SITUATIONAL ANALYSIS OF INSTITUTIONAL DISASTER RISK MANAGEMENT (DRM) IN THE ERSTWHILE FEDERALLY ADMINISTERED TRIBAL AREAS OF PAKISTAN

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thesis titled

"SITUATIONAL ANALYSIS OF INSTITUTIONAL DISASTER RISK MANAGEMENT IN THE ERSTWHILE FEDERALLY ADMINISTERED TRIBAL AREAS OF PAKISTAN"

submitted by

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has been accepted towards the partial fulfillment of the requirements for the degree of

Master of Science in Disaster Management

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ACADEMIC THESIS: DECLARATION OF AUTHORSHIP

I, Ismail Khan having Registration No.00000148574, declares that this thesis and work presented in it are my own and this thesis has been generated by me as a result of my own original research on**"Situational Analysis of Institutional Disaster Risk Management (DRM) in ErstwhileFederally Administered Tribal Areas (FATA) of Pakistan"**

I affirm that:

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To

THE PEOPLE OFERSTWHILE FEDERELLY ADMINSTERED TRIBLE AREASOF PAKISTAN

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ABSTRACT

The last decade of the century has seen an accelerated rate of the climatic changes resulting in a wave of hydro-meteorological disasters globally. The earth's internal and external dynamics have also been active resulting into mega earth quakes and other geological disasters. Pakistan because of its extremely diverse geography, ranging from snowcapped mountains to plains, plateaus, deserts and coastal areas, is hence facing a range of climatic and geological like earthquake, flooding, drought, tsunami and cyclones. Besides, the country also faced human induced crises like dislocation and wars. Federally Administered Tribal Areas (FATA), currently the Tribal Districts of Khyber Pakhtunkhwa, have not only faced a wave of extremist militancy and conflicts but also has felt an array of natural hazards like extensive rains, floods (flash & riverine), drought, desertification and earthquakes during last one and a half decade. Counter insurgent operations resulted in mass displacement from the area and after clearance and peace restoration the area is now a days passing from the institutional and social transformation and reforms.

In this pretext the institutional situational analysis of disaster risk management wascarried out by analyzing the qualitative data obtained from the primary sources by using judgmental and snow ball data sampling techniques. Data was collected through a set of questionnaire while using techniques like Focus Group Discussions and Key Informant Interviews etc. The data was analyzed and presented by using different data presentation techniques and software. The results were analyzed to evaluate the prevailing hazards, to assess and identify the gaps in the institutional capacity and to ascertain the knowledge and practices in order to ensure the effective Disaster Risk Management in the study area. The information obtainedweretriangulated and validated with databases of different governmental departments of the area. Finally, the research findings and conclusions lead to institutional short, medium and long-term Disaster Risk Management interventions which would help strengthen the Disaster Risk Management system in the newly merged tribal districts of Khyber Pakhtunkhwa.

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AHP	Analytical Hierarchy Process
BHUs	Basic Health Units
CADRE	Community Action for Disaster Response
CCA	Climate Change Adaptation
DDMA	District Disaster Management Authority
DDMUs	District Disaster Management Units
DDRT	District Disaster Response Team
DEOC	District Emergency Operation Center
DM	Disaster Management
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
FATA	Federally Administered Tribal Areas
FDMA	FATA Disaster Management Authority
FGDs	Focus Group Discussions
FWRDP	FATA Water Resource Development Project
GoP	Government of Pakistan
HCL	Hydro Chloride
HFA	Hyogo Framework for Actions
JICA	Japan International Cooperation Agency
KIIs	Key Informant Interviews
KP	Khyber Pakhtunkhwa
MDGs	Millennium Development Goals
MDTF	Multi Donors Trust Fund
NDMA	National Disaster Management Authority
NDMO	National Disaster Management Ordinance
NDMP	National Disaster Management Plan
PaRRSA	Provincial Reconstruction, Rehabilitation and Settlement Authority

PCNA	Post Crises Need Assessment
PHED	Physical Health Engineering Department
PRC	Pakistan Red Crescent
PWDs	Persons With Disability
T.B	Tuberculosis
TDPs	Temporarily Displaced Persons
TESCO	Tribal Electric Supply Company
THQ	Tehsil Head Quarter
UN	United Nations
UNDP	United Nations Development Program
UNISDR	United Nations International Strategy for Disaster Risk Reduction

Chapter 1

INTRODUCTION

1.1 Background

The last two decades of the century has seen an accelerated rate of the climatic changes resulting in a wave of hydro-meteorological disasters globally. The earth's internal and external dynamics were also been activeresulting in mega earth quakes and other geological disasters(Salehyan & Hendrix, 2014). Pakistan by the virtue of its extremely diverse landform features, ranging from snowcapped mountains to plains, plateaus, deserts and coastal areas, is hence facing a range of climatic and geological shocks. By scrolling down the historical records, it is indicated that the country has experienced a wide range of disasters, either induced by men or nature itself, among which earthquake, flooding, draught, tsunami and cyclones are common(Rahman, Khan, & Shaw, 2015). The changing climatic pattern is also likely to aggravate the seriousness of this problem in coming years(Dore, 2005).

Like other parts of Pakistan, the Federally Administered Tribal Area (FATA) currently known as the Tribal Districts of Khyber Pakhtunkhwa province, has not only faced a wave of extremist militancy and conflicts but alsofelt an array of the natural calamities like extensive rains, floods (flash & riverine), drought, desertification and earthquakes during last two decades(FDMA, 2016). Counter insurgent operations resulted in mass displacement from the area. After clearance and peace restoration FATA is now a days passing from institutional and social transformation. Disaster Risk Management (DRM) situational analysis on institutional levelhas been carried out by analyzing the data obtained from the primary sources.

Determining the current state/situation of the institutional level DRMis act a base line and it is more crucial for the planning purpose and can be used as a good tool for informeddecision-making process for the relevant disaster management authorities. Critical review of the Pakistan's National Disaster Management Plan 2012-2022 (NDMP)revealed the situational

analysis of the existing mechanisms, structures, opportunities and threats. In this connection the given plan has presented a scientific and logical overview of the existing hazards and vulnerabilities of the country. Furtherance, all the DRM actions identified are based on the country situational analysis(NDMA Pakistan, 2012).

1.2 Rationale of the Study

After 25th Amendment to the Constitution of Pakistan made on 27thMay 2018,FATA has been merged with Khyber Pakhtunkhwa province of the Pakistan. As part of the merger, FATA Disaster Management Authority is going to merged with Provincial Disaster Management Authority of KP. Disaster Risk Governance/Management has largely remained untouched in the realm of the risk mitigation and risk management. This is because of the heavy response, relief and early recovery operation in the area after the return ofTemporary Displaced Persons (TDPs) which were displaced as a result of the war on terror. District Disaster Management Units (DDMUs) in the newly merged tribal district still needs assistance to reach a level where it can work independently because of a very little focus given by the government to guide and equip the stakeholders which can enable them to mitigate the risk, adapt to the changing climate and prepare for disaster response.

Institutional DRM situational analysis will help the government to engage the stakeholders, and other interest groups like line departments, development partners and communities to plug the gaps existing in the system. This study place special emphasis on ensuring it is cost-effective and sustainable in the local context and ready to be integrated and embedded within the disaster management systems and processes. The DRM situational analysis provides the analytical base for developing a strategic plan or road map to bring up the newly merged districts up to the level of other districts and even beyond. This helps in setting DRM priorities and recommendation to achieve a robust DRM system for the resilience ofTribal Districts of KP. Primarily, this study can be considered as a planning tool which is analyzes the current capacities and practices around DRM by using various socio-technical approaches in the light of the changing context of the area.

1.3 Research Gap

Different assessments and surveys have been conducted in FATA during the post crises situation and TDPs return by different governmental and non-governmental bodies in order

to cater the need for decision making for early and protracted relief and recovery operations for the restoration of services and recovery of local economy sectors. Initially a study titled Post-Crisis Needs Assessment (PCNA) was carried out, which was commissioned by the Government to assist them in crisis management and mitigation.The financial and technical support of the said study was provided by the Asian Development Bank (ADB), European Union, World Bank, and United Nations. The report finding were mostly focused on nine areas for improvement in which the disaster risk assessment was missing(Goverenment of Pakistan, 2010). Later on, the in-depth Food Security and Livelihoods Assessment was carried out by the Food Security Cluster of Pakistan with leading role of the United Nation World Food Program in the TDP's return households of FATA during May 2017. National Disaster Management Authority (NDMA) of Pakistan and Pakistan Bureau of Statistics jointly took lead of the given survey from the governmental side(NDMA Pakistan, 2017). The study findings were mostly associated with food security and livelihood, although they have considered the natural hazard dimensions affecting the food chain and livelihood options.However, it was not provided thein-depth investigation to find solutions for risk management and risk mitigation in the concerned areas.

Keeping in view the analysis of the existing research, this is a prominent need to carry out an in-depth situational analysis of the institutional DRM in the area and to set a baseline for future planning and interventions. This study isfocusing on the situational analysis of the Institutional DRM in theTribal Districts of KP.

1.4 Research Objectives

The research was based on the following objectives;

1. Review of the disaster management policy framework in erstwhile FATA context to understand the role of different agencies or institutions.
2. To carry out situational analysis to ascertain the hazard profile, and to assess the existing institutional capacities,
3. To identify key opportunities, driving forces, challenges/gaps to operationalize the institutional mechanism and actions for DRR/M.

1.5 Scope of the Study

Keeping in view the data and research gap related to DRM and Climate Change Adaptation(CCA) in the newly merged tribal districts of KP, a model study for situational analysis of institutional DRM and CCA is crucial to set a base line for the existing systems and phenomena related to the DRM in the research area.

This research thesis is primarily based on the qualitative data collection and data analysis techniques.The data was collected through Focused Group Discussions (FGDs) and semi structured Key Informant Interviews (KIIs) of the tehsil, district and provincial level government officials. The data collection was carried out in all the seven merged districts (the than Agencies/Frontier Regions of FATA) of KP.

This study considered dimensions like hazard profiling of the given districts on tehsil level by considering natural as well as human induced hazards and using Analytical Hierarchy Process (AHP) techniques. The study also investigating the existing DRMpractices and hazard specific Disaster Risk Reduction (DRR) measures of the line agencies. This study is also trying to investigate the current and future sectorial development plan of the line agencies to explore the practice of earlywarning reception and dissemination at departmental levels. Another dimension considered by this study is to investigate the existing capacities of the line agencies/district and tehsils authorities with indicators like assets (movable/non-movable) available with departments, operational capabilities and the inclusiveness for persons with disabilities and other vulnerable segments of the society. All the given analysis leads to identify the gaps available at institutional level in the districts. Lastly, the study tried to find out actions and recommendation for each department forDRR and improved resilience. These actions areeither structural or non- structural with a priority of need for short term, medium term and long terms.

1.6 A Brief on the Study Area- (Erstwhile FATA)

The erstwhile Federally Administered Tribal Area (FATA) and the currently Tribal Districts of Khyber Pakhtunkhwaare spread over 27,220 sq. km. Khyber Pakhtunkhwa (KP) and erstwhile FATA makes two parallel arcs along the west bank of the Indus as it runs southward with the western edge as the international border with Afghanistan. According to

the 2008-09 estimates, FATA's total population touches 4.02 million. Population's vast majority resides in rural areas with agriculture as the mainstay of the economy supported with a subsistence-level use of natural resources(MDTF , 2010).

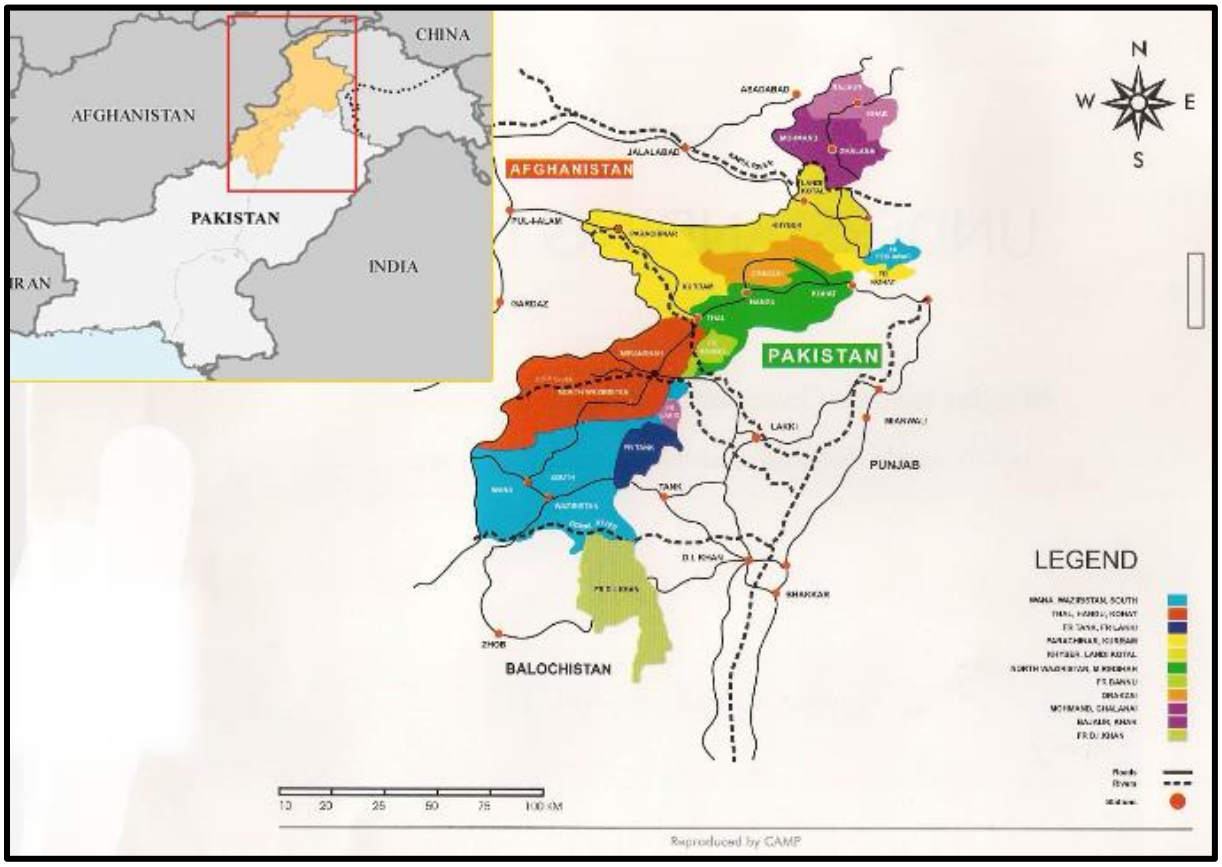


Figure 1. 1: Administrative map of the Erstwhile FATA, Pakistan *(Shinwari, 2010)*

Administratively FATA consists of seven semi-autonomous agencies (the administrative units). These are North Waziristan, South Waziristan, Kurram, Orakzai, Khyber, Mohmand andBajaur,.In addition, the FATA included 'Frontier Regions' that adjoin the districts of Marwat, Tank, Dera Ismail Khan, Peshawar, Kohat, Bannu andLakki. Under 1973 Constitution of Pakistan FATA was given a status to be governed by the FederalGovernment (President of Pakistan) through the Governor of Khyber Pakhtunkhwa by the law of Frontier Crime Regulation (FCR). 1973 constitution does not allow the tribesman to participate in the political process, while latter in 1996 the Adult Franchise Act was extended to FATA and the tribes diaspora were given the rights to vote for the Parliament of Pakistan(Shinwari, 2010). Through 25thAmendment to the constitution of Pakistan, FATA was merged with KP.

(UNDP Pakistan, 2018) compiled a report titles “Human Development Indices and Indicators: 2018 Statistical Update” depict that FATA has consistently been ranked as the most deprived/underdeveloped area in Pakistan against the key sets of human development indicators including health, education, water & sanitation and housing etc. FATA is a socio – economically deprived region as its per capita income is less than half of the national average of $ 500 and sixty percent of the population lives below the national poverty line. Per capita development schemes are reportedly one tenth of the national average. Literacy rate averages 17.42% which includes 30% for male and 3% for female compared to national average of 56%. FATA has one doctor per 6272 patients compared to the national average of 1359. Its latent poverty stands exacerbated by the violence prone environment that has characterized the region since early 1980s.

1.7 Structure of the Thesis

This thesis report consists of five chapters that are briefly discussed as:

Chapter 1 provides a general introduction of situational analysis and justifies its need in the given context as per the identified gaps in the research and practices. The chapter further set the objective and scope of the research.

Chapter 2 presents a detail of the literature reviewed for the research to identify gap and the status of existing literature.

Chapter 3 illustrates the adopted methodology for conducting the institutional level situational analysis of DRM.

Chapter 4 covers results and discussion mad by analyzing the collected qualitative data. In this chapter various hazards have been elaborated, profiled and raked at tehsil level. The chapter give an insight to the existing capacities of the departments for DRM and the gaps identified at institutional levels.

Chapter 5 provides recommendation to plug the identified gaps through short, medium and long term DRR interventions at institutional levels.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter cover the literature review related to situational analysis, literature related to the study area and literature related to the methodology I adopted for carrying out this research. Various sources were cited including research papers, research thesis, assessments, governmental reports, policies, constitutional acts and other research done by the national and international agencies. Furthermore, the research also reaches the disaster losses database present either nationallyor internationally.

2.2 DRM& International Obligations

The concepts of Disaster Management were got familiar in the scientific community and practitioners in early 70s, which were evolved and with greater realizationoverthe times(Mercer, Kelman, Taranis, & Pearson, 2010). The needs were felt for a paradigm shift from reactive to proactive approaches while analyzing the pattern, frequency, intensity and impacts of the natural disasters. As a result, DRR emerged as a crossing cutting discipline and has grown among the stakeholders to help them in mitigating or averting the worst consequences of disasters. During the past few decades, DRR policies, strategies and plans considers this as a systematic process for reducing vulnerabilities and enhancing resilience of the systems against the untoward events (UNISDR, 2009).

Institutional set up for the given discipline evolved with a timeline like in 1971 United NationsDisaster Relief Office (UNDRO) was established in Geneva through a general assembly resolution. The purpose of this institute was to examine natural disasters scientifically and to assist governments in providingadvices on risk management and mitigation and to channelized the financial assistance to the disaster affected countries.Later in 1992, Department of Humanitarian Affair (DHA) was established and UNDRO was merged in it. DHA was reorganized as the Office of the United Nations Coordination of

HumanitarianAffairs (UNOCHA) in 1998(Rahman, Khan, & Shaw, 2015).

UN General assembly designated the decade of 1990-1999 as International Decade for Natural Disaster ReductionIDNDR with an aim emphasize the reduction in human losses and socio-economic disruption causes by the disasters through a UN Resolution. The implementation and appraisal were assigned to a newly established Secretariat at the UNOffice in Geneva which converted to International Strategy for Disaster Risk Reduction (ISDR) in 1998. World Summit on Sustainable Developmentwas held in 2002 at Johannesburg which give a way for DRR to be a cross cutting theme for the development agenda i.e. MDGs 2002(UNISDR, 2009).

After the 2004 deadly Indian Ocean Tsunami the UNISDR call a world Conference DRR from18-22 January 2005 in Kobe Japan, where discussion was made on the deadliest aspects of extreme events and the call for DRR. The discussion was comprehended with adaptation of a non-binding agreement of the stakeholders as Hygo Framework for Action (HFA 2005). HFA has provided the five priority areas for actions for the stakeholders(UNISDR, 2009). In 2015, HFA was reviewed by the stakeholders in Sendai, Japan and based on the finding and progress a new framework agreement was adopted by the stakeholders in form of Sendai Framework for Disaster Risk Reduction (SFDRR 2015). SFDRR identify four priorities and give greater emphasis on risk reduction in the context of sustainable development targets identified as SDGs (Kelman, 2017). Pakistan, as member state of the United Nations has remained the signatory of the aforementioned improvements in the field of DRR and always been obliged to comply the commitments made at international platforms of nations(Ahmed, 2013).

2.3 Disasters in the Context of Pakistan

According to the International Disasters Database (EM-DAT) of the Center for the Research on Epidemiology of the Disasters (CRED), Pakistan has faced a total of 35 extreme events during 2001–2018 (18-year span), 80,520 human lives were lost out of which 74,484 attributed to the earthquake followed by 5722 by the flood and 209 fatalities by the landslides. Floods were recorded as more frequent disaster, however in term of intensity earthquake surpasses all other disasters and the massive 2005 Kashmir earthquake attributed

more than 90% 0f human losses in the disaster history(EM-DAT, 2017).

Pakistan has exposed to a number of adverse natural events reportedly are earthquakes, cyclones, tsunamis, floods, landslides, droughts, Glacial Lake Outburst Flooding (GLOF), avalanches. Besides, the country has also felt the human induced disasters and humanitarian criseslike the internal displacements of communities, terrorism, transport accidents and industrial accidents(NDMA Pakistan, 2012). The situations have been further aggravated due to rapid industrialization, population increase, growing and unplanned urbanization, inhabitation in risk prone areas, encroachment of flood plains and visible shift in climatic patterns. A reactive emergency response approach remained chiefly applicable to deal with these calamities until earthquake 2005 exhibited the need for adopting a systematic & proactive approach towards disaster management(Ahmed, 2013).

Table 2. 1: Disasters timeline (history) of Pakistan (1998-2015)

#	Timeline	Historical Disastrous Event
1	2013	Nearly 1.5 million people were affected by the **Flash Flood**, 80,000 houses were damaged, and 1.5 million acres crops were affected. 234 people were died and 4,100 were displaced and temporarily sheltered in 408 relief camps.
2	2012	05 million people were affected by **Floods**, by inundating 14,270 villages in the low laying areas of the country.1.1 million acres of cropland were affected. 270,000 people were displaced and housed in 478 established relief camps. About 465,000 houses were damaged.
3	2011	Sindh province of the country were affected by the **Floods**which affected 22 out of 23 districts and claimed 500 lives. 72 % of the province total crop was affected grown on 2.2 million ha cropland.
4	2010	Mega Flood of the region were triggered as a result of monsoon rainfall. 300 mm rain were recorded over a 36-h period. Rivers were swelled and caused the history's worst flood in the country which submerged 20 % area of the country.
5	2009	In Karachi the Rainfall recorded at Masroor Airbase observatory as 143 mm on 18th and 19th July which leads to **Urban** and **Flash Flooding**. The previous heaviest rainfall in the history was 207 mm (1st July 1977)
6	2007	**Heat waves** were gripped Pakistan during June 2007 which leads to an increase in temperature up to 48 °C on 9thJune at Lahore. The temperature maxima, repeating the record of 78 years (June 1929)
7	2007	**Super cyclones**namely Gonu (02A) of Cat-5 and Yemyin (03B) of Cat-1 developed in the Arabian Sea during June 2007. The cyclone hit the Makran coast and the affect were felt in Pakistan and also in the adjoining countries.

8	2006	**Flooding** in Pakistan resulted in 185 deaths and a lot of damages to the assets. It was started in late July and end in mid-August during Monsoon rain spells. The rains also affected neighboring eastern Afghanistan by generating flood which claimed at least 35 lives.
9	2005	**Flooding** caused by the heavy rains were recorded in parts of the Balochistan, Khyber Pakhtunkhwa and Afghanistan during the month of March resulted in more than 30 fatalities in Pakistan
10	2005	Warm temperatures in the mountainous areas of northern Pakistan were recorded which resulted in accelerated snowmelt and causing **Riverine Flooding** in River Kabul, Swat, Kunar and **GLOFs** in Chitral.
11	2003	**Floods** resulted by the heavy rain and snowfall in month of February claim more than 60 lives in Balochistan province of Pakistan. **Flash flooding** events were also recorded and result in washing away parts of the roads and highways
12	2003	**Monsoon rains and Floods**affected around one million people in southern parts of Pakistan caused in 162 deaths mostly in Sindh province.
13	2003	A**Heat wave** caused by the maximum temperatures in the month of June. Highest temperature recorded was 52 ℃ at Jacobabad on 5thJune (normal highs of the month is around 44 °C)
14	2001	621 mm rainfall were recorded for a 10 hrs period in Islamabad on 23rd July and caused **heavy flooding** in Lai Nullah (River)
15	1998–2001	History's worst drought gripped southern parts of Pakistan and parts of surrounding countries

2.4 Institutional and Legal Framework of DRM in Pakistan

World nations had felt the need of legislation and legal system to be in placed at national provincial and local level which were iterated in the HFA 2005. The DRM legal system shall further institutionalize through strategies, institutional framework and plans. In this connectionradical changes notedin the institutional arrangements at the government level of Pakistan since 2005(Rahman, Khan, & Shaw, 2015).The major break troughs of the DRM system in Pakistan are;

2.1.1 HFA and Pakistan

UNISDR evolved in 1999 through a UN General Assembly resolution wich aimed to function as a secretariat and focal point for the implementation of the HFA targets in the world. The core mandated areas of the given new set up are the coordination for DRRand CCA, increasing investments for DRR/CCA, promoting resilience culture of cities,schools and hospitals, and strengthening the national and international culture for DRR/CCA. The UNISDR under the Kobe prefecture and HFA (2005–2015) introduced a paradigm shift from

reactive to proactive mode(UNISDR, 2009) .

Pakistan was one of the signatories amongst the 168 nations who endorsed theHFA. The National Disaster Management Authority (NDMA) Pakistanwas later on evolved as national platform and focal agency for the implementation, coordination, monitoring and reporting on HFA progress(NDMA Pakistan, 2012).

2.1.2 National Disaster Management Ordinance (NDRMO) 2006

Sequential to the HFA and the aftermath of 2005deadly Kashmir earthquake DRM Institutionalization started in Pakistan back in 2006 after the promulgation of National Disaster Management Ordinance (NDRMO) through a presidential order which paved a way for the establishment of dedicated DM agencies/authorities at national, provincial, district and local level(GoP, 2012b). Disaster Management Commissions were formed at national regional level as the apex forum of policies, strategies, plan and guidelines approval and the Disaster Management Authorities were established to assess and follow-up the directives of the commissions.

2.1.3 National Disaster Management Authority (NDMA) Pakistan

In connection of NDMO 2006, National Disaster Management Authority (NDMA) was establishedin 2007 as an apex body and national platform of stakeholders for DRM in the country. Under the NDMO (now Act), the National Disaster Risk Management Framework(NDRMF) was formulated by the NDMA in 2007 which outlines all the contours for the national, provincial, district and local level DRM mechanism(GoP, 2007).

NDMA Pakistan has formulated the National Disaster Response Plan(NDRP) during March 2010. The plan was considered as a manuscript which consolidate the comprehensive Standard Operating Procedures (SOPs)for emergency response at each administrative level. The plan also chalked out specific roles and responsibilities of all the main actors in emergency response(GoP, 2010). Inaddition, the newly emerged DRM system had found greater support from the collaboration of national and international partners. One UN DRM has been strengthened the newly merged system in terms of capacity building and institutional strengthening(UN Pakistan, 2015).

2.1.4 National Disaster Management Act 2010

The NDMO with necessary modification was discussed and passed by the parliamentin December 2010 and notified as an act titled as Pakistan National DisasterManagement Act (DMA) 2010(GoP, 2010). NDM Act 2010 providing base for the establishment ofnational disaster management system in Pakistan. Three tiers of the disaster management authorities were defined in the act to be established on national, provincial and district levels for disaster risk management and disaster risk management. The Act elaborates composition, functions and regulations for each tier of disaster management. It is also giving the details on measures to be taken by the government for disaster management, establishingNational Institute of Disaster Management (NIDM), establishing of national disaster response force, getting in place the National Disaster Management Fund with possible budgeting sources, procedures of audits and other offences and penalties.

2.1.5 Provincial/FATA Disaster Management Authorities

The DRM structure lineated in the NDM Act 2010 was also replicated at the provincial level as per the legal provisions provided in the given act. The provincial DRM hierarchy will be steered by the ProvincialDisaster Management Commission (PDMC) which is headed by therespective Chief Ministers of the province. Provincial DisasterManagement Authority (PDMA) will serve in the secretariat domain to perform all the disaster management related functions in the province. After 18th Amendment to the Constitution of Pakistan, Khyber Pakhtunkhwa contextualized the NDM Act 2012 with the required amendments.

The NDM Act 2010 was extended to the FATA region in 2010 by providing a project PC-1 based institutional arrangementsas FATA Disaster Management Authority(FDMA , 2012). Since inception the institute has managed a range of complex emergency because of the war-torn situation of decades in the FATA region, however, the institute did not achieve the due capacity in the realm of disaster risk reduction(FDMA, 2016).

2.1.6 District/Agency& Local Disaster Management Authorities

In the legal institutional domain of DRM in Pakistan the lowest tier considers to be the implementor of all the disaster management related operations is the District Disaster Management Authority DDMA. However, in case of FATA the Agency level disaster management authority is not existing. The function of the DDMO was performed by the

Agency Coordinators of FDMA(FDMA, 2016). Recently, after the merger of the regions with Khyber Pakhtunkhwa the DDMAs has been notified and supported with minimum structure.

2.5 Situational Analysis & Disaster Risk Management

Globally the DRM situational analysis is a set practice in the practitioners and researcher community to draw a base line for strengthening of the system at local, regional and community. There are a number of research studies are available on it from around the globe. Some of the examples are summarized below;

(Aka, et al., 2016) has carried out the DRM situational analysis at institutional as well as at community level in the Cameroon by selecting indicators related to hazards, vulnerabilities, capacities and other resilience indicators. They used the primary data collection techniques through random sampling and analyses the respondent information by using mixed method approach. Their study results in the resilience calculation and ranking of the different administrative units (regions) of the country. The areas scored high in the resilient indicators pertinent to disaster prevention like monitoring of hazard through early warning systems, outreach activities to build resilience in the communities and readiness level of the institutes to respond to the disasters like landslides, floods, gas explosions and volcanic eruptions etc. The study further gives detail of the laws relating to DRM in Cameroon.

Situational analysis of DRM gives a detail insight to the prevailing hazard. Hazard prioritization and geographical ranking performed on the respondents' experience of the events, and the analysis of past records. The ranking and prioritization performed on the perception of the respondent by using the Analytical Hierarchy Process (AHP) method. Hazard risk perception of the respondents and study participants is actually a calculation of the likelihood and consequence, which is estimated from the past experience (Kokangül, Polat , & Dağsuyu, 2013). The same methodology has been used by the (B., Yarrakula, & J., 2017) by taking some variables/parameters related to climatic extremes and noted the precipitation of the respondents. They manipulated the responses by using thedecision-

makingmethod of AHP. They reached to the conclusion that the manipulation is the percentage contribution of each variable of precipitation.

Situational analysis of the institutional DRM further explores the capacity assessment of the formal institutes in an area by using indicators related to the coping and adoptive capabilities to resist, respond and recover affectively in case of any untoward event. Researchers like (Milman , Bunclark, Conway, & Adger, 2013) tested six dimensions of the institutional capacitywhich are influencing the planning and implementation of adaptation activities in the Middle East, Mediterranean, and Sahel. Based on analysis they concluded that there is existing a large variation in adaptive capacity across the investigated area and within the institution. The research also highlighted the gap of capacity and recommended policy intervention on climate change adaptation policy interventions.

2.6 Situation Analysis of Institutional DRM in Pakistan

Institutionalization means the process ofestablishing a mechanism of the regular system, procedures and practice of an institution. (Jepperson, 1992) defined the institutionalization as “development of a regularized system of policy making.” And the concept of institutionalization in DRM is elaborated by the (Maqbool & Hussain, 2014) as responses to the disasters occurring onregularly basis are often institutionalized in the political system of Pakistan. His work investigates the historical evolution of various disaster institutions in Pakistan and the process of institutionalization of DRM. The study concluded with the findings that the reactive approach inherited in the institutionalization is not effective to lesson the material and financial losses. However, in recent past a marked progress has been made to shift focus toward the risk management and risk reduction. The paradigm shift was provided by the devastation made by the 2005 mega earthquake of Kashmir and Khyber Pakhtunkhwa.

Situational analysis of DRM in Pakistan was first felt as the new evolving system in the country envisages to achieve the sustainable social, economic and environmental development by reducing risks and vulnerabilities after promulgation of NDM Act 2010. NDMA, mandated to be a a national platform and authority for DRM and to undertake the system improvement initiatives for meeting the expected demands sufficiently. In this

connection Government of Pakistan requested Japan International Cooperation Agency (JICA) to help NDMA to carry out a detail situational analysis of the current state of affairs for DRM by the agencies and further to set the milestone and achievements with timeline and resources in form of National Disaster Management Plan (NDMP) which was completed in 2012 and get approved by the National Disaster Management Commission (NDMC) of Pakistan(JICA Pakistan, 2009).

To determine the current state of institutional and community level disaster risk management as a base line is more crucial for the planning purpose. NDMP by (NDMA Pakistan, 2012)has presented situational overview of the existing mechanisms, structures, opportunities and threats under the components of (i) Community Based Disaster Risk Management (CBDRM), (ii) Early Warning System (iii) and (iv) Human Resource Development for DRM in the country.Similarly, the main plan also presents a scientific and logical overview of the existing hazards and vulnerabilities of the country. In furtherance all the DRM actions identified are based on the country situational analysis.

2.7 FATA as a Hotspot for Humanitarian Crises

FATA on virtue of its strategic location, positioned with the Durand Line has always remained on top of the security agenda by the Pakistan, Afghanistan and the world power like United States and other. The socio ethnic composition of the tribal Pukhtuns, Poverty, difficult terrain, contested system of administration, cross-border tribal and ethnic connections and the growing jehadidiscourse are the challenges which verged the area into an epi center of the humanitarian crises over the past decades. Many conflicts unleashed in the past, resulting in deaths, injuries, traumas, dislocation and collateral damages in the area (Shinwari, 2010).

Insurgency and government counter-insurgency initiatives have led the war-torn people of FATA to extremely insecure and loose human safety net. About 5 million people were displaced from 2005 to 2015. The displacement has made the FATA communities more exposed to greater risks. The women, girls, children, aged people PWDshave been exposed which exacerbate the vulnerabilities of the given societal segments. Furthermore, the

displacement caused in the escalation of gender inequalities and violence against women and girls in the given fragile context(EASO, 2016).

Pakistani security forces have been able to restore law and order situation after defeating the counter insurgent elements in the area. In post conflict arena, the government has initiated a series of programs to reduce the risk of disasters that the people face in FATA, as well as ensure social security and safety of the return population of the displaced persons. The conclusion has drawn that there is a need to enhance the indigenous institutional capacity within the areas to address risks and vulnerabilities arising out of disasters(PPAF, 2012).

According to the(WFP Pakistan, 2017)report titled “In depth food security and livelihood survey of FATA returnees”, the food security situation of the returnee population in FATA remains fragile, mainly driven by limited food access as a result of limited livelihood opportunities, unstable and low level of income. By testing the two main indicators of food security i.e. food consumption and coping capacity they find that 24% of the return households are food insecure. The shelter condition of the area shows that majority of the population living in kacha houses and highly vulnerable to climatic and geological shocks. Poor health, hygiene, sanitation and community infrastructure further decreases the coping capabilities of the communities.

2.8 Institutional DRM in FATA

Erstwhile FATA has not faced the complex emergencies in past but unfortunately had/has been considered as one of the most ignored area of Pakistan. Disaster and damages recording data basis were not existed in the area, and hence many past disasters remain unreported. This isthe reason that the authenticated informationare not available at FATA Secretariat and on Agency/district level. Since inception in May 2010, FDMAhas introducedamechanism by deploying Agency Coordinators at each agency of the FATA. The aim of the said deployment was to report any disasters either natural or manmade to FDMA headquarter and to keep coordination with the agencies and stakeholders.

Erstwhile FATA was laggingbehind in all sectors in Pakistan like Education, Health, Livestock, Irrigation, Livelihood etc. Similarly, mainstreamingDRR in sectors were not even consider a task by the policy makers and planners. Inorder to bring FATA in line

withother areas in terms of DRM(FDMA , 2012). There are various reasons for lackof DRM initiatives some of which are:

- Lack of awareness among the stakeholders on disaster risk reduction and management.
- Non availability of fund for DRR and effective DRM.
- Exploitation of the natural resources without considering the sustainability.
- Development were/is not guided by the DRR mainstreaming in projects.
- Lack of Early warning systems at district and at community level.
- Inadequate coping and managing capacity of line departments to handle disasters.

Chapter 3

METODOLGY

3.1 Introduction

This chapter discussed the methodological framework adopted to carry out this study. The chapter also briefed about the research design, data collection tools and techniques, and data analysis and presentation. The research work presented in this thesis is using the qualitative research methodology. The participants and respondent interviewed belonged to government administrative/ and line departments at provincial, district and local level. Besides these, some of the national and international organization working in the research areas were interviewed and consulted for data collection.

3.2 Research Design

Conceptual methodological diagram of the study is given in figure 3.1 which summarizes the efforts taken to carry out the research and produce the desired results. This integrated and coordinated model was produced based on extensive literature review and field findings. Methodology applied for the situational analysis is described by the researchers in other parts of the world in different sectors. The applied methodology and the results obtained by this study are validated with the situational analysis carried out by (Rakesh, Shweta, & Omar., 2015) by adopting structured survey approach for data collection and analysis.

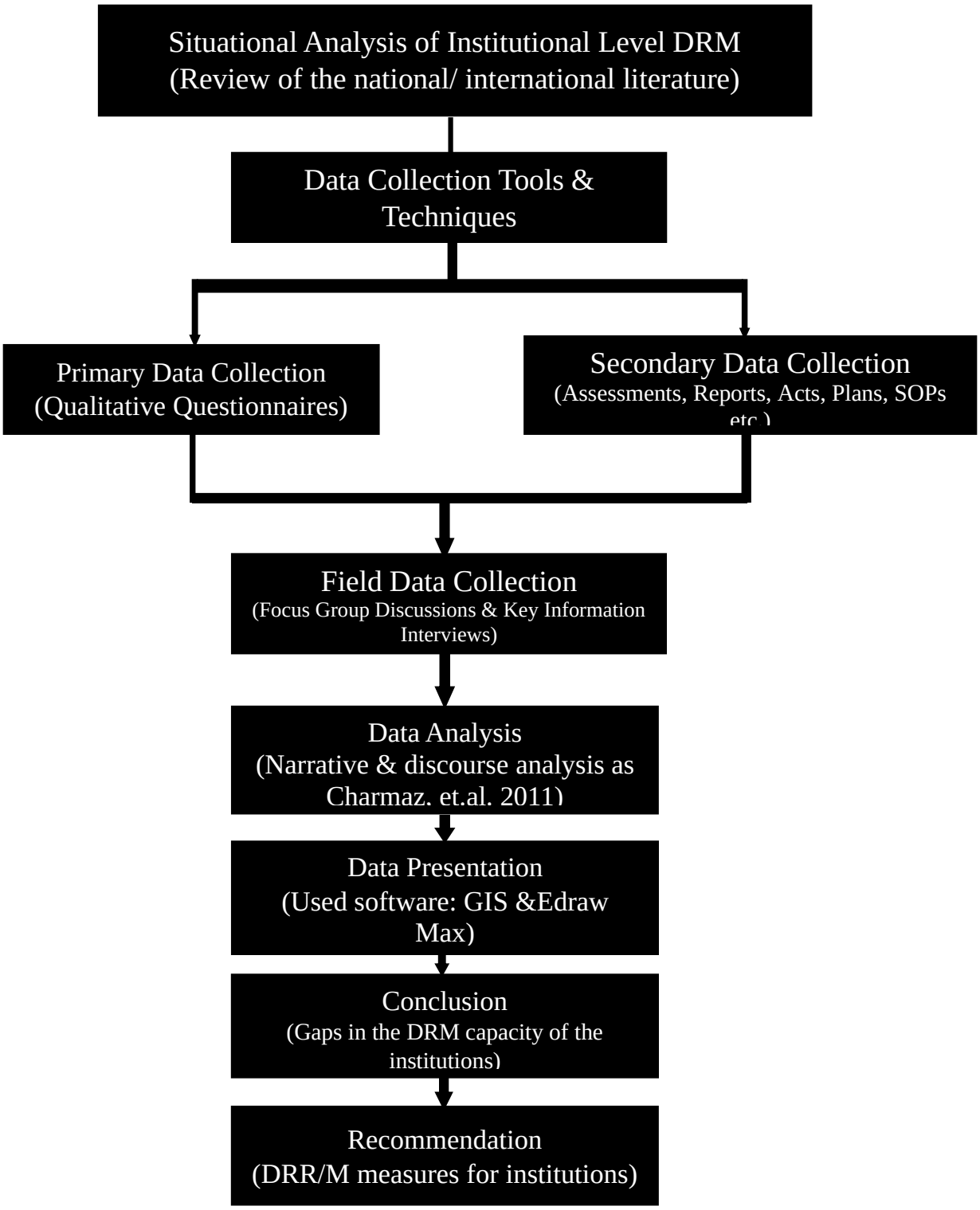


Figure 3. 1: Flowchart of the methodological framework of the study

3.3 Nature and Universe of the Study

The nature of the research conducted by this study is descriptive and analytical in nature. Qualitative data was collected from both,primary and secondary sources and hence the research will broadly be characterized as qualitative in nature. The data was mostly obtained through open-ended and conversational communication with discussion participants and interview respondents. The research further tries to investigate not only "what" people think but also "why" they think so. The research methodology implied here is further allowed us for an in-depth probing and questioning of the discussion participants and interview respondents based on their response. All the given characteristic helps me to reveal the behavior and perception of the stakeholders pertinent to the situational analysis of DRM at institutional level in the study area. The results obtained from the adopted method are more descriptive which help me to draw my inferences easily.

This study cover all of the tribal districts for data collection and analysis. The district with number of FGDs conducted and associated number of participants and respondents consulted are shown in table 3.1 below;

Table 3. 1: FGDs conducted with respective numbers of participants at 07 Tribal Districts of KP

Sr. #	Agency (Tribal District of KP)	No. of FGDs Conducted (Questionnaires filled)	No. of Stakeholders Consulted (Respondents)
1	Bajaur Agency/Tribal District	03	20
2	Mohmand Agency/Tribal District	03	21
3	Khyber Agency/Tribal District	03	12
4	Orakzai Agency/Tribal District	03	15
5	Kuram Agency/Tribal District	03	06
6	North Waziristan Agency/Tribal District	03	12
7	South Waziristan Agency/Tribal District	03	06

3.4 Research Methodology

Questioners were developed after the in-depth literature review on the given topic which help in the identification of the major contours and scope of the research. The given review and keeping in mind the scope of work helps to decide the sampling size and sampling techniques.

3.4.1 Sampling Size

The study used mostly the purposive sampling while in some places the snowball sampling techniques which are randomly selecting units based on experience and identified information sources. In the given sampling techniques selection of the particular section of the population (government officials) believed to yield samples that will give the best estimate of the parameter chosen for the situational analysis of DRM. Therefore, selection of this techniques leaves other segments (less informative) of the population with zero probability of inclusion. In the statistical and theoretical perspective, purposive samples are drawn from a population with smaller variance than the target population as described by the (Guarte & Erniel B. Barrios & Barrios, 2005).

3.4.2 Sampling Techniques

The following two types of sampling techniques were used by this research study.

3.4.2.1 Purposive Sampling

The purposive sampling techniques were called by different researchers with different names like judgmental, selective or in some cases subjective sampling techniques. These are type of sampling technique in which researcher choses the population for data collection based on his or her own judgment as participant of the discussion or respondents. (Patton, 2001) added that thepurposive sampling techniques is a best way to conduct qualitative research forthe implementation studies for qualitative inquiry, generally assumed to be selected purposefully to yield information rich result. This sampling techniques chosen by this study because of the reason that the target respondents are the government officers and some other known stakeholders.

3.4.2.2 Snowball Sampling

The study also used snowball sampling techniques on need basis. It is a type of sampling where research participants recruit other participants for further investigation and in-depth study. The technique uses especially with combination of purposive sampling whenever situation arises that the potential participants/respondercan reach through the reference of 1st participant/responder.The techniques called snowball sampling because the nature of it is like once you have the ball rolling, it picks up more "snow" and going becomes larger and larger. Given the nature of snowball sampling, it is not considered a representative sample for statistical purposes. Snowball is a good technique for conducting exploratory and qualitative research(Goodman , 1961).

3.4.3 Tools used for Data Collection

This study used the following tools for data collection

3.4.3.1 Focus Group Discussions (FGDs)

As this research targeted the governmentalorganization and the representative from some other segment of the non-goverenmental institutes, therefore the FGDs were selected as tool for data collection. The tools widely used by researchers in qualitative research the focus group usually includes a limited and chosen number of participants/respondents from the target population. The tool is also effective in purposive sampling with an advantage that the researcherdoesn't necessarily need to interact with the group in person and hence there is a very little chance of bias (Morgan & Spanish, 1984). This method is very useful when it comes to conduct a situational analysis for planning and policy formulation(Bryson , 2004).

Following are the summery of the FGDs conducted

- Number of FGDs conducted = 21
- Number of respondents targeted = 92

The composition of the focus groups was heterogeneous by sectors/department, experience, age and by gender etc.

3.4.3.2 Key Informant Interviews (KIIs)

The research also used KIIs especially for the snowball sample data collection. This tool is useful when there is a need to duct an in-depth interview with some of the respondents of interest for a particular subject. It is one of the most common qualitative research methods where personal interview conducted with one respondent (supposed to be key informant) at a time. The advantage of this method over the others is, this method provides great opportunity to gather precise data about what people believe and perceive (Tongco, 2007). This method give liberty if the researcher needs more information then he/she may ask follow up questions that will help them collect more information(McCracken, 1988). These interviews were performed face-to-face during visits to different departments at the provincial directorates and secretariat level. The department selected were identified during FGDs at district level for further information collection (shown in Table 3.2)

3.4.3.3 Observation

Observation is a tool by which the researcher/practitioner gets close enough to the study subjects to observe (with/without participation of the respondents) usually to understand what is the knowledge, attitude, practice of the participants/respondents and what is the nature of the phenomena (like hazards, vulnerabilities and capacities in this case) of subjects(Peel, 2005). This research testified and validated the variables like prevailing hazards, vulnerabilities and capacities through observation during visits made to the study districts and the premises of different offices.

By testing all of the above-mentioned tools and techniques the organizations/stakeholders consulted for data collection along with the tools exercised during consultation are given in table 3.2 below;

Table 3. 2: Different governmental departments consulted for primary data collection

Sr. #	Organization Consulted for FGDs	Tools Exercised
1	Livestock Department FATA	FGDs
2	FATA Disaster Management Authority (FDMA)	FGDs

3	Pakistan Civil Defense, FATA	FGDs & KIIs (snowball sampling)
4	Communication and Works (C&W) Department, FATA	FGDs
5	Pakistan Red Crescent, FATA	FGDs
6	Irrigation Department FATA	FGDs
7	Additional Political Agents Offices (Agency Development Focal Persons)	FGDs
8	Multi Agencies Development Program, FATA Development Authority	FGDs
9	Forest Department FATA	FGDs
10	SAWERA (A women centric NGO)	FGDs
11	FATA Water Resource Development Project (FWRDP)	FGDs
12	Social Welfare Department, FATA	FGDs & KIIs (snowball sampling)
13	Health Department, FATA	FGDs
14	Education Department, FATA	FGDs
15	IRM-Pakistan Reading Project	FGDs
16	Agriculture Department FATA	FGDs & KIIs (snowball sampling)
17	Local Government and Rural Department, FATA	FGDs
18	CRDO-NGO	FGDs
19	Physical Health Engineering Department, FATA	FGDs
20	TESCO	FGDs
21	Sports Department, FATA	FGDs
22	Levies Force, FATA	FGDs

3.4.4 Questioners and types of Data Collected

The data collected through given tools and sampling techniques were descriptive data.For the district level capacities assessment, as mentioned above that seven FGDs have been organized in newly merged districts together with newly merged sub-divisions. During these

FGDs, all line departments and civil societies organizations of the respective tribal districts and sub-divisions were participated. The participants were engaged in three different types of group exercises, given below,based on parameters related FGD's session;

FGD Session I - Hazard Profiling: Participants engaged in groups and they discussed the prevailing hazards in their respective tribal districts and chalk out tehsil level hazards profiling by using the matrix provided to them (attached as **Annexure 1**). Group members ranked hazards as very high, high, moderate and low hazard on tehsil level by making consensus based on their experience. The techniques are evaluative in nature and is supported from the international research as AHP(B., Yarrakula, & J., 2017)

FGD Session II – Capacities & Gaps Identification: The toolkit was used to evaluate institutional situation of DRM of the governmental departments at provincial and atdistrict level (attached as **Annexure 2**). Participants were grouped department wise and discussions made about the capacities of the department which can be used for the future disaster risk management and resilience initiatives. The participants also identified gaps in the capacity of the respective department.

FGD Session III – Recommendation for DRR Actions: Participants discussed and proposed DRR actions which can help in building the capacities of organization in preparedness and response to disaster threats through questioners (attached as **Annexure 3**). Departments/sectors specific DRR measures were proposed for the coming five years. Furthermore, these actions wereprioritized as short, medium and long-termby the participants (details are in Chapter 5).

3.4.5 Data Analysis

This research used the following data analysis strategies and techniques

3.4.5.1 Narrative analysis

This research used the narrative analysis techniques for whereby it interpreted the stories/description told by the participants/interviewers within the context of research and based on their everyday life experience. The narrative analysis helped in making the analysis divers, equally substantial and meaningful for interpretations and conclusions by

considering the elements of the interest. The techniques have many advantages for descriptive data analysis as quoted by (Cortazzi, 1993)

3.4.5.2 Discourse analysis

The research also used discourse analysis techniques for interpretation and re-interpretation of the recorded discussions and interviews(Brown, Brown, , Brown,, & Yule, 1983). The techniques are highly useful and especially in this modern era when the researcher used the interview audio recording instruments like phone cells. Many of the discussion and interviews were recorded through phone cells and later on interpreted as discourse analysis during the study.

3.4.6 Data Presentation

After presentation the data was presented with the help of visualization software. Geographic Information System (GIS) was used for the hazard interpretation prioritization and profiling in the form of uni-variate thematic maps. Similarly, the capacity assessment of the departments was presented as different charts, graphs and diagrams by using the Edraw Max designed for data visualization.

3.5 Limitation of the Research

Following limitation were noted during the course of this research

- The cultural sensitivity of the study area discouraged the female employment in government department and hence negligible gender balance were obtained during data collection.
- Factors important for the situational analysis like DRR financing and governmental allocations were unable to evaluate because of the reluctant of the department to share financial information.
- The pirated and freely available versions of the software like Edraw Max were used which provide very little features compared to the licensed versions.

Chapter 4

RESULTS AND DISCUSSIONS

4.1 Introduction

As the nature of study was descriptive and exploratory and focus was to carry out the DRM situational analysis of the formal institutions existing in the study area through qualitative data collection. The data analysis was performed with the approach of narrative and discourse analysis as, first the whole data of interviews was transcribed in word format and then analyzed the pattern in the data. The variables evaluated can be categorized as (a) hazard profiling of the districts at tehsil level, (b) institutional capacities assessment and gaps identification, and lastly (c) recommendation to plug the gaps through DRR actions. The parameter (a) and (b) are discussed in this chapter while the (c) parameter will discuss in Chapter 5.

4.2 Prevailing Hazards

Prevailing hazards of the research area are characterized as natural or human induced hazards and are discussed in detail in following sections.

4.2.1 Natural Hazards

With unique and diversified physiographic nature and socio-cultural and political characteristics of the newly merged districts of KP, the areas are always exposed to a number of natural and human induced hazards. The major natural hazards occurring in the areas are riverine floods, flash floods, earthquake, snow fall, hail storm, forest fires, locusts attack, landslides, cloud burst and drought while the human induced hazards are tribal and sectarian conflicts, cross border terrorism and firing, road accidents and fires. There is existing a temporal variation in the nature and type of hazards across the districts. So, the hazards affecting a district were investigated from the damage and loss databases maintained in the deputy commissioner offices of the respective districts. It was further explored from the stakeholders in FGDs as explained in the precedingsub sections.

4.2.1.1 Flash Floods

Flash floods occur predominantly in the mountainous, semi-mountainous areas and in the adjoining plains situated in the given districts. It has been commonly observed that flash flood trends are on the rise, due to changing weather patterns, climate change implications and increased development activities in the flood plains of the newly merged districts of KP province depicted in focus group discussion held with stakeholders in the districts. The table 4.1 shows the consequent damages incurred from heavy raining and flash flooding phenomena in the region during 2016 (data shared by FDMA).

Table 4. 1:District-wise damages caused by 2016 heavy monsoon rain and flash flooding in FATA

Tribal District or Newly Merged Subdivision	**Died**	**Injured**		**Houses Damaged**		**Other damages**
		Minor	**Grievances**	**Partially**	**Fully**	
Bajaur District	5	2	8	11	2	2 Levey check post collapsed
Mohmand district	1		5	1		
Khyber District	11	1	16	29		
						Casualties due to collapse of Mine in Lower Orakzai
Orakzai District	7	1	10	6		Five cows died because of roof collapse
Kurram District	6			9	1	
North Waziristan	6				1	
Wazir sub division	2		2	1		
Total	**38**	**4**	**41**	**57**	**4**	

4.2.1.2 Riverine Floods

The heavy rainfall occurring in the catchment areas of major rivers bring excessive sediments laden water causing over flow in downstream areas in most of the study districts. The major rivers flowing in the newly merged districts are Kabul, Swat, Kurram, Gomal, Tochi and Bara. In Khyber district, the Bara river together with other tributaries of Chora and Ali Masjid Khwarmostly affecting the villages situated along the river banks especially in Bara Tehsil. Similarly, Kurram, Kheto and Khaisorarivers after originating from Koh-e-Sofaid affecting all the villages and towns situated along the banks of the river. In the given catchments the losses have been reported indownstream settlements likeSadda, Thal, Shewa and Bannu tehsils.Furthermore, river Tochi affecting villages of tehsil Miranshah in district North Waziristan, most of the frontier region and other adjacent areas situated along the river bank. Flood 2010 recorded as one of the devastating disasters in the newly merged

districts. In 2010very high magnitude floods have been recorded in Tochi, Kurram and Bara rivers(FDMA, 2016). Table 4.2 shows the damages of 2010 heavy rain fall and flooding.

Table 4. 2: Details of Losses and Damages due to Heavy Raining and Floods during 2010

S #	District and sub-Division	Villages affected	Persons affected	Affected areas (Acres)	Cropped area affected (Acres)	Persons died	Persons Injured	Houses Damaged		Cattle Head Perished
								Partially	Fully	
1	Bajaur District	86	32,360	10,598	10,598	27	26	3,115	121	6,430
2	Mohmand District	61	3,680	2,017	1,955	5	1	174	194	842
3	Orakzai District	36	220	1,196	1,196	2	0	5	17	212
4	Kurram District	64	3,130	421	273	4	0	293	20	551
5	Khyber District	37	3,790	7,635	7,635	17	23	379	0	724
6	North Waziristan District	39	660	5,333	5,135	21	17	0	66	322
7	South Waziristan District	24	170	18,431	17,690	2	0	0	17	1,844
8	Hassan Khel Sub-division	5	4,370	7,535	3,135	0	0	0	437	358
9	Dara Adam Khel Sub-division	83	3,690	433	230	3	0	368	1	176
10	Wazir Bannu Sub-division	10	4,880	709	665	0	0	488	0	546
11	Bettani Sub-Division	18	5,240	177	177	1	0	515	0	575
12	Drazanda Sub-division	14	25,600	1,513	846	9	22	1,247	1,959	3167
13	Jandola Sub-Division	12	910	1,135	517	0	0	91	0	3,119
	TOTAL	**489**	**88,700**	**57,133**	**50,052**	**91**	**89**	**6,675**	**2,832**	**18,866**

Source; (FDMA, 2016)

4.2.1.3 Droughts

Drought is another hazard prevailing in the study districts. Drought isprevailing in thestudy district but not reported as frequent as flood on governmental level. Drought due to its creeping natureand of slow onset can only be observed over a larger period of prevalence. This creeping event leave severe impacts on sectors like agriculture, livestock and associated livelihoods sources of population living in the prone areas(Wilhite, 2005). Although the droughts are rarely reported in the newly merged districts, however, BajaurTribal District has a reported history of droughts in past decade. The district received unexpectedly very low precipitation for a longer time during 2000-2001 and experienced drought episodes of mild to severe nature (FDMA , 2012)

4.2.1.4 Earthquake

The newly merged districts are situated in Koh-e-Hindukh and Koh-e-Sufaid mountain ranges which has a history of frequent earthquake jerks in the past. The seismic activities occurred in the given ranges are deep seated with rare impacts on surface.Due to the vicinity of regional and localized fault lines, the newly merged districts are exposed to earthquake hazard(Nowroozi & Ali , 1971). The poor infrastructure and fragile living condition further add to thevulnerability of population and infrastructure. The region lies in category three of the earthquake Zonation by the Geological Survey of Pakistan. The table 4.3 indicates the damages occurred from the recent earthquake in the region(FDMA, 2016).

Table 4. 3: Details of Losses and Damages occurred due to October 2015 Earthquake

S #	Name of District	Deaths	Seriously Injured	Fully Damaged Houses	Partially Damaged Houses
1	Bajaur District	23	138	1,035	3,257
2	Khyber District	1	3	57	143
3	Kurram District	1	1	59	152
4	Mohmand District	5	0	265	721
5	Orakzai District	0	1	45	115
6	Darazanda Sub-Division	0	0	6	10
7	Hassan Khel Sub-Division	0	0	3	11
	Dara Adam Khel Sub- Division	0	0	4	9

Total	**30**	**143**	**1,474**	**4,418**

Source: (FDMA, 2016)

4.2.1.5 Land sliding

Small isolated landslide eventsoccurred from time to time with little impact on the built-up system.These landslides were mostly triggered by the heavy rainfall, flash floods, earthquakes and heavy snow fall. Vulnerability factors like deforestation and anthropogenic activities like construction of roads and blasting for widening of the roads and other infrastructure contributing more to theland sliding events.Tribal districtslikeKurrum, North Waziristan, Orakzai and South Waziristan are exposed to landslides hazard(FDMA, 2016).

4.2.1.6 Windstorm

The impact of windstorm is not as disastrous compared to the other hazards in newly merged areas. However, on local level people reported and showed concern about the losseslike livestock in perishing animal sheds, houses and soil erosion caused by infrequent windstorms. The windstorm in newly merged district generally reported in two distinct seasons i.e. during Winter from Western depression originate in the West and during Summer from heavy monsoon rain and flooding(FDMA, 2016).

4.2.2 Major Human Induced Hazards

FATA because of its strategic location, positioned with the Durand Line has always remained on top of the security agenda by the Pakistan, Afghanistan and the world powers like United States and other. Many conflicts unleashed in the past, resulting in deaths, injuries, traumas, dislocation and collateral damages in the area (Shinwari, 2010). Some of the human induced hazards prevailing in the region are given below;

4.2.2.1 Land Mines Explosions

The newly merged districts are strategically and geographically located in the region where the area always played a dominant role as a bridge between Pakistan and Afghanistan. But because of thisreason, the area was severely affected during the Afghanistan war, which continued for more than 20 years. These areaswere mostly used as transitional route to supply ammunition to Afghanistan including land mines during Afghan-Russian war(Shinwari, 2010). As a result of this, large number of landmines were planted in newly merged districts during late 80s and early 90s.It affected/affecting the local population

because of explosion.Bajaur and Khyber were reported as the worst affected districts of landmines (EASO, 2016).

4.2.2.2 Conflicts

The newly merged districts have long history of internal tribal violence and conflicts although limited to certain geographical areas. These conflicts caused heavy loss of human lives and led to severe economic losses and instabilities in the regions. However, the situation worsened when Pakistan Army was deployed for the first time in newly merged districts during 2004-05 to curb the insurgencies and extremism from across the border. Moreover, series of military operations have been conducted after August 2008 till recent years including Zarb-e-Azab against militants specifically in Bajaur, Mohmand, Orakzai, North Waziristan, South Waziristan and Kurram tribal districts. These military operations resulted into forced internal migrations of the millions of inhabitants, which further deteriorated the situation and caused heavy economic losses and instabilities in the region. Table 4.4 and Figure 4.1 shows the displaced population resulting from Zarb-e-Azab counter-insurgent military operation till date(FDMA, 2016b). Figure 4.2 shows the overall return situation of the area till date which depict that about 3% of the displaced population is living still in camps/off-camps.

Table 4. 4: Displacement due to military operations in FATA (till date)

#	Merged District	Displaced	Returned	Balance	Returned %	Balance %
1	North Waziristan	108,041	92,375	15666	85.50	15
2	South Waziristan	71,124	71,124	0	100.00	0
3	Khyber	91,689	90,575	11,154	98.79	12
4	Orakzai	35,823	35,823	0	100.00	0
5	Kurram	33,024	33,024	0	100.00	0
6	Bajaur	72,897	72,897	0	100.00	0
7	FR Tank	2,228	2,228	0	100.00	0
8	Mohmand	36,759	36,759	0	100.00	0
	Total	**451,585**	**434,805**	**26,820**	**97%**	**3%**

Source: (FDMA 2019-Unpulished Report)

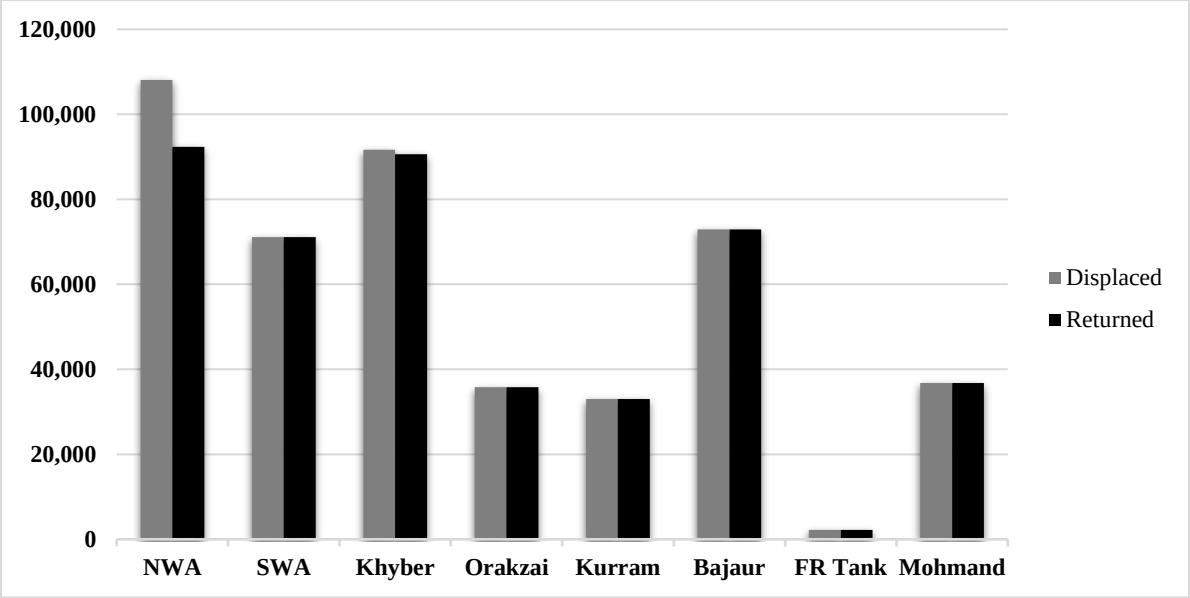


Figure 4. 1: Agency wise displacement and return situation after military operation in the study area

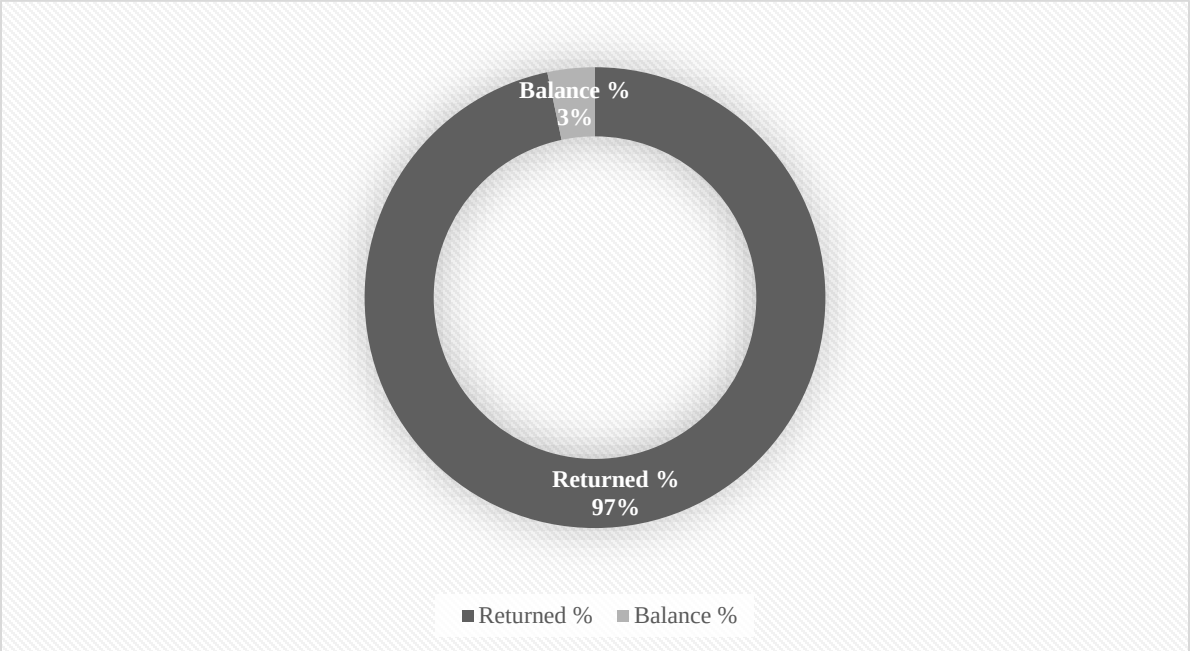


Figure 4. 2: Current displacement and return status of the operation hit areas (FATA)

Besides ethnic and sectarian conflicts few other conflictsarised between different sects from time to time. Tribal District Kurram especially is exposed to such sectarian violence because of conflicts between Shia and Sunni Muslims which erupt frequently since 2008. Shia ethnic groups reside in upper Kurram with 42% population, whereas Sunnis ethnic group lives in

lower Kurram, with 58% of the total population. During 2008, these conflicts resulted in heavy human loses and property damages, where Kurram-Parachinar main road remained closed for all kinds of traffic for almost three years(Mahsood & Kamran, 2017).

4.3 District-Wise Hazard Profiling Based on Primary Data

Administration, authorities and humanitarian partners were remained much engaged in the complex emergency in study areas, therefore, little attention were given to the disaster risk management. In this pretext the data was dig out with district and provincial authorities on tehsil level hazard profiling of the newly emerged districts, but couldn't find any document during desk review. Therefore, it was decided to prepare a separate questioner and conduct separate FGDs at FATA Secretariat level at Peshawar and 07 FGDsto be conducted in each tribal district. FGDs groupswere heterogenous and in which inputs were taken from the governmental and non-governmental stakeholders in order to identify potential hazards and prioritize these hazards tehsil-wise for each district.

In this regard, FGDs conductedin FATA secretariat level during June, 2018 (shown in table4.4), while FGDsconducted in each tribal district were starting from July 2018 to August 2018. District and tehsil level governmental departments and humanitarian personnel were participated in the FGDs (shown in Table 4.5).

Table 4.5: List of governmentaldepartmentsvisited during FGDs conducted at FATA Secretariat Level

Respondent	Gender	Organization Name	Role within Organization	Place of Interview	Date of Interview	Institutional Level
1	Male	Directorate of Projects FATA Secretariat	Program Officer Livelihood	FATA Secretariat	19-June-18	Provincial
2	Male	Planning and Development Department	Planning Officer	FATA Secretariat	19-June-18	Provincial
3	Male	Social Welfare Department	Deputy Director Social Welfare	FATA Secretariat	19-June -18	Provincial
4	Female	Education Department	Assistant Director	FATA Secretariat	20-June-18	Provincial
5	Male	Works and Services Department	XEN	FATA Secretariat	20-June-18	Provincial
6	Male	Civil Defense Department	Director Civil Defence	Provincial Directorate	20-June-18	Provincial
7	Male	Irrigation Department	XEN	FATA Secretariat	20-June-18	Provincial

8	Male	Livestock and Dairy Development Department	Deputy Director	FATA Secretariat	20-June-18	Provincial
9	Male	Local Government and Rural Development Department	Deputy Director	FATA Secretariat	20-June-18	Provincial
10	Male	Public Health and Engineering Department	Assistant Director	FATA Secretariat	20-June-18	Provincial
11	Male	Crises Management Cell	Assistant Director	FATA Secretariat	21-June-18	Provincial
12	Male	Reconstruction and Rehabilitation Unit	Deputy Director	FATA Secretariat	21-June-18	Provincial
13	Female	Health Department	Deputy Director	FATA Secretariat	21-June-18	Provincial
14	Male	Agriculture Department	Director FATA	FATA Secretariat	21-June-18	Provincial

Table 4.6: Focus Group Discussions (FGDs) conducted at Different Tribal Districts

Respondent	**Gender**	**District/Subdivision**	**Informants**	**Place of FGD**	**Date of FGD**	**Institutional Level**
1	Male/Female	Khyber District and Hassan Khel Sub-Division (F.R. Peshawar)	Government/NGOs/ Community	Peshawar	02-July-18	District/Tehsil Level
2	Male/Female	Mohmand District	Government/NGOs/ Community	Ghalanai	04-July-18	District/Tehsil Level
3	Male/Female	Bajaur District	Government/NGOs/ Community	Khar	06-July-18	District/Tehsil Level
4	Male	Orakzai District /Dara Adam Khel Sub-Division	Government/NGOs/ Community	Kohat	16-July-18	District/Tehsil Level
5	Male	Kurram District/Wazir Sub-Division	Government/NGOs/ Community	Kohat	18-July-18	District/Tehsil Level
6	Male	South Waziristan District and Bettani and Jandola Sub-Division	Government/NGOs/ Community	D.I. Khan	30-July-18	District/Tehsil Level
7	Male	North Waziristan District/Darazanda	Government/NGOs/ Community	D.I. Khan	01-August-18	District/Tehsil Level

The FGDs helped in identifying the potential hazards in the area, gaps in resources, understanding the requirement and explore the required resources. All the three types of the design questioners were tested in the FGDs (attached as **Annexure 1, 2 & 3**).

Data collected from FGDs together with detail desk review of the existing literature, consolidated and tehsil-wise hazard classified thematic maps were prepared showing the prevalence of major hazards.Similarly, composite multi-hazard maps were prepared from the given data, presenting the hazard type and intensity as low, medium, high and very high

hazard zones. It is worth mentioning that hazard ranking has been done on expert judgments and consensus while deploying the AHP techniques (B., Yarrakula, & J., 2017).

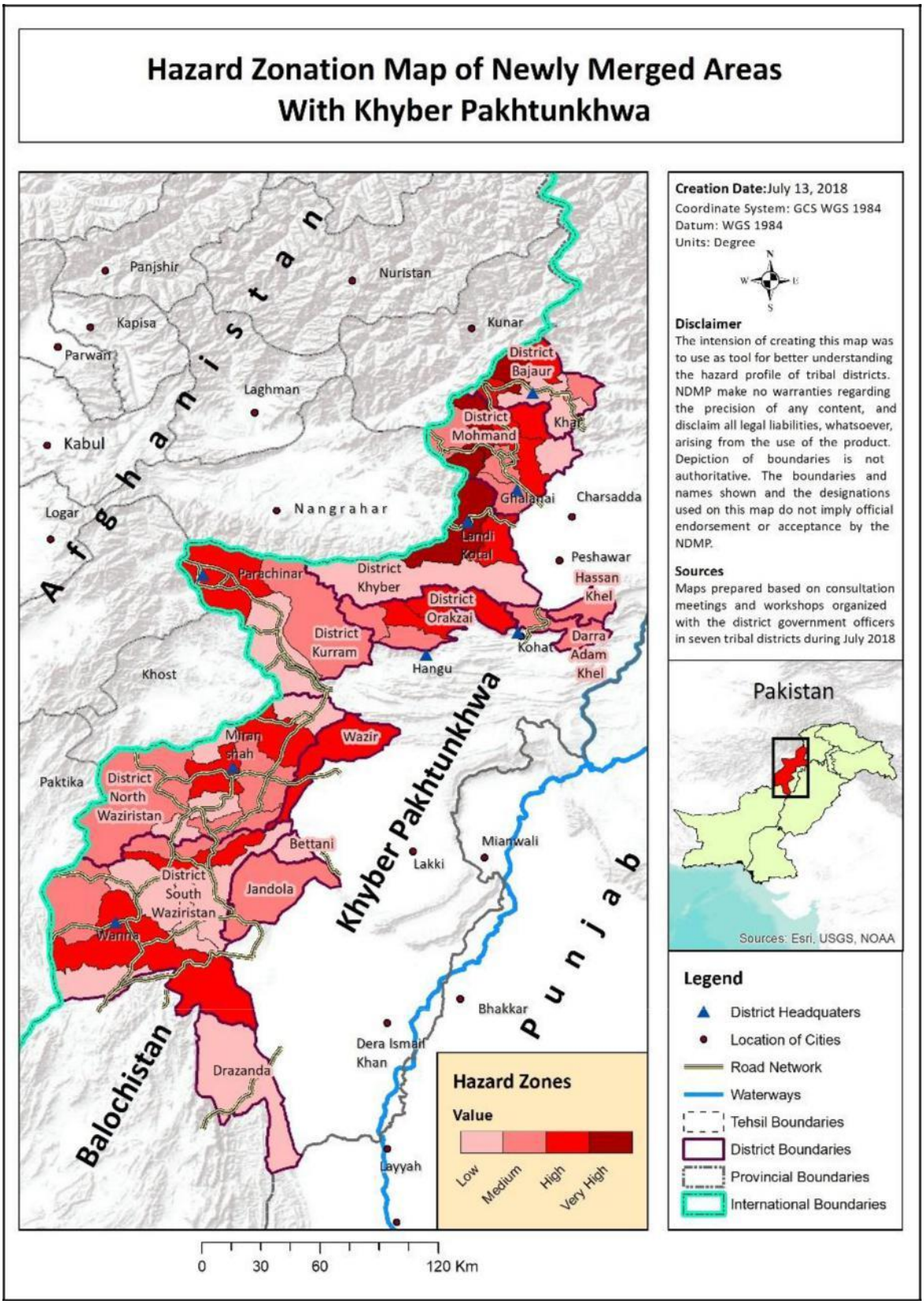


Figure 4. 3: Thematic classified multi-hazardsmap of the newly merged districts of KP

4.3.1 Tribal District Khyber

The FGD participants markedLandiKotal as very high hazard prone tehsil where majority of the hazards are prevailing. Besides,it is also located near Afghanistan border where occasional incidences of terrorism and cross border attacks on military posts were reported in the past. Some of the important natural hazards identified are drought, river floods, flash floods, epidemics, hail storms, earthquake, heat strokes and lightening etc. The human induced hazards identified areconflicts/terrorism, road accident, urban fire and land/road mines. Figure 4.4 shows the potentials hazards and its ranking at tehsil level in Tribal District Khyber.

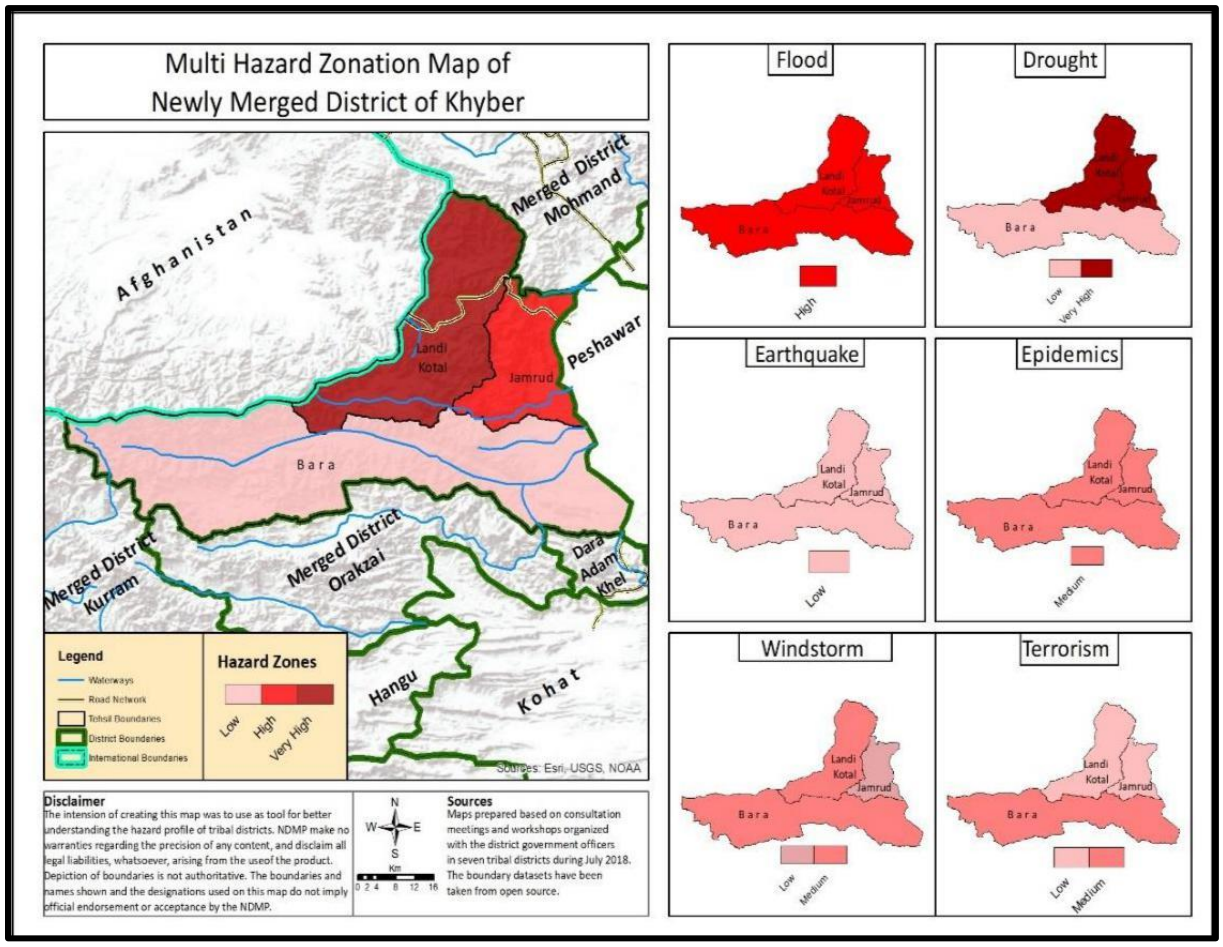


Figure 4. 4: Thematic classified multi-hazards map of the newly merged Tribal District Khyber

4.3.2 Tribal District Mohmand

According to FGDfindings and available record of damages with district administration, Safi and Khewazaiwere categorized as very high hazard prone tehsils for multi hazards

events, while tehsil Amber and Pandiali were ranked as high hazard. The important hazards identified are drought, riverine floods, flash floods, soil erosion, epidemics, hail storms, earthquake, heat strokes and lightening. Similarly, the human induced hazardous events are insurgencies, road accidents, terrorism incidents and explosions from land/road mines. Figure 4.5shows potentials hazards and its ranking on tehsil level in Tribal District of Mohmand.

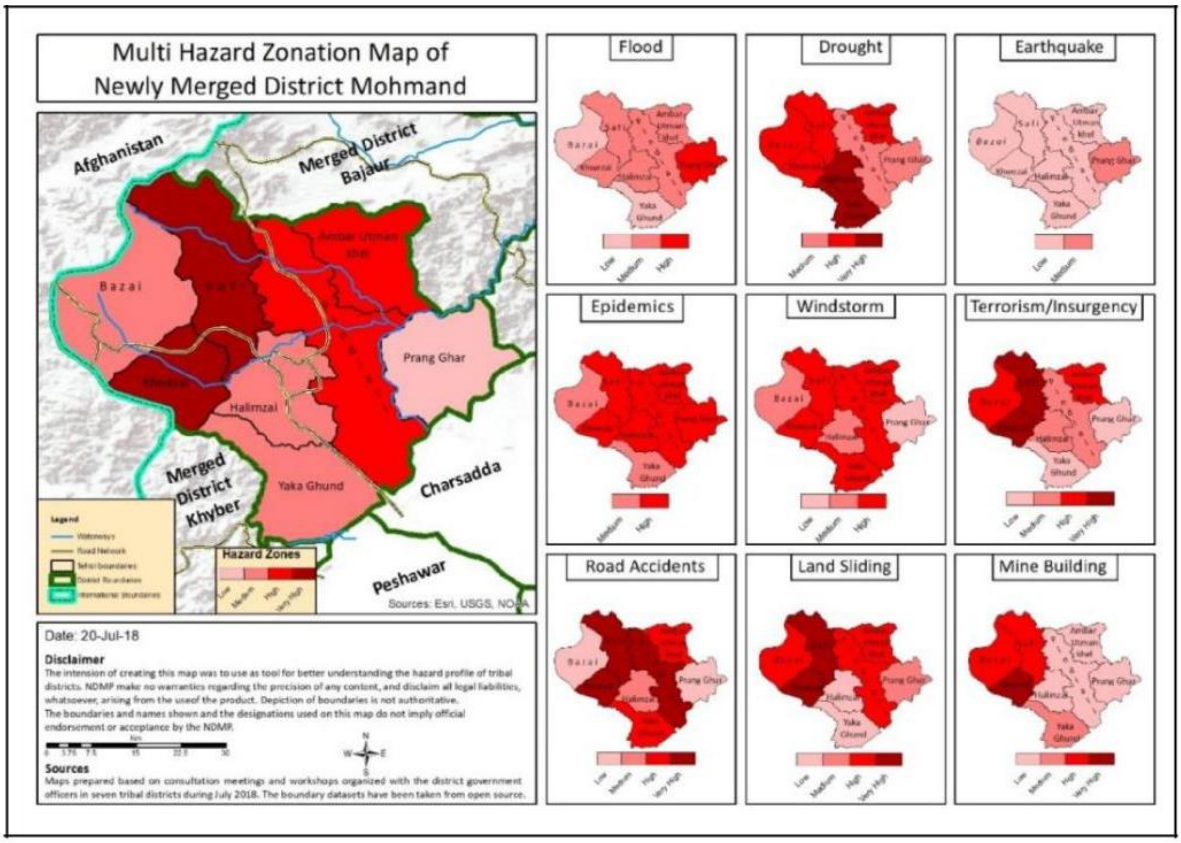


Figure 4. 5: Thematic classified multi-hazards map of the newly merged Tribal District Mohmand

4.3.3 Tribal District Bajaur

In Bajaur, out of the seven tehsils, Mamundtehsil was ranked asvery high while the remaining are moderate and low. The important hazards of the district are drought, riverine and flash flooding, epidemics, earthquake, road accident, terrorism, and land mine explosions. Similarly, some of the rare events caused damages are torrential rains, fire, civil conflicts, thunder storms and hail storms. Figure 4.6 shows the tehsil potential hazards and its ranking in Tribal District Bajaur.

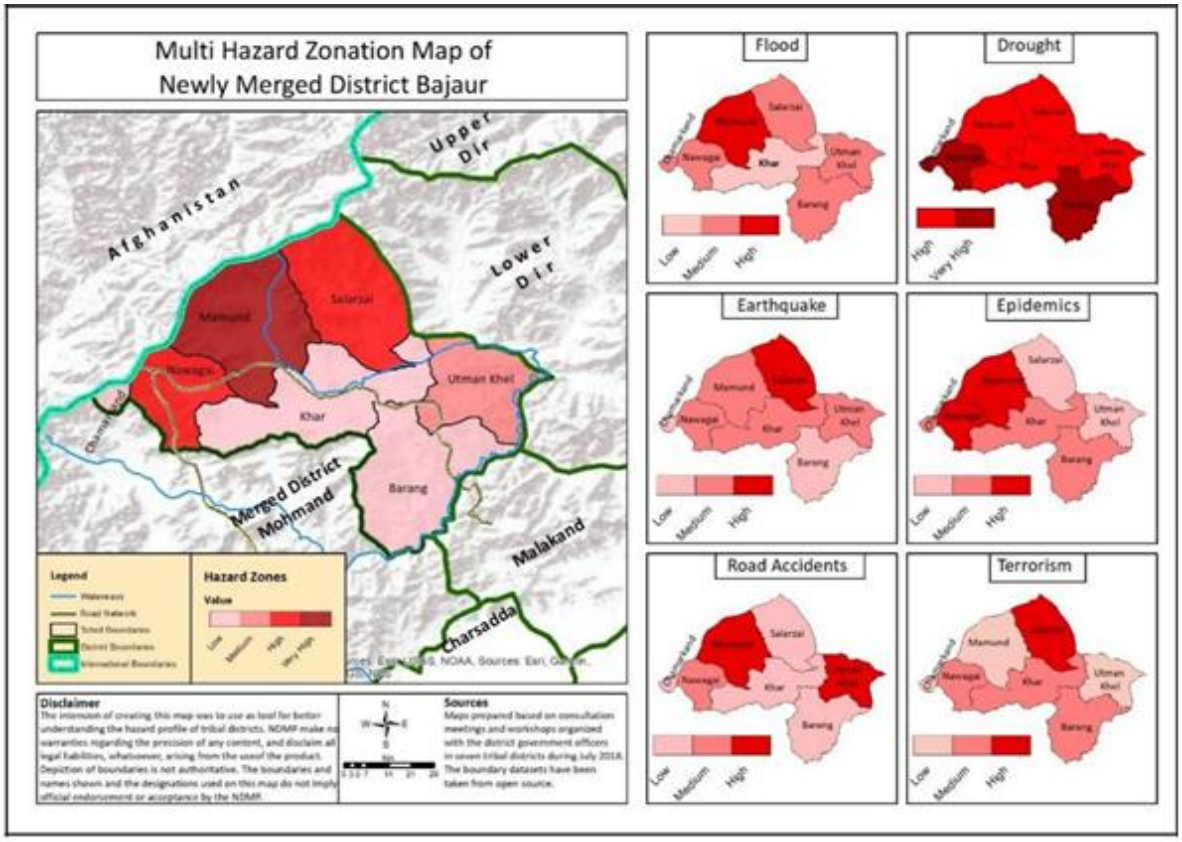


Figure 4. 6: Thematic classified multi-hazards map of the newly merged Tribal District Bajaur

4.3.4 Tribal District North Waziristan

Tribal District North Waziristan was among the worst affected district during operationZarb-I-Azab 2014 where 104,382 families were compelled to vacate their houses and shift to safer areas of KP and other provinces. According to the FGD findings and available government record, Spinwam and Miran Shah were categorized as high hazard prone tehsils while other are low to moderate. Figure 4.7 showspotential hazards and its ranking in North Waziristan District on tehsil level.

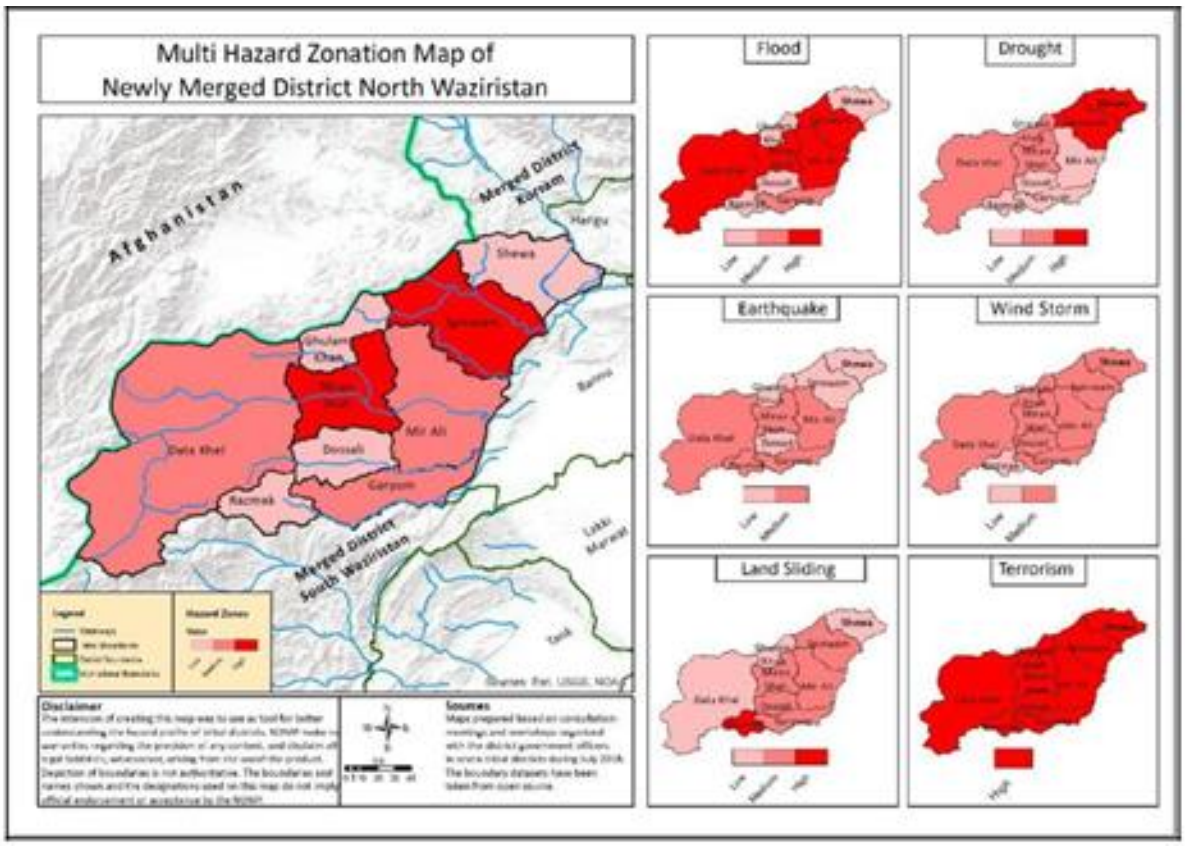


Figure 4. 7: Thematic classified multi-hazards map of the newly merged Tribal District North Waziristan

4.3.5 Tribal District South Waziristan

FGD findings couple with available government record it is depicted thatLadha and Wanacan marked as high hazard prone tehsils while other are moderate and low. Some of the important hazards identified are drought, riverine floods, flash floods, epidemics, hail storms and earthquake while the human induced hazards are insurgencies, road accidents, terrorism and land mines. Figure 4.8 shows the potentials hazards and its ranking on tehsil level in South Waziristan Tribal District.

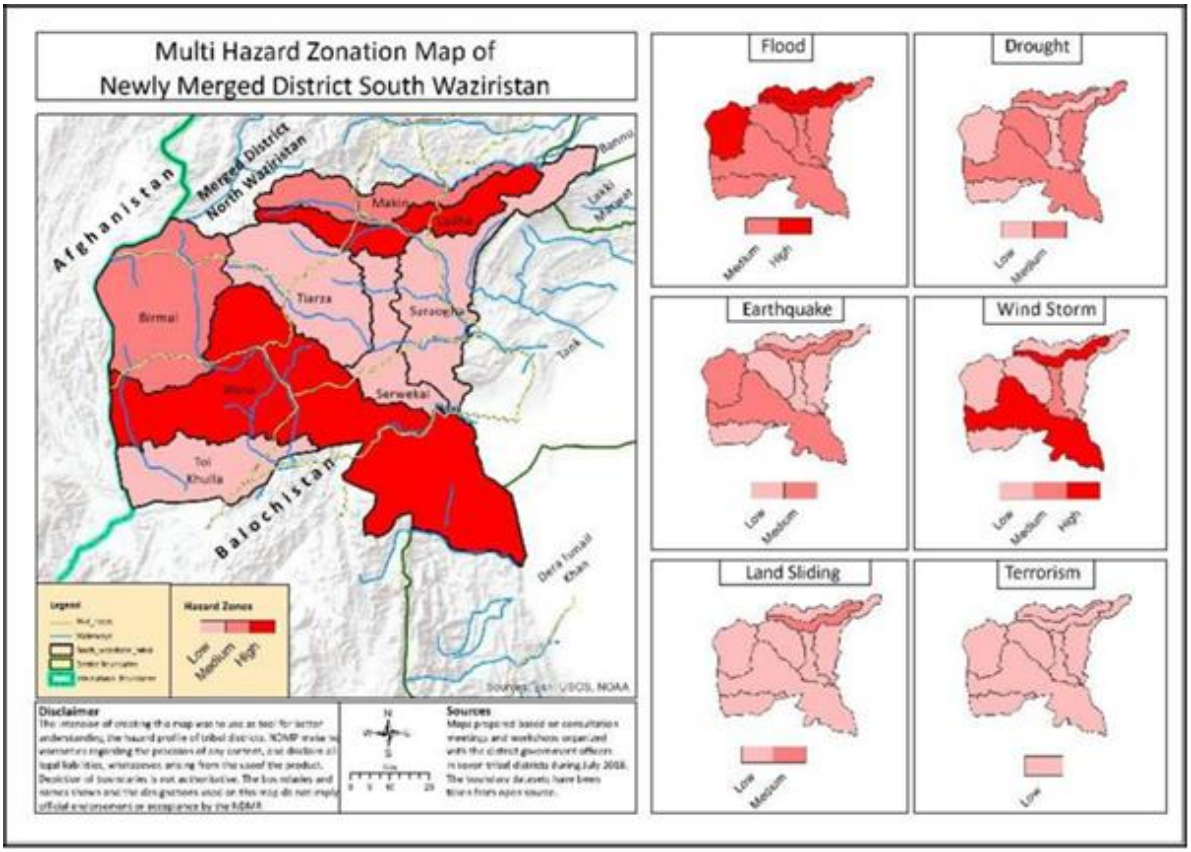


Figure 4. 8: Thematic classified multi-hazards map of the newly merged Tribal District South Waziristan

4.3.6 Tribal District Kurram

FGD findings, damages and compensation database of the government ranked tehsils of Parachinar and Sadda as high hazard prone while the other are moderate and low.The prevailing natural hazards identified are floods, hail storms, drought, earthquake, epidemics, livestock epidemics etc. The human induced hazards identified are sectarian violence, militancy, road accident, and terrorism. Figure 4.9shows thepotential hazards and its ranking on tehsil level in the Tribal DistrictKurram.

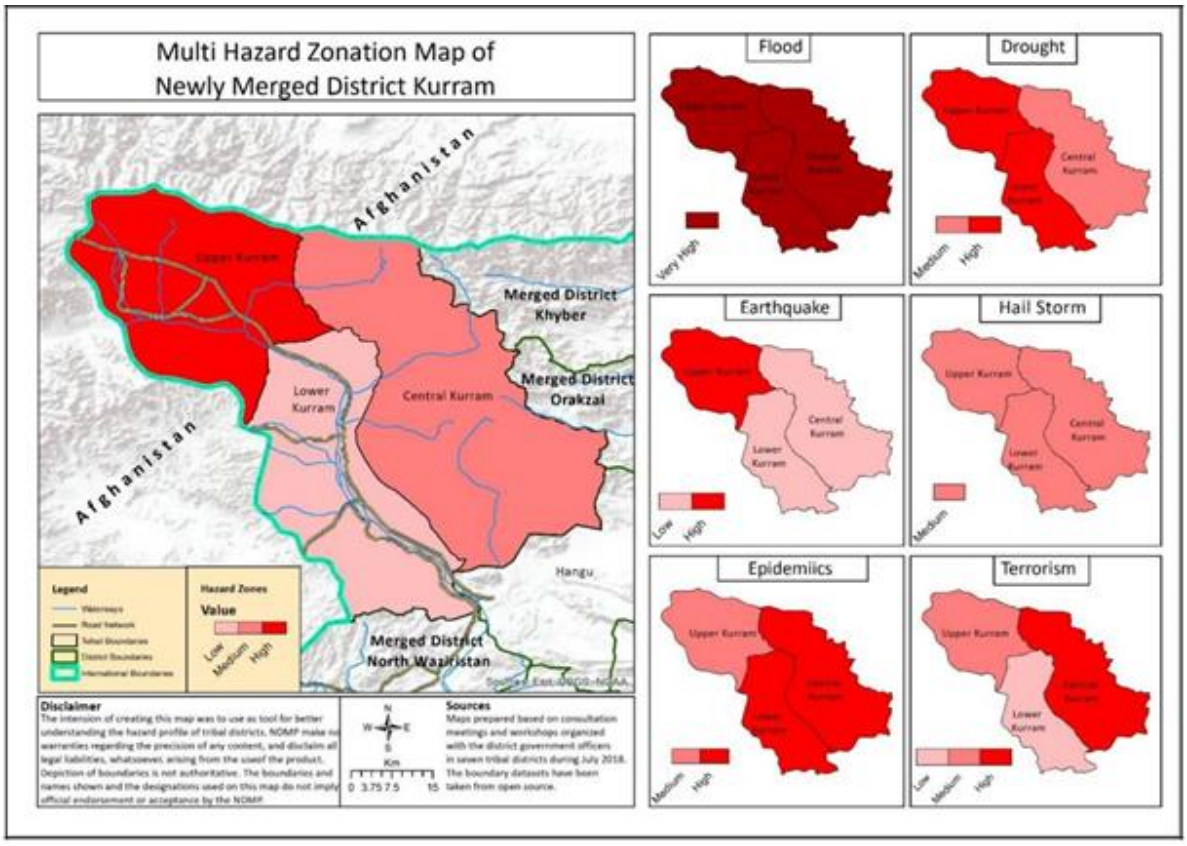


Figure 4. 9: Thematic classified multi-hazards map of the newly mergedTribal District Kurram

4.3.7 Tribal District Orakzai

As per the inputs received from FGD and KIIs, theCentral and Lower Orakzai are ranked as high hazard prone tehsils. Theprominent prevailing hazards are drought, earthquake, flash floods, epidemics, wind storms and landslides, while the human induced hazards areconflicts, road accidents, terrorism and land/road mines. Figure 4.10 shows the potentials hazards and its ranking in Orakzai Tribal District on tehsil level.

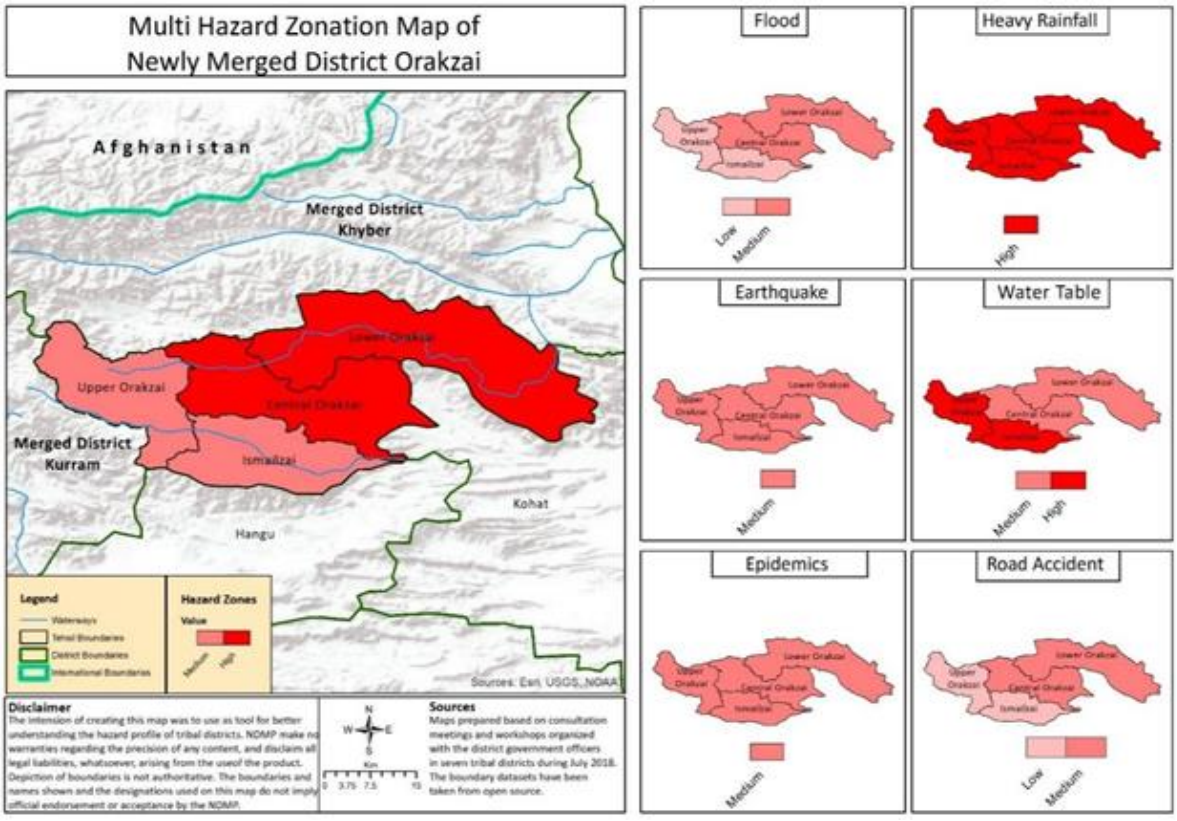


Figure 4. 10: Thematic classified multi-hazards map of the newly mergedTribal District Orakzai

4.3.8 Hazard Profiles of Various ErstwhileFrontier Regions

These frontier regions are now merged as sub-divisions with other settledistricts. The study alongside conducting hazard profiling oferstwhile Agencies, FGDs were also conducted with governmental and non-governmental stakeholders for the erstwhile frontier regions, which are now merged as sub-divisions with various districts. The identified natural hazards found are drought, thunder/lightening, heavy rains, tornadoes, wind storms and earthquake. Similarly, road accidents, terrorism/bomb blasts, urban fires were identified as human induced hazards. Figure 4.11 shows the potential hazards and its ranking in various erstwhile frontier regions.

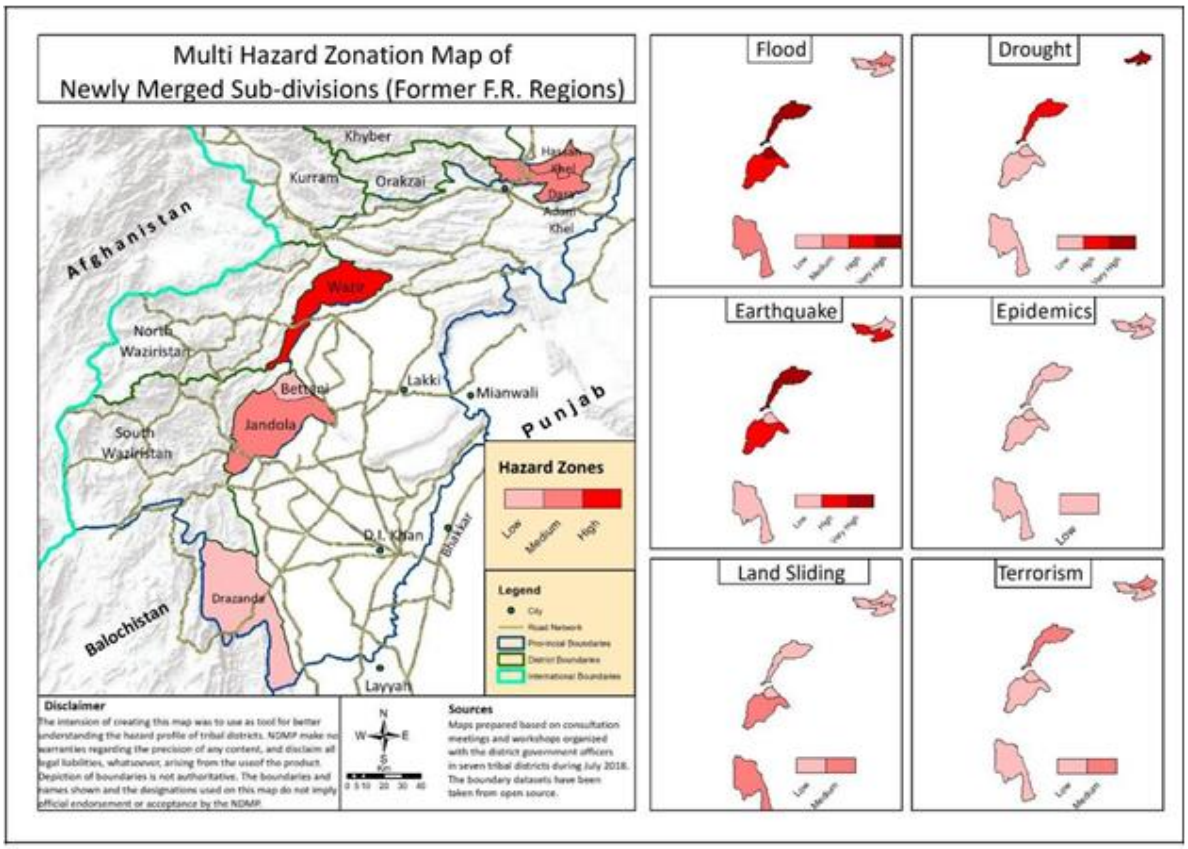


Figure 4. 11:Thematic classified multi-hazards map of the newly mergedVarious Sub-Divisions (Erstwhile F.R. Regions)

4.4 Situational Analysis of Institutional DRM: Capacities and Practices

Capacity assessment and gap analysis were carried out on provincial level (FATA directorates) as well as on district level. The aim of the assessment was to identify key opportunities, driving forces, existing challenges and gaps faced to operationalize the institutional mechanism for effective disaster management. The respondents were targeted objectively as;

1. To know the organizational level coping capacities and gaps at FATA Secretariat
2. To determine the DRM priorities of the newly merged districts of Khyber Pakhtunkhwa

This research study uses the Venn's Diagram Analysis techniques to illustrate the situational analysis of Institutional DRM in terms of capacity. A Venn diagram is a visual presentation of similarities and differences between two or more factors for a given central theme (Ragin

, 2006). The techniques have widely been used by the researchers in social sciences for better illustration of the descriptive data. A Venn diagram consists of a series of circles, in which the edges overlapping shows closeness of two factors and the size of the circle shows the level of influence (here in this case is the level of capacity) (Krishna & Shrader, 1999).

A Venn's diagram in social science be interpreted as the factors with greater influence will be illustrated with large circle and the smaller influence factors with small circles. The distance between two circles and the intersections shows the relationship of closeness and commonality between the factors Detail analysis with software interface screen shots has been given in the preceding section.

4.4.1 FATA Secretariat Level Institutional Situation Analysis of DRM Capacities

FGDs and KIIs were organized with the government and non-government stakeholders at FATA secretariat level in order to note their responses. Data were collected from the following offices;

Table 4. 7: FGDs conducted for Institutional Level Situational Analysis of DRM Capacities (FATA Secretariat Level)

No	Department	No.	Department
1	Directorate of Projects FATA Secretariat	9	Livestock and Dairy Development Department
2	Planning and Development Department	10	Local Government and Rural Development Department
3	Social Welfare Department	11	Public Health and Engineering Department
4	Education Department	12	Crisis Management Cell, FATA Secretariat
5	Works and Services Department	13	Reconstruction and Rehabilitation Unit
6	Civil Defense Department	14	Health Department
7	Irrigation Department	15	Agriculture Department

The overall DRM capacities of the governmental departments at FATA secretariat level have illustrated through the Venn's diagram (shown in figure 4.12). The analysis was

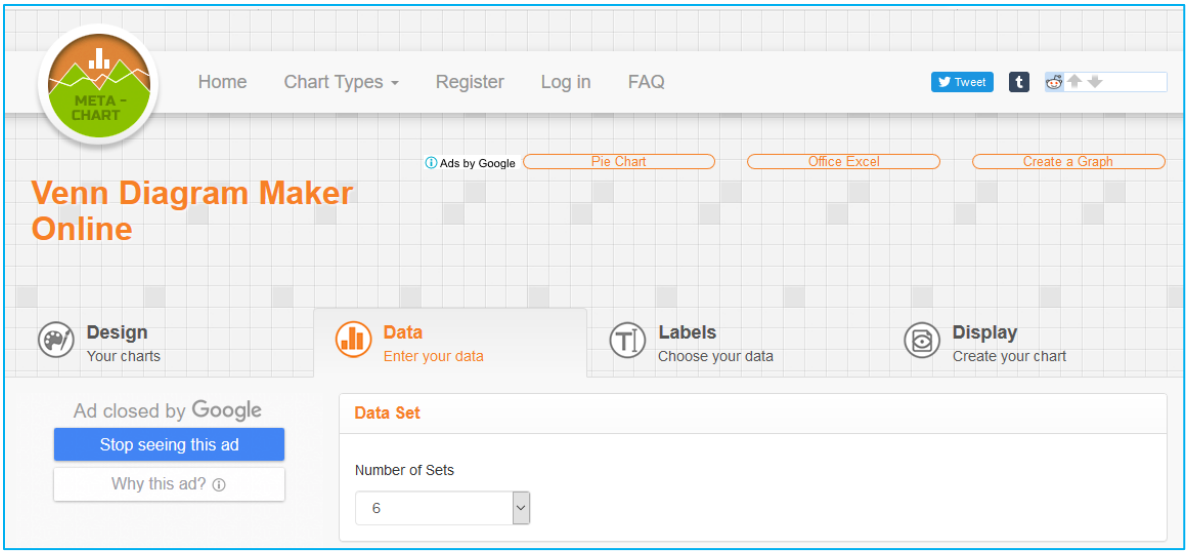
performed with a software called Edraw Max which is giving an online free customized access on trial bases. The basic steps followed,are given below;

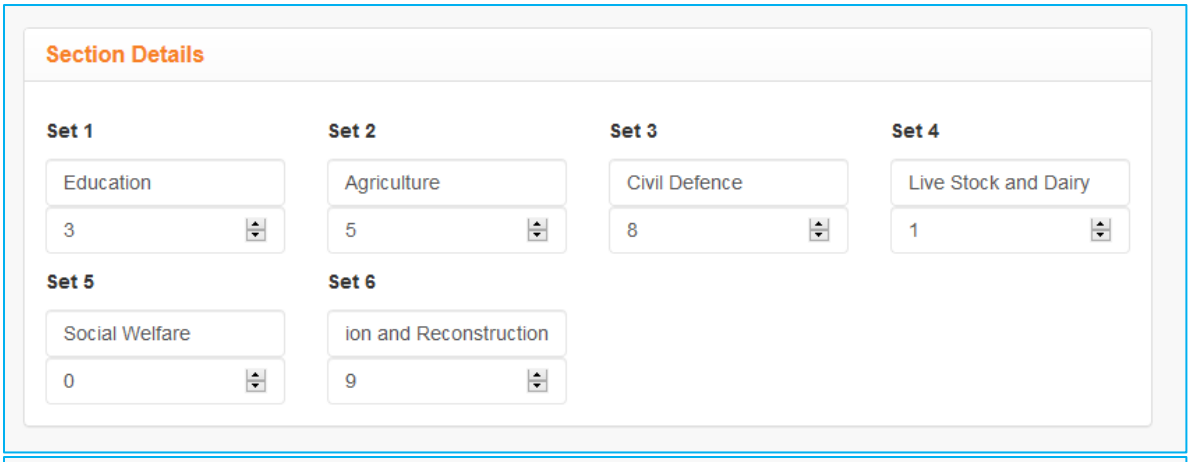
Preparation of Data: The data obtained from the FGDs and KIIs were prepared as to score the overall departmental capacity and to also draw the relationship among the departments in terms DRM capacity. Data preparation for the FATA secretariat level capacity assessment is given here for the understanding purpose;

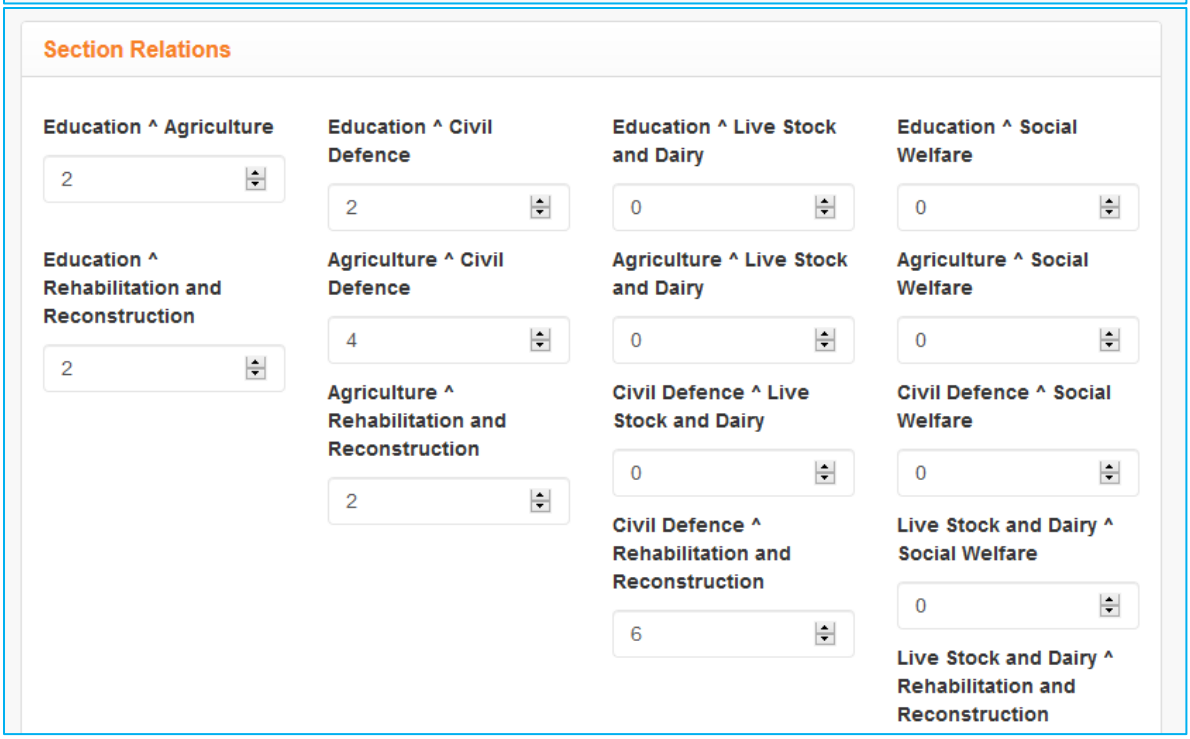
Table 4. 8: Data preparation for the Venn's Diagram Analysis in Edraw Max

Department	Factors considered for the Capacity Assessment with assign score						Total Score
	HR	DRR/M Plans	DRR Infrastructure	Machinery	Machinery	Other	
Education	2	0	1	0	0	1	4
Agriculture	2	1	0	0	0	0	3
Civil Defence	2	2	0	2	2	1	9
Livestock	1	0	0	0	0	0	1
Social Welfare	1	0	0	0	0	1	2
RRU	2	2	2	2	1	2	11

Data Feeding to Edraw Max and Analysis: After preparation of data the data feeded into the online extension of the Edraw Max as Venn's Diagram Maker. This is an elaborate exercise where based on the table 4.8 the data were feed into the software for different factors and relationships. Screen shots from the analysis performed for FATA secretariat level analysis are given in below figures 4.12 for elaboration of the methodology.


META - CHART
Home
Chart Types
Register
Log in
FAQ
Tweet
Ads by Google
Pie Chart
Office Excel
Create a Graph
Venn Diagram Maker Online
Design
Your charts
Data
Enter your data
Labels
Choose your data
Display
Create your chart
Ad closed by Google
Stop seeing this ad
Why this ad?
Data Set
Number of Sets
6


Section Details
Set 1
Education
3
Set 2
Agriculture
5
Set 3
Civil Defence
8
Set 4
Live Stock and Dairy
1
Set 5
Social Welfare
0
Set 6
ion and Reconstruction
9


Section Relations
Education ^ Agriculture
2
Education ^ Rehabilitation and Reconstruction
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Education ^ Civil Defence
2
Agriculture ^ Civil Defence
4
Agriculture ^ Rehabilitation and Reconstruction
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Education ^ Live Stock and Dairy
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Agriculture ^ Live Stock and Dairy
0
Civil Defence ^ Live Stock and Dairy
0
Civil Defence ^ Rehabilitation and Reconstruction
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Education ^ Social Welfare
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Agriculture ^ Social Welfare
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Civil Defence ^ Social Welfare
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Live Stock and Dairy ^ Social Welfare
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Live Stock and Dairy ^ Rehabilitation and Reconstruction

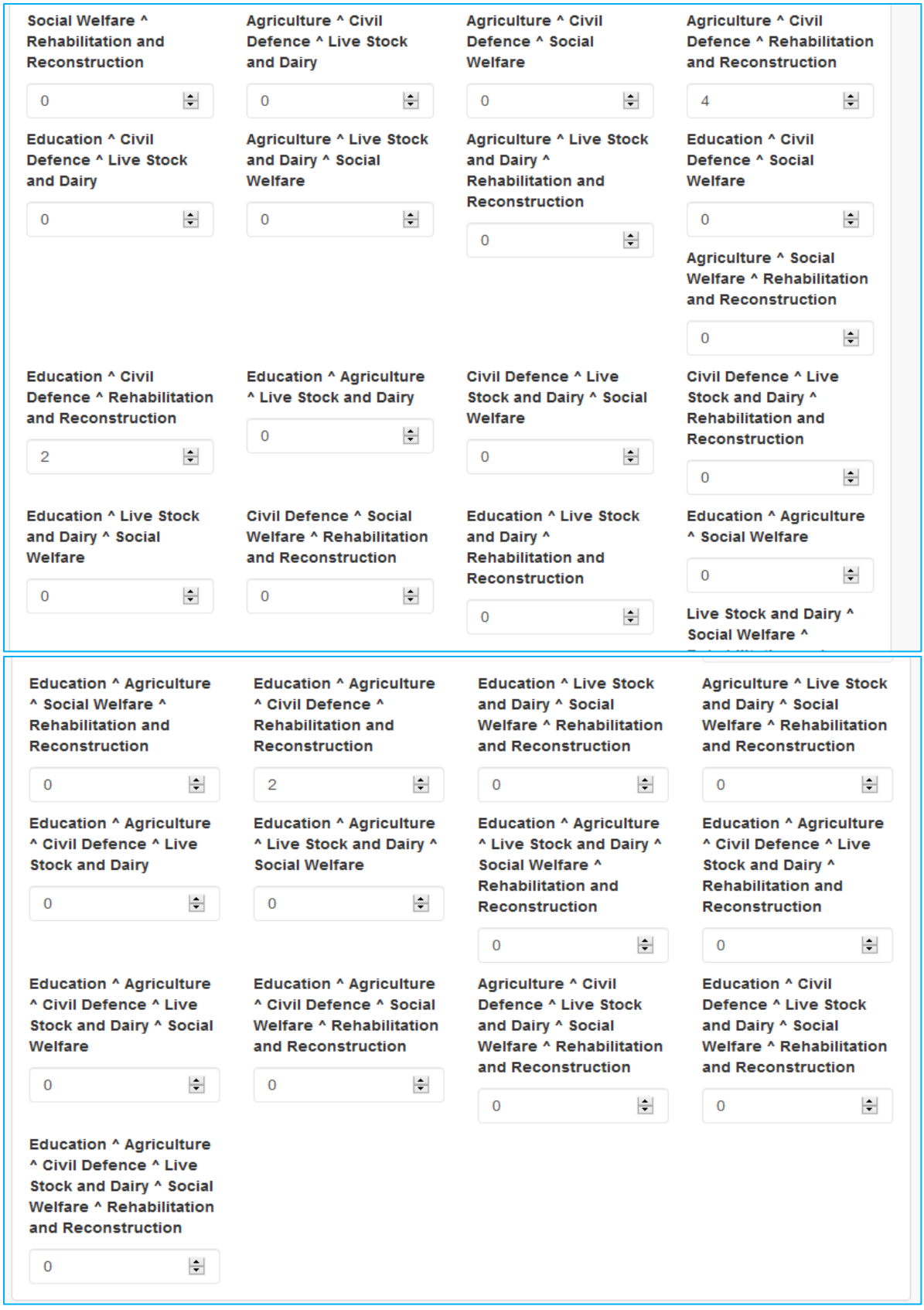

Figure 4. 12: Venn;sDiagram Analysis; Data entry in the software

The analysis performed is resulting in a Venn's Diagram for Institutional Capacity of Erstwhile FATA Secretariat as shown in figure 4.13. From the Venn's Diagram Analysis, it is depicted that that most of the government departments are severely lacking in key DRM capacities which are extremely essential in order to enable these organization to cope up with the disasters and emergencies.

Venn's Diagram for Institutional Capacity of Erstwhile FATA Secretariat

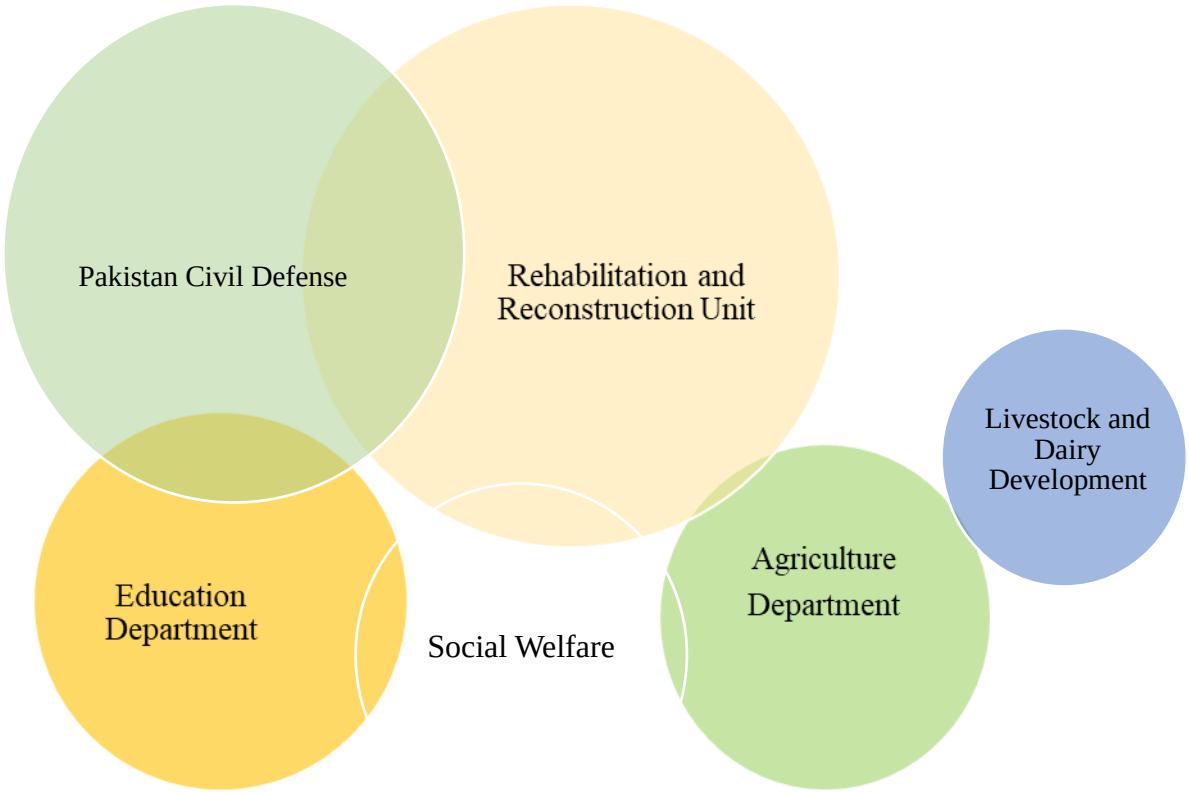

Figure 4. 13: Venn's Diagram Illustration of the Institutional Capacity Assessment at FATA Secretariat Level

As for as the human resource capacities are concerned, there are few trained staff available with various departments. In education department trained staff is available as trainers on community-based DRM, schools-based DRM. Similarly, trained staff are available on Damage Need Assessment in Rehabilitation and Reconstruction Unit (RRU). Furthermore, trained staff are available on medical first aid, search and rescue, and firefighting at Civil Defense department and Pakistan Red Crescent etc. Related to women participation in DRM and their coping capacities, thereseems greater concern that women participation is almost negligible on institutional and even on household level.

Sectoral plans are available in some of the departments but they are not specifically DRM mainstreamed. Civil defense department is the only one, who has evacuation and contingency plan. Besides, in some of the departments, light machineries, tools and equipment's are available which could be used during any imminent disaster or emergencies.

4.4.2 District Level Institutional Situation Analysis of DRM Capacities

For the district level capacities assessment of the institutional DRM,about seven FGDs were organized in newly merged districts together with newly merged sub-divisions (as shown in Table 4.7). During these FGDs, most of the line departments and civil societies organizations of the respective tribal districts and sub-divisions were participated. FGDs were facilitated in three different types of group exercises which help to ascertain the department wise capacities in respective newly merged districts.

Table 4. 9: FGDs conducted for Institutional Situation Analysis of DRM Capacities (District Level)

#	FGD Date	District/Sub-Division	Venue
1	2nd July	Khyber District and Hassan Khel Sub-Division (F.R. Peshawar)	Peshawar
2	4th July	Mohmand District	Ghalanai
3	6th July	Bajaur District	Khar
4	16th July	Orakzai District /Dara Adam Khel Sub-Division	Kohat
5	18th July	Kurram District/Wazir Sub-Division	Kohat
6	30th July	South Waziristan District and Bettani and Jandola Sub-Division	D.I. Khan
7	1st August	North Waziristan District/Darazanda	D.I. Khan

District wise departmental capacities of the respective districts and newly submerged subdivisions have been presented through Venn's Diagram Analysis as shown infigures ranges from 4.14to 4.20. These diagrams were prepared from the resources inventories collected from each individual department in FATA secretariat and in the districts. The factors considered as capacities are; human resources, machinery and equipment, DRR/DRM plans, DRR infrastructure and early warning system.

Venn,s Diagram for Institutional Capacity of Tribal District Khyber

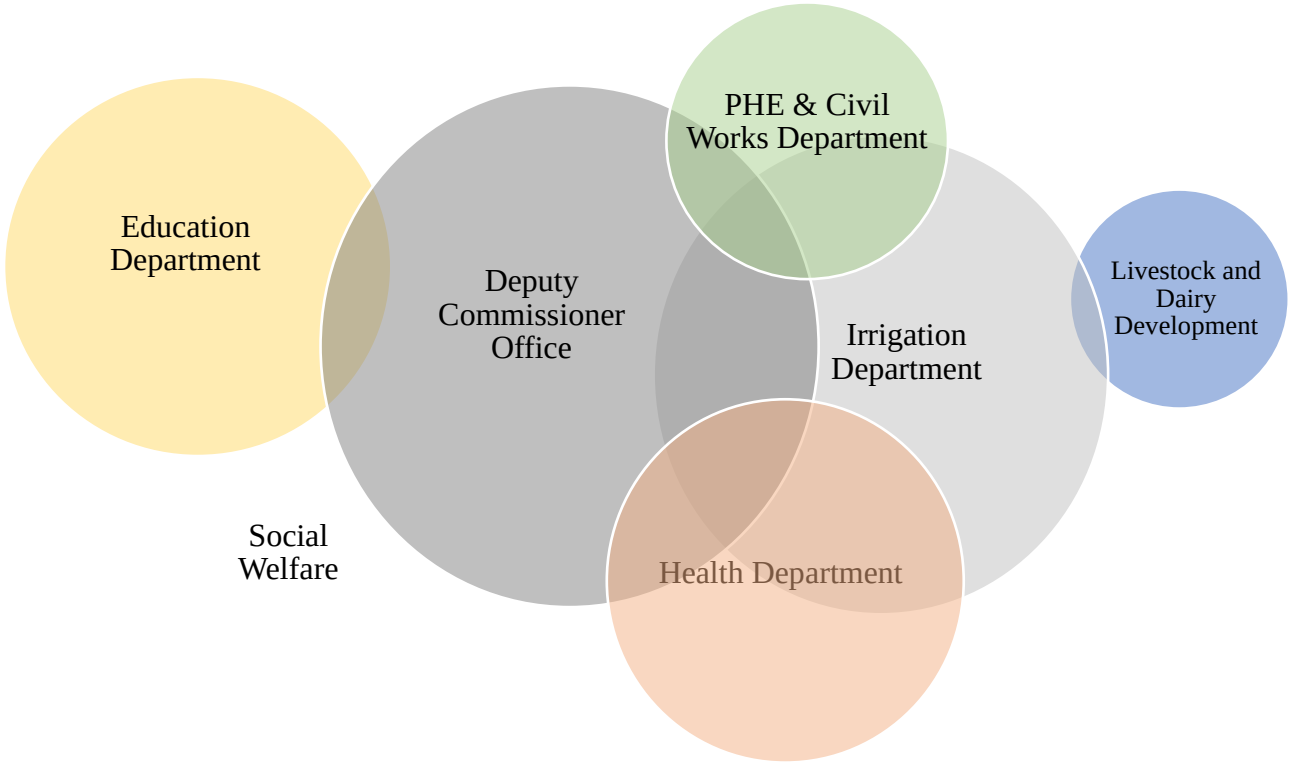

Figure 4. 14: Venn's Diagram Analysis of the Institutional Capacity Assessment of DRM in Tribal District Khyber

Venn,s Diagram for Institutional Capacity of Tribal District Mohmand

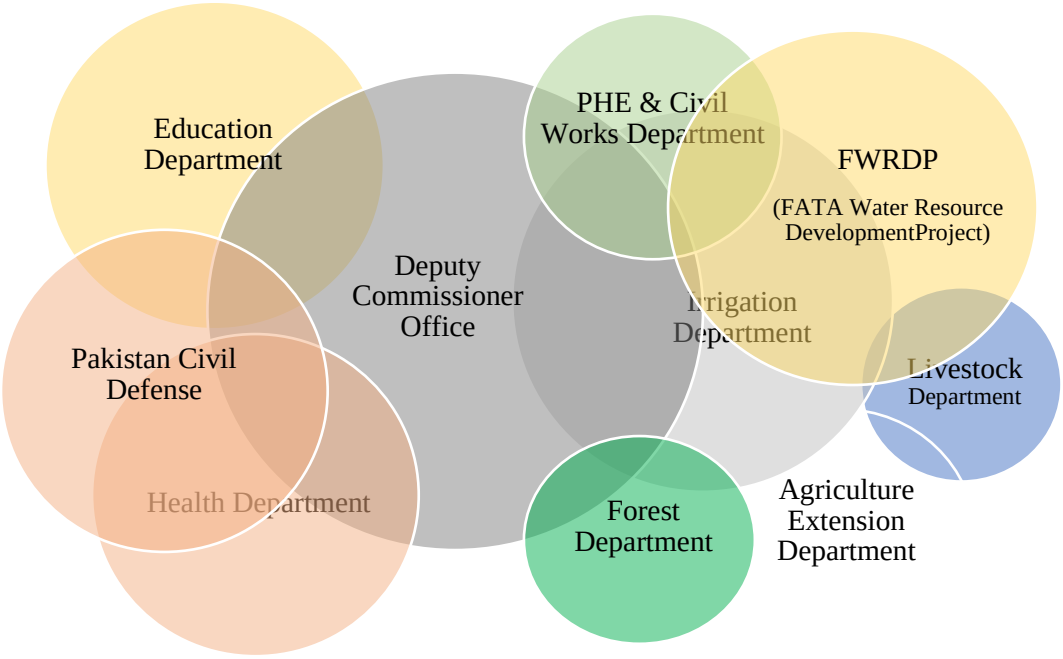

Figure 4. 15: Venn's Diagram Analysis of the Institutional Capacity Assessment for DRM in Tribal District Mohmand

Venn,s Diagram for Institutional Capacity of Tribal District Bajaur

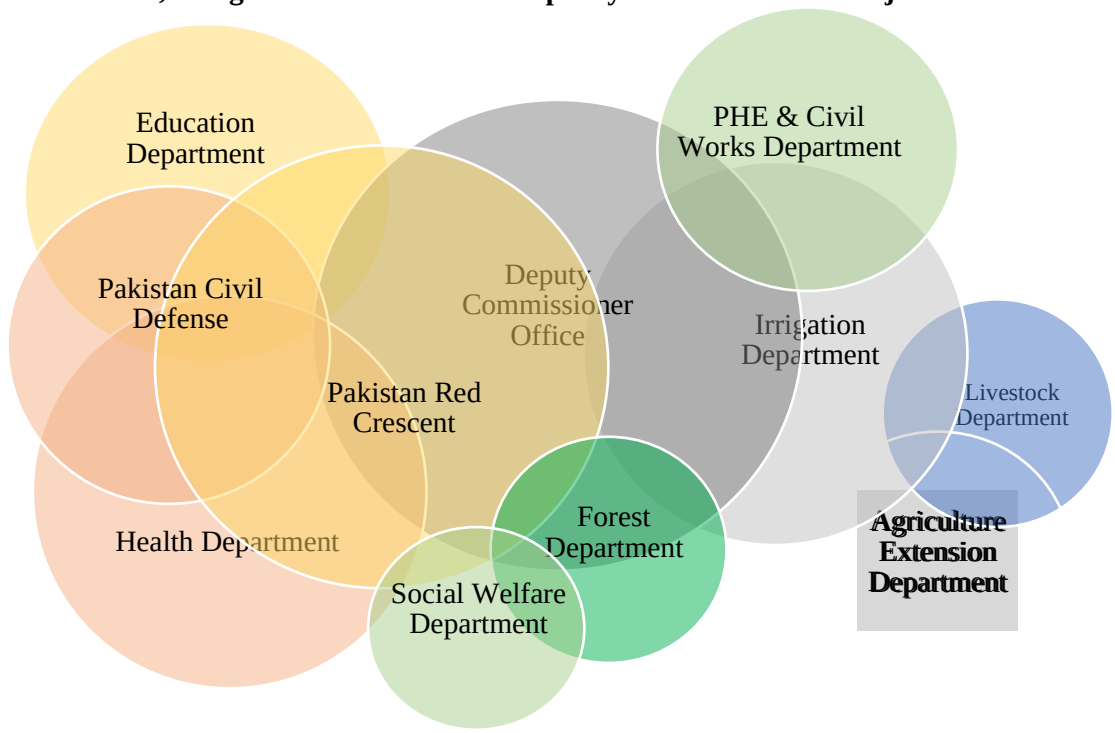

Figure 4. 16: Venn;s Diagram Analysis of the Institution Capacity Assessment for DRM in Tribal District Bajaur

Venn,s Diagram for Institutional Capacity of Tribal District South Waziristan

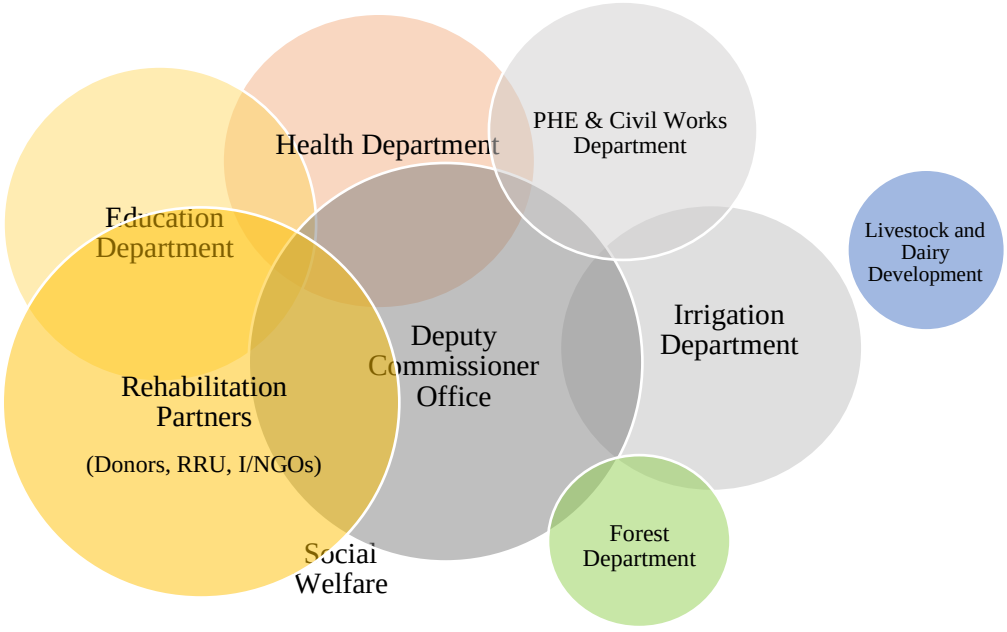

Figure 4. 17: Venn;s Diagram Analysis of the Institution Capacity Assessment for DRM in Tribal District South Waziristan

Venn,s Diagram for Institutional Capacity of Tribal District North Waziristan

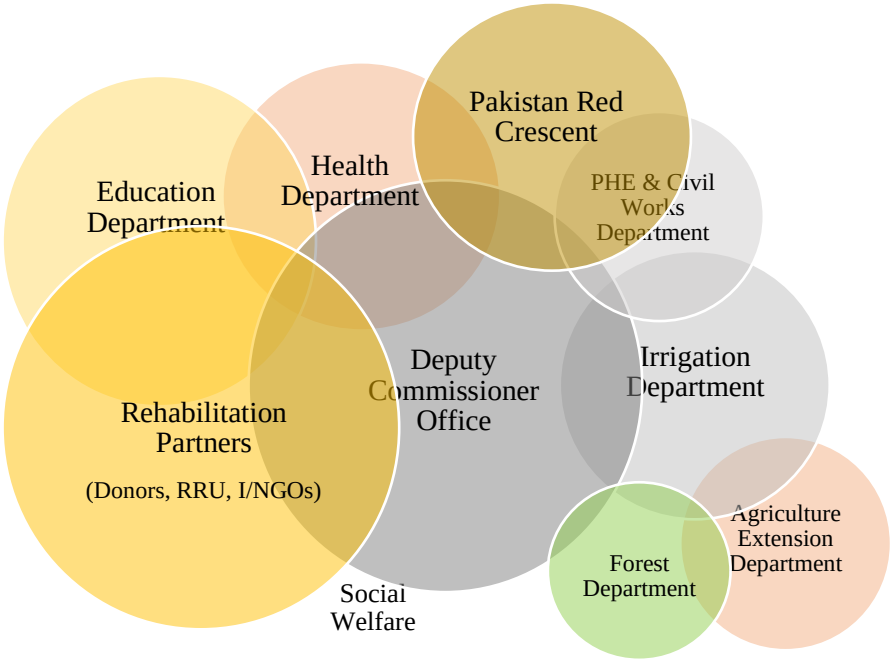

Figure 4. 18: Venn;s Diagram Analysis of the Institution Capacity Assessment for DRM in Tribal District North Waziristan

Venn,s Diagram for Institutional Capacity of Tribal District Orakzai

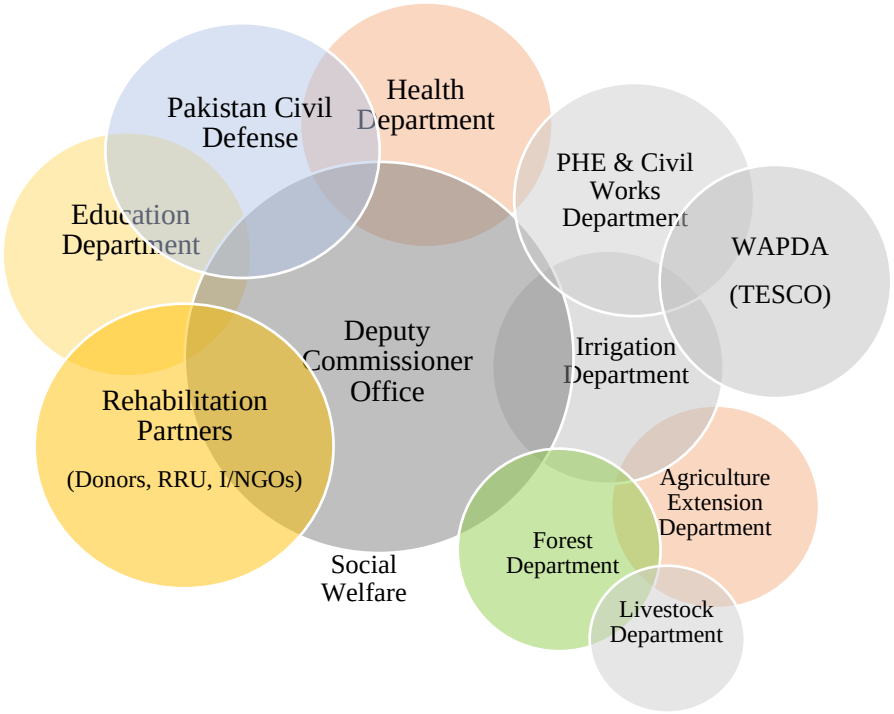

Figure 4. 19: Venn;s Diagram Analysis of the Institution Capacity Assessment for DRM in Tribal District Orakzai

Venn,s Diagram for Institutional Capacity of Tribal District Kurram

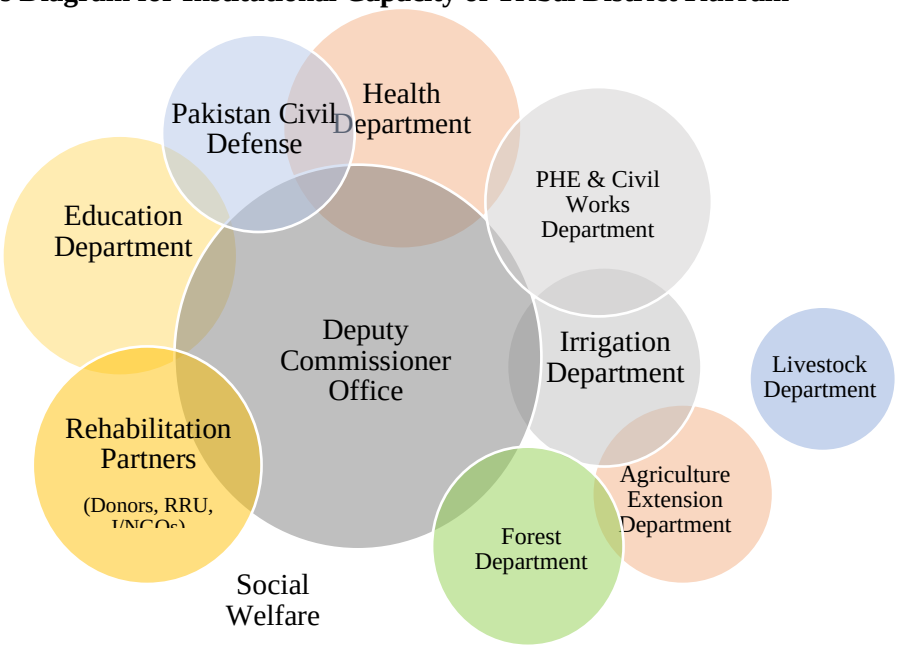

Figure 4. 20: Venn;s Diagram Analysis of the Institution Capacity Assessment for DRM in Tribal District Kurram

As per assessment, it is very clear that the line departments have some capacities to deal with disaster risk management but still those capacities are found as limited and was not enough for effective response for disaster management. For further details, see the following department level identified capacities.

Chapter 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This research study provides a detail insight to the prevailing hazards and its impacts on communities, systems and built environment. Furthermore, the institutional level capacity assessment by considering the factors like human resources, machinery and equipment, DRR/DRM plans, DRR infrastructure and early warning system. All the given discussion leading towards the conclusion in terms of gap in the institutional capacity and which is the scope of this study.

5.1.1 Gaps Identified at the Department Level

One of themajor gap identified, based on the data analyses collected through FGDs and KIIs, there is a complete lack of inclusiveness of the vulnerable segments in the governmental policies, planning, execution and monitoring. The capacities related with women and people with disabilities are almost absent in majority of the offices surveyed for collecting of data. Besides no data was available related with capacities associated with women and PWDs and from the above given tables, it was noted that thequestioner section related to the capacities pertinent to women and PWDs have been left blank by the participants/respondents. However, some prospects been observed and recorded at few schools and health facilities (newly constructed)in Tribal District North Waziristan's two sub-divisions i.e. Wazir and Bettani.

For the departmental capacity gap assessment (provincial & district level), data analysis revealed the following gaps;

- **Rehabilitation and Reconstruction Unit (RRU) for Erstwhile FATA:** The department has been established with an aim to chalk out and carry out all the rehabilitation and reconstruction in erstwhile FATA. The function of the Unit is more like coordination and facilitation for the mention subject. The institutional capacity assessment of the unit regarding DRR/M depicted that there is a lack of knowledge

forDRR integrated rehabilitation and reconstruction. No guidelines and DRM plans were available. There seems a lagoon of the inclusiveness in the planning and execution of the project in relation to the mainstreaming of PWDsand other marginalized groups. RRU is facing financial constraints by resources to support and were noted a very slender presence at the secretariat level. It needs to have same operational HR capacities as PaRRSA which had around 130 people at HQ and field level.There are little or no resources at disposal of RRU except for office level operations.

- **Deputy Commissioner Office:** This office has enjoyed the full powers related to the public administration just like any other district of Pakistan. The office has also a constitutional mandate, as Deputy commissioner has assigned the role as the Chairman of DDMA. This office considers as an elite and focal point of DRM in the districts. However, in the study areas context the gaps identified in the capacities of deputy commissioners' offices in newly merged districts are; there is no any formal structure and existence of the DDMO office and functionality, not existing any integrated emergency operation center, no mechanism for early warning dissemination etc. Besides, the allocation of fund was also noted as negligible for post and pre disaster operations.
- **Health Department:** At district head quarter level the hospitals are able to handle any normal emergency situation but at outreach level the department has a very little existence. The department has the constraints in ambulances, human resources, infrastructure, emergency drugs and any referral mechanism. Similarly, hospitals preparedness for emergency component is also missing. Incident Command mechanism is also missing at hospitals and health facilities.
- **Education Department:** There is a lack of trained staff onDRR/M,no and DRR mainstream planning and execution, no mainstreaming of DRR in curricula, not conducted formally any awareness sessions in schools, lack of safety culture (equipment and training), lack of emergency mock drills for students and teachers, no any dedicated vehicle and dedicated budget heads for the purpose is available.
- **Agriculture Department:**Disaster management operational plan isn't available at department level as they don't have enough technical capacities in the field of DRR/M,no any mechanism for monitoring and forecasting of agriculture related hazards like droughts,

infestation etc and no any proper training of the personnel on DRR/M were observed. Currently the department has no contingency plan and no any notified committee or focal persons exist for catering and collective emergency response efforts by the government. The department also lack inequipment,lack in safety measures like proper evacuation sites in their office's buildings and simulation exercisesconducted for the personnel.

- **Civil Defense Department:** Vey less trained human resources available with the department, due to which the department cannot perform its jurisdictional responsibility of enforcing fire codes, firefighting and creating trained volunteers' network across the erstwhile FATA. The department is unable to find any financial window in governmental allocation.
- **Livestock and Dairy Department:** Disaster management operational plan currently not available neither have the contingency plans due to lack of awareness and proper technical skills. There is no distinct resources or capacity exists in the department particularly for DRM. No technical staff present in department to cope-up with the disasters. There are no such financial resources available with the department, which can be utilize to cope-up with the emergencies and disasters.
- **Social Welfare Department:** The department have no human recourse to deal with disaster risk. There are no physical resources available for DRMlike early warning dissemination to the vulnerable segments of the community.

5.2 Recommendations: Proposed DRR/MMeasures

Based on the identified gaps and weaknesses portrayed from the discussions and analysis, the actions and suggestions recommended by the participants have been given in this section. The recommendations have also been supported by the research findings in order to plug the gaps in the institutional capacities. The priority of the actions was set by the discussion groups either is either short term, medium term or long term. Tables ranged from 4.10 to 4.16 shows the proposed recommended actions for the decision makers and implementers for strengthening DRM in the newly merged districts of KP.

Table 4. 10: Disaster risk reduction measures proposed for Tribal District Mohmand

	Activities/interventions of your department/Department/ Agency*	**Short Term (1-2 Years)**	**Medium Term (3-4 Years)**	**Long Term (5 Years and Beyond)**
4.10.1 DRR measures proposed by the public health engineering department				
1	Construction for residence of sub engineers/staff at field areas		X	
2	Provision of the furniture for the office use to help the departmental functionality even in disasters		X	
3	Solarization of offices for un interrupted power supply to overcome the coordination disruption in time of disaster.		X	
4	Provision of survey equipment which could be used to identify the risk of water logging, salinity and its management		X	
5	Provision of measurement tools for the survey of affected Area		X	
6	Arrange training of sub engineers in term of capacity building	X		
7	Arrange trainings on awareness raising at tehsil level for general public		X	
4.10.2 DRR measures proposed by the education department				
1	Rehabilitation and reconstruction of partially damaged schools			X
2	Provision of first aid kits, emergency response kits, office equipment, communication system in school to cope with disastrous situation.	X	X	X
3	School solarization, provision of drinking water,provision of washroom facilities and ambulances to make it multi-purpose schools.	X	X	X
4	Awareness raising sessions and strengthening coordination with other line departments for mitigation, preparedness and timely response.			X
5	Capacity building of the students and teachers on disaster risk management at all level of the department	X	X	X

4.10.3 DRR measures proposed by the district administration				
1	Strengthening district government by providing equipment and machinery for preparedness and emergency response.	X		
2	Operationalization of the offices of DDMO, and DEOCs	X		
3	Skilled (trained on DRM) human resources for disaster response at tehsil and community level		X	X
4	Awareness and training of DRR for district government officials		X	X
5	Capacity enhancement for DRR planning with dedicated funding sources at district level.		X	X
4.10.4 DRR measures proposed by the FATA Water Resource Development Project (FWRDP)				
1	Capacity building of the officials on privileging disaster risks and its management like drought.	X		
2	Supporting construction of small dams and check dams as flood & drought mitigation measures.	X	X	X
3	Canal lining of water courses.		X	X
4	Construction of resilient drinking water supply schemes		X	
5	Refresher courses on basic training of DRR/M (male and female)	X		
6	Awareness sessions needs to be conducted for the staff of FWRDP.	X		
4.10.5 DRR measures proposed by the irrigation department				
1	Construction of protection bunds at vulnerable palace of the district	X	X	X
2	Construction of small dams for flood and water resource management	X	X	X
3	Construction of irrigation channels with improved quality to minimize the risk of flooding.	X	X	X
4	Construction of earthen ponds for animal drinking water harvesting(during or after flood).	X		
5	Capacity building of irrigation officials on DRR/M.		X	
6	Awareness raising programs for flood management at department and community level.	X		
4.10.6 DRR measures proposed by the forest department				
1	Promotion and establishment of the forest nurseries for plantation and climate change adoption purpose		X	X
2	Promotion of block plantation in target districts to combat climate changes	X	X	X

3	Projection and encouragement of the soil conservation activities	X	X	X
4	Availability of water tankers in disaster emergency at field level			X
5	Awareness among the public regarding afforestation		X	
6	Recruitment of field staff for forest management		X	X

4.10.7 DRR measures proposed by the social welfare department

1	Provision of vehicles for movement to the targeted areas			X
2	Establishing coordination and communication mechanism (horizontally & vertically)	X	X	
3	Provision of office equipment and supporting in youth engagement	X	X	X
4	Organizing DRM training, awareness sessions, group work activity at village and union council level	X		
5	Community sensitization on DRM through local media	X		

4.10.8 DRR measures proposed by the civil defense department

1	Strengthen department by establishing new offices at tehsil level for outreach access to communities and volunteer.			X
2	Availability of funds for volunteer staff to encourage them for volunteerism and to keep them retain as volunteers.	X	X	X
3	Provision of vehicles for department in order to timely response in effected area		X	X
4	Provision of fire fighting vehicles at all offices and for community response to fire emergencies	X	X	
5	Establishment of well-equipped ware houses at each tehsil to deal with disasters and emergencies			X
6	Development of DRR/M trainings, brushers, leaflets for awareness raising campaign	X	X	X
7	Maintain close coordination with line departments for effective disaster management		X	X

4.10.9 DRR measures proposed by the agriculture department

1	Construction of retaining and protection walls in fields to reduce land erosion		X	X
2	Construction of resilient irrigation channels.		X	X
3	Digging of wells and solar tube wells to reduce water shortage	X	X	X
4	Provision of advance machinery for agriculture activities.			X

5	Encouraging and providing support in orchard raising and agro-forestation	X	X	X
6	Research in agriculture for advancement in the context of disaster management		X	X
7	Trainings for former community	X		
8	Fertilizer regulations agricultural authorities	X		
9	Kitchen gardening training for women		X	

4.10.10 DRR measures proposed by the Pakistan Red Crescent

1	Construction of PRC Mohmand building, first aid, ambulances, vehicle for volunteers and paid training staff	X	X	X
2	Supporting PRC in conducting trainings on DM for government official and local community to deal with disasters		X	X
3	Supporting PRC in conducting first aid trainings for local communities and government officials	X	X	X
4	Supporting PRC in conducting trainings on mine risk education for the local communities	X	X	X

Table 4. 11: Disaster risk reduction measures proposed for Tribal District Khyber

	Activities/interventions of your department/Agency*	Short Term (1-2 Years)	Medium Term (2-4 Years)	Long Term (5 Years and Beyond)
4.11.1 DRR measures proposed by the public health engineering department				
1	Provision of tanker/boozers to the department in order to deal emergencies		X	X
2	Provision of electrical and mechanical machinery to the departments	X		
3	Recruitment of trained technical human resources in department	X		
4	Enhancing capacity of the department in civil work restoration in the district.	X	X	X
5	Preparation of departmental DRR/M plan supported by the hazard and risk assessment of the district		X	X
6	Financial resource mobilization for disaster related activities			X
4.11.2 DRR measures proposed by the education department				
1	Rehabilitation of partially damaged schools	X	X	
2	Reconstruction of full damaged schools (disaster resilient structure)	X	X	X
3	Provision of proper shelter and boundary walls in schools	X	X	
4	Provision of additional classrooms	X	X	X
5	Provision of barbed wire overschool's boundary walls	X	X	
6	Tube wells for water supply.		X	X
7	Proper training of the department personnel on minimizing disaster risks.	X		
8	Inclusion of students and teachers in trainings related to DRM		X	X
4.11.3. DRR measures proposed by the finance and planning cell of the Deputy Commissioner Office				
1	Need to strengthen the department by provision of fire brigade truck in each tehsil	X	X	
2	Provision of heavy machinery like excavator and dozer in each tehsil of the district		X	X
3	Ensure first aid kits in each department at district level	X	X	
4	Develop mechanism to conduct regular refresher training on DRR/M for district officials	X	X	X
5	Provision of disaster management fund to the department for	X	X	X

	mitigation, emergency response and for restoration of essential services			
4.11.4 DRR measures proposed by the Communication and Works (C&W) Department				
1	Need to construct DEOC for as point of contact and point of dissemination of information	**X**	**X**	
2	Ensure dumper, trucks and other machinery for DRR and DRM activity at department level		**X**	**X**
3	Mobilization of funds for disaster risk reduction activity at department level		**X**	**X**
4	Need to strengthen the coordination mechanism with DDMU at district level in future	**X**	**X**	**X**
4.11.5 DRR measures proposed by the Irrigation Department				
1	Construction of protection bunds in different nullahs/khwarh.	**X**	**X**	**X**
2	Establishment of floods flask in vulnerable location.	**X**	**X**	
3	Construction of watercourses and canals that can absorb flood waters during monsoon.	**X**	**X**	
4	Capacity building of the staff to make them able to combat disasters and emergencies		**X**	**X**
5	Financing for restoration of the affected flood fighting infrastructure	**X**	**X**	**X**
4.11.6DRR measures proposed by the District Administration				
1	Strengthen the district administration by provision ofheavy machinery for disaster response	**X**	**X**	**X**
2	Provision of mobile hospitals at district level		**X**	**X**
3	Ensure flood rescue equipment and tools in district		**X**	**X**
4	Stock piling of tents as an emergency shelter for disaster situation with district administration	**X**	**X**	**X**
5	Construction of flood protection walls in the vulnerable point of thedistrict		**X**	**X**
6	Construction of causeways and bridges especially onPeshawar – LandiKotal Road to mitigate the disaster Risk.	**X**	**X**	
7	Training sessions for Levies and Khasadar force on DRR/M	**X**	**X**	
8	Establishment of disaster management teams in the district	**X**	**X**	
9	Promotion disaster management committees at community level		**X**	**X**
4.11.7 DRR measures proposed by the Health Department				

1	Allocation of ambulances and staff for emergencies and disasters	X	X	X
2	Ensure availability of electricity by installation of solarization system in each hospital at tehsil level to increase its operational capability	X	X	
3	Construction of resilient health facility at safe area which are accessible to all	X	X	X
4	Strengthen disease early warning system in all health facilities to minimize the epidemics, which considered as the secondary hazards	X	X	
5	Provision of DRR/M training and workshops for health staff	X	X	X
6	Promote hospital preparedness for emergencies programs in the districts		X	X

4.11.8 DRR measures proposed by the Livestock and Dairy Development Department

1	Provision of emergency shelters for animal			X
2	Ensure veterinary ambulances in departments			X
3	Contingency fodder stock piling for animal in case of emergency	X	X	X
4	Maintaining emergency medicines stock in veterinary hospitals			X
5	Provision of vaccines for animal during disaster			X
6	Water storage and arrangement for animals in disasters	X	X	X
7	Early disease warning system for animal epidemics	X		
8	DRR/M trainings for livestock and dairy department staff	X		
9	Exposure visits for the department staff	X		

Table 4. 12: Disaster risk reduction measures proposed for Tribal District Bajaur

	Activities/interventions of your department/agency*	Short Term (1-2 Years)	Medium Term (1-2 Years)	Long Term (5 years and Beyond)
4.12.1 DRR measures proposed by the Social Welfare Department				
1	Keep contingency stock of wheelchairs, tricycles, hearing machine distribution for PWDS during disaster situations	X	X	X
2	Capacity building of PWDs in order to make them able to deal with disaster	X	X	
3	Conduct capacity building training workshops on DRM for staff and PWDs	X		
4	Preparation of DRM inclusive plans and mapping of PWDs at community level	X	X	X
5	Funding mobilization for DRR related measures	X	X	X
4.12.2 DRR measures proposed by the Education Department				
1	Training and awareness among students and teachers	X		
2	Reconstruction of full damaged schools	X	X	X
3	Building additional and resilient classrooms	X	X	X
4	Barbed wire on school's boundary walls	X		
5	Installation of tube wells for water supply in school's premises	X		X
6	Mock exercises for studentsfor different type of risk in schools	X	X	X
4.12.3 DRR measures proposed by the Communication and Works (C&W) Department				
1	Implementation of proper building codes.	X	X	X
2	Awareness raising of public to avoid construction in flood prone areas	X	X	X
3	Provision of first aid kit to the department	X		
4	Construction of RCC bridges, culverts, roads, slippery removal and restoration of communication lines	X	X	X
5	Refresher courses on basic training of DRR and DRM.		X	X
6	Mobilization of funds for this purpose.	X	X	X
7	Proper coordination vertically and horizontally	X	X	X
4.12.4 DRR measures proposed by the Irrigation Department				

1	Construction of protection bunds in different nullah/khwarh	X	X	X
2	Construction of spurs and protection walls	X	X	
3	Water courses and canals that can absorb flood shocks during monsoon		X	X
4	Flood gauges and flood warning equipment's, sand bags at bulldozer	X		
5	Training of the staff	X		

4.12.5 DRR measures proposed by the Agriculture Department

1	Heavy rescue machinery along with tractors for levelling of land		X	X
2	Funds for seeds and fertilizers for emergency response		X	
3	Flood protection walls in vulnerable points of district	X		
4	DRM training sessions for formers community.		X	
5	Disaster management training of trainers for officials of agricultural department		X	X
6	Establish disaster management committees at community level		X	

4.12.6 DRR measures proposed by the Health Department

1	Upgradation of DHQ for disaster management	X	X	X
2	Construction of THQ and construction of trauma centers at THQ level	X	X	X
3	Construction of resilient BHUs	X	X	
4	Construction of community health centers	X	X	
5	Early disease warning system establishment and strengthening	X		
6	DRM trainings and recruitment of doctors and other health staff	X	X	
7	Organizing DRM and safer hospital workshops in order to reduce public about disaster management	X		

4.12.7 DRR measures proposed by the Civil Defense Department

1	Establishment of civil defense separate unit at district level		X	X
2	Vehicles for volunteers to reach the targeted area for relief activity on time		X	X
3	Provision of first aid kits and hygiene kits to the department	X	X	
4	Establishment of warehouses at tehsil level	X	X	
5	Sufficient fund for proper utilization in times of disasters	X	X	X

6	Honorarium in term of money for volunteers	X	X	X
7	Capacity building of volunteers for DRM	X	X	X
8	Trainings on DM for civil defense staff	X		
9	Exposure visits for civil defense staff	X		

Table 4. 13: Disaster risk reduction measures proposed for Tribal District South Waziristan

	Activities/interventions of your department/agency	Short Term (1-2 Years)	Medium Term (1-2 Years)	Long Term (5 Years and Beyond)
4.13.1 DRR measures proposed by the Communication and Works Department				
1	Required training of staff regarding threats of disasters.	X		
2	Strengthening the existing condition of roads and structures damaged by the disasters	X	X	
3	The C&W shall be given funds on departmental level before the disaster in order to manage the unseen events in better way	X	X	X
4.13.2 DRR measures proposed by the Livestock and Dairy Development Department				
1	Require disaster management funds in the department to help in time of disasters	X	X	X
4.13.3 DRR measures proposed by the Education Department				
1	Funds should provide to every department before disaster	X	X	X
4.13.4 DRR measures proposed by the Health Department				
2	Essential immunization and vaccine for various diseases.	X	X	X
3	Emergency drugs for diseases like T.B, malaria and typhoid etc.	X	X	X
4	Construction of health facility at safe area that is accessible to all masses		X	X
5	DRM trained workers	X		
6	Financial provisions	X	X	X
7	Ambulance with trained HRs	X		
4.13.5 DRR measures proposed by the Irrigation Department				
1	Availability of funds for DRR/M activities	X		
2	Dams construction as flood protection measure	X	X	X
3	Protection walls construction in hazardous area		X	X
4	Support in water supply and restoration.	X	X	X
5	Gabion structures for protection of bunds		X	X
6	DRM trainings of departmental staff.	X		

Table 4. 14: Disaster risk reduction measures proposed for Tribal District North Waziristan

	Activities/interventions of your department/Agency	Short Term (1-2 Year)	Medium Term (1-2 Year)	Long Term (5 Year and Beyond)
4.14.1. DRR measures proposed by the Public Health Engineering Department				
1	Provision of tube well machinery	X		
2	Construction of rooms in the department			X
3	Construction of the compound walls at vulnerable places		X	
4	Retaining walls construction to minimize disaster effects to water supplies			X
5	Repairing of distribution system	X	X	X
6	Pipe lines at communities where required	X	X	
7	Solarizationof the tube wells	X	X	
8	Need more human resources for smooth running of scheme		X	X
9	Training of staff on DRR is needed	X		
4.14.2 DRR measures proposed by the District Administration				
1	Allocation of funds for disasters.	X	X	X
2	Ambulance for quick disaster response.	X	X	
3	Warning system establishment for disaster situation	X	X	
4	Vehicles for disaster response.		X	X
5	Building of flood protection bunds in the district		X	X
6	DRR/M training of admin staff and all line departments	X		
7	Tents for the people and establishment of incidents command system (DEOC)	X	X	
4.14.3 DRR measures proposed by the Health Department				
1	Allocation of funds for disasters	X	X	X
2	Medicines for emergencies	X	X	
3	Ambulances and equipment	X	X	
4	Diseases warning system.		X	X
5	Generators, mobile hospitals and mosquito nets	X		

6	DRM training for staff.		X	X
7	Incidents command system for hospital		X	X
8	Emergency ramp construction and ensure left for PWDs in high raised building of health facility	X		X
9	Ensure emergency door in health facilities	X		X
10	Provision of firefighting equipment, wheel chairs, stretcher for pregnant women and PWDs in health facility	X		X
11	Trainings and seminar on DRR for female staff of health facilities	X		X
12	Construction of secure room for female PWD in health facilities	X		X
13	Provision of first aid boxes to health facilities	X		X

4.14.4 DRR measures proposed by the Education Department

1	Enhancing building capacities of schools and providing of missing facilities	X		
2	Circle wise emergency transports for education department and emergency response kits for school		X	
3	Provision of vehicles for transportation of children during disaster	X		
4	Construction of resilient school buildings.			X
5	Security and monitoring for human induced hazards			X
6	Development of DRM plan for education department.	X		
7	Need of tents for temporary schools' establishment during disaster	X		
8	Training of teachers and students on DRR/M.	X	X	
9	School based early warning system establishment.	X		
10	Emergency ramp construction and ensure left for PWD in high raised building of female school	X		
11	Ensure emergency door in female schools	X	X	X
12	Provision of firefighting equipment, wheel chair, stretcher for pregnant women and PWDs in female school	X	X	X
13	Training on DRR for female staff and students of target school	X	X	X

4.14.5 DRR measures proposed by the Agriculture Department

1	Construction of resilient drains	X	X	
2	Construction of resilient irrigation channels	X	X	

3	Crops insurance to reduce disaster losses		X	X
4	Water supply and restoration of schemes	X	X	X
5	Seeds and fertilizer provision of land reclamation	X	X	
6	Staff capacity building on DRR	X	X	
7	Formulation of DM plan to strengthen coordination	X		

4.14.6 DRR measures proposed by the Livestock and Dairy Development Department

1	Solarization of all veterinary institutions.	X	X	
2	Free medical camps in emergencies	X	X	X
3	Vaccines for emergency situation	X	X	X
4	Shelters provision for animals during disaster	X	X	X
5	Generators and spray machines to use in emergency	X		
6	Livestock department staff Training on DRM.	X	X	
7	Strengthening of veterinary institutions.		X	X
8	Motor cycles for field staff for vaccination and treatment	X	X	

4.14.7 DRR measures proposed by the Sports Department

1	Sports goods for refreshment activities for disaster affected areas	X	X	X
2	Construction of sports grounds after disaster.	X	X	
3	Sport department staff training on DRM.	X		

Table 4. 15: Disaster risk reduction measures proposed for Tribal District Orakzai

	Activities/interventions of your department/agency	Short Term (1-2 Year)	Medium Term (1-2 Year)	Long Term (5 Year and Beyond)
4.15.1 DRR measures proposed by the Civil Defense Department				
1	Strengthen department by provision of firefighting support	X	X	
2	Provision of first aid boxes to the department for effective response	X	X	
3	Provision of leaders, ropes, rescue bags, jumping sheets for emergency and disaster response	X	X	
4	Provision of Kudla's, fire men, mega phones, dust masks, ambulance, HCL marks, shoes, life jackets, tents for civil defense department strengthen.	X	X	
5	DRM capacity building training to the staff.	X		
6	Provision of proper uniform for the volunteers in order to make them motivated		X	X
4.15.2 DRR measures proposed by the Education Department				
1	Resilient school buildings construction.	X	X	X
2	Provisions of furniture to the schools and education department	X	X	X
3	Ensure search & rescue kits are available at schools' level.		X	X
4	Construction of protection walls in vulnerable schools' areas		X	X
5	Vehicles arrangement for education department to use as transportation mean during emergency evacuation			X
6	Stockpiling of tents for temporary schools establishment.		X	X
7	Human resources recruitment like teaching staff and supporting staff		X	X
8	Disaster management funds allocation for education department	X	X	X
9	Regular drill, simulation exercises and DRM training workshop organizing in school	X	X	X
10	Provision of first aid kits to all schools in the target area.	X	X	
4.15.3 DRR measures proposed by the Irrigation Department				
1	Provision of four vehicles at camps offices of tehsil.			X
2	Provision of four excavators and dozers at tehsil level for derbies removal during at normal time	X	X	

3	Provision of dewatering pumps at tehsil level for emergency response	X	X	
4	Stock piling of tents for displace peoples in emergency.	X	X	X
5	DRM training for irrigation department staff.	X		
6	Funds mobilization and provision to Irrigation department for DRM activity and emergency need	X	X	X
7	Development of Information system /early warning mechanism	X		
8	Emergency and first aid kit provision to the department.	X	X	
9	Supporting staff recruitment for the support during emergency	X	X	

4.15.4 DRR measures proposed by the Irrigation Department

1	Earthquakes resistant buildings shall be constructed to reduce loss of earthquake			X
2	Establishment of four camp offices at tehsil level.		X	
3	Provision of four excavators at tehsil level.	X		
4	Provision of four dewatering pumps at tehsil level.	X		
5	Arrangement of four dumpers for material carriage during emergency	X		
6	Establishment of camps for displaced persons in emergency		X	
7	DRR training for communication and works department.		X	
8	Provision of funds for emergency.	X		
9	Establishment of Information system.	X		
10	Induction of supporting staff in department		X	
11	Provision of Emergency first aid kit.	X		
12	Mock exercises organization at department level.	X		
13	Vehicles provision for emergency.	X		
14	Establishment rescue center at each tehsil.	X		

4.15.5 DRR measures proposed by the Health Department

1	Provision wheel Chairs, Minor Stratus's, Ambulances, OT equipment, kafan for Dead bodies, Emergency first aid box, health facility	X		
2	Equipment and medicines for emergencies	X		
3	Ensure mobile dispensary		X	

4	Immunization arrangement for emergency	X		
5	Emergency electricity arrangement	X		
6	Provision of X-Ray, Ultrasounds machines for health facilities		X	
7	Training on disaster management for health department	X		
8	Training of doctors on ATLS		X	
9	Strengthening of vector control program	X		
10	Promotion of DRM community awareness sessions.		X	
11	Specific budget to agency surgeon through DHS Fata.		X	
12	Paramedics training specially for first aid.		X	

4.15.6 DRR measures proposed by the Forest Department

1	Promotion of district level afforestation.	X	X	X
2	Promotion of farm forestry at district level.	X	X	X
3	Construction of check dams as mitigation measure of flash flood and land sliding	X	X	
4	Construction of live spurs in vulnerable points.	X	X	
5	Ensure of rooms in nurseries.			X
6	Promotion of water channels in nurseries.			X
7	DRM and climate change training for the staff of forest department	X		

4.15.7 DRR measures proposed by the Social Welfare Department

1	Stock piling of wheel chairs, tri cycles, and crushes for disable person during emergency	X	X	
2	Stock piling of sewing machines for widow in emergency.	X	X	
3	DRM training for the staff of social welfare department.	X		

4.15.8 DRR measures proposed by the Physical Health Engineering Department

1	Establishment of four camps offices at each tehsil level.		X	
2	Ensure diesel generators available with department for disaster situation	X		
3	Provision four machineries for PHED related work.	X		
4	Recruitment of five Technical Staff plus trained on DRM for strengthen department		X	

5	Provision of fifty storage tankers for emergency response.	X		
6	One vehicle arrangement for carriage of material to site.			X
7	Availability of contingency stock of Pipes.	X		
8	DRR/M trainings for PHED staff.	X		
9	Information system strengthening.	X		
10	Ensure emergency level fund at each sub division.		X	

4.15.9 DRR measures proposed by the Deputy Commissioner Office

1	Construction of earthquake resilient shelter centers and equipment with resources		X	X
2	Strengthening of flood resilient Irrigation Channels.		X	X
3	Hospitals preparedness for emergencies.	X	X	X
4	Establishment of center for women & PWDs during emergencies			X
5	Provision of vehicles to district government to management effective evacuation	X	X	
6	Stock piling of tents, food packages to deal with imminent disaster	X	X	X

4.15.10 DRR measures proposed by the Livestock and Dairy Development Department

1	Establishment of diagnostic laboratory in the department	X	X	
2	Provision of motor cycle for veterinary assistants.	X	X	
3	Proper buildings for damaged veterinary dispensaries.		X	
4	Establishment resilient buildings of poultry farms.	X	X	X
5	DRM training for lab staff.	X		
6	Training on artificial insemination in small animals.	X		
7	Training for livestock epidemic prevention like Congo virus etc.	X	X	

4.15.11 DRR measures proposed by the TESCO WAPDA

1	Contingency stock of L.T. and H.T Cables emergency response	X	X	X
2	Promotion of earth system.	X	X	
3	Stock piling of insulators	X	X	
4	Stock piling of cross arms	X	X	
5	Promotion protective system	X	X	X

6	Provision of SAG span and staff	X	X	
7	Ensure safety and protection measure in the department.	X	X	X
8	DRM awareness sessions for TESCO staff.	X		

Table 4. 16: Disaster risk reduction measures proposed for Tribal District Kurram

	Activities/interventions of your department/agency	Short Term (1-2 Year)	Medium Term (1-2 Year)	Long Term (5 Year and Beyond)
4.16.1 DRR measures proposed by the Irrigation Department				
1	Construction of protection walls along with G.I wire for channels and crop land	X	X	
2	Construction of resilient head at retaining walls for channel and uptake point	X	X	X
3	Resilient RCC aquatint for crossing the barani nullah.		X	X
4	Channel lining to easily accessing of water for irrigation of land		X	X
5	Excavator for use of debris removal during floods.	X	X	
6	Vehicles for staff to approach the site on time.	X	X	
7	Computer system for maintaining damages record	X	X	
4.16.2 DRR measures proposed by the Health Department				
1	Provision of Ambulances in each BHU	X		
2	Ensure Emergency Drugs available in each health facilities	X		
3	Major minor repair of health facility including water supply		X	
4	Establishment of disease management unit			X
5	Hospital preparedness training for staff of health departments	X		
6	Incident command system training for health staff			X
7	Organize disease management training at DHQ THQ BHQ level	X		
8	Establishment of independent unit for disaster management in health department	X		
4.16.3. DRR measures proposed by the Pakistan Red Crescent				
1	Provision of ambulance to PRC for better response.		X	
2	Stock piling of tarpaulin sheets for emergency response.	X		
3	Ensure emergency medicines for medical camps during disaster	X		
4	Organize CADRE training for PRC staff.			X
5	Organize DDRT Trainings for local communities and officials			X
6	First aid trainings government line department and community			X

7	Search rescue and evacuation training for target community	**X**
8	Hygiene promotion in local communities.	**X**

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ANNEXTURES

Annexure 1: Questionnaire for FGD Session I - Hazard Profiling

"Situational Analysis of Institutional Disaster Risk Management (DRM) in Federally Administered Tribal Areas (FATA) of Pakistan"

Focus Group Discussion (Type I): Hazard Profiling Questioner

Date:		Venue:		
Name of group members				
S #	**Name**	**Designation**	**Organization**	
1				
2				
3				
4				
5				
6				
7				

a). Over all ranking of your agency under each hazard types?

Name of Agency	Name of hazard available at Agencylevel	Click on appropriate box			
		Low	Medium	High	Very High
	Types of Natural Hazard				
	2).				
	3).				
	4).				
	5).				
	6).				
	7).				
	8).				
	9).				
	10).				
	11).				

b). Over all ranking at each Teshil level under each hazard types?					
Name of Tehsil	**Name of hazard available at Tehsil level**	**Click on appropriate box**			
1).		**Low**	**Medium**	**High**	**Very High**
	1).				
	2).				
	3).				
	4).				
	5).				
	Types of Man-made/human-induced Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
Name of Tehsil	**Name of hazard available at Tehsil level**	**Click on appropriate box**			
2).		**Low**	**Medium**	**High**	**Very High**
	Types of Natural Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
	Types of Man-made/human-induced Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
Name of Tehsil	**Name of hazard available at Tehsil level**	**Click on appropriate box**			
2).		**Low**	**Medium**	**High**	**Very High**
	Types of Natural Hazard				
	1).				
	2).				
	3).				
	4).				

	5).				
	Types of Man-made/human-induced Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
Name of Tehsil	**Name of hazard available at Tehsil level**	**Click on appropriate box**			
4).		**Low**	**Medium**	**High**	**Very High**
	Types of Natural Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
	Types of Man-made/human-induced Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
Name of Tehsil	**Name of hazard available at Tehsil level**	**Click on appropriate box**			
5).		**Low**	**Medium**	**High**	**Very High**
	Types of Natural Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				
	Types of Man-made/human-induced Hazard				
	1).				
	2).				
	3).				
	4).				
	5).				

Annexure 2: Questionnaire for FGD Session II – Capacities & Gaps Identification:

"Situational Analysis of Institutional Disaster Risk Management (DRM) in the Federally Administered Tribal Areas (FATA) of Pakistan"

Focus Group Discussion Type-II (Department and agency level situation analysis)

Instructions for Questionnaire Filling:

This questionnaire will capture the reflection of the participants on the given questions while working of the respondents in different groups (department wise), the group members will discuss about the capacities available at department level that can be used for the future disaster risk management and resilience initiatives and what are the identified gaps?

1. Capacity/Resources inventory at Department level in terms of disaster risk reduction

S.#	Capacity/Resources available with Department	Operational Capability *Whether the resources are in operational (Yes or No)*	Location of the resources	Enlist any capacities available specifically building capacities of women and PWDs	Quantity of the resources	Remarks

2. Is there any work done as disaster risk reduction measures for hazard specific (flood – drainage, pumps; evacuation roots – evacuation center; earthquake-shelter places and security measure for human induce hazard etc.)

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3. What is the status of Community based early warning systems for each hazard (Fast accessibility, broad addressing, geographic distribution)?

Annexure 3: Questioner for FGD Session II – Recommendation for DRR Actions

"Situational Analysis of Institutional Disaster Risk Management (DRM) in the Federally Administered Tribal Areas (FATA) of Pakistan"

Focus Group Discussion Type-III (Department level DRR Measures)

Instructions for Questionnaire Filling:

This questionnaire will capture the reflection of the participants on the given questions while working of the respondents in groups (department wise), the group members will discuss about the proposed departmental level DRR measures that can help in building the capacities of departments in preparedness and response to disaster threats. Group members will propose DRR measures for coming five years and will categorize as Short, Medium and Long term measures.

Name of Agency:

_____

Name of Department:

_____

1. What types of disaster risk reduction measures or interventions you would like to recommend for building the capacities of your Department in order to enable for effective disaster risk and emergency response management*?

Proposed disaster risk reduction measures/interventions	Activities/interventions of your department/ Department/ Agency*	Short Term (1-2 years)	Medium Term (3-4 years)	Long Term (5 years and beyond)
Structural measures/interventions				

Non-Structural measures/interventions				

***Note: -** While proposing the Disaster Risk Reduction interventions, pl. also take note that Gender and PWDs are included in the proposed interventions. You may also like to mention specific interventions required for gender and PWDs.