disseminate early warnings.
- PEOC is operational 24/7 to improve emergency response. The PEOC staff is working in two shifts i.e. morning and evening shift. All the equipment list installed in PEOC is attached.
- Control rooms have been established in all 26 districts.
- Designated DDMO post is sanctioned in each district out of which DDMO post is filled in four district and ACs head quarter has additional charge in all other districts.

**Question No. 33** What alternative means of communication are ready, such as telephones, radios and the internet? Are there multiple options available in case of a disaster?

**Response** **Answer by AD DRM-II and PEOC:** The communication with all districts takes place through Internet and PTCL line.

**Question No. 34** Is there an up-to-date disaster management information system at PDMA?

**Response**                    **Answer by AD DRM-II:** DMIS has relief module which include information about:

- Disaster
- Damages
- Compensation
- Relief

**Answer by AD PEOC:** Yes DMIS is updated till 2016, having damages and compensation data.

**Question No. 35** Is the existing disaster management information system suitable for analyzing risks and planning efforts to reduce the risk and/or mitigate the impact of disasters?

**Response**                    **Answer by AD DRM-II:** The existing system has no information, however, has the flexibility to include risk assessment and other information.

**Answer by AD PEOC :**The existing DMIS system has no such information.

**Question No. 36** Does the management information system contain enough information on hazards and risks to determine, who is exposed and who is vulnerable?

**Response**                    **Answer by AD DRM-II and PEOC:** Currently lack of such type of information.

**Question No. 37** Is an appropriate geographical information system is available in PDMA and used? Please list down the purposes for which used?

**Response**                    **Answer by AD PEOC:** Not Available

**Question No. 38** Whether PDMA has up to date hazard maps and analysis to deal with climatic/weather prone disasters?

**Response**                    **Answer by AD PEOC:** Not available

**Question No. 39** What information management activities can be supported by the GIS?

**Response**                    **Answer by AD PEOC:** Not available

**Question No. 40** What types of decisions can be supported with a GIS?

**Response**                    **Answer by AD PEOC:** Not available



**Question No. 41** What are the institutional arrangements that would enable the appropriate use of this GIS?

**Response** **Answer by AD PEOC:** ADP Scheme Revamping of PEOC has the provision of staff for GIS implementation. The staff recruitment is in process and a GIS wing will be established under the PC-1.

**Question No. 42** Are hazard maps prepared taking into consideration the existing environmental plans and land use planning etc.?

**Response** **Answer by AD PEOC:** No

**Question No. 43** To what extent would a GIS help to attract the interest of other agencies and facilitate cooperation?

**Response** **Answer by AD PEOC:**GIS play a vital role in Risk Assessment and analyzing the situation. Through GIS, it would help in decision making.

**Question No. 44** Is the PDMA/provincial government promoting public awareness and education and strengthening community participation in the area of disaster risk reduction?

**Response** **Answer by AD T&A:**PDMA celebrates DRR day on 8 Oct regularly. In order to highlights the importance of DRR day, seminar and walks are arranged. In 2016, the same awareness session was carried out in Government School (Boys &Girls) at Charsadda. Teachers, PTC members and student participated in the sessions.

**Question No. 45** Are education programs and training on disaster risk reduction planned and realized in schools and local communities?

**Response** **Answer by AD T&A:**PDMA in collaboration with NDMA had arranged training on child center disaster risk reduction and comprehensive school safety. Academia, police department, C&W, Rescue 1122, elementary & secondary education, Civil Defence participated. Apart from this teachers in district Hangu were trained on mine risk education. Local elective representative from the district were also trained on Mine Risk Education Tool Kit.

**Question No. 46** Are local drills and simulation exercises conducted at all levels of government?

**Response** No answer

**Question No. 47** At the local level, have more practical matters such as evacuation areas/routes and possible shelters been considered, disseminated and reflected in the disaster drills?

**Response** No answer

**Question No. 48** Is there any specific program for training/emergency exercises for particularly vulnerable people (Patients in hospitals, students in schools, people living in low-lying areas or near river banks)?

**Response** **Answer by AD T&A:** Gender and child cell was established under NDM ACT 2010 (under section 16, sub section 2), which gives power to PDMA to take care of vulnerable groups in the wake of emergencies. GCC has developed multiple guidelines, SOPs, Manuals etc. To include voices of vulnerable population in planning, policies and implementation levels. GCC has trained line department and Humanitarian Organization on Child Protection in Emergencies (CPIE). Child Protection in Emergencies Strategy was also developed to better respond to any emergency.

**Question No. 49** Are various local departments fire department, police, and hospitals, community-based organizations, the Red Cross/Red Crescent, the media and local businesses involved in the training/emergency exercises?

**Response** No answer

**Question No. 50** Is there a Quick Response Team to respond to disasters as they occur?

**Response** **Answer by AD DRM-II:** Civil Defense, Rescue 1122 and district level volunteer task force along with fire and cement agencies respond to disasters.

**Question No. 51** Whether any pre-disaster/preparedness training has been carried out for the staff?

**Response**                    **Answer by AD T&A:** A holistic DRM and CBDRM training program under an ADP project was carried out during 2012-14. 150 provincial/ district officers and almost 200 local community members were trained how to cope with any disaster situation at local level. Copy of PC-I is attached.

**Question No. 52** What are the staffing profiles? Is the staffing appropriate in order to coordinate and carry out disaster risk reduction activities?

**Response**                    **Answer by AD T&A:** Yes, PDMA has qualified and well experienced and trained staffs, which are coordinating DRR activities in vulnerable districts of KP.

**Question No. 53** Number of local volunteer and staff trained to cope with the climate prone disaster?

**Response**                    **Answer by AD T&A:** As of Question No. 51.

#### **Annex-II to Answer No 05**

#### **Quarterly Review Progress of ADP Scheme No. 812-Revamping of PEOC & MIS Section and Development of MIS for PDMA - Rs 350million.**

The PC-I for the project was approved by PDWP on 29-01-2015 under ADP Scheme No. 864 with cost of Rs 350.00 Million. PC-I includes development of ERP System for PDMA, DMIS, Strengthening of PEOC, GIS and Installation of Early Warning System to Improve the disaster management response capacity of PDMA.

#### **Current status / Progress of the scheme:**

- The activity of expansion of PEOC, Establishment of MIS section and divisional control room Peshawar has been completed.
- Rs 06M Capital amount has been re-appropriated to C&W Department to meet the expenditures incurred on these activities after fulfillment of all codal formalities. The whole activity of “Office Establishments of Divisional Control Rooms, MIS/GIS Section and Expansion of Integrated PEOC” was approved in the DDWP meeting dated 09/09/2016 as a sub-component of ADP scheme No.812 “Revamping of PEOC” at a cost of RS. 25.018M.
- Acquisition of UAN 1700 Emergency helpline has been made.
- Android Application has been developed, Launching of the android app is in pipelining.

- Online surveillance of Jalozei warehouse from Emergency Operation Centre has been made.
- Installation of new ubiquitous internet devices (routers, POE switch) has been done.
- 04 Internees have been hired in second phase to develop the android app and to streamline the databank of PDMA.
- Series of meetings conducted with all stakeholders such as Irrigation, HQ 11 corps, Metrological Department with the aim to materialize the component of “Installation of Early Warning System for Flash floods / Riverine floods in Malakand Division”. Mode of feasibility study shall be discussed in the upcoming meeting.
- Request for proposal for Call Center Establishment has been drafted and will be published shortly after approval of competent authority.
- Purchase of IT equipment and Electronic equipment is in progress. Tenders opened on 16<sup>th</sup> May, 2017.
- **HR Recruitment Issue of PEOC:** A summary to Honorable Chief Minister was moved on 6<sup>th</sup> May, 2016 through establishment department with the request to allow the hiring of HR under this scheme. However, no progress has been made on the said summary by the establishment department yet. It is therefore, HR process could not be completed well on time due to stubborn attitude of the regulatory departments. Subsequently, in absence of dedicated specialized HR for such a highly technical nature project and due to various disasters responses in the recent past, milestones under the project could not be achieved as per planned schedule.

**Annexure-I**

Table –I (Rs in million)

<b>Expenditure of Statements of PDMA, KP for the Period _____</b>					
<b>PDMF DESIGNATED ACCOUNT No. 03004200356 NBP, Civil Sectt. Peshawar</b>					
<b>Year</b>	<b>Openin g Balance</b>	<b>Release during the year</b>	<b>Expenditure</b>	<b>Balance</b>	<b>Remarks</b>
2014-15	0	171.000	0.00	171.000	No Expenditure
2015-16	171.000	166.727	50.000	287.727	Reconstruction and Rehabilitation
2016-17 up to 02/2017	287.727	11.195	0.216	298.707	Relief measures
<b>Total</b>		<b>348.922</b>	<b>50.216</b>	<b>298.707</b>	
<b>Chief Minister Fund Designated Account NO. 03004200365 NBP, Civil Sectt. Peshawar</b>					
<b>Year</b>	<b>Openin g Balance</b>	<b>Release during the year</b>	<b>Expenditure</b>	<b>Balance</b>	<b>Remarks</b>
2014-15	0	83.000	58.251	24.749	Relief measures
2015-16	24.749	1.295	0.306	25.738	Relief measures
2016-17 up to 02/2017	25.738	1.000,	0	26.738	No Expenditure
<b>Total</b>		<b>85.295</b>	<b>58.557</b>	<b>26.738</b>	

Table-II (Rs in million)

<b>Relief Account-Assignment Account No. 4038818465 NBP, Main Br. Peshawar</b>					
<b>Year</b>	<b>Budget</b>	<b>Expenditure</b>	<b>Balance</b>	<b>Remarks</b>	
2014-15	1,655.626	993.315	-	Payment for IDPs NWA	
		596.619		Releases to other department for relief measures	
		65.692		Misc. expenditure	
2015-16	13,741.73 0	50.000	-	Advance funds for preparedness disaster monsoon	
		13.441		(Canteen store/Utility Store items) Package Relief Items	
		13,302.304		Releases to other department for relief measures	
2016-17 up to 02/2017	1,532.969	10.877	1,488.14 4	Purchase of goods for pre disaster (Canteen stores) Package Relief Items	
		1.822			
		32.126		Releases to other department for relief measures	