Building resilience by learning

The Disaster Risk Management Handbook

A learning experince of DRM Model Mansehra

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Foreword

Disaster risk reduction and management have become key concepts in present-day development practices across the world. Globally and regionally, we are experiencing a constant increase in socioeconomic losses due to disasters. Geological, ecological and climatic changes are persistently mounting disaster threats for the world community in general and developing nations in particular. 2011 may be regarded as the most distressing year in the world's history for calamities and catastrophes. The economic losses from natural disasters alone amounted to $366 billion around the world. Pakistan has unfortunately been one of the severe victims of such natural and complex human induced disasters during the present and last decade.

The earthquake of 2005 brought many valuable lessons for national policy makers, local government practitioners as well as the communities to rethink and reassess their capacities and weaknesses when dealing with disasters. Government of Pakistan introduced legal, institutional and administrative arrangements for disaster risk reduction and management at national, provincial and local levels, whereas, NGOs and INGOs brought a wealth of knowledge and experience to cope with ensuing hazards and vulnerabilities.

As a long-term development cooperation partner of Pakistan, GIZ's efforts in technical assistance and institutional reform towards pioneering the disaster risk management mechanism under its Disaster Preparedness and Management Project (DPMP) in Mansehra (2008-2010) were pioneering. The project not only facilitated development and implementation of a district level DRM Model but also contributed towards a visible behaviour change among stakeholders which included local administration, non-government organisations, civil society entities and community members.

The DRM Model Mansehra was the first of its kind in Pakistan characterising optimum utilisation of local resources, bringing behaviour changes across multi-stakeholders, mobilising community level volunteerism at local level and enhancing good governance in hazard mitigation and risk reduction. Resultantly, the first ever District Disaster Management Unit (DDMU), was established in Mansehra, and made functional with efficient investment of external and optimal utilisation of internal resources.

How were the resources effectively mobilised, what changed the behaviour of implementing partners, in what ways were the capacities of local government functionaries enhanced and how a coordinated effort was carried out to materialise wider commitments for disaster risk management, are some of the key lessons to learn and build on.

This handbook attempts to present global, national and local arrangements and philosophies of disaster risk management and their application in Mansehra as an evidence for learning and adaptation by local government leaders, disaster risk management practitioners, research institutes, community based organisations, non-government entities and social development workers to work further on the innovative interventions and strategies making the communities more resilient with the aim to further mainstream disaster risk reduction into development planning and practices.

The handbook is an outcome of extensive desk reviews of policy, strategy and implementation level documents prepared by leading national and international organisations as well as from deep insights into the best practices of DPMP's interventions and exchange of experience with stakeholders at Mansehra District of Khyber Pakhtunkhwa.

I positively hope that the handbook will provide practical approaches in understanding the DRM concepts and will further help disaster management stakeholders and practitioners to learn and replicate the DRM Model Mansehra in their respective districts.

Also, I would like to take this opportunity to express my appreciation for GIZ Support to Governance in Pakistan Programme in providing technical expertise and sector knowledge in the development of this handbook.

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Director General
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Preface

The provincial and local governments in Khyber Pakhtunkhwa committed to institutionalise the disaster risk management process in their respective jurisdictions following the catastrophic earthquake of 2005. To supplement these efforts, the Government of Pakistan with the support of multilateral and bilateral international development agencies extended full support and cooperation.

A memorandum of understanding (MoU) was signed between the Government of Khyber Pakhtunkhwa (then North West Frontier Province) and German International Cooperation (former German Technical Cooperation - GTZ), in 2007 for piloting a disaster risk management system in Mansehra under its Disaster Preparedness and Management Project (DPMP).

GIZ had already been operating in Khyber Pakhtunkhwa since 2006 on behalf of the German Federal Ministry of Economic Cooperation and Development (BMZ), across a project to support disaster preventive reconstruction. Thereafter, DPMP focused on supporting the institutional development of disaster management authorities at provincial and district levels to improve and strengthen disaster risk management and disaster response mechanisms.

Mansehra experience has demonstrated that disaster management remains a significant and important focus for local governments. The ability of District Disaster Management Units (DDMUs) to develop and maintain the capacities for disaster management planning and operation are key factors in helping to ensure the safety, resilience and sustainability of communities.

This handbook is intended as a learning tool to supplement the significant work done by DDMU Mansehra in preparing communities to manage and mitigate the effects of disasters. It is another step towards supporting linkages between the strategic and operational disaster management plans of the district administration in making district administration responsive and the communities resilient to disasters.

Incorporating disaster management into local governments' development planning was made possible under the concept of disaster management alliance in collaboration with line departments, local government agencies, emergency services and technical specialists. An enabling environment was thus created where everyone could feel responsible for individual and collective actions.

Working relationships based on mutual trust and confidence were built among all partners including local government elected representatives, appointed officials at the local governance tiers, representatives of the government line departments, law enforcement agencies, scientific research institutions, international development partners, national non-government organisations and the communities of District Mansehra.

The handbook attempts to explain the processes, approaches, methodologies and tools that were developed, used and tested by DDMU Mansehra. Knowledge management based on documentation of empirical knowledge, best practices and technical experience illustrate GIZ's ongoing commitment in promotion and adoption of disaster risk management mechanisms for replication of DRM Model Mansehra across other geographic settings in Khyber Pakhtunkhwa.

Dr. Detlef Barth
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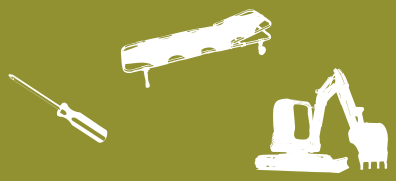
List of Abbreviations

AC	Assistant Commissioner
ACO	Assistant Coordination Officer
BGR	Federal Institute for Geosciences and Natural Resources (Germany)
CBO	Community Based Organisation
CDPM	Center for Disaster Preparedness and Management (Peshawar)
CMO	Chief Municipal Officer
CNG	Compressed Natural Gas
CSO	Civil Society Organisation
CSSR	Collapsed Structure Search and Rescue
DC	Deputy Commissioner
DCO	District Coordination Officer
DDMA	District Disaster Management Authority
DDMU	District Disaster Management Unit
DDMO	District Disaster Management Officer
DPMP	Disaster Preparedness and Management Project (ex GTZ)
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EDO	Executive District Officer
EMR	Emergency Medical Responder
EMT	Emergency Medical Technician
ERT	Emergency Response Team
EWS	Early Warning System
FF	Fire Fighter
FR	First Responder
FWO	Frontier Works Organisation
GCM	Group Coordination Meeting
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GLOF	Glacial Lake Outburst Flood
GSP	Geological Survey of Pakistan
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
HA	Hectare
IFRC	International Federation of Red Cross and Red Crescent Societies
IDP	Internally Displaced Person
INGO	International Non-governmental Organisation
KP	Khyber Pakhtunkhwa
LPG	Liquefied Petroleum Gas
MAF	Million Acre-Feet

MC	Municipal Committee
MFR	Medical First Responder
MM	Millimeter
MOU	Memorandum of Understanding
MR	Medical Responder
NDMC	National Disaster Management Commission
NDMO	National Disaster Management Ordinance
NDRMF	National Disaster Risk Management Framework
NGO	Non-governmental Organisation
NHA	National Highway Authority
NOC	No-objection Certificate
NTC	National Telecommunication Corporation
NWRDP	National Water Resources Development Programme
PaRRSA	Provincial Reconstruction, Rehabilitation and Settlement Authority
PCNA	Post-Crisis Needs Assessment
PDMA	Provincial Disaster Management Authority
PDMC	Provincial Disaster Management Commission
PHD	Public Health Department
PMD	Pakistan Metrological Department
PRCS	Pakistan Red Crescent Society
PTCL	Pakistan Telecommunication Company Limited
RA	Road Accident
RITE	Regional Institutes for Teacher Education
SDPI	Sustainable Development Policy Institute
SOG	Standard Operating Guideline
SOP	Standard Operating Procedure
S&R	Search and Rescue
TMA	Tehsil Municipal Administration
TMO	Tehsil Municipal Officer
TOR	Terms of Reference
TWG	Technical Working Group
UN	United Nations
UNDP	United Nations Development Programme
UNFCC	United Nations Framework Convention on Climate
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority
WWF	World Wide Fund for Nature

CHAPTER 1

INTRODUCTION



1.1 Background

Over a period of three years in challenging conditions, the GTZ supported 'Disaster Preparedness and Management Project' in Khyber Pakhtunkhwa made a significant contribution towards mainstreaming disaster management at the institutional level within the province and turning it into a practical reality. Disaster risk management has been recognised and acknowledged as a key issue by the actors concerned, who are now in a position to further reduce the risks and impacts of disasters by implementing risk management measures. Disaster response capacities have also been improved, thus making a key contribution towards civil protection.

Building up on DPMP's success, the Administrative Reform Component of GIZ Governance Programme is providing support in the capacity development of institutions and networking of a large number of actors, to push forward the innovative and dynamic process initiated by the DPMP. This is important not only because of the recurrence of disasters, but also due to the precarious security situation, which involves a high risk of human and material losses.

Protecting the population and infrastructure against threats is a key task of the state and one which is performed largely at the municipal level. DPMP succeeded not only in developing disaster response capacities, but also put in place an effective system for everyday risk management. By raising popular awareness and establishing a volunteer system, it was also made possible to involve the population in the system.

One challenge for the future will be to put disaster management and response measures in place for the entire population. So far, district level disaster management authorities and village rescue teams have been established only in a few pilot regions. Nevertheless, by implementing pilot measures, DPMP created key foundations for transferring lessons learned to other districts.

Wider implementation of these lessons learned will be a core task of the Provincial Disiater Managment Authority (PDMA) over the coming years. In order to sustain the momentum of the process of institutionalising disaster risk management and disaster response, GIZ financed three experts to support PDMA over a period of 18 months in the areas of reconstruction for disaster prevention, civil protection, as well as organisational and human resource development.

After completion of the DPMP, GIZ support delivered to PDMA has been taken over by the Administrative Reform Component of GIZ Governance Programme.

There is a pressing need to further improve disaster management cooperation between the province and the districts. From this point on, efforts must be carried out to continue utilising and further developing the existing contacts and the relationship established between relevant institutions and Provincial Government on the one hand, and GIZ (German Development Cooperation) on the other.

To sum it up, it is evident that civil protection was improved considerably during the course of DPMP and will continue to develop progressively in the future. Although, natural events such as earthquakes cannot be prevented by disaster risk management, yet through a responsive mechanism in place, many more human lives and material losses can be saved. DPMP in Khyber Pakhtunkhwa has thus made a significant contribution toward more sustainable development in the region for the Administrative Reform Component to carry forward.

1.2 About the handbook

In 2010, the Government of Khyber Pakhtunkhwa established District Disaster Management Units (DDMUs) in all the districts of Khyber Pakhtunkhwa. As of now, these units are in the process of setting up working procedures and carrying out their duties with a diverse range of stakeholders including government agencies, non-government institutions and citizens.

The Disaster Preparedness and Management Project (DPMP) executed by GIZ (ex GTZ) in 2008-2010 developed and established a model for ensuring disaster management at the district level in Mansehra. In extension of efforts carried out by DPMP, the PDMA/PaRRSA and GIZ Governance Programme have agreed to review the Mansehra experience as a crucial input for scaling-up and rolling-out of operational DDMUs in the province.

The process approaches, actions and success stories of this model will provide guiding principles to district and local government leadership, and shall explain how existing resources could effectively and productively be used in disaster risk management. Each district must determine how these actions apply within their own contexts and capacities for replication of the model in their respective jurisdictions.

The need to devise a strategy to establish functional DDMUs in other parts of the province and to ensure that these units have the requisite capacities has been explicitly communicated by implementing partners during the planning phase of the GIZ Governance Programme conducted in 2011. Subsequently, an agreement was reached with PDMA/PaRRSA on extending joint efforts under Administrative Reform Component's Output 4 with a focus on:

1. Orientation of DDMUs on roles, competencies and procedures
2. Dissemination of DRM Model Mansehra for future initiatives of the PDMA and DDMUs

To fulfill these objectives, the handbook attempts to explain the processes, approaches, methodologies and tools which have been developed and tested under DRM Model Mansehra. The methods and tools proposed in this guide are generic and can be adapted according to the characteristics of different natural hazards, development issues, geographical conditions, institutional settings, and administrative arrangements. In order to strengthen GIZ's assistance to governments and other concerned organisations in promoting disaster management, the handbook has been developed on the basis of empirical knowledge, experience sharing and best practices in scaling-up DRM Model Mansehra, and its implementation challenges and outcomes. It will help the District Disaster Managment Officers and Chief Municipal Officers for replication of this model in their respective districts and municipalities.

The handbook draws heavily on the field experience of local government officials, development practitioners and civil society activists for strengthening the institutional capacities of DRM systems in Mansehra. Management knowledge, expertise and practices explained in this handbook will provide useful guidance to local government leadership as a first step in understanding disaster risk management related skills and shall also help in building the capacity of the practitioners for implementation of the model in other districts.

The handbook is developed with the support of GIZ Governance Programme by compiling, documenting and providing information on strategies, policies and efforts made by DDMU Mansehra with the technical support of the GIZ. The handbook is an overview of the combined efforts made by multi-stakeholders in making District Mansehra a pioneering paradigm in disaster risk management.

The handbook also discusses challenges, constraints and bottlenecks DPMP faced in designing, developing and implementing the model. The strengths and weaknesses, discussed in this handbook will also help the district and local government administration in designing

and implementing the model in their respective districts.

Following the first chapter of introduction, the handbook comprises of five additional chapters. Chapter two presents key concepts and definitions in the context of DRM. Chapter three discusses various disaster risks and hazards in Pakistan. Chapter four demonstrates the national disaster management system and chapter five gives an overview of the significance of local government particularly the MCs in disaster management. The last chapter six details salient features of DRM Model Mansehra including key lessons learned and recommendations for further improvement and replication of the model.

Disaster Managment Team of Distric Mansehra - ready to take up the challenge

CHAPTER 2

KEY CONCEPTS IN DRM

2.1 Disaster

A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources (UNISDR 2004).

A disaster happens when a hazard impacts upon a vulnerable population and causes damage, casualties and disruption. An earthquake in an uninhabited desert cannot be considered a disaster, no matter how strong the intensity may be. An earthquake is only disastrous when it affects people, their properties and activities.

2.2 Hazard

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Hazard is an event or occurrence that has the potential to cause injuries to life and damage property or the environment. Examples of natural hazards are floods, tsunamis, earthquakes, etc. Landslides, floods, droughts and fires can be described as socio-natural hazards since their causes are both natural and man-made. The distinction between natural and man-made hazards is becoming harder to define. For example, flooding may be increased through landfill, drainage or groundwater extraction. Storm surge hazard may be worsened by the destruction of mangroves. Human-made hazards are associated with industrial or energy generation facilities and include explosions, leakage of toxic waste, pollution and dam failures. War, complex conflicts, terrorism and civil strife are also included in this category. Some hazards can cause secondary hazards, such as, an earthquake causing landslides can block river flow which may cause flooding. A community may be exposed to multiple hazards as a result of secondary hazards.

2.3 Hazards in Khyber Pakhtunkhwa Province

The Province of Khyber Pakhtunkhwa is in the grip of major hazards, having the potential to damage people and property on regular intervals:

Major hazards in Khyber Pakhtunkhwa

1.	Earthquake	6.	Flood
2.	Landslide	7.	GLOF
3.	Drought	8.	Avalanche
4.	Epidemic	9.	Fire
5.	Industrial	10.	Conflict

2.4 Classification of hazards

Hazards are classified into four major categories:

Major hazards in Khyber Pakhtunkhwa

A. Natural hazards i.e.
   a. Hydro-metrological hazards
   b. Geological hazards

B. Human induced or socio-nature hazards

C. Technological hazards

D. Biological hazards

A Natural hazards

Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Natural hazards are a sub-set of all hazards. The term is used to describe actual hazard events as well as the latent hazard conditions that may give rise to future events. Natural hazard events can be characterised by their magnitude or intensity, speed of onset, duration and areas of extent. For example, earthquakes have short durations and usually affect a relatively small region, whereas, droughts are slow to develop and often affect larger regions. In some cases, one hazard may be triggered by another hazard, such as the flood caused by a hurricane or the tsunami that is created by an earthquake.

i. Hydro-metrological hazards:

Hydro-meteorological hazards include tropical cyclones (also known as typhoons and hurricanes), thunderstorms, hailstorms, tornados, blizzards, avalanches, floods including flash floods, heat waves and cold spells. Hydro-meteorological conditions can also be contributing factor in other hazards such as landslides, wild fires, locust plagues, epidemics, dispersal of toxic substances and volcanic eruption.

ii. Geological hazards:

Geological process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage, such as, earthquake, volcanic eruption, land movement, rock fall, glacial surge, etc.

B Human induced or socio-natural hazards

The phenomenon of increased occurrence of certain geo-physical and hydro-meteorological hazardous events, such as landslides, floods, land subsidence and drought that arise from the interaction of natural hazards with over exploited or degraded land and environmental resources. This term is used to describe the circumstances where human activity is increasing the occurrence of certain hazards beyond their natural probabilities. Socio-natural hazards can be reduced and avoided through wise management of land and environmental resources.

C Technological hazards

A hazard originating from technological or industrial conditions, including scientific accidents, dangerous procedures, infrastructure failures or specific human activities that may cause loss of life, injury,

illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Examples of technological hazards include industrial pollution, nuclear radiation, toxic waste, dam failure, transport accident, factory explosion and chemical spill. Technological hazards may also arise directly as a result of the impacts of a natural hazard.

D Biological hazard

Process or phenomenon of organic origin which is conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Examples of biological hazards include outbreaks of epidemic disease, plant or animal contagion, insect plagues and infestations.

2.5 Vulnerability

The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Vulnerability is a set of prevailing or consequential conditions, which adversely affect people's ability to prevent, mitigate, prepare for and respond to hazardous events. These long-term factors affect a household's or community's ability to absorb losses after disaster and to recover from the damage. Vulnerabilities precede disasters, contribute to their severity, impede disaster response and may continue to exist long after a disaster has struck. These long-term factors affect a household's or community's ability to absorb losses after disaster and to recover from the damage.

Anderson and Woodrow (1990) categorised vulnerabilities into three areas:

2.5.1 Physical and material vulnerability

For example, poor people who have few physical and material resources usually suffer more from disasters than rich people. People who are poor often live on marginal lands, they don't have any savings or insurance and they are in poor health. These factors make them more vulnerable to disasters which means that they have harder time surviving and recovering from a calamity than people who are better off economically.

2.5.2 Social and organisational vulnerability

People who have been marginalised in social, economic or political terms are vulnerable to suffer more from disasters whereas groups, which are well organised and have higher commitment towards their members, suffer comparatively less during disasters. Weakness in social and organisational areas may also cause disasters. For example, deep divisions can lead to conflict and war. Conflict over resources due to poverty can also lead to violence. A second area of vulnerability then is the social and organisational aspect of a community.

2.5.3 Attitudinal and motivational vulnerability

People who have low confidence in their ability to affect change or who have "lost heart" and feel defeated by

events they cannot control are harder hit by disasters than those who have a sense of their ability to bring the change they desire. Thus, the third area of vulnerability is the attitudinal and motivational aspect.

2.6 Capacity

The combination of all the strengths, attributes and resources available within a community, society or organisation that can be used to achieve agreed goals.

Capacities are the assets, resources and skills available within a community, society or organisation that can be used to reduce the risks or 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. Capacities enable households and communities to cope with, withstand, prepare for, prevent, mitigate, or quickly recover from a disaster.

People's capacity can also be classified in the same categories as was done with vulnerabilities in the previous section. People whose houses or crops have been destroyed by an earthquake or flood can recover things from their homes and from their farms that can be recycled. Sometimes they have food in storage or crops that can be recovered from the fields. Some family members have skills which enable them to find employment if they migrate, either temporarily or permanently. In most disasters, people suffer greatest losses in the physical and material realm. However, even when everything physical is destroyed, people still have their skills and knowledge, they have family and community organisation, they have leaders and systems for making decisions, they have tribal loyalties or religious affiliations and they have capacities in the social and organisational realm. These, too, are important capacities and form the basis for development just as much as the physical resources that people have.

2.7 Disaster risk

The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period. The definition of disaster risk reflects the concept of disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socioeconomic development, disaster risks can be assessed and mapped, in broad terms at least.

Disaster risk is the chance of likelihood of suffering harm and loss as a result of a hazardous event. It closely depends upon the exposure of something to a hazard. This can be expressed as:

Risk = Chance (C) x Loss (L)

The output of risk analysis is usually an estimation of the risk scenarios.

2.8 Elements at risk

A societal element is said to be 'at risk' when it is exposed to hazards and is likely to be adversely affected by the impact of those hazards when they occur. People (their lives and health), households and community structures, facilities and services (houses, access roads, bridges, schools, hospitals, etc.), livelihood and economic activities (jobs, equipment, crops, livestock, etc.) are described as "elements at risk". In many cases, the natural environment is also an element at risk.

2.9 Disaster risk assessment

A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend. Risk assessments (and associated risk mapping) include, a review of the technical characteristics of hazards (location, intensity, frequency and probability), the analysis of exposure and vulnerability (physical, social, health, economic and environmental dimensions) and the evaluation of the effectiveness of prevailing and alternative coping capacities in respect to likely risk scenarios. This series of activities is sometimes known as a risk analysis process.

Disaster risk assessment is a participatory process of application of tools and methodologies to assess the hazards, vulnerabilities and capacities of a community. Through hazard assessment, the likelihood of the occurrence, the severity and the duration of various hazards are determined. The assessment takes into account physical, geographical, economic, social and political factors that make some people vulnerable to the dangers of a given hazard. In the capacity assessment, the community's resources and coping strategies are identified. The result of the disaster risk assessment is a ranking of the disaster risks of the community as basis of planning for risk reduction.

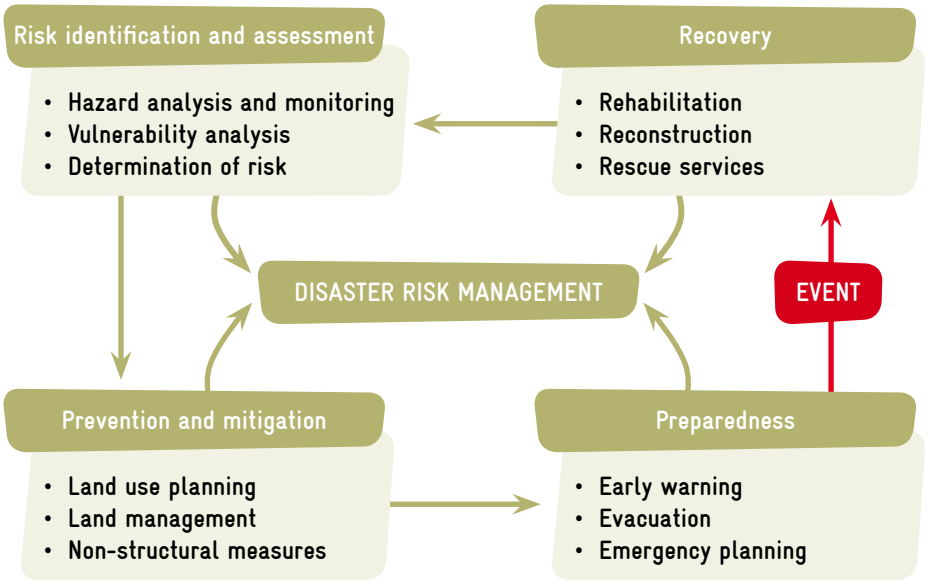
2.10 Disaster risk reduction and disaster risk management

Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment and improved preparedness for adverse events.

A comprehensive approach to reduce disaster risks is set out in the United Nations endorsed Hyogo Framework for Action, adopted in 2005, under which the expected outcome is:

"The substantial reduction of disaster losses, in lives and the social, economic and environmental assets of communities and countries".

The systematic process of using administrative directives, organisations and operational skills and capacities to implement strategies, policies and improved coping capacities to lessen the adverse impacts of hazards and the possibility of disaster.



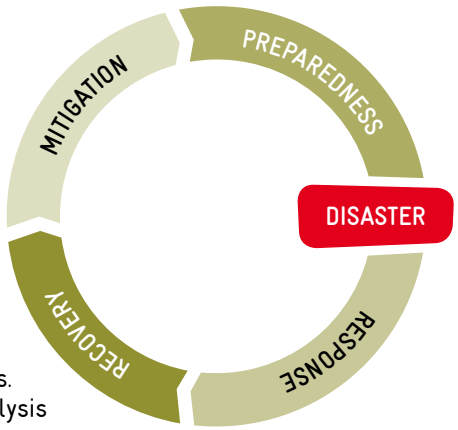
What is disaster management?

Preparedness – activties prior to a disaster.
Examples: Preparedness plans, emergency exercises, disaster preparedness trainings and warning systems.

Response – activties during a disaster.
Examples: Public warning systems, emergency operations, search and rescue.

Recovery – activities following a disaster.
Examples: Temporary housing, claims processing and grants, long-term medical care and counseling.

Mitigation – activities that reduce the effects of disasters.
Examples: Building codes and zoning, vulnerability analysis and public education.



Source: Information and Communication Technology in Disaster Risk Management – presentation prepered by Manager Disaster Information Systems, GOI UNDP Programme, Ministry of Home Affairs, GOI, 2005

2.11 Risk management

The systematic approach and practice of managing uncertainty to minimise potential harm and loss.

Risk management comprises risk assessment and analysis, and the implementation of strategies and specific actions to control, reduce and transfer risks. It is widely practiced by organisations to minimise risk in investment decisions and to address operational risks such as those of business disruption, production failure, environmental damage, social impacts and damage from fire and natural hazards. Risk management is a core issue for sectors such as water supply, energy and agriculture, where production is directly affected by extremes of weather and climate.

2.12 Risk transfer

The process of formally or informally shifting the financial consequences of particular risks from one party to another, whereby, a household, community, enterprise or state authority will obtain resources from the other party, after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to the other party. Insurance is a well-known form of risk transfer, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer. Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credits. Risk transfer can occur formally where governments, insurers, multilateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and re-insurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings, respectively.

2.13 Disaster risk reduction plan

A document prepared by an authority, sector, organisation or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.

2.14 Disaster management

Disaster management is a collective term encompassing all aspects of planning for and responding to disasters, including both pre and post disaster activities. It refers to the management of both the risks and the consequences of disasters.

Disaster management comprises of a broad range of activities designed to:

- Prevent the loss of lives
- Minimise human suffering
- Inform the public and authorities of risk
- Minimise property damage and economic loss
- Speed up the recovery process

2.15 Emergency management

The organisation and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.

2.16 Early warning systems (EWS)

There is no such a thing as a 'sudden crisis', but only a lack of information or analysis. EWS is the set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organisations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss. A single body should be designated with overall responsibility for the functioning of early warning. This unit should be accountable for failures at early warning.

2.17 Mitigation

The efforts for lessening or limitation of the adverse impacts of hazards and related disasters in pre, during and post disaster scenarios.

The adverse impacts of hazards often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures encompass engineering techniques and hazard resistant construction as well as improved environmental policies and public awareness. It should be noted that in climate change policy, "mitigation" is defined differently, being the term used for the reduction of greenhouse gas emissions that are the source of climate change.

2.18 Disaster preparedness

The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

Disaster preparedness covers activities to enhance the ability to predict, respond to, and cope with the effect of a disaster. It includes precautionary activities by households, communities and organisations to react appropriately during and following the event.

2.19 Prevention

Prevention includes measures taken to detect, contain and forestall events or circumstances, which, if left unchecked, could result in a disaster. Prevention expresses the concept and intention to completely avoid potential adverse impacts through action taken in advance. Examples include dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high risk zones and seismic engineering designs that ensure the survival of a critical building in any likely earthquake. Very often the complete avoidance of losses is not possible, however, the impact of the losses could be mitigated. Partly for this reason, the terms prevention and mitigation are sometimes used interchangeably in casual use.

Prevention is the outright avoidance of adverse impacts of hazards and related disasters.

2.20 Emergency response

Emergency response covers measures required in search and rescue of survivors and in meeting basic survival needs for shelter, water, food and health care.

Aggregate of decisions and measures taken to (1) contain or mitigate the effects of a disastrous event to prevent any further loss of life and property, (2) restore order in its immediate aftermath, and (3) re-establish normality through reconstruction and rehabilitation shortly thereafter. The first and immediate response is called emergency response.

2.21 Recovery

Process of returning an organisation, society, or system to a state of normality after the occurrence of a disastrous event.

Recovery is the process to fully restore the community to pre disaster level of functioning or better than that. This refers to rehabilitation of livelihoods, restoration of social and economic activities and reconstruction of shelter and infrastructure.

2.22 Climate change

The Inter-governmental Panel on Climate Change (IPCC) defines climate change as, "a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forces, or to persistent anthropogenic changes in the composition of the atmosphere or in land use". The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is, in addition to natural climate variability, observed over comparable time periods".

Climate change is a change in the average weather that a given region experiences. Average weather includes temperature, wind pattern and precipitation. Today, the climate change is happening at a very fast speed. This is enhancing the occurrence of extreme hazardous events.

2.23 Environmental degradation

The reduction of the capacity of the environment to meet social and ecological objectives and needs.

Degradation of the environment can alter the frequency and intensity of natural hazards and increase the vulnerability of communities. The types of human induced degradation vary and include land misuse, soil erosion and loss, desertification, wild fire, loss of biodiversity, deforestation, mangrove destruction, pollution of natural resources, climate change, sea level rise and ozone depletion.

2.24 Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

This definition coined by the 1987 Brundtland Commission is very succinct but it leaves many questions unanswered, regarding the meaning of the word development and the social, economic, and environmental processes involved. Disaster risk is associated with unsustainable elements of development such as environmental degradation, while conversely disaster risk reduction can contribute to the achievement of sustainable development through reduced losses and improved development practices.

2.25 Resilience

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, through the preservation and restoration of its essential basic structures and functions.

Resilience means the ability to "resile from" or "spring back from" a shock. The resilience of a community, with respect to potential hazard events, is determined by the degree to which the community has the necessary resources and is capable of organising itself both prior to and during times of need.

2.26 Land-use planning

The process undertaken by local government authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.

Land-use planning is an important contributor to sustainable development. It involves studies and mapping, analysis of economic, environmental, and hazard data, formulation of alternative land -use decisions and design of long-range plans for different geographical and administrative scales. Land-use planning can help to mitigate disasters and reduce risks by discouraging settlements and construction of key installations in hazard prone areas, including consideration of service routes for transport, power, water, sewage and other critical facilities.

2.27 Local government authorities

The terms "local government" and "local authorities" have been used interchangeably throughout this handbook. Local governments are administrative offices of an area smaller than a district. The term is used to contrast with offices at nation-state level, which are referred to as the central government, national government, or (where appropriate) federal government. The handbook seeks to find ways to determine the level of understanding of local government officals with respect to disaster risk and its relation to development, prosperity and well-being. Furthermore, the handbook outlines the sphere of influence that local governments can reach out to increase awareness. The biggest challenge globally is to scale up, and make real changes at local level based on needs of the most vulnerable groups. DRR is relevant for community development issues of livelihood, water, sanitation and hygiene, health, education and ecosystem protection.

2.28 Local governance

Local governance is governing at the local level viewed broadly to include not only the machinery of government, but also the community at large and its interaction with local authorities.

CHAPTER 3

DISASTER RISK SITUATION IN PAKISTAN AND KHYBER PAKHTUNKHWA

Pakistan has been at risk to various types of natural disasters of which cyclones, floods, landslides, earthquakes and drought are most common. The country is one of the most flood prone countries in South Asia. During its history, the floods of 1950, 1992 and 1998 resulted in a large number of deaths and severe loss of property valued at an estimated $1.3 billion. Pakistan is also located in a seismically active zone on account of its proximity to the Indo-Australian and Eurasian plates. This vulnerability was proven on October 8th 2005, when a major earthquake measuring 7.6 on the Richter scale hit 9 Districts in Khyber Pakhtunkha and Azad Jammu and Kashmir, killing over 73000 people and damaging about 450000 houses. Pakistan is impacted by both human induced and natural disasters. The types of disasters that occurred from 1954 to 2004, and the frequency of the occurrence of the most common disasters are listed in Table 1.

Table 1. Hazards in Pakistan and frequency of most significant hazards (1954 to 2004)

Natural hazards	Frequency %	Human induced	Frequency%
Avalanches	-	Epidemics	6
Cyclones (storms)	16	Industrial and transport accidents	-
Droughts	4	Nuclear accidents	-
Earthquakes	18	Radiological accidents	-
Epidemics	-	Oil spills	-
Floods	33	Urban and forest fires	-
Glacial lake outbursts	-	Civil conflicts	-
Landslides	10		-
Pest attacks	1		-
River erosion	-		-
Tsunami	-		-
Extreme temperature	12		-

Source: Disaster Risk Management, TWG Working Group Meeting, UN May 17, 2007

These estimates illustrate the severity of the problem posed by disasters. However, some experts believe that the true financial cost of disasters over the past 50 years comes close to $50 billion.

The October 2005 earthquake highlighted the risk exposure and vulnerability of Pakistan. The decision makers, politicians, media, development workers, international donors and the general populace became aware for the first time of the major catastrophic risks facing Pakistan. Pakistan's exposure to natural hazards and disasters could be ranked between moderate to severe. A range of natural hazards including earthquakes, droughts, floods, landslides, avalanches, cyclones, tsunamis, glacial lake outbursts and river erosions threaten Pakistan. In addition, a variety of human induced hazards also threaten the society, economy and environment in the country. They include industrial, nuclear and transport accidents, oil spills, urban fires, civil conflicts, sectarian violence and terrorism.

During the last two decades, 2655 sectarian violence incidents occurred, killing more than 4000 and injuring more than 8000 people. The anticipated economic cost of terrorism is over $70 billion during the last two decades. The country sustained over $7 billion worth of economic losses in two earthquakes of 2005 and 2008. 80000 people, including 18000 school

going children were killed in the two earthquakes. Benazir Bhutto's assassination costed over $1 billion, while 200 people were murdered. Landslide cost of Attaabad was estimated at $5 billion and more than 25 people died. 2010 flood, the super flood in the history of Pakistan, killed over 2000 people, affecting 84 districts out of 113 in Pakistan. 3.5 million people displaced as a result. Economic cost of the flood was estimated to be over $4 billion. The priority hazards from the perspective of disaster risk reduction in Pakistan include earthquakes, droughts, floods and transport accidents that can cause widespread damage when they occur. The following is an overview of the key hazards that threaten Pakistan.

3.1 Earthquakes

The Indo-Australian plate upon which Pakistan, India and Nepal lie is continuously moving northward, colliding with and sub ducting under the Eurasian plate, thus forming the Himalayan Mountains and triggering earthquakes in the process. The following areas are located within high hazard and very high hazard risk areas:

Suleiman, Hindu Kush and Karakuram mountain ranges in the Northern Areas and District Chitral in Khyber Pakhtunkhwa. Muzaffarabad, Quetta, Chaman, Sibi, Zhob, Khuzdar and Dalbandin.

Makran coast including Gawadar and Pasni in Balochistan. The cities of Islamabad, Karachi and Peshawar are located on the edges of the high hazard areas.

The areas comprising Pakistan have suffered five major earthquakes in the 20th century including the great Quetta earthquake of 1935, the 1945 earthquake off the coast of Makran, the 1976 earthquake in Northern Areas, the October 2005 Kashmir earthquake and Baluchistan earthquake in 2008. In between these major events, the Northern Areas and Kashmir have experienced many small quakes with localised impact.

The 7.6 Richter scale Kashmir earthquake of October 2005 occurred in a region where a major plate boundary earthquake was considered long overdue. Although, the earthquake resulted in widespread devastation, yet the scientists believed that it may not have released more than one tenth of the cumulative elastic energy that has developed since the previous great earthquake in the region in 1555 or earlier. The seismologists are also concerned about the absence of earthquakes in Baluchistan in the recent history, which may mean the occurrence of major seismic activities in future.

3.2 Droughts

The incidence of drought in Pakistan is becoming increasingly common with substantial consequences on food security, livestock production, environment and natural resources. Low rainfall and extreme variations in temperature characterise the climate in Pakistan. About 60 percent of the total land area in country is classified as arid, which receives less than 200 mm annual rainfall. The main arid rangelands include Cholistan, Dera Ghazi Khan, Dera Ismail Khan, Kohistan, Tharparkar and Western Baluchistan. The average annual precipitation in Baluchistan and Sindh provinces is about 160 mm as compared with 400 mm in Punjab province and about 630 mm in Khyber Pakhtunkhwa province. Within Baluchistan, the average precipitation varies from

less than 50 mm in the Southwest to about 400 mm in the Northeast.

In general, per capita water availability is declining in Pakistan over time due to the combined impact of rising population, falling water flows and erosion in the storage capacity. The country's per capita water availability of 1136.5 cubic meters is only marginally above the threshold level of water scarcity i.e. 1000 cubic meters. Experts predict that with prevailing consumption rates and a population growth of 4 million people per year, one out of three people in Pakistan will face critical shortage of water, "threatening their very survival". The Government has started National Water Resources Development Programme (NWRDP) 2000 to 2025. The NWRDP has formulated a strategy for water resources development and identified possible sites for dam construction with a total storage capacity of 35.66 MAF.

3.3 Floods

Pakistan is one of the most flood prone countries in South Asia. River related floods are the most severe in Punjab and Sindh provinces, while, hill torrents that are common in hilly terrain tend to affect Khyber Pakhtunkhwa, Baluchistan and Gilgit Baltistan. There has been a number of floods in Pakistan that caused a significant amount of damage, particularly during 1950, 1992 and 1998 resulting in a large number of deaths and a severe loss of property valued at an estimated $1.3 billion. Most of the flooding occurs in late summer during the monsoon season but flooding also occurs as the result of glacial lakes breaking caused by high summer temperatures. In 2007, monsoon rain induced flooding, damaged the rice crop in Sindh and Baluchistan provinces, and reduced production by as much as 200 thousand tons, which equals approximately 3.5 percent of the crop. Since rice is a high value crop, the loss will have a significant impact on the farm value added in the agriculture sector and will lead to a reduction in export earnings.

3.4 Landslides

The regions of Kashmir, Gilgit Baltistan and parts of the Khyber Pakhtunkhwa province are vulnerable to landslide hazard. Aside from the young geology and the fragile soil type of the mountain ranges, accelerated deforestation is a major cause behind increased incidences of the landslides in the region. In the aftermath of the 2005 earthquake, the steep mountains in Kashmir and Khyber Pakhtunkhwa came down tumbling. The landslides isolated villages and cities. In some cases, wide sections of the mountain, more

than a kilometer in width, slid into the valleys below. Small scale isolated landslide hazards happen frequently in the above regions, which cause significant damages and losses at the local level. Recent land sliding activity in Attaabad (4th January 2010) caused heavy damages to lives and properties. As a result of the landslide movement, the Hunza river flow was blocked, causing serious threat to the population along the river. The following districts are vulnerable to landslides: Bagh, Bhimber, Neelum and Muzaffarabad in Azad Jammu and Kashmir. Astore, Diamer, Gilgit and Ghanche in Gilgit Baltistan Province. Kaghan, Naran and Chitral in Khyber Pakhtunkhwa province.

Experts say that the incidents of landslides can increase in future, since the forestation cover is shrinking by 3.1% and woody biomass by 5% annually (7000 to 9000 ha taken away annually).

3.5 Glacial lake outbursts floods

Another likely scenario that can come into play is the burst of glacial lakes in the upstream of Indus basin due to heat waves, a phenomenon termed as glacial lake outburst flood (GLOF).

A recent study found that, of the 2420 glacial lakes in the Indus basin, 52 lakes are potentially dangerous and could result in GLOF with serious damages to life and property. The study has also indicated that global warming can increase the potential of GLOF in future. Although the history of GLOF is not documented in Pakistan, records indicate that GLOF occurred in Ghizer Valley in the Ishkoman region in 1960 and in the Hunza region in 1992-1993. Karakoram range generally has higher elevation and is considered as out of the impact of climate change, yet it is alarming that five GLOF events occurred in less than one year (2007-2008) in parts of Gojal Tehsil in Hunza River Basin which posed a great risk to the downstream communities. Similarly, the Shingo Basin, Astor areas south of Gilgit, and the Jhelum valley are also vulnerable to the GLOF disaster.

3.6 Avalanches and glacier surge

The Kashmir region and Northern Areas in Pakistan experience avalanches on a regular seasonal basis. Local people in the hazardous region and the tourists are vulnerable to this hazard. A study conducted by WAPDA in 1985-1989 under the Snow and Ice Hydrology Project, identified the potential avalanche paths. The Siachen-Kariyan avalanche is normally called glacier surge, a new phenomena caused either by rise in temperature or some tectonic movement,

where glacier advances move at velocities up to 100 time faster than normal avalanche. "Indian Army is playing pivotal role in global warming, causing the fast melting of Siachen Glacier" (Voodoo Science Practitioners). The Glacier surge buried over 150 soldiers and civilians stationed at Siachen this year. Every year, avalanches in mountain region trigger and kill many people, damaging million of losses to properties and livelihoods.

3.7 Industrial, nuclear and transport accidents

Transport accidents are a common phenomenon in Pakistan, particularly the rail system in the country is notorious for frequent collisions. During the last two years, two air plane crashes killed over 200 people at a socioeconomic cost in billions. Road accidents are common phenomenon and every day 20 to 30 people die due to road accidents. There is no standardised system in place for operation of public transport, resultantly, non-road worthy vehicles continue to run on roads for public transportation. The growing industrialisation particularly within urban settlements in cities like Gujranwala, Faisalabad, Karachi, Lahore, Sialkot and elsewhere can be a source of major industrial disasters. In the recent past, over 600 people died due to two fire incidents in factories of Karachi and Lahore. The neighboring India suffered from Bhopal Gas leakage in 1985, in which 5000 people were killed and enormous health hazards were experienced by citizens of Bhopal. Having installed various nuclear facilities and nuclear power stations, Pakistan is also exposed to high risks of nuclear accidents. The Chernobyl disaster in Russia and radiation disaster in Japan serve as reminders in this regard.

Pakistan now has two ports in Karachi and Gawadar along the coast of Makran. These areas are at risk from marine accidents. In Karachi, in August 2003, the wreckage of Tasman Spirit, a Greek ship, caused colossal environmental losses and health hazards for the businesses, port workers and adjacent communities. About 28000 tonnes of oil spilled around the harbor area, which affected marine life in a major way. The residents reported headaches, nausea and respiratory problems in the weeks following the accident. It took months for the authorities to clear the oil affected areas.

3.8 Urban fires

All the major cities of Pakistan are experiencing everyday fire. During the current year, two major fire incidents in Garment factories each in Karachi and Lahore perished over 600 people and caused million dollars worth of economic loss. Two oil tankers exploded as they were exiting an oil depot near the Benazir International Airport in Rawalpindi. Considering the pace of urbanisation, coupled with industrialisation, the chances of urban fires cannot be ignored. The CNG gas stations are installed in all urban areas, whereas, LPG is being sold in small shops and stores for household use. In small cities and towns, the sale of petroleum products, at small shops located within residential areas, is also common. These practices combined with mass

culture of smoking cigarettes could pose a major fire risk. The fire services in urban centers, except Karachi, are not equipped properly.

3.9 Civil conflicts

Pakistan is a diverse society, ethnically, linguistically, religiously and culturally. This diversity has sometimes led to civil conflicts amongst various social groups. For example, Pakistan has suffered sectarian conflicts during the 1980s and 1990s. These conflicts caused loss of life and damage to property, while creating insecurity for various social groups in the affected areas. Pakistan has also borne the brunt of Afghan war in the form of hosting about 6 million refugees for more than two decades. About 2 million Afghan refugees still live in various parts of Pakistan. This mass scale refugee invasion has damaged the social fabric of Pakistan.

3.10 Climate change and variability

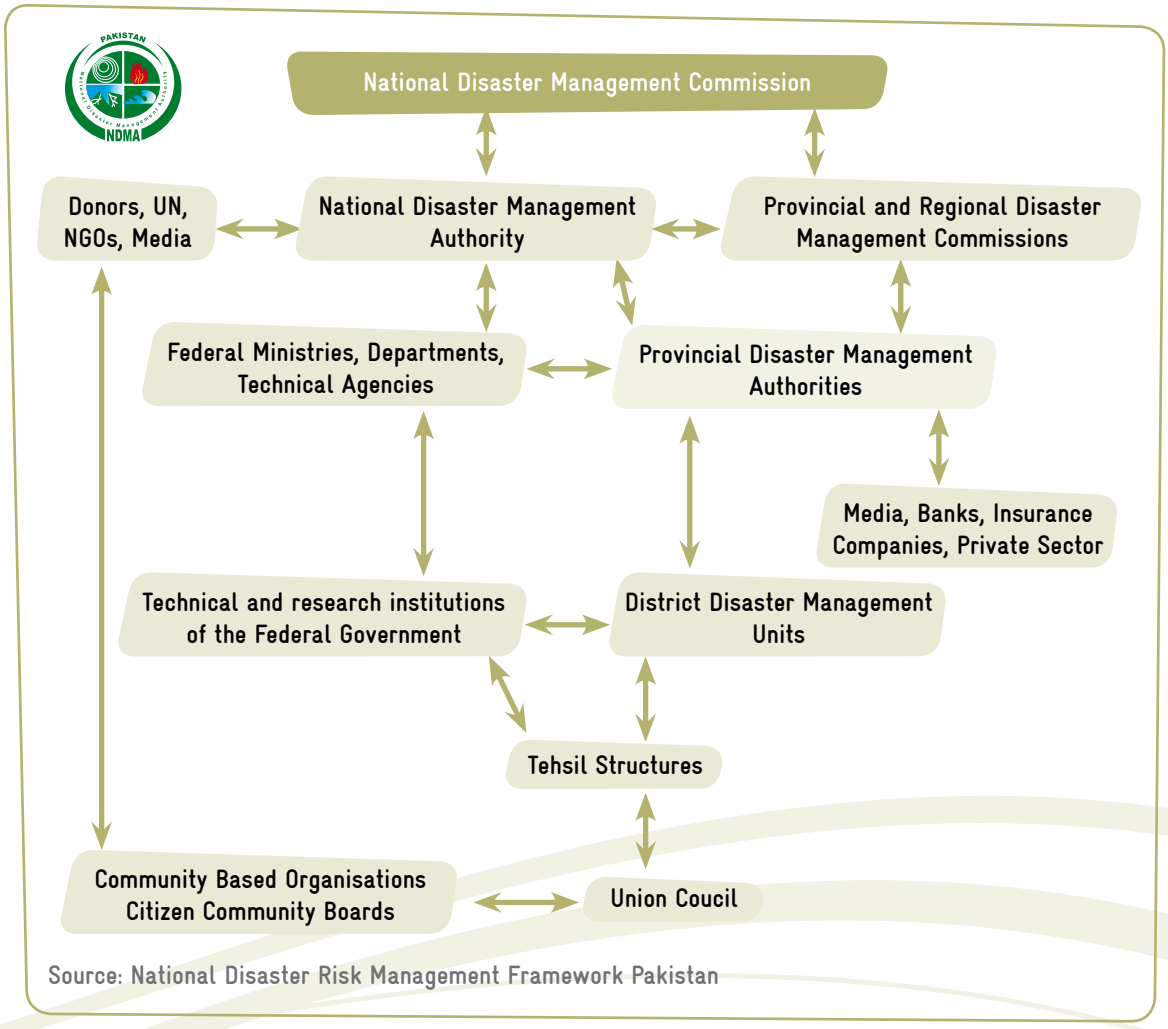
As per observations of WWF Pakistan, global warming is causing damage to Pakistan's environment. Among the impacts felt and seen are biodiversity loss, shifts in weather patterns and changes in fresh water supply. A study carried out by GIZ (ex GTZ) for WAPDA to analyse trends in temperature and precipitation in the Northern Areas for the last century (Archer, 2001) found that seasonal and annual temperatures have raised than the last century at Skardu. Mean annual temperature has increased by 1.4° C with the mean annual daily maximum rising more than 2.35° C. Temperature increase might cause an upward shift of almost 400 meters in the frost line. It might impact upon the snow and rain patterns and the availability of snow for melting during summer, which is a major source of water in many rivers. Observations of the World Glacier Monitoring Service based in Switzerland indicate that mountain glaciers in the Karakorum have been diminishing for the last 30 years. Experts believe that the flow of water in rivers increased during the decade of 1990-2000 in comparison to 1975-1990, which means melting of more ice upstream. Researches also indicate that some of the glaciers in Pakistan have retreated significantly in the recent past. Scientists believe this to be an indicator of climate change, resulting in more snow melt. Changes in the climate denote that the incidence of flash flooding and extreme flooding can increase during the next few decades. Studies conducted by SDPI also indicate that with a doubling of CO^2, average rainfall in South Asia would increase between 17-59 per cent. This will be associated with a doubling in the frequency of high rainfall events. Variable monsoons, also anticipated, could mean more droughts. Experts also believe that further desiccation of arid areas due to warming would endanger food production in the plains unless a lot of trees are planted there.

(Source: NDMRF)

CHAPTER 4

DISASTER RISK MANAGEMENT SYSTEM IN PAKISTAN

In the backdrop of October 2005 earthquake, the Government of Pakistan realising the nature of close linkages between disasters and development efforts promulgated the National Disaster Risk Management Ordinance 2006. Legal and institutional arrangements were made for comprehensive disaster risk reduction and management. In order to address the shortcomings and to be compliant with the International Strategy for Disaster Risk Reduction (ISDR) 1999 and Hyogo Framework for Action 2005-2015, National Disaster Risk Management Framework was developed. On the lapse of 2006 Ordinance, the Parliament enacted National Disaster Management Act in 2010. Comprehensive legal and institutional arrangements were made to deal with the compelling disasters in the country. National Disaster Management Authority (NDMA) was established as a national entity with provincial and district structures.



Source: National Disaster Risk Management Framework Pakistan

Other agencies responsible for disaster risk reduction and management at national level are:

Disaster management organisations at national level

Pakistan Meteorological Department	Pakistan Engineering Council	Pakistan Council of Research in Water Resources
Federal Flood National Commission / Flood Forecasting Division	Space and Upper Atmosphere Research Commission	Global Change Impact Study Centre
Water and Power Development Authority / Dams Safety Council	Earthquake Reconstruction and Rehabilitation Authority	Indus River System Authority
Pakistan Armed Forces	Airlines / Transport and Communication Agencies	Maritime Security Agency
Director General Civil Defence	Pakistan Commissioner for Indus Waters	National Centre for Drought Enviroment / Monitoring and Early Warming System
Emergency Relief Cell	Pakistan Railways	National Engineering Services of Pakistan
National Crisis Management Cell	Geological Survey of Pakistan	National Institute of Oceanography


Federal Coordinating Body
NDMA
Federal Ministries
Communications
Defense
Education
Environment
Finance and Revenue
Food and Agriculture
Foreign Affairs
Health
Housing and Works
Industry and Production
Information and Broadcasting
Interior
Law, Justice and Human Rights
Local Government and Rural Development
Petroleum and Natural Resources
Planning and Development
Population Welfare
Ports and Shipping
Railways
Science and Technology
Social Welfare and Special Edcuation
Tourism
Water and Power
Women Development
Youth Affairs
International Supporting Organisations
UN Agencies
IFRC
International NGOs
Federal Public Companies and Stakeholders
Airline Companies
Banks
Edhi Foundation
Hospitals
Insurance Sector
Landline Telecommunications Companies
Media
Mobile Telecommunications Comapnies
Pakistan Humanitarian Forum
Pakistan Red Crescent Society
Sui Northern Gas Pipelines Limited
Sui Southern Gas Pipelines Limited
Federal Departments and Authorities
Capital Development Authority
Civil Aviation Authority
Civil Defence
Coastal Guards
Federal Food Commission
Fire Fighting Services
Geological Survey of Pakistan
National Crisis Management Cell
National Emergency Operation Cell
National Emergency Relief Cell
National Highways Authority
National Housing Authority
National Logistics Cell
Pakistan Armed Forces
Pakistan Housing Authority
Pakistan Meteorological Department
Pakistan Public Works Department
Pakistan Railways
Police (Other Law Enforcement Agencies)
Space and Upper Atmosphere Research Commission
Survey of Pakistan
Traffice Police
Water and Power Development Authority
Local Governments
Province (PDMA)
District (DDMU)
Other Stakeholders
Research Institutes
Companies
Communities
Domestic NGOs
Residents

The National Disaster Management Authority (NDMA) at the federal level is facilitating Provincial Disaster Management Authorities (PDMAs) and the District Disaster Management Units (DDMUs). The relatively new system envisages achieving sustainable social, economic and environmental development in Pakistan through reducing risks and vulnerabilities. Its mission is to enhance institutional capacities for disaster preparedness, response and recovery with a risk reduction perspective in the development planning process at all levels. In line with the vision, the National Disaster Risk Management Framework (NDRMF) has identified the following guiding principles:

- Focus upon most vulnerable social groups, for example, children, women, elderly, minorities
- Promote community and local level preparedness culture
- Follow multidisciplinary and multisectoral approaches
- Combine scientific knowledge with social knowledge
- Make development policy, planning and implementation risk-sensitive
- Develop culturally, economically and environmentally relevant technologies for safer construction in different parts of the country
- Promote sustainable livelihood practices in areas at high risk from multiple hazards
- Establish and strengthen partnerships amongst multiple sectors, for example, government, private sector, media, insurance, NGOs, civil society organisations, UN and donors
- Work with other countries and international community to promote disaster risk reduction
- Acquire specific capacities and capabilities, keeping in view hazard risk profile of the country
- Develop disaster risk management plans at district level in view of specific requirements of the local area

4.1 Priority areas

The DRM system revolves around the following 9 priority areas, which are being implemented at the national, provincial, district and community levels:

i. Institutional and legal arrangements
ii. National hazard and vulnerability assessment
iii. Training, education and awareness
iv. Promoting disaster risk management planning
v. Community and local level risk reduction programming
vi. Multi-hazard early warning system
vii. Mainstreaming disaster risk reduction into development
viii. Emergency response system
ix. Capacity development for post disaster recovery

4.2 Legal and institutional arrangements for DRM

In line with the provisions of NDM Act 2010, the Government of Pakistan has approved and notified the following DRM structure at the national, provincial and district levels:

4.2.1 National level

1.1. National Disaster Management Commission (NDMC):
Headed by the Prime Minister as its Chairperson, the NDMC is the highest policy and decision making body for disaster risk management. Other members include, opposition leaders of both the houses, Chief Ministers of four provinces, Governor Khyber Pakhtunkhwa, Prime Minister Azad Jammu and Kashmir, Chief Executive of Gilgit Baltistan, Chairman Joint Chiefs of Staff Committee or his nominee, Federal Ministers for Communications, Defense, Finance, Foreign Affairs, Health, Interior, Social Welfare and Special Education, Chairman NDMA, representative of civil society and any other person appointed or co-opted by the Chairperson. NDMC is mandated to formulate polices and develop guidelines on DRM, approve DRM plans prepared by Ministries or Divisions of the Federal Government, arrange and oversee funds as well as provide support to other countries affected by major disasters.

1.2. National Disaster Management Authority (NDMA):
Under sub-section (1) of section (3) of National Disaster Management Act 2010, NDMA has been established to serve as the focal point and coordinating body to facilitate implementation of disaster risk management strategies. Following are the powers and functions of NDMA:

- Act as the implementing, coordinating and monitoring body for DRM
- Prepare the National DRM Plan to be approved by the National Commission
- Lay down guidelines for preparing DRM Plans by different Ministries or Departments and the Provincial Authorities
- Implement, coordinate and monitor the implementation of the National Policy
- Provide necessary technical assistance to PDMAs for preparing Provincial DRM Plans
- Coordinate response in the event of any threatening disaster situation or disaster
- Promote general education and awareness in relation to DRM
- Perform such other functions as the National Commission may require it to perform
- Lay down guidelines for or give directions to concerned Federal Ministries or Provincial Governments and Provincial Authorities regarding measures to be taken by them in response to any threatening disaster situation or disaster

4.2.2 Provincial level

2.1. Provincial Disaster Management Commission (PDMC):
The PDMC is chaired by the Chief Minister along with other members including opposition leader and a member nominated by him. The Chief Minister has the powers to nominate other members of PDMC. Similarly, he may designate one of the members to be the Vice Chairperson. The powers and function of PDMC are as following:

- Lay down the provincial and regional DRM policy
- Lay down the Provincial Plan in accordance with the guidelines laid

down by the national commission

- Approve the DRM Plan prepared by the departments of the Provincial Government
- Review implementation of the Plan
- Review the development plans of provincial departments and ensure that risk reduction measures are integrated
- Oversee the provision of funds for risk reduction and preparedness measures
- Review measures being taken for mitigation, capacity building and preparedness by the departments of the Provincial Government and issue such guidelines or directions as may be necessary

2.2. Provincial Disaster Management Authority (PDMA):
The PDMA is headed by a Director General appointed by the Provincial Government. Following are the powers and functions of PDMA:

- Subject to the provisions of National Disaster Management Act 2010, a Provincial Authority shall be responsible for implementing policies and making plans for disaster management in the province
- Formulate the Provincial DRM policy and obtain approval of the PDMC
- Ensure implementation of DRM policies and plans in the Province
- Coordinate and monitor the implementation of the National Policy, National Plan and Provincial Plan
- Examine the vulnerability of different parts of the Province to different disasters and specify prevention or mitigation measures
- Lay down guidelines to be followed by Provincial Departments and District Authorities for preparation of DRM plans
- Evaluate preparedness and response arrangements of public and private agencies at the provincial level
- Coordinate response in an event of disaster
- Give directions to any Provincial Department or Authority regarding actions to be taken in response to disaster
- Promote general education, awareness and community training in this regard
- Provide necessary technical assistance or give advice to District Authorities and Local Authorities for carrying out their functions effectively
- Advise the Provincial Government regarding all financial matters in relation to disaster management
- Examine the construction in the area and if it is of the opinion that the standards laid down have not been followed, it may direct for following the same to secure compliance of such standards;
- Ensure that communication systems are in order and disaster management drills are being carried out regularly

4.2.3 District level

3.1. District Disaster Management Unit (DDMU):
The Disaster Management Act put ample emphasis on establishing DDMUs, notified by Provincial Government in the Official Gazette. DDMUs are headed by the local council at the district level (by whatever name called) who shall be Chairperson ex-officio, whereas DCOs/DCs, District Police Officers (DPOs) ex-officio, EDOs (Health) and such other district level officers, to be appointed by the District Government are its members. Under section (20) of National Disaster Management Act 2010, District Disaster Management Unit will exercise the following powers and functions:

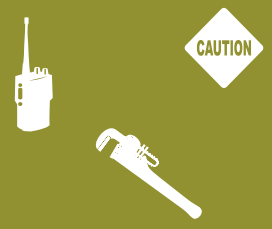
- Prepare a disaster management plan including district response plan
- Coordinate and monitor the implementation of the National Policy, Provincial Policy, National Plan, Provincial Plan and District Plan
- Ensure that the areas in the district, vulnerable to disasters, are identified, measures for the prevention of disasters and mitigation of its effects are undertaken by the departments of the Government at the district level as well as by the local authorities
- 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 as well as by the local authorities in the district
- 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
- Lay down guidelines for preparation of disaster management plans by the departments of the government at the district level and local authorities in the district
- Monitor the implementation of disaster management plans prepared by the departments of the government at the district level
- Lay down guidelines to be followed by the departments of the government at the district level
- Organise and co-ordinate specialised training programmes for different levels of officers, employees and voluntary rescue workers in the district
- Facilitate community training and awareness programmes for prevention of disaster or mitigation, with the support of local authorities, government and non-government organisations
- Set up, maintain, review and upgrade the mechanism of early warnings and dissemination of proper information to public
- Prepare, review and update disaster level response plans and guidelines
- 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 being carried out promptly and effectively
- Review development plans prepared by the departments of the government at the district level, statutory authorities or local authorities with a review to make necessary provision therein for prevention of disaster and mitigation
- Identify buildings and places which

could in the event of disaster situation be used as relief centers or camps and to workout how arrangements for water supply and sanitation in such buildings or places would be made

- Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice
- Provide information to the Provincial Authority relating to the different aspects of disaster management
- Encourage the involvement of non-government organisations and volunteer social welfare institutions working at the grassroot level in the district for disaster management
- Ensure communication to be in order and disaster management drills are to be carried out periodically
- 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

CHAPTER 5

SIGNIFICANCE OF LOCAL GOVERNMENTS IN DRM



According to the guidelines under section (20) of National Disaster Management Act 2010, local authorities are responsible for implementation of DRM activities at local level. Due importance has been discussed in the act about the roles and responsibilities of local authorities in disaster risk management at local level.

Section (25) of NDM Act 2010 empowers Local Authority to:

i. Ensure that its officers and employees are trained for disaster risk management

ii. Ensure that resources relating to disaster management are so maintained as to be readily available for use in an event of any threatening disaster situation or disaster

iii. Ensure that all construction projects, under it or within its jurisdiction, conform to the standards and specifications laid down for prevention of disasters and mitigation by the National Authority, Provincial Authority and the District Authority

iv. Carry out relief, rehabilitation and reconstruction activities in the affected area, in accordance with the Provincial Plan and the District Plan

v. The Local Authority may take such other measures as may be necessary for disaster management

The key part of Disaster Risk Reduction shift is understanding integrated systems and working with them across multiple scales. DRM efforts require taking systematic approach, thinking holistically about governance, livelihoods, hazards , stresses and emerging threats, working from the local upwards to national, regional and international levels. It also requires different timescales to be recognised, considering past activities (including traditional knowledge) and future projections for climate and society. It requires thinking and working both vertically and horizontally across socio-ecological perspective.

At risk or vulnerable people need to understand, manage and monitor risk related to the security and wellbeing of their lives, livelihoods and assets on daily basis. Therefore, it is important to understand risk at the local level and put at risk or vulnerable people and their perspectives as a central part of building resilience.

An effective emergency response by the local authorities can play an important role in saving lives in the aftermath of a disaster. On the other hand, lack of capacities at the local level for disaster response contribute to huge loss of life and property.

However, the Local Authorities alone may not be able to achieve greater success in disaster reduction, preparedness and response without the active involvement and participation of the vulnerable communities. Because effective disasters risk reduction requires action by all vulnerable individuals, families, communities and organisations. The technical, human and financial resources of the Local Authorities are very limited, which may not be sufficient to implement disaster risk reduction activities amongst all vulnerable communities. Therefore, it is essential that the local authorities mobilise support from various civil society institutions and involve larger communities.

The Local Authorities can play the role of a facilitator, enabler and resource provider in order to promote community level risk reduction and preparedness. There are four key services that are required by the vulnerable communities for disaster preparedness. They include:

5.1 Community mobilising, organising and capacity building

Many vulnerable communities may not be organised and active in the area of disaster risk reduction and preparedness. They may not also have the technical ability to undertake an organised action. Similarly, the communities do not always adapt measures to mitigate anticipating threats of multi-hazards and most of the time they pay no attention to the early warning disseminated to them for evacuation. Therefore, the Local Authorities can play an effective role in organising community groups, mobilising the existing groups and in building their capacities through trainings and study visits.

Each slope needs to treat as per its suitability to live in harmony with nature's law for it stability.

5.2 Information on risks, vulnerabilities and preparedness actions

In many cases, it is the lack of information on hazards, related risks, vulnerabilities and the preparedness actions by the local communities that serves as a hindrance in community action. This is particularly true in the case of internally displaced communities in urban centers and in post-conflict situations. An important need of such communities is to receive such information. The local authorities should establish arrangements to inform the communities in relation to hazards, vulnerabilities, risks, capacities and preparedness actions. The local authorities can establish community and local level information centers to provide such information. The existing cultural and social institutions can be used for this purpose. The local authorities must utilise multiple communication systems, for example, announcements through masjid, imam bargah, church, police mobile, radio, television, public address system, mobile phone, newspaper, volunteers network, exhibitions and rallies to ensure they reach the at-risk communities and groups.

Local communities in Mansehra were empowered through establishment of community based disaster risk management committees, trained and equipped with basic response kits. They were linked with DDMU and TMOs concerned for early warning dissemination, evacuation and providing relief to affected people. Community volunteers during floods effectively disseminated early warnings and evacuated at risk communities, thereby, rescuing 18 people from flood, providing relief to affected people and evacuating over 5000 tourists from landslide area.

5.1 Incentives to families and community groups and motivation for disaster risk reduction, preparedness and response

In many cases, such as Mansehra, poor people and families are hindered by the lack of financial resources to undertake actions on disaster risk reduction and preparedness. Poor families are unable to access the existing loan facilities offered by banks due to lack of collateral. Therefore, they may not be able to construct a disaster resistant house or find an alternative source of livelihood that is less vulnerable to droughts or floods. A community group might not be able to construct a rainwater-harvesting pond due to lack of funds. Therefore, the provision of financial resources, in the form of micro-credits and small grants, is essential to enable families and community groups in implementing disaster risk reduction and preparedness activities. Keeping in view the importance of provision of small grants and other funding facilities for disaster reduction, ERTs and CBOs in Mansehra get registered with Social Welfare Department to enable them to get 25% share in the local development funding. The ERTs and CBOs enabled them to get funding for local level micro-mitigation projects. Arrangement with MCs should be in progress to identify all hazard prone area and no NOC should be granted to the people for construction of

buildings unless approved. Incentives which are proposed to be provided to people constructing their homes in safer places, included exemption from local taxation and free insurance against disaster risk. Political authorities as well as NGOs should discourage habitation in disaster prone areas.

5.4 Technical assistance

This is another very important service that is essential for the vulnerable communities. People living in areas like Mansehra lack technical expertise and capabilities to implement activities on hazard mitigation, vulnerability reduction or even to conduct a risk assessment. For example, a community may not have the trained masons who know how to construct earthquake safe houses or they may not have the technical knowledge on earthquake hazard assessment or on drought and flood resistant crops. The community also lags behind in skills and knowledge required for emergency response. Lack of such technical expertise may hinder the communities from undertaking disaster risk reduction initiatives. These services are needed from external sources e.g. NGOs, local governments, universities or research centers.

In Mansehra:
The community members were provided with hands on skills of hazard, vulnerability, risk and capacity assessment tools in first aid, rescue, fire fighting, evacuation, planning, organisation management and leadership training. They were also equipped with basic emergency response kits and made to participate in drills and simulation exercises. Professional search and rescue team consisting of 30 members was established, trained and equipped appropriately.

Within the above broader framework, the Local Authorities can play a pivotal role in facilitating community action through following interventions and initiatives:

- Establish policies as per the local needs and develop hazards profiling of the local area
- Identify and prioritise most vulnerable communities in their respective jurisdiction
- Conduct local and community level risk, vulnerability and capacity assessment
- Document local coping mechanisms and expertise using indigenous knowledge
- Develop local disaster preparedness and contingency plans
- Facilitate and train community for disaster preparedness planning
- Design local and community level Early Warning Systems (EWS) including dissemination system and training of community on EWS
- Enhance capacity of community volunteers and groups, for example, training on search and rescue, extrication of the trapped from buildings, first aid, fire fighting, swimming, evacuation drills and risk assessment, etc.
- Regularly upgrade disaster preparedness and mitigation plans
- Provide resources to community volunteers and groups, for example, medicine kits, rescue equipment, survival kits, warning equipment, firefighting equipment, evacuation equipment (boats, transport), etc.
- Ensure safe storage of essential items near vulnerable locations, for example, food, medicine, rescue equipment, earth moving machinery, etc.
- Setup temporary shelters at vulnerable locations to host affected people
- Formulate local level emergency response teams comprising of community members and local officials
- Line-up damage assessment and relief distribution teams

- Coordinate networking among all stakeholders

In recent years, local self governance and good governance have emerged as key concepts to form the basis of political system. Disaster risk management is a necessary part of local and community development. This is also considered as a key strategy for poverty alleviation. Disaster disrupts local infrastructures as well as local economy, however, disasters can actually become "vehicle for change" towards sustainable and participatory development. The role of Local Authorities is most important in promoting a participatory disaster resilient development. They can do this by creating and enabling an environment that feeds on community action.

ERTs in the form of CBOs were registered in Mansehra making them entitled for 25% local government development funding to be used for micro-level common mitigation projects of DRR and similarly for social guarantee based loans from banks on social collateral arrangements. Harvest loaning against crops was also facilitated through Agriculture Development Bank. This arrangement provided many people access to financial and credit facilities.

Under the legal and administrative arrangement, section (25) of National Disaster Management Act 2010 of Pakistan, it is the responsibility of local authority to take all other measures (in addition to sub section 1, a, b, c and d) as may be necessary for disaster management.

Section (20) of National Disaster Management Act 2010, empower district authority to take all necessary measures for disaster risk reduction and management in the district with support of local government institutions.

5.5 Role and responsibilities of tehsil authorities under clause 7.6 of the NDRMF

Institutions at this level are the frontline of disaster risk reduction and response. For many departments, this is the lowest level of administration where they interface directly with communities for all civic and municipality services. MC is responsible for water and sanitation as well as sewerage services. MC also issues NOC to the community for construction of houses and other structures in its jurisdiction. It is the responsibility of MC to carry out hazard and vulnerability assessment in collaboration with scientific institutions and the community to develop land utilisation plan, design and develop building code, land zoning, construction code and standards, town planning, building regulation and safety standards, implementation and monitoring of safety standards and regulation. MC is the focal institution at the core of community interaction and no action will be sustainable and workable without the centered decision of the community.

In case of emergencies, the essential services and critical infrastructure highly affect the prime responsibility of the MC. Restoration of civic services, provision of safe location, water and sanitation services, relief camp management, safety of the properties and lives of the people lie with MC's administration. If the MC has all the information and profile of the community available with it, it will be easier to plan emergency services.

Similarly, MCs have an important role in organising emergency response, relief, damage and loss assessment, recovery and needs assessment. These Local Authorities can lead the

risk reduction and response operations under the command of Chief Municipal Officers in consultation with the DDMUs. Appropriate local structures need to be established for risk reduction and preparedness. The prime responsibility for handling disasters vests with the local government. Immediate response, normally by the emergency services, should activate its contingency plan. If the local government cannot cope with the situation through its own resources, it must call upon the province for assistance. At the local level, municipalities should be responsible for the implementation and maintenance of an all-hazard and full-spectrum comprehensive disaster management programme, ensuring:

- Prevention
- Mitigation
- Preparedness
- Response
- Rehabilitation and reconstruction
- Development

If a disaster occurs at the local level, the prime responsibility for handling the disaster is vested with the Local Authority. Saving lives through search and rescue services, responding to fire, preventing an escalation of the emergencies, relieving sufferings by fulfilling the basic needs, protecting property and facilitating subsequent recovery from the emergency.

It is thus the prime responsibility of the Local Authority to have a contingency plan to deal with any incident such as an emergency. As a matter of rule, disaster management should be included in municipality's integrated development plan. Local disaster management should also be multidisciplinary, transparent and inclusive, and it must aim at reducing vulnerability. While being inclusive, disaster management has to be taken seriously by government departments and it is important for each department involved in disaster management to assume ownership of its delegated responsibilities.

Legally and administratively, the role of Municipal Administration has been defined and determined in National Disaster Management Ordinance, National Disaster Risk Management Framework and Khyber Pakhtunkhwa Local Government Act 2012.

The mandate of MC in context of disaster risk reduction, disaster management planning, preparedness, mitigation, response and recovery is very crucial because it is the lowest level of administration, where they interface directly with communities for development and maintenance of civic facilities and taking responsibility for the protection and safety of the assets and lives of the people in the jurisdiction of MC. The best implementation of DRM at local level is through MC in context of following responsibilities:

Ms. Shabana, Sungi Development Foundation: "During my work experience during the super flood in Mansehra, the way early warning was disseminated and actions taken by TMA Balakot for evacuation of community from the pre-identified flood prone areas, mobilisation of volunteers, NGOs and government agenices were organised in such a way that I have never seen in my 20 years of professional life. Motivation, mobilisation and coordination among all the partners was commendable, which was essential to face disaster of such magnitude. I worked day and night with volunteers and felt proud to evacuate hundreds of people to safer places. The role played by local NGOs and the coordination facilitated by DDMU during the 2010 massive disaster is a practical form of DRM, which I had personally experienced".

- Land use management planning and safe built environment
- Land use zoning determining residential, commercial, educational, recreation and conservation areas
- Fire fighting and rescue services to affected communities
- Issuing and dissemination of early warning to people in hazard zones
- Evacuation of and camp management to affected communities

- Provision of essential services including drinking water, sanitation and waste management in the camps
- Dewatering of stagnant flood water and decomposing of dead bodies
- Enforcement of rules and regulations relating to identification of risk zones with respect to natural hazards
- Coordination with technical institutions for developing and implementing building codes
- Traffic control and management
- Enforcement of building codes, regulation and bye-laws
- Issuance of habitation and infrastructure development
- Road construction and maintenance
- Developing and maintenance of critical infrastructure including water supply, sanitation and sewage maintenance, wastage management, hygiene and health management
- Development and maintenance of safety standards
- Assurance of safe drinking water, hygienic food and nutrition to public

With reference to the aforelisted roles and responsibilities, it is vital for MC to be expert in disaster risk reduction and management. MC knows the community's dynamics, perception of risks, socio-economic scenarios, cultural constraints as well as local hazards which may cause every day disaster to the community. Understanding the local perception of community in context of climate change is very important for sustainable development. It is vital to understand the impact of global warming and the emerging threats of climate change on lives and livelihoods of the community at local level. At the time of disaster, access to most affected people is only possible through MC's interventions. Disaster needs and damage assessment, identification of needy and distribution of relief can be best done through this channel. Transparency, accountability, efficiency and effectiveness of DRR could be best implemented through MC's institutional arrangement.

Under the Khyber Pakhtunkhwa Local Government Act 2012, MCs are responsible for delivery of civic services as detailed hereunder to the community. With this mandate, MCs are primarily responsible for assurance of safer built environment for inhabitation in their jurisdiction. It is again their responsibility that no construction (private or public) should be made in flood plain zone and land slide risk areas. No habitation certificate will be issued for construction in hazard prone areas identified holistically by scientific agencies.

In respect of DRM Model, TMAs in District Mansehra had played a vital role in developing and implementing the model. Two officials from each TMAs of Mansehra were placed at the disposal of DDMU Mansehra (one each focal person and rescuer). Extensive training in fire fighting, search and rescue were imparted to them to bring their capacity to the level of trainers, who further delivered training to their firemen in their respective jurisdiction on firefighting, MFR, CSSR and other rescue techniques. Through this process, knowledge and skills were transferred to other TMA staff. With the enhanced technical capacity of firefighters in TMA Mansehra, two state-of-the-art fire fighting vehicles were added to the existing fire engines, scaling-up the capacity of firefighters. Uniforms and safety kits were also provided to the firefighters and resultantly TMA Mansehra responded to many emergencies within 10-15 minutes. TMA developed building bye-laws, supported UNDP in earthquake vulnerability assessment of TMA Manserha and developed SoPs for emergency response with the support of Local Government and Rural Development Department Khyber Pakhtunkhwa.

Recognising the critical role of MCs, it is highly recommended to provide them with more avenues of capacity building of their staff in planning, implementation and response sectors for effective and efficient service delivery to the communities.

Despite limited jurisdictions determined for the MCs in the Khyber Pakhtunkhwa Local Government Act 2012 being implemeted with effect from 1st January 2013, half of the population is living in the jurisdiction of these municipalities.

Lesson learned:
Different erosion processes are dominant in different zones of the watershed, so the conservation measures required are also different. Therefore, focus has to be on proper land use practices in the upstream of watershed, stream bank erosion control in the transportation zones and sediment management in the plain.

Urban settlements are the lifelines of today's society. They serve as economic engines, centers of technological innovation and function as living examples of our cultural demographics. Unplanned activities within

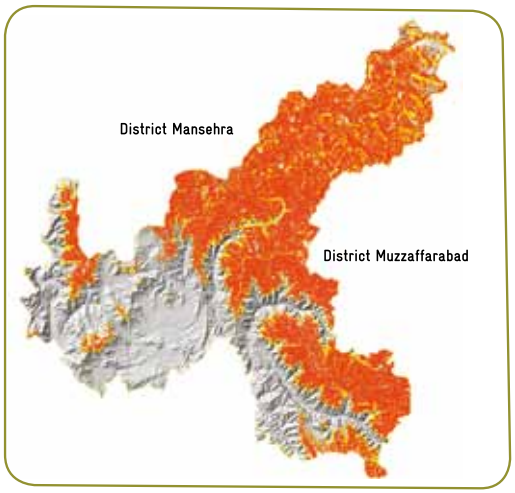
the cities also generate new risks, which need to be addressed by MCs. Particularly at risk is the increasing number of informal settlements without following any regulations and safety measure. MCs are vital organs of campaign to engage and convince local governments to be committed to a checklist of minimum safety standards in provision of civic services and work on them with local organisations, grassroots networks, private sector and national authorities for making the cities more resilient to disasters.

CHAPTER 6

THE DRM MODEL MANSEHRA

6.1 The situation analysis

Mansehra District of Khyber Pakhtunkhwa consists of three tehsils, namely, Mansehra, Oghi and Balakot. The district is located from 34º-14´ to 35º-11´ north latitudes and 72º-49´ to 74º-08´ east longitudes. The total area is 4579 square kilometers.



Mansehra makes its boundary on the North to Kohistan and Battagram Districts, on the East to Muzaffarabad District of Azad Jammu and Kashmir, on the South to Abbottabad and Haripur Districts and on the West to Shangla and Buner Districts.

According to 1998 Census Report, its total population is 1152839 with an average annual growth rate of 2.4%. Other socioeconomic indicators include, life expectancy 63 years, household size 6.7 persons and literacy rate 36.3% (50.9% for male and 22.7% for female). Disabled population being 1.6% (two-third is male and one-third is female). The literacy rate is much higher in urban areas as compared to rural areas, both for male and female i.e. 44.3% and 19.9% for urban and rural areas, respectively. Of the total population, 1091463 (94.7%) individuals live in rural areas. The male to female sex ratio in rural and urban areas of the district is 98 and 106 respectively. Most of the population (84.3%) has its own houses. Only 32.1% of the population has the facility of drinking water inside their homes. As far the type of construction is concerned, 62.6% rural and 79.8% urban housing units have been built with baked bricks, blocks or stones, whereas, 34.5% rural and 17.8% urban housing units have been built with unbaked bricks. Only 1.4% of the total houses are structured with wood or bamboo.

According to 1998 District Census Report, there are 34.4% housing units having one room, 61.4% with 2 to 4 rooms and 4.2% with five or more rooms. On average, one housing unit has 2.1 rooms and there are 6.7 persons per housing unit.

Mansehra District was the worst affected district of Khyber Pakhtunkhwa during the 2005 earthquake, in terms of human losses and destruction of physical infrastructure. According to reports of the district government, 15997 persons died while 9903 were injured. Besides, the number of housing units destroyed due to disaster was also implacably higher. As many as 108283 housing units were completely destroyed and 34001 partially damaged. Balakot City, part of Mansehra District, located on the fault line has been declared **Red Zone** and plan has been made to relocate it to a new place called Bakriyal.

Education sector faced enormous damages in terms of material loss. Loss of lives of the students and teachers was unimaginably higher. There were 935 institutions recorded as fully damaged and some 624 as partially damaged as a result of the earthquake.

The enormity of earthquake was very complex, generating negative effects of biblical proportions. Thousands of people became shelter less, losing their life time earnings. The experience, which the local leadership and the people of Mansehra acquired from national and international organisations, working in Mansehra for reconstruction and rehabilitation opened new avenues for learning and development. This event also generated some positive effects on empirical knowledge and learning of all stakeholders, including development practitioners, planners and managers, academic institutions and international community. One such event led to the development of Disaster Risk Management Model Mansehra implemented and practiced by local leadership despite of hardest challenges

which the people of the district suffered due to serious socioeconomic and cultural vulnerabilities in the 2005 earthquake.

Over 80 national and international organisations contributed to rebuilding and recovery of the badly affected district. District administration, local government agencies, line departments, Pakistan Army, law and order maintaining organisations, national institutions and international agencies contributed in physical and non-physical mitigation of the district. The knowledge and expertise acquired by the local leadership and the community also contributed in development of the DRM Model.

6.2 The origin of DRM Model Mansehra

Bringing change in the mindset of the ages old perception, behavior, attitude, concept and approaches of bureaucracy was very challenging. However, this challenge was accepted by the GIZ DPMP (ex GTZ) and all stakeholders were brought on a single platform of DDMA Mansehra to bring change in attitude, behavior and thinking of multi-stakeholders regarding disaster perception and management. Disaster risk awareness, education, capacity, and development strategies should be aimed at promoting a culture of safety, so as to achieve changes in current patterns of human behaviour that influences the risk of large-scale damaging effects of natural hazards. In the past, earthquake experience efforts in this field have often been based on a rescue and relief centric approach. Orientation should enhance holistic disaster management approach that includes catastrophic risk prevention and risk reduction trainings for knowledge, skill and capacity enhancement in these areas. This reorientation requires an emphasis on disaster risk reduction strategies and a combination of individual and collective actions. The challenge is to bring the issues of disaster risk to a new level of significance for local governments.

In line with the MoU signed between Provincial Government of Khyber Pakhtunkhwa and German International Cooperation (GIZ), a pilot project called Disaster Preparedness and Management Project (DPMP) was launched in District Mansehra in July 2008 for designing and developing systematic institutional and administrative arrangements in the district. It shifted the perceptions of bureaucracy and public from reactive disaster management approach to proactive disaster risk reduction approach.

The systematic and strategic guidelines set out by NDRMF, FHA and other international protocols were guiding principles for designing this project. Detailed review and understanding of global academic and comprehensive research work on disaster risk management across the world were the reference points compared with the ground realities of Mansehra after earthquake 2005 disaster and "build back better" concept of disaster recovery and reconstruction, undertaken by international, national and local organisations.

6.3 Level and the form in which DPMP provided support

The objective of the DPMP project in Khyber Pakhtunkhwa was to strengthen the institutions and organisations, in charge of disaster management, so that they could prepare themselves for disaster and, if a disaster occurs, they could mobilise and coordinate the available resources efficiently. This includes supporting the capacity development of the emergency services and promoting the participation of the population in disaster risk management and disaster response. The project therefore supported provincial and district governments in delivering advisory services at various levels:

A. Institutional development

Advisory services to support PDMA Khyber Pakhtunkhwa in development and establishment of local level institutions, capacity development and institutional building were the key interventions of

DPMP. The project supported institutions including DDMA Mansehra and affiliated organisations responsible for disaster risk reduction at multi-level in prevention, preparedness, mitigation and response. The project also supported Center of Disaster Preparedness and Management at Peshawar University.

B. Capacity development of Civil Defense Department and the emergency services

Capacity development support was provided to Civil Defense Department and its voluntary units in Peshawar and Mansehra. Capacity building trainings to the officials of civil defense were provided at multi-level. Upgradation of the officials of Civil Defense Department was also facilitated. Training and re-training for trainers and volunteers were arranged.

The department was fully engaged in all activities of DPMP for development of professional rescue services with search and rescue and medical rescue units, fire brigade and control center. Civil Defense Mansehra was fully equipped with emergency kits and 30 members search and rescue team was established under the command and control of civil defense. Search and rescue team responded to many localised disasters and over 18 lives were saved including millions of worth of property. Convocation was arranged at Peshawar for the civil defense volunteers for the first time, where about 6000 volunteers across the Province participated. The convocation was chaired by Chief Minister of Khyber Pakhtunkhwa. Incentives announced by the CM for the officials as well as the volunteers were highly morale boosting building for the volunteer networks across the province.

C. Training and research

Postgraduate course in disaster risk management was initiated at the University of Peshawar and an academic training for the teachers of CDPM was successfully conducted. Peshawar University is the only university in the country offering a master level acadamic programme in disaster risk management, which is one of the most valuable contributions of DPMP. It facilitated DRM related national and international trainings for the officials of Federal, Provincial and District Governments. CDPM undertook study of the DPMP on regular basis. The findings ensured both the quality and productivity of the DPMP deliverables and outcomes in Mansehra and Peshawar. About hundred teachers and RITE educators got trained in school disaster risk management. Line departments, local government agencies and NGOs were provided extensive training on DRR and DRM. The outcome of the DPMP in Mansehra can be briefed as under:

D. Intervention with district and local government agencies

To generate human resources for DDMA, the line departments and local government agencies nominated one senior officer and one emergency responder to represent concerned institutions for DRM related activities. The main activities included:

- Extensive training on DRR and disaster management planning for line departments' focal persons at national and international level
- Intra and inter-departmental training on DRR and disaster management planning for developing departmental plans
- A core team of 17 government officers and 13 non-government officials was formed to extend technical support to Steering Committee of DDMA on

DRM and also to monitor the sectoral activities of line departments, local government agencies and NGOs for DRR integration in development planning

- The core team was also assigned to promote DRR within inter-departmental and intra-departmental levels for building capacities in three aspects of disaster management i.e. prevention, mitigation and preparedness
- Compulsory participation and contribution in the multistakeholder General Coordination Meetings (GCM), on regular monthly basis which were organised in Mansehra. This enhanced knowledge, capacity, trust and confidence of all actors to support district and local government in promotion of DRR by accountable and transparent service delivery to public
- Resource mapping of all organisations, in the district, to see what resources are available with the departments and organisations (manpower, material, financial and technical) for emergency services
- How and when the desired resources could be made available to DDMA
- SoPs and ToRs developed by core team of experts were highly useful to district and local government authorities in mobilisation of emergency response.

E. Intervention with INGOs and NGOs

- To enhance the capacity of the second important pillar of DRM i.e. INGOs, NGOs and CSOs, they were involved in the mainstream of district development and disaster management processes
- Representatives of international and national non-government organisations were involved in decision making at DDPRC and DDMA level to foster their involvement and participation
- To enhance and promote horizontal and vertical working relationships, participation of the head of line departments and focal persons of concerned government organisations enabled the DDMA to take timely and appropriate decision in all aspect of DRM. This process also made public servants and humanitarian agencies accountable the public in effective, efficient and transparent service delivery
- To access information from all direction i.e. government agencies about their policies, NGOs about their interventions in DRR and the role of community in adaptation of DRR for sustainable development, information was shared and actions were taken to implement the decisions by all partner organisations including the communities
- To enable all stakeholders in efficient and effective utilisations of available resources at all levels, without any duplication and overlapping, resource mapping exercise were conducted
- To pool available resources at district level and to generate required funding to meet DRM requirements for making the district and the community multi-resilient to hazards, strategy and plans were developed by all actors
- To avoid duplication and overlapping of resources, appropriate plan of actions were developed and implemented
- Stakeholders collectively designed contingency and evacuation plans for monsoon contingency planning in addition to implementing the plans in real scenarios

F. Intevention with community organisations

- Capacities and capabilities of over 45 community organisations, trained and equipped by different national and international organisations on CBDRM at district level, contribution for promotion of DRR and DRM

- Mapped the skills, knowledge, capacity and capability of community organisations for bringing them in line with the minimum standards on preparedness and the profiles of the ERT volunteers were developed and maintained at DDPRC
- Knowledge and experience sharing on DRM has been enabled at multi-level by multistakeholders to empower the communities, local government agencies and other stakeholder in taking account of vulnerabilities and plans to mitigate their anticipated impact
- Maintained emergency stockpiling in all 59 Union Councils of Mansehra. Stock maintenance training, SoPs and ToRs for joint community volunteers, union council secretaries and monitoring agencies were developed, maintained and verified by concerned officials
- Maintained database of community volunteers at DDMA for coordination at the time of emergency. Similarly, capacity enhancement trainings and refresher trainings were also conducted for volunteers in better preparedness
- Made community volunteers and ERTs active partners of DDMA through inclusive process of all actors
- Conducted regular meetings, refresher training, drills and simulation exercises for search and rescue team of the Civil Defense Department with community volunteers to strengthen capacity and capability of all partners
- Functionalised Inter-ERTs exposure visits of volunteers and arranged competition among the ERTs to foster volunteers and make them more active
- Community representation at policy and decision making at DDRPC and DDMA was encouraged and communities were motivated to play their role effectively and efficiently
- Linkages and interlinkages of ERTs and SRTs for all emergency information, response and mitigation activities were established in enhancing DDMA's functional and operational strength.
- Exercised resource mapping of ERTs undertaken by DDMA to draw a clear picture of the capacity and capability of the ERTs in terms of technical, financial, social and material stockpile
- Planning was done about pooling of resources in response to emergencies by ERTs towards resilience of the community
- Contingency and evacuation plans were developed by DDMA and local government agencies with the communities and ERTs for updated plan of action in case of emergency
- Disseminating plans of government on community contingency and evacuation not only enhanced level of understanding of the community but also ensured transfer of ownership to the community

G. Search and rescue team stablished

Serious weakness in the overall response system during the 2005 earthquake caused huge causalities of over 9000 people and heavy number of injuries forced the district government to establish competent and well equipped search and rescue teams at local level for spontaneous response to emergencies.

DPMP initiated a unique and cost-effective mechanism for establishment of search and rescue teama with the partnership of district and local government authorities and the community of Mansehra at district level. Retaining human resource for search and rescue efforts is a common challenge for all agencies throughout the world, especially in Pakistan. Similar to other challenges, DPMP initiated partnership approach with

district and local government authorities and the represenatives from the community for provision of human resources. A 30-member team consisting of district and local government officials and community volunteers (including four female members) were selected. Multi-hazard response training including CSSR, MFR, FF, MR, FR, etc. were imparted. Expert trainers from abroad as well as locally were hired for extensive trainings. The teams were deputed to Punjab Emergency Services for a 6-week extensive training. Team members were equipped with scientific search and rescue equipment and with state-of-the-art rescue vehicle. The capacity of search and rescue team was brought at the national level. This effort was highly appreciated by the Hazara Administration since District Mansehra was the center point to other four districts of Hazara Division where rescue teams could be deployed for emergencies.

H. Incident command system established

We live in a complex world in which responding to emergencies, from single car accidents to large scale disasters, often require cooperation among several agencies. In an emergency, many agencies will be called upon to help with the response Most of the time, understanding of disaster terminologies and use of equipment also add to the challenges. The major questions in response are "who will command the overall operation" and "how will coordination among concerned agencies take place". An international system was adapted in local perspective by DDMA Mansehra, which provided information on how everyone had to work in an ICS environment, including the rationale for using ICS and how ICS could be used to manage all types of incidents. It also described the basics of ICS organisation such as, how ICS can form the basis for an effective emergency management system and and how ICS can further enhance emergency operations.

A comprehensive response system at district level, which provided 24/7 emergency services on one window basis, was made functional and operational. Services were made available to the public with further enhancements, but unfortunately the system became non-functional after the exit of DPMP. Key features of the system were:

- Emergency helpline i.e. 1122 was made functional for the first time in Khyber Pakhtunkhwa at Mansehra
- Toll free service was made available on 24/7 basis to the public and dedicated government officials were posted on shift basis for 24 hours
- Search and rescue service was made available at DEOC on 24/7 basis for any emergency with standby state-of-the-art rescue vehicle
- Fire brigade was linked with helpline services and at the time of emergency fire and rescue vehicles were moved to site of incidence
- Ambulance service was also made a compulsory part of one window operation i.e. ambulance was also

available on helpline service to move with other rescue vehicles

- Although, these services were at the very initial stage back then, yet the ideal system was positively surprising for the people District Mansehra
- ToRs and SoPs for multi-agency response at multi-level were developed under the ICS and made functional
- During the flood operation, this system was tested and found to be more than satisfactory
- Coordination of multi-agencies for multi-level services delivery at the time of emergency was defined and understood by all stakeholders
- Section heads were made responsible for emergency response with clarity of roles and responsibilities through regular simulation drills and exercises
- Commissioner Hazara Division as well as DCOs and DPOs of other districts also actively participated in these drills and simulations

I. Disaster preparedness and management in schools

"Too many children are dying because they are not educated to live with disasters or because they are attending classes in unsafe buildings. Making schools safer must be the priority of every government in a disaster-prone country. Disaster risk reduction has no cost compared to the loss of a school full of children buried alive in a mudslide or crushed by a falling building". (Sálvano Briceño, Director of the UN International Strategy for Disaster Reduction)

The unforgettable memory of October 05, 2005 earthquake that killed over 18000 students in schools of Pakistan still lingers on in the minds of the people. Those who had experienced the horrifying event are fearful of such occurrence. Under the "build back better" concept, the reconstructed schools are considered to be earthquake resistant, however, no such drills or demonstrations have been done that can verify the fact that these rebuilt structure can absorb the shocks of same magnitude. GIZ DPMP initiated non-structural mitigation components in the disaster risk reduction project to enhance responding capacity of students and the teaching community to enable them to respond to tragic events like the 2005 earthquake.

To enhance awareness of the risks and dangers, disaster risk management issues need to be addressed in schools. A pilot project on school disaster preparedness and management was launched in Mansehra that:

- Trained 60 teachers from 30 schools of Mansehra in addition to 34 teachers from different RITEs in 17 districts of Khyber Pakhtunkhwa
- 30 schools (20 male and 10 female) of Mansehra and 34 instructors from 17 RITEs of different districts of Khyber Pakhtunkhwa were provided emergency training in school preparedness
- 47 institutions (30 schools of Mansehra and 17 RITEs in other districts of Khyber Pakhtunkhwa) were equipped with emergency response kits
- 3000 students of class 9th and 10th were trained in emergency response
- A comprehensive 60 hours disaster preparedness and management course was designed and developed by the DPMP was approved by Department of Education, Government of Khyber

Pakhtunkhwa

- The pilot project was successfully implemented in Mansehra
- University of Peshawar deeply evaluated the effectiveness and impact of the School disaster preparedness and management project
- Department of Education, Government of Khyber Pakhtunkhwa approved replication of the DRM Model in 25 districts
- Department of Education, Government of Khyber Pakhtunkhwa allocated 500 million PKR funding for replication of the DRM Model

J. Raising social awareness

Media information campaigns on disaster risk management were initiated and a two -day workshop for journalists covering disaster reporting and fundamentals of DRM was organised. With the support of PDMA Khyber Pakhtunkhwa, a major television campaign was launched and popular TV celebrities were involved in the campaign which was broadcasted in Khyber Pakhtunkhwa on several channels at peak viewing time. More than 55 articles on natural risks and current deficits in disaster management were published in regional and national print media outlets.

The substantial public awareness raising work generated interest among the population, thus supporting the call for effective disaster management structure and the presence of emergency services. The media campaign directly contributed towards improving civil protection by means of providing the population with information on what needed to be done in an emergency situation and the integration of these issues into curricula.

In addition to planned project activities of DPMP, stakeholders were also exposed to training sessions, awareness building programmes as well as hazard, vulnerability and risk susceptibility mapping to sensitise them. The earthquake and landslide vulnerability maps developed by UNDP and BGR were explained to stakeholders and detailed orientation on map reading and use of technical maps for spatial planning purpose were provided.

6.4 Stages involved and identification of milestones and cut-off points in the process

For setting milestones and cut-off points in the identification process of DRM Model Mansehra, a comprehensive study and assessment of the existing disaster risk management systems, practices, concepts and approaches in District Mansehra was undertaken to assess the capacities, capabilities and competencies in disaster risk management. The assessment reviewed in detail the mandates of all organisations in disaster risk management perspective by highlighting skills, knowledge, competencies and understanding of the emerging threats of climate change and global warming, and their impacts on lives and livelihoods of the people to develop a comprehensive disaster management strategy for the district. Frontline agencies in disaster risk management and line departments which were primarily responsible for protection and safety of local communities were specifically discussed in analytical review. Furthermore, it was agreed to recommend visionary strategic priorities for comprehensive disaster risk management system. With the support of district and local government authorities, formal and informal meetings

were held with head of line departments, local government agencies, district administration, police department as well as national and provincial government agencies. Meetings with international and national non-governmental organisations were also held to understand their contributions in the process of disaster recovery, preparedness and mitigation. Meetings with community based emergency response teams (volunteers) were also held to comprehend the perception of DRR and DRM, with reference to their capacities and capabilities to respond to emergencies. The key purpose was how to develop a comprehensive disaster management system and strategy in the district that will address multi-level disaster management spectrums, i.e. institutional mechanism, enhancement of capacities of focal point agencies, effective coordination among all stakeholders and a unified command and control system, including EWS and 24/7 emergency services to the community.

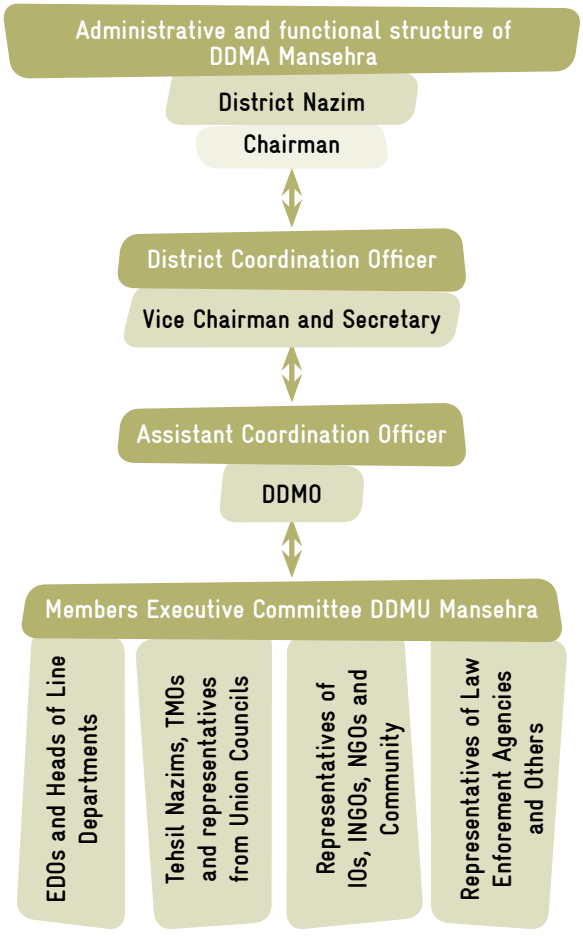
6.5 Administrative and functional structure of DDMA Mansehra

The mandate and responsibilities of 13 line departments, including Finance, Planning and Development, Revenue and Estate, Education, Health, Social Welfare, Civil Defense, Agriculture, Public Health Engineering, Irrigation, Hydrological, Works and Services, Forest, Food, Tehsil Municipal Administrations (Mansehra, Balakot and Oghi), Police, Pakistan Army, Federal and Provincial Departments including NHA, FWO, GSP, Metrological Department, Flood Forecasting Department and WAPDA were individually discussed with concerned organisations through the patronage of DCO and ACO Mansehra.

District Nazim Mansehra, District Council, Tehsil Nazims and Secretaries of 59 Union Councils also participated in the process of discussions and dialogues involving disaster risk reduction. In addition to government structures and systems, more than 40 non-governmental national and international organisations working in Mansehra and over 45 community based organisations were involved in the process of participatory disaster risk management campaign.

Individual and collective meetings with concerned organisations were held to discuss the mandates of the organisations concerning DRM. In line with the National Disaster Management Framework, guiding principles were set and the draft SoP was shared with all concerned. The document was finally approved by District Council, the then legislative body for local level strategic planning and decision making, setup under the Local Government System of 2001. Functional and operational structure of DDMA was approved by Steering Committee and Secretariat of DDMA was established to provide technical support.

Under the administrative arrangement, all line departments were asked to provide human resources (one focal person of grade 17 or



above and one junior staff between the ages of 25-40 for search and rescue team). DPMP was assigned with the responsibility of extensive training to focal persons and search and rescue team members to enable them in contributing to DDMA and concerned departments for disaster preparedness planning.

DDMA Steering Committee consisted of District Nazim (Chairman DDMA), DCO (Vice Chairman DDMA and Secretary of Steering Committee) and ACO (DDMO) were made responsible for overall strategic decision and policy making. The steering committee of DDMA also consisted of EDOs of concerned line departments, TMOs of municipalities, one representative each from IOs, INGO and NGOs groups and 3 representatives of CBOs one each from each TMA jurisdiction were appointed. Tehsil Nazims and one representative from each TMA Union Council jurisdiction were also included in the Steering Committee of DDMA. One representative each from Police Department, Pakistan Army, WAPA, NHA and representative of national and provincial organisations were nominated, making the committee one of the highest decision making bodies for all administrative and strategic policy decision making regarding DRR and DRM.

6.6 Identification of spoilers and drivers

Identifying relevant participants and their involvement was the most critical element of disaster risk reduction process in the district The identified stakeholders were having conflicting expectations and fears about knowledge and information sharing. In the process of stakeholder identification and analysis, local government representatives carried out detailed mapping exercise on the basis of vertical and horizontal working relationship with government agencies, INGOs, NGOs and community organisations across districts and municipalities.

Communicating the objectives: In this context, clear communication on main objectives of approach and process was carried out. The consultation started with a joint clarification of broad goals and expected outcomes of the stakeholders that may spoil or supplement the efforts of the project.

During the process of assessment and implementation, the project encountered usual spoilers and drivers. Despite the existence of usual spoilers, the project was a successful model of learning and practice demonstrating that a lot could still be done even within limited resources. The existing resources in any district could be utilised effectively and efficiently, if there was a genuine will to do with honesty, dedication and commitment. However, professional competency and community trust were the drives of success In that case, there were many drivers including the following that supplemented successful project implementation:

Lack of knowledge and insufficient technical capacity on disaster risk management, bureaucratic red-tapism, centralised and isolated decision making system, poor participation of community in policy formulation, weak system of knowledge management, lack of mutual trust, political influence and interference in professional decision making and negative perceptions of the community regarding institutions were some of the spoilers which the project encountered during its span of activities.

i. Professional competency of implementers
ii. Leadership qualities
iii. Clear understanding of mandate and vision of the project
iv. Honesty, commitment and dedication
v. Trust building and confidence of stakeholders
vi. Action oriented approach rather than words
vii. Supportive, cooperative and adaptive to the culture and system
viii. Strong social mobilisation platform and motivation to change for change with no hidden agenda
ix. Transparency, accountability and respect towards basic human rights

6.7 Obstacles and remedial measures

Traditional and bureaucratic approaches, attitudes, behaviors and perceptions of the communities and officials as well as lack of DRM related knowledge were the major obstacles. These obstacles were crossed through continuous motivation, training and skills transfer to the concerned agencies, organisations and communities. Building trust and confidence of the stakeholders was one of the major intervening approaches for overcoming these challenges.

6.8 The crucial role of institutions

Policies and institutions are key factors that influence access by different population groups to assets, technologies, options and strategies in the aftermath of a disaster. Institutions for reactive response to disaster were available in the country. Legal and institutional arrangements in the country on DRM was an effort to bring changes in the mindset of the people from a reactive to proactive approach.

With the paradigm shifting from reactive to proactive approaches in overall disaster management system in the country, the priority area for disaster preparedness and mitigation spectrum determined by NDRMF and HFA 2005-2015 had been adapted in true spirit.

The tasks of involved institutions became more vital in order to play a key role in operationalising different phases of the DRM framework and mediating the link between sustainable development, disaster management and humanitarian actions. Without institutions, there would be no action and DRM would remain a concept on paper only.

For example, during the recovery process in the earthquake affected districts (including District Mansehra), mitigation, prevention and preparedness projects were undertaken by variety of institutional actors also including the public sector technical agencies (for example, agriculture, forestry, fisheries, health, education, local government, social welfare, etc.). These organisations carried out a number of projects to enhance livelihoods, improve incomes and introduce disaster risk coping strategies. During the relief stage, for instance, various organisations focused on "save and rescue" operations and meeting basic needs such as shelter, food and water. In the rehabilitation stage, their aim shifted to prevention of further erosion of productive assets and coping strategies to help households in re-establishing their livelihoods.

Understanding and Defining Institutions

Institutions in this handbook refer to rules/ regulation and social norms as well as to the organizations that facilitate the coordination of human actions and play a vital role in disaster risk management.

The two components of "institutions" are the "rules of the game" (norms, values, traditions and legislation which determine how people are supposed to act/behave), and the "actors" (organizations) and their capacities that operate according to these rules. Both dimensions need to be addressed in an institutional analysis.

Specialised DRM institutions, like NDMA, PDMAs and DDMAs were expected to play vital role in policymaking, coordination, facilitation, monitoring and implementation of DRM action plan at all levels, lay down guidelines for preparing disaster management plans, provide necessary technical assistance to Provincial and District Governments for preparing comprehensive disaster management plan in accordance with the guidelines laid down by the National Commission on Disaster Risk Management. In this context, sound analysis and understanding of the roles and responsibilities of formal and non-formal organisations in DRM, their institutional and technical capacities for comprehensive disaster risk management were vital. Another important area to be considered was to develop a holistic

approach for promotion of coordination and working relationship at vertical and horizontal levels for disaster risk reduction. A particular challenge for government and development agencies is to build up strong local capacities and mobilise public and private sector organisations at different levels according to their comparative advantages in the design and implementation of locally relevant DRM strategies.

6.9 Capacity analysis of key stakeholders

The capacity gaps of DRM were identified through a detailed assessment carried out by the DPMP and highlighted the needs as:

i. Strengthening institutional and technical capacities for disaster risk management at district and local levels for disaster preparedness, mitigation and response

ii. Integrating DRR into regular development, emergency response, rehabilitation and reconstruction planning

iii. Establishing holistic and unified command system for disaster response with enhanced capacity of search and rescue team to respond to multi-hazards at multi-levels.

iv. Strengthening coordination and linkages among multi-stakeholders for disaster preparedness and emergency response and linking DRM activities with district government's disaster risk management system

v. Building the capacity of the communities and community organisations for hazards identification, analysis, monitoring and implementation of mitigation measures for risk reduction

vi. Mainstreaming DRR into development and livelihood planning by all stakeholder including district and local government agencies, multi-sectoral organisations, NGOs, INGOs, CBOs and ERTs

vii. Introducing minimum standards of preparedness at all levels including community ERTs level for disaster response and equipping the communities with emergency kits

viii. Developing disaster risk management plans by multi-sectoral agencies encompassing local, provincial and federal level organisations. DRM plans developed at village, community, union council and tehsil levels need to be linked with multi-sectoral agencies and organisations to be incorporated in the comprehensive District Disaster Management Plan

ix. Developing contingency plans for hazards including evacuation plans at multiple levels and undertaking simulations for testing of the plans

x. Introducting DRR into school safety project

xi. Strengthening the capacity of frontline agencies of disaster risk management including civil defense, local government agencies and social welfare service providers

xii. Operationalising the paradigm shift from reactive emergency relief to proactive DRM

xiii. Developing early warning system and dissemination process to the community

xiv. Pre-positioning the emergency stockpile at union council level for rapid response to emergency by community volunteers

xv. Integrating community response and preparedness system into district disaster management system for coordination and effective response

6.10 Contribution of PDMA and NDMA

Provincial Disaster Management Authority (PDMA) Khyber Pakhtunkhwa was officially notified on October 2008, while DDMA Mansehra (presently called DDMU) was notified on 7th September 2008. The administrative and structural evolution of PDMA Khyber Pakhtunkhwa was also supported by the DPMP. The major strength of DDMA Mansehra was the same line of technical support which was available to PDMA. Despite its own evolutionary process, PDMA provided technical support to DDMA Mansehra, as and when required, and the project of Mansehra was highly appreciated by the high-ups of PDMA time and again. The then DG PDMA, in a high profile Provincial Government's meeting said:

"DDMA Mansehra is a proud pilot project of PDMA to be presented to any level and to be replicated anywhere".

After 2010 floods, Dawn Media representatives were deployed to Mansehra by Mr. Shakeel Qadir Khan (the then DG PMDA) to experience the effective response of DDMA. Accordingly, interviews with DDMA high-ups were broadcasted on Dawn news television channel and newspaper, appreciating the efforts of district administration for setting up an effective and efficient flood response system.

Linkages, coordination and understanding between DDMA Mansehra, NDMA, ERRA and other organisations working on DRM remained exceptional. DDMA activities were regularly shared with PDMA, with the provision of persistent guidance and support. PDMA officials physically participated in drills, simulations and trainings arranged by DPMP in partnership with DDMA Mansehra.

Exposure visits to national and international DRM organisations were arranged by DPMP wherein PDMA officials participated. DRM orientation and capacity building trainings for the officials of PDMA, NDMA and Provincial Government were also arranged. Two track approaches "top down and bottom up" were adopted to involve policy makers and the end users (service providers and community members). This strategy not only enhanced the capacity and understanding of DRM at policy level, but also transferred learning on the importance of DRM to implementing agencies and communities. However, due to certain resource limitations, mounting pressure of IDPs crisis and 2010 floods, PDMA could not carry on with its contribution of what could be expected from a patron body to supplement the efforts of DDMA Mansehra.

6.11 Exchange of knowledge and experience with other DDMUs in Khyber Pakhtunkhwa

Unfortunately, none of the DDMAs were functional in Khyber Pakhtunkhwa during the project life of DPMP, so exchange visits between DDMA Mansehra and other DDMAs could not be undertaken. However, knowledge exchange and experience sharing sessions between major stakeholders including the DCOs, DPOs and head of line departments from different districts of Hazara Division were held from time to time. Demonstrations, drills and simulations were held on regular basis by DDMA Mansehra and were chaired by Commissioner Hazara Division, during which representatives from other district participated and exchanged their knowledge, experience and learning. Multi-disaster drills were organised by DDMA Mansehra to invite technical expertise for scaling-up of search and rescue teams later to be incorporated in the action plans of DDMA.

Policy and administrative decision makers conducted study trips and exposure visits to disaster management institutions. Exchange of professional knowledge at national and international level enhanced awareness and comprehension levels on comprehensive disaster risk management to implement measures within their own spheres of responsibility. As a result, a higher importance was attached to disaster risk management and the process of institutionalisation developed a strong momentum. The continuous lobbying work performed under the DPMP was also partially responsible for the fact that the engagement of the district, local and provincial government agencies went on to exceed their initial expectations associated to the project.

Knowledge and experience sharing between multi-stakeholders and multi-agencies at multiple levels enhanced the horizon of DDMA. Practical demonstrations, hands-on trainings, exposure to national and international conferences, facilitation of exchange visits and orientations to line departments, local government agencies, national and international organisations, non-government entities, community organisations and volunteer networks enhanced the capacity of DDMA.

The activities and plans were also shared with NDMA and ERRA - the Federal Organisations for disaster risk management and reconstruction - for seeking guidance on disaster management polices and plans. Through exchange of knowledge and sharing of experiences with UNDP, University of Peshawar, BGR, GSP, International Red Cross and other international and national organisations strengthened professional competencies of DPMP and DDMA Mansehra. A huge wealth of knowledge and experiences was acquired and accumulated through this project, which contributed to the sustainability of the results beyond the completion of the project.

6.12 Alignment of DRM Model Mansehra with provincial laws and policies

The DRM Model Mansehra was drawn in line with section (20) of National Disaster Management Ordinance 2006 and in conformity of NDRMF 2007. The nine point priorities of NDRMF were embedded in the strategic plan of DDMA Mansehra for implementation. Standard Operating Guidelines (SoGs) were developed on the basis of guidelines determined under the National Disaster Risk Management Framework:

i. Institutional and legal arrangements for DRM
ii. Hazard and vulnerability assessment
iii. Training, education and awareness
iv. Disaster risk management planning
v. Community and local level programming
vi. Multi-hazard early warning system
vii. Mainstreaming disaster risk reduction into development
viii. Emergency response system
ix. Capacity development for post disaster recovery

DDMA's functional and administrative structure, strategic plans, SoGs, SOPs and ToRs were designed in line with the provincial and national laws, policies and guidelines. The five priority areas of HFA were also considered in alignment with the local policies and operational plans:

1. Build institutional capacity: Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation
2. Know your risks: Identify, assess and monitor disaster risks and enhance early warning
3. Build understanding and awareness: Use knowledge, innovation and education to build a culture of safety and resilience at all levels
4. Reduce risk: Reduce the underlying risk factors through land-use planning,

environmental, social and economic measures

5. Be prepared and ready to act: Strengthen disaster preparedness for effective response at all levels

The roles and responsibilities of the stakeholders at local level were identified and agreed upon according to the national and international framework on disaster risk management. The dynamic approach of DDMA Mansehra enabled district and local governments to align their disaster risk management policies and plans according to the provincial laws from time to time. PDMA was kept in full picture about the ongoing activities of DDMA Mansehra, however, for administrative and operational purposes, DDMA was quite independent and flexible.

DDMA Mansehra also developed close collaboration and coordination with Divisional Government at Hazara and offered technical services to Divisional Government as and when required. Commissioner Hazara and DCOs of four other districts of Hazara Division participated in DRM activities of Mansehra, which highly build the morale of local government officials and community volunteers. One of the effective tools for motivation for all the stakeholders was commitment of Commissioner Hazara Division.

6.13 Standards for quality assurance

The already precarious situation worsened when local inhabitants of Malakand Division had to leave their houses in anticipation of the Pakistan Army's military action against Tehrik-e-Taliban Pakistan in 2009.

The recovery and reconstruction process had been tasked to PDMA. Managing the resulting humanitarian crisis became a priority of the Provincial Government and tied up many of its resources. Dealing with over 3 million IDPs (the largest in the world) created major challenges for the recently established PDMA.

As expected, technical and financial inputs from PDMA were not made available, however, PDMA was constantly kept in loop about all the activities of DDMA and guidelines were sought from time to time to ensure quality of disaster management initiatives. DDMA and DPMP officials regularly attended meetings and trainings arranged by PDMA and presentations were also delivered to PDMA about the ongoing activities of DDMA. Suggestions and guidelines from PDMA were incorporated in the regular plan of DDMA.

For monitoring and evaluation purposes, the officials of PDMA also physically attended drills, simulations and trainings arranged by DPMP at District Mansehra. Accordingly, all activities of DDMA were aligned with PDMA standards and policies on disaster risk reduction and management. To ensure community disaster preparedness "minimum standards for community level emergency response team" was developed and implemented in District Mansehra. ERTs from all 59 Union Councils participated in a competition arranged by the DPMP and incentives were offered to the best teams of Tehsil and District. Cash prizes and other awards were given to the participating and winning team.

6.14 Application of the monitoring system

The aim of DRM Model Mansehra was to enhance and enforce the local capacities and systems in disaster risk reduction and management. Therefore, it was the priority of the project to build stronger linkages and develop a system that could ensure the enforcement of the DDMA policies and plans. To ensure implementation of the DRM Model, the following social, motivational and technical monitoring system was developed. The process was regularly monitored, throughout the project life, internally and externally. DDPRC, the Secretariat of DDMA, consisting of focal persons from line departments and other agencies were responsible for regular monitoring of the DPMP and DDMA activities:

1. All the stakeholders including district and local governments, NGOs, federal and provincial agencies and communities were taken into confidence for the common cause of DRM
2. The objectives and the project's mandate and milestones for implementation were clearly shared with all stakeholders and practiced through actions, as promised
3. The famous saying "actions speak louder than words" was practically demonstrated by district and local government agencies, which built the trust and confidence of the community on the newly introduced system
4. Multi-dimensional approaches adopted for monitoring and implementation were practical, understandable, localised and acceptable for all stakeholders. Therefore, adaptation of the system was with the consensus of all stakeholders
5. Voluntary commitment, practical demonstration and actions at district government level were some of the major motivational factors for trust and confidence building of the involved stakeholders
6. Annual work plans and logical frameworks of partner organisations were shared with district government and technical working groups. A team of dedicated focal persons from line departments, local governments agencies and NGOs at the platform of DDPRC thoroughly reviewed and referred to sectoral specialised organisations for the purpose of consolidation and proper monitoring
7. Sector specific organisations were arranged into local cluster system. Regular monthly meetings of the working groups were held to review the monthly progress report of concerned organisations. Head of the concerned cluster group (concerned line department and local government agencies) were responsible for monitoring the activities of development actors and for reporting to General Coordination Meeting of multi-stakeholders
8. Regular monthly General Coordination Meeting (GCM) was conducted at district level where all representatives including the community representatives participated and reviewed DRR and DRM activities in their respective sectors
9. Progress of DRM at district and local governments was also shared with stakeholders in GCM and suggestions were incorporated for action planning
10. The Technical Working Committee at DDPRC and Steering Committee at DDMA level regularly reviewed the progress of DRR and DRM implementation process at multi-level by multi-agencies as well as the progress of DPMP activities
11. To ensure implementation of DRR and DRM activities, NOC system for NGOs and CSOs as well as stringent check and balance system for its implementation was introduced
12. Monthly progress reports were shared with Steering Committee of DDMA, PDMA and GIZ (ex GTZ) management for guidelines and directions
13. A comprehensive monitoring system was introduced from at multi-level including:
    - During development planning by

incorporating monitoring tools including LFA, at all levels

- Regular monitoring through monthly activity plan
- Verifying progress through MOVs, by the implementers themselves
- Monitoring at sectoral working group meetings
- Monitoring at DDPRC level by technical working group
- Reviewing and monitoring at GCM action plans
- Ultimately reviewing the monitoring outcomes and results by DDMA Steering Committee for policy decision

The monitoring and evaluation system was introduced in such a way that it gave the impression of facilitating, learning and supplementing the efforts of each other, rather than the general impression of examining, investigating and criticising each other's activities. The negative impression of corruption, inefficiency and poor governance seriously undermined accountable and effective institutions in the country. Monitoring, efficiency and service delivery could only be guaranteed through trust and confidence building of the community on the overall system, which was widely accepted by all stakeholders in Mansehra via the monitoring and evaluation mechanism.

6.15 Utilisation of local and external resources

DRR is a cross-cutting and complex issue which requires political commitment, public understanding, scientific knowledge, responsible development planning, people-centered early warning system and disaster response mechanism. A multi-stakeholder platform, under DDMA, committed to consolidate and pool knowledge, skills and resources required for disaster risk reduction.

DRM is a complex, complicated, interlinked and interconnected discipline requiring a multi-dimensional approach, a huge number of expert human resource, technological innovation and resource management. District and local governments lacking on technical, human and financial resources were unable to deliver services to the community according to the mandate of the organisations. DPMP realising the needs and gaps in resources, decided to adapt innovative approaches for optimum utilisation of existing resources and to minimise dependency on external resources.

6.16 Current status of DRM in Mansehra

Mr. Anwar Sherani (DDMO Mansehra) shared the present status of DRM Model Mansehra after the exit of GIZ enabled support from the district, and said that he highly appreciated the efforts of GIZ for building the capacity of District Disaster Management Unit Mansehra. He further added that:

"The exit of GIZ from the district was premature. It was too challenging for district government to fill the gap at a stage when the efforts made by GIZ were rapidly flourishing. The status of DRM Model Mansehra is presently not as good as it was in August 2010, when DPMP was withdrawing its support from the district. Being aware of the district government's strong reservations, the District Government Mansehra took up the matter with GIZ Management to extend its support until the GIZ Governance Programme could takeover the DRM Model of Mansehra for sustainable transformation. DDMU Mansehra has been facing the challenges of capacity and capabilities for maintaining this unique DRM Model. DDMO is pre-occupied with many other assignments as well. I appreciate the voluntary commitments of search and rescue

team members that upheld the team spirit without district government's support. But having no provision for fuel for the rescue vehicle and movement of rescue team, how could the DRM Model be maintained?"

The present status of DDMU is not encouraging. This is again a lesson to understand how a single push on the part of district government will bring positive change in the overall system. Evidence based learning in case of DDMU Mansehra indicates that the noteworthy contribution and effort made by previous district and local governments and scores of other actors during 2008-2010 are diminishing. It is a matter of accountability, transparency and responsibility that will ensure sustainable development as well as maintain disaster resilience in the community. If the same attitude continues in the government system, none of the investment could be productive and sustainable at any level across the country.

6.17 The cost effectiveness of the DRM Model

DPMP was a cost-effective and result-oriented project. Administrative and operational costs of the project stood at just 15 %, while the programme cost accounted for the remaining 85%.

A very small but smart team of professionally competent and dedicated members consisting of Project Coordinator, Administration and Finance Officer and Driver was engaged with the project. The total estimated cost of the project was 40 million PKR or 0.4 million USD. The efficiency and effectiveness of the project was an account of inspiration for stakeholders. People who were directly or indirectly involved in the project planning and implementation processes, highly appreciated the productivity even after 2 years of the exit of the project. The purpose and objective of the project was optimum utilisation of local resources for maximum productivity, which was achieved.

Human resource mobilisation at local level for emergency response, localised practical simulation exercises and general coordination meetings did not have any cost bearing to the project or to DDMA. The participating partner organisations shared the cost of above activities on rotation basis. Specialised trainings for search and rescue team, focal persons training on disaster risk reduction, integration of DRR and DRM into development planning, international trainings of district and local government officials were the interventions that had cost implications for DPMP.

MoU between DPMP and ERRA was signed for integration of CBDRM project into district and local governments disaster response management system. UNDP supported DPMP for provision of equipment and facilitation of training for search and rescue team. If local resources would have not been used wisely, the cost of the project for undertaking these activities might have been 7 to 10 time higher than the actual utilisation.

6.18 Essential elements for rolling-out of the DRM Model Mansehra in other districts

Local government entities, especially the MCs, line departments, non-government organisations and communities represented through organised working groups are the key players of a successful DRM Model. Following are some of the key elements which are relevant for scaling-up and rolling-out of the DRM Model Mansehra in Khyber Pakhtunkhwa (minimum financial and institutional conditions).

a. One of the major and vital characteristics is a dynamic leadership. One who will lead the process of rolling-out the model in other parts of Khyber Pakhtunkhwa. The leadership must have professional competencies in disaster risk management, resolve to work hard, dedicated to the purpose of disaster management and sincere with the mission of serving communities. This simple characteristic and

formula, as a universal truth, has worked in many cases and will continue to work anywhere in the world

b. One of the most challenging tasks for disaster management practitioners has always been bringing high-tech disciplinarians and multi-agency professionals from national and international development organisations together with the kingship of bureaucracy and local communities on a single platform

c. Another factor is to get the work done with consensus and participation of all stakeholders, which requires relentless efforts, fortitude for disaster risk reduction and multi-resiliency of the communities

d. Another important area is the application of top-down and bottom-up approaches simultaneously and concurrently at all levels of intervention. This will influence the district leadership to take the ownership of the project and encourage the decision makers at the provincial level

e. Tips used in case of DRM Model Mansehra for exposure and study tours of provincial and district heads to national and international events have also worked well

f. DRM Model Mansehra is a very dynamic and flexible system which could be readily updated in context of changing scenarios and evolving circumstances

g. 100 hours training modules (from basic to advance level) on DRR and DRM for district and local governments officials need to be developed. Employees of public sector organisations should be bound to attend these trainings (mandatory)

h. Key performance indicators tied to the performance of officials in trainings and demonstrations should be a measure of promotion to the next level

i. In addition to existing promotion criteria, 40% marks should be allocated for disaster risk management related performance of the officials for next step promotion. At least 70% of the total marks should be fixed for promotion consideration

j. All officials must undergo one-week compulsory practical training with Punjab Emergency Services, Civil Defense Department or PRCS

k. Entitlement of annual increments should be linked with refresher trainings in the areas of DRR and DRM

l. PDMA should influence Provincial Government to issue notification, initially for the conflict zones and later on to be extended throughout the province. This is the most cost-effective way of building the capacities of employees of local government institutions and public sector organisations

m. NOC should be issued only to those NGOs having a qualified disaster management focal person who has undergone a compulsory course of 100 hours. This is another way of standardising DRM training for all the actors at district level

n. An important aspect, missing from the existing model, is intervention with media and politicians. This aspect can further accelerate the pace of promotion and ownership of DRM across the province

o. A multi-stakeholder SWOT analysis that takes into account capacities of district and local governments and other actors will supplement the efforts of DDMUs in the province. A consolidated resource mapping will further strengthen the capacity and capability of DRM organisations

p. Assessment of hazards, threats and vulnerabilities will indicate the gaps to be filled through the DRM Model. The strength of existing resources (physical, social, intellectual, material, financial psychological, cultural and behavioral)

will be compared with the existing and anticipated natural and human induced vulnerabilities to understand and plan for short and long term interventions in the areas concerned

q. Replication of the cost-effective DRM Model in the conflict area will articulate the vision of PDMA to achieve sustainable social, economic and environmental development in the targeted areas through reducing risks and vulnerabilities, especially for the poor and marginalised groups, by effectively responding to and recovering from the impact of disaster(s)

r. Strategies encompassing low-cost solutions reflect the degree of sustained budgetary commitment that can realistically be afforded by DDMU, PDMA and NDMA after the exit of GIZ support. This will equally promote and advocate the integration of DRM and DRR into the development policy at all levels of interventions

6.19 Lesson learned and recommendations for scaling-up DRM Model Mansehra

Lessons learnt can teach us which aspects worked well while which ones needto be focused on. In other words, what went wrong and what could be done to overcome similar challenges in future interventions. Regarding DRM Model Mansehra, following are some key lessons that deserve a specific mention:

- A leader with wisdom, innovation, intellect, dedication and commitment will bring a greater change in transformation of the society through changed behaviour in disaster perception, which has been seen in Mansehra
- People are the best judge who follow the actions not the words. One has to be honest and committed with the mission and mandate
- Respect people, in return, they will respect you. People, by nature, are peace loving and opposing actions make them respond in positive or negative manner
- Trust and confidence building process takes time, however, actions, deeds and practices will strengthen the conviction of the society and the system to work towards a shared mission
- Transparency, accountability, simplicity and commitment are some of the best tools for motivation, mobilisation and acceptance of any project by the community
- People are flexible to accept changes. This strength can be used in case of multi-dimensional interventions with the communities for bringing sweeping changes in their socioeconomic outlook which makes them resilient to disasters
- Approaching the communities, living with the communities, understanding their socioeconomic disparities and working with them for sustainable development were some of the best practices for the DRM Mansehra Model team during its interventions in Mansehra
- Disasters should be viewed no longer as extreme events created entirely by natural forces but as unresolved problems of development. It is now widely recognised that risks unmanaged for a long time lead to occurrence of disasters
- Volunteer system without government support will not be effective and sustainable. Building trust, confidence, respect, commitments and patronage will be required on part of government for effective volunteer system
- DRM needs to be kept and based within disaster specific government structure but it will be successful with the benefits of widespread participation of local communities and key stakeholders i.e.

non-government agencies and line departments

- Ownership and commitment of district government for DRR and DRM activities has become a key area for national and global commitments. Without the practical involvement, cooperation and support of Deputy Commissioner, Assistant Commissioner and District Disaster Management Officer, the system shall not be effectively operational
- District government's patronage is critical for raising awareness, mainstreaming DRR into development planning and maintaining emergency stockpile at community level
- Without professional competency, dedication and commitment of DDMOs, DDMUs will not be able to deliver critical DRR and DRM services to the community. DDMO, once posted for the position, must stay for a minimum time period of 3 years. In the meantime, alternative leadership should be developed for replacement
- PDMA, while adapting DRM Mansehra as a Model for replication in other parts of the province should re-initiate and re-activate the activities of DDMU Mansehra in the way it was functional two years ago. The learning should also be used to support the District Government Mansehra in scaling-up
- DRR should be integrated into development planning at all levels, by all actors - from union council to district administration
- Search and rescue team and emergency response team should be linked strongly to rolling-out disaster mitigation strategies in the districts. Refresher and regular trainings must also be ensured
- Whether a disaster is major or minor, locally adapted coping and survival strategies will enable the communities to respond to the situation long before external help arrives
- The burden of DRM Model Mansehra was too large for the district government due to its scarce resources. However, the District Government Mansehra considered continuing such initiatives to be its social responsibility. It has always been a challenge to make such initiatives successful and for that DDMUs will be requiring active contribution from PDMA

6.20 Conclusion and way forward

- While the government is committed and work has already begun on integrated policy formulation, the road ahead is long and arduous. Serious efforts from all stakeholders should be presented in order to achieve real progress in the realm of DRM and DRR
- Isolated pockets of efforts must be mainstreamed for scaling-up and rolling-out
- A core group including sectoral departments, such as, local government agencies, civil society organisations, private sector comapnies, non-government outfits, PDMA, NDMA, Ministry of IT, Higher Education Commission and UN Agencies must lay out a long-term roadmap to serve as monitoring agents to enure implementation
- Without a cohesive and integrated effort, small pockets of activities and lessons will never be able to benefit the disaster prone people of Pakistan at a wider scale
- Government should generate the capacity of its institutions, organisations and citizens to embrace and engage knowledge and technology for employment in various avenues of

life. Once this has been achieved, a culture of safety becomes the driving force for future disaster risk reduction and promotion of risk perception. The impact of such an approach and action has both socioeconomic and environmental effects, as risk reduction becomes a daily life tool rather than simply a gadget-based fascination for the people

- Pakistan has never had a strategy nor comprehensive policy that focused on creating risk reduction and resilience culture on an ongoing basis in line with the changing socioeconomic, ecological, technological, geological and environmental scenarios. The need for making such policy should be taken up by all the stakeholders as a critical area of interest and action
- For promotion of DRR and DRM, perhaps more incentives for climate change adaption and safety culture should be offered to the communities
- Awareness raising, knowledge sharing and capacity enhancement on DRR and DRM should be presented to the communities. Local government leaders, who are primarily responsible for safety and protection of the people of Pakistan must take the initiative of creating innovative platforms for larger groups to inspire discourse and instigate discussion for change in risk perception
- Change is already occurring. It is only a matter of time for the government to adopt such strategy that will ensure resilience of the people of Khyber Pakhtunkhwa
- The importance of community based disaster risk reduction measures must be incorporated in sectoral and district level disaster management planning. Scientific findings must be compared with indigenous knowledge and people should center DRM and DRR perceptions to find out workable solutions
- It has to be realised that an innovative knowledge base for disaster risk reduction can only be achieved by cultivating, nurturing and retaining top talent in the bureaucracy, civil society organisations and community volunteers. This talent pool must include youth, scientists, engineers, designers, writers, businessmen and women who serve as sources of risk reduction and sustainable development. Their capacities in the areas of DRR and DRM need to be enhanced sustainably
- Unless Pakistan is positioned both locally and globally as an innovative and technologically advanced nation, it will never be in a position to become a talent magnet and to retain its own creative human resource base

In order to fulfill demand of risk reduction and management in all aspects of life, the Government of Khyber Pakhtunkhwa must dedicate and mobilise its resources and it must fuel critical change throughout the province with increased transparency, accountability and good governance, for effective service delivery to the people.

References

Disaster Management - Working Concept
Published by: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Internet: http://www.giz.de

How to make the cities more resilient
To access the handbook, please visit: www.unisdr.org/campaign

Words Into Action: A guide for implementing the Hyogo Framework
For further information, please visit: www.unisdr.org/iatf

Participants Handbook: Workshop on role of development instruments in disaster resilience development
National Disaster Management Authority (NDMA), Goverment of Pakistan
United Nations Development Programme (UNDP), Pakistan

Community-Based Disaster Risk Management for Local Authorities
Asian Disaster Preparedness Center (ADPC)
For more details, please log on to: www.adpc.net

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