

District Disaster Management Plan District Ghotki

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Acknowledgment



District Disaster Management Plan (DDMP) for District Ghotki has been developed after series of consultation/validation workshops and continuous meetings with different stakeholders at District level. PDMA Sindh and District Administration Ghotki are very thankful to all the departments who participated in the exercise by giving their suggestions/comments and attended consultation and validation workshops at different occasions.

This was possible because of technical support and funding by the United Nations Development Programme (UNDP) under the UK-DFID programme on Building Disaster Resilience in Pakistan. I am also thankful to the consultant from Network of Disaster Management Practitioners (NDMP), for overall conceptualization and steering the process for development of the plan. I look forward to an effective implementation of this plan by all stakeholders and hope that this preparedness will help in mitigating the potentials losses which may occur due to any unfortunate eventuality.

Lt. (Rtd.) Muhammad Khalid Saleem
Additional Deputy Commissioner (ADC-II)
District Ghotki

Message



After the devastating earthquake of 2005 and episodes of flooding during 2010 to 2015, a paradigm shift has been realized from reactive to proactive approach with more focus on preparedness and mitigation as compared to response and recovery which was the dominant strategy before 2005 earthquake. The shift is further geared through promulgation of National Disaster Management Act 2010 in a country, where a robust disaster risk management system at National, Provincial and District level in under finalizations.

District Ghotki is prone to natural and human induced hazards because of which District Administration is always keen to take proactive measures to reduce the suffering of general public. In this regard, a District Disaster Management Authority has been established under National Disaster Management Act 2010 for handling any disastrous situation. However there was a dire need to develop district disaster management plan in order to set strategic direction in prioritizing disaster risk reduction measures which can help in achieving broader goals of a disaster resilient district.

Hence a District Disaster Management Plan (DDMP) was prepared after an extensive consultation process at District and Taluka level involving relevant Government and non-government stakeholders. Very healthy participation of all stakeholders is encouraged and appreciable which makes this plan a very useful and productive document to be used for managing future disasters. I personally appreciate Lt. (R) Khalid Saleem, Additional DC-II for his keen interest and dedicated hard work in finalizing a comprehensive DDMP. This may be spectrum of disaster management including prevention, mitigation, preparedness, response, recovery etc. to ensure sustainable development. I take it as my sacred duty to commend PDMA Sindh who picked up District Ghotki for development of its disaster management plan. I am also grateful to UK-DFID and UNDP who made preparation of this DDMP possible through their funding besides technical support, through the consultant from Network of Disaster Management Practitioners (NDMP).

I am hopeful that all concerned Government Departments and stakeholders of District Ghotki will take guidance and will follow-up this plan as road map for disaster risk reduction with full spirit in realizing its ultimate objectives of making communities more resilient to future disasters and putting Pakistan on the path of integrating disaster risk reduction into its all development plans.

Syed Aijaz Ali Shah

Deputy Commissioner

District Administration Ghotki

Message



In a follow action, after the promulgation of NDM Act 2010, Provincial Disaster Management Authority Sindh already stands established similar to other provinces. As a mandatory requirement in line with NDM Act 2010, for fully robust, strengthened and functional disaster management system, provincial and district level disaster management plans are a pre-requisite to strategically guide provincial and district governments including all related stakeholders for effective pooling and management of resources to ultimately enable them better response in time of disaster threats.

I would like to whole heartedly congratulate and appreciate the efforts made by District Government Ghotki in taking lead to prepare District Disaster Management Plan. It is quite heartening to learn that DDMP has been prepared based on thorough discussions, consultations and validation exercises with the involvement of all important stakeholders from federal, provincial, district/taluka administrations besides civil society organizations and vulnerable communities. We are much grateful to all actors and participants who have given their valuable inputs in the preparation and finalization of this document. We all know that no plan is etched in stone. There always exist much room for improvement as per the ground realities, hence DDMP might require revision to keep it a living document. In this context the present document should be taken as a first version of DDMP. All stakeholders are requested to share respective feedback and recommendations to support PDMA Sindh and District Government in further refining this Plan in future.

Akhtar Hussain Bugti

Director General

Provincial Disaster Management Authority (PDMA), Sindh

Foreword

Number of natural and man-made disasters threaten Sindh Province particularly floods, cyclones, drought, urban floods, heat waves, dust storms, epidemics, fires, industrial pollutions, insect infestation and terrorism. Riverine floods are the most frequently occurring among these which regularly cause loss of precious human lives, damages to public and private property including human livelihoods etc. 50 floods events since 1926 have caused impacts in Sindh. In the recent years tropical cyclones (Yemyin, Phet) have been hitting Sindh coastline regularly almost every 3 to 5 years¹.

District Ghotki is among those districts frequently affecting by the heavy rains and riverine floods. The district serves as entry point situated on the left bank of River Indus where it enters into Sindh Province, remaining the primary reason for riverine flooding. The population in Katcha areas of two Talukas namely Ubauro & Daharki are at high risk due to frequent threats of riverine flooding. While nomadic living style; poverty, low literacy rates and conservative way of life are posing further constant threats to the lives and properties in the Katcha areas.

The devastating disasters of earthquake 2005 and unprecedented flood 2010 brought about an acute awareness among the government stakeholders and communities of the critical need of proactive approach with more focus on mitigation and preparedness instead of response, relief and rehabilitation which was dominant approach to deal with disaster before earthquake 2005.

Post 2005 unprecedented earthquake period saw the promulgation of National Disaster Management legislation initially in 2007 through an Ordinance followed by an Act of Parliament in 2010. Initiation of NDM Act resulted into placement of three tier National Disaster Management System from National to Province and from Province to District. DM Systems at National and Provincial are now robust while at district level the system is in evolution state from weak to good and good to very good. NDM Act has been translated into planning through National Disaster Management Plan (2012-2022) which is now providing strategic right course in shaping country-wide DRM system.

Disaster management planning at various levels is one of key requirement and most essential document to be prepared and readily available among the relevant stakeholders at all levels to focus on reducing the vulnerabilities and increasing the local capacities to combat the disasters. Preparation of disaster management plan at district level is one of an important document to be prepared by the district authorities. The DDMP will provide strategic guidance to the district authorities to streamline resources to enable them and fully prepare for the disaster threats.

Divided into five chapters, the plan explains the disaster management system with focus on proactive approach starting with introduction part, giving the geographical and socio-economic profile of the district in the first chapter. The second chapter of the plan covers the risk profile of the district which shows at risk union councils in the District. Profiling of at risk union councils have been carried out through detail desk review, series of consultation meetings, and consultation workshops at district and taluka level and a day long validation workshop. A robust disaster management system has been proposed in third chapter where the roles and responsibilities of various organizations have been explained in the context of their potential role in reducing

1. Provincial Disaster Management Authority Sindh 2008; "Provincial Disaster Management Plan": Page 29-30 available at <http://www.pdma.gos.pk/new/preparedness/SINDH-BOOK-22-04-09.pdf>. (Accessed: 20 March 2018)

the consequences of disasters. Different DRM structures with their possible function have also been proposed starting from district up to village level. Besides, standard operating procedures for emergency response has been proposed in the light of the National Disaster Response Plan 2010 and National Disaster Management Plan 2012-2022. Fourth chapter suggests various disaster risk reduction interventions in selected sectors to increase the capacities and enhance the emergency response mechanism and disaster management of the district government while last chapter of the plan contains annexures relevant to this plan.

List of Acronyms

AC	Assistant Commissioner	ADC	Additional Deputy Commissioner
BHU	Basic Health Unit	BDRP	Building Disaster Resilience in Pakistan
CBOs	Community Based Organizations	CBDRM	Community Based Disaster Risk Management
CHW	Community Health Worker	CSOs	Civil Society Organizations
DC	Deputy Commissioner	DFID	Department For International Development
DDMA	District Disaster Management Authority	DDMP	District Disaster Management Plan
DDMO	District Disaster Management Officer	DEOC	District Emergency Operation Centre
DRM	Disaster Risk Management	DRR	Disaster Risk Reduction
EWS	Early Warning System	FAO	Food and Agriculture Organization
FGD	Focus Group Discussion	HBFC	House Building Finance Corporation
KII	Key Informant Interview	LSO	Local Support Organization
M&E	Monitoring and Evaluation	MHVRA	Multi-Hazard, Vulnerability and Risk Assessment
NDMA	National Disaster Management Authority	NDM Act	National Disaster Management Act
NEOC	National Emergency Operation Centre	NGOs	Non - Government Organizations
NDRMF	National Disaster Risk Management Framework	NLC	National Logistic Cell
NDMP	National Disaster Management Plan	NDMP	National Disaster Management Plan
PDMA	Provincial Disaster Management Authority	PDMC	Provincial Disaster Management Commission
PPHI	People's Primary Healthcare Initiative	PHE	Public Health Engineering
PMD	Pakistan Meteorological Department	PWD	Person With Disabilities
PEOC	Provincial Emergency Operation Centre	PTC	Parent Teacher Council/Committee
PRCS	Pakistan Red Crescent Society	SOPs	Standard Operating Procedures
TMA	Taluka Municipal Administration	TDMC	Taluka Disaster Management Committee
THQ	Taluka Headquarter	TMO	Taluka Municipal Officer
TDMP	Taluka Disaster Management Plan	UC	Union Council
UCDMC	Union Council Disaster Management Committee	UK	United Kingdom
UNDP	United Nations Development Programme	UNISDR	United Nations International Strategy for Disaster Reduction
VDMC	Village Disaster Management Committee	WFP	World Food Programme

Chapter - 1

Introduction



1.1. District Ghotki at a Glance

District Ghotki, name taken from Ghotki Town, the district Headquarter. It is located on the left bank of River Indus between 27°18' to 28°27' north latitude and 69°10' to 70°10' east longitude. With a total area of 6,083 square kilometers, the district covers 4.3% of Sindh's area and 0.76% of the total area of Pakistan. Administratively the district is divided into 05 Talukas, two municipal committees, four town committees & 66 union councils. The Taluka-wise area distribution shows that Khangarh and Daharki Talukas covers

around 67% of the area followed by Ghotki, Ubauro and Mirpur Mathelo sharing 12, 11 and 10% of the area (Table 1.1). The district is bounded on the north by Rahim Yar Khan District of the province of Punjab, on the north-west by Kashmore district, on the south-west by Sukkur district of the province of Sindh and on the east by Jasalmir, a state in India² (Figure 1.1). District Ghotki was established on 15.10.1994, while before 1994, it was a part of District Sukkur. District Ghotki has 300km of roads, out of which 100km are non-metallic roads.

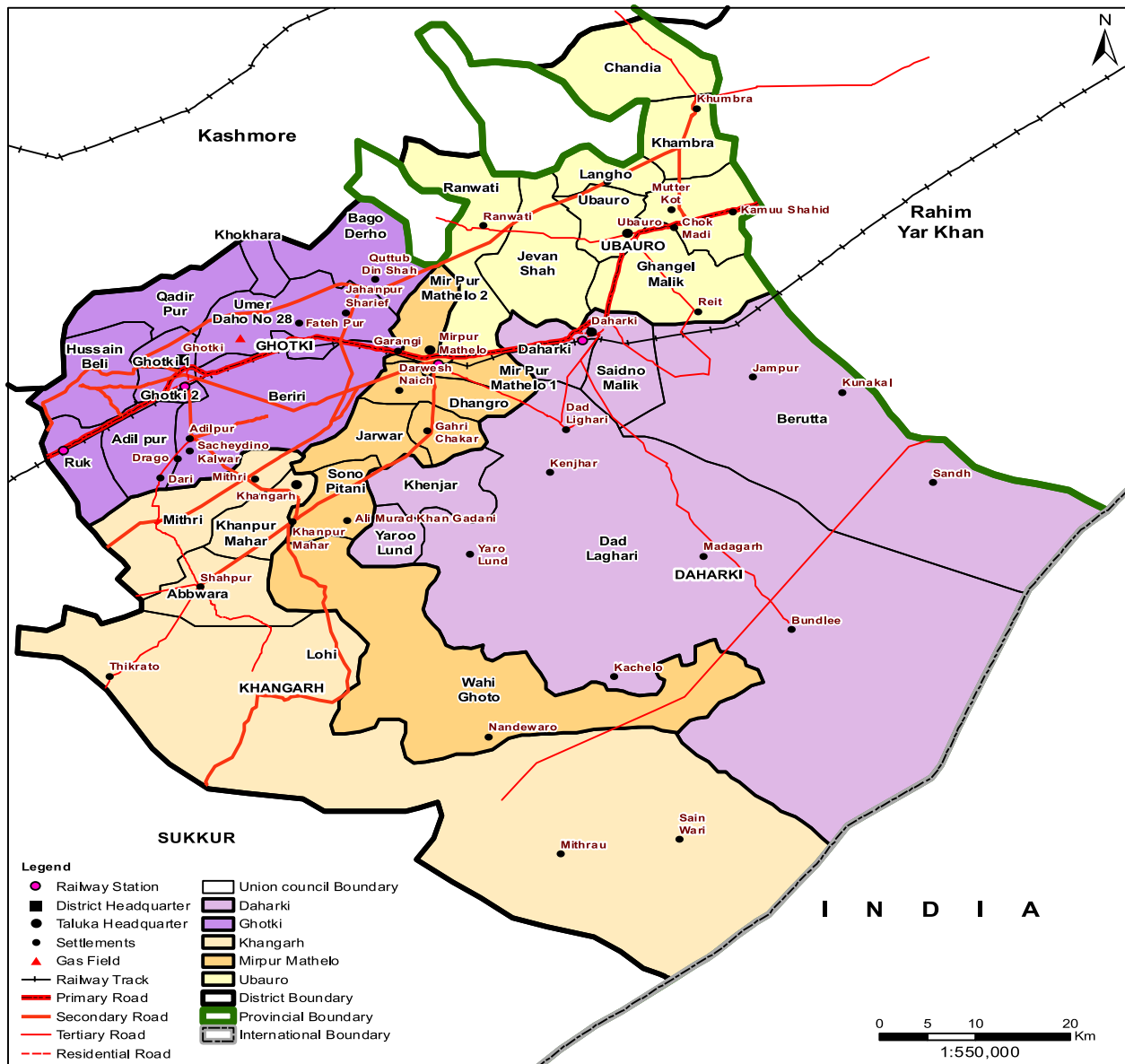


Figure 1.1: Geographical Map of District Ghotki

2. Pakistan Bureau of Statistics Islamabad 1998; "District Census Report of District Ghotki"; Page: 1-2

Table 1.1: Taluka-wise Area Distribution of District Ghotki³

S.No.	Name of Taluka	Area in KM ²	% age area of the district	No. of Circles	No. of Tapas	No. of Dehs
1	Ghotki	763	12%	03	19	77
2	Khangarh	1,986	33%	02	10	37
3	Mirpur Mathelo	593	10%	04	17	60
4	Daharki	2,088	34%	02	12	48
5	Ubauro	653	11%	03	15	65
Total		6,083	100%	14	73	287

District Ghotki is broadly divided into three zones. Area adjacent to River Indus is Zone A which is part of Indus's active plain. Zone B is next to this which is part of Indus's old flood plain and extremely fertile in nature. Zone B is irrigated by a network of canals to support land cultivation the whole year. The desert area which makes up part of Pakistan's Nara desert is the Zone C.

Ghotki district is bounded by diverse set of natural vegetation. Rakh (tropical thorn) is a common sight which grows naturally in the active and old flood plains of Indus. Desert and semi-desert vegetation is found in desert zone. Thick riparian forest are present in 3 to 4 small pockets besides there exists a sparse forest belt running along a small length of Indus River.

The Soils of District Ghotki are categorized as under⁴:

Category	Soil Type
Zone A:	Loamy, Sandy stratified soils of young flood plains,
Zone B:	Loamy, Clayey soils of older river plains,
Zone C:	Rolling to hilly sandy soils of Aeolian deserts.

1.2. Rivers and Streams

The main river traversing through the District is mighty Indus as depicted in Figure 1.1. The Indus has total length of 86 Kilometers in District Ghotki with head initiating from Dilwaro bund (Taluka Ubauro) with tail

ending at Gaimro Bund (Taluka Ghotki). Flood Protection bunds have been constructed on both sides of the river. The area between these bunds ranges from 10-25 km at different locations and is commonly known as the Katcha area. Some 50,000 people occupy and live in the Katcha area who are at the greatest risk, as when the Indus overflows its banks when in high to very high flood, the area lying between the river and its protective bunds is submerged in flood discharge. District has no marshes or lakes/ streams, though a few low lying places where water collects after heavy rainfall or from over spilling of canals but these remain dry for the greater part of the year can be found.

1.3. Climate and Weather

The climate of District Ghotki can be divided into two well defined seasons; the hot summers and the cold winters. The hot summers begin in the middle of March, while the winters start kicking in from the middle of October. May, June and July are the hottest months. The mean maximum and minimum temperatures during this period are about 44oC and 29oC respectively. December, January and February are the coldest months with mean maximum and mean minimum temperatures during this period being around 23oC and 9oC respectively. Dust storms are also not an anomaly and fierce hot winds are common during the months of May, June and July. The autumn sets in during November and lasts for a month or two at the most. Rainfall is scant in the district. The district receives maximum rainfall during month of monsoon

3. Revenue Department, Ghotki District Administration, 2017

4. Rural Development Policy Institute (RDPI) and Plan International Report 2010; "District Ghotki Hazards, Vulnerability and Development Profile"; Page: 12 available at <http://rdpi.org.pk/wp-content/uploads/2016/06/District-Profile-Ghotki.pdf>; (Accessed; 20 March 2018)

(July to September), while occasional rainfall also occurs during month of February due to western depression clouds. The months of August and September are very stuffy and humid.

Detailed data on temperature and precipitation is not available for Ghotki District. Therefore weather data of District Sukkur has been considered as it is situated near District Sukkur (Figure 1.2 and 1.3).

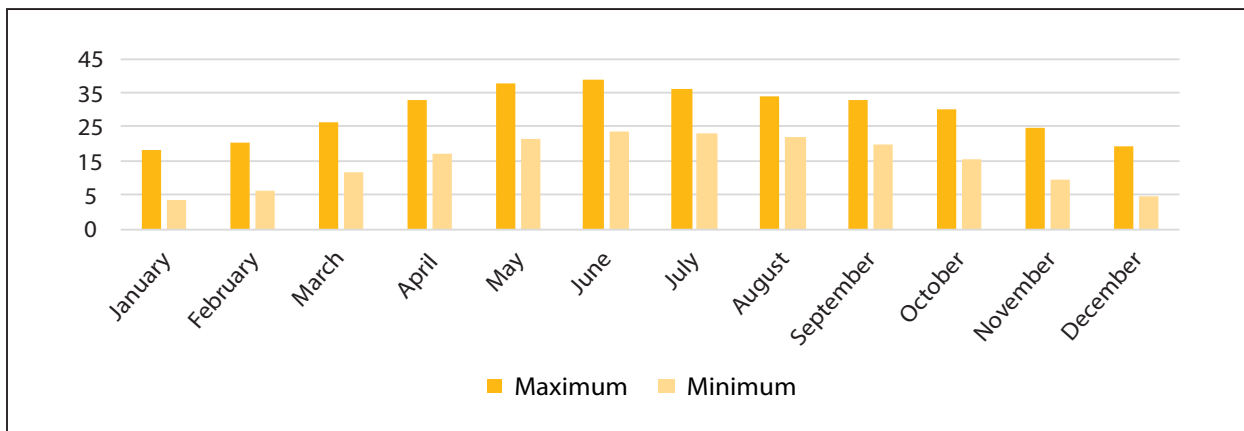


Figure 1.2: Month-wise 30 years mean temperature variation at Sukkur (C°)

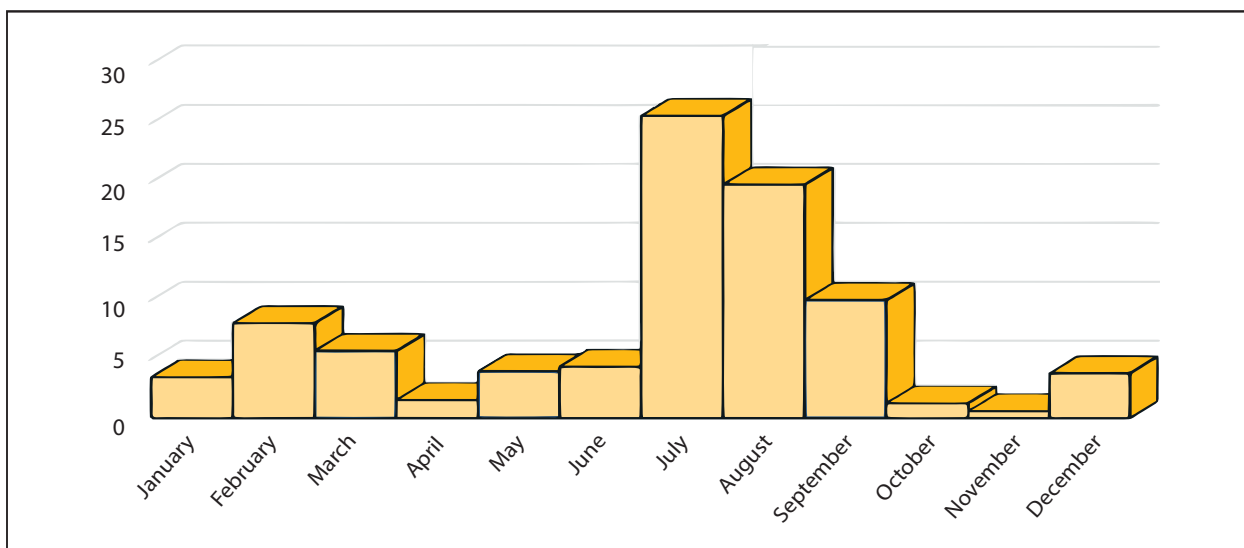


Figure 1.3: Month-wise 30 years mean precipitation at Sukkur⁵ (in mm)

1.4. Socio-economic Indicators

1.4.1. Population of the District

According to 2017 unpublished statistics by the Pakistan Bureau of Statistics, the District has a total population of 1,647,239. The urban and rural

population figures are 403,538 (24.49%) and 1,243,701 (75.5%) respectively⁶ (Table 1.2). The number of household are 296,830 with ratio of 5.55 person are living per household. The total area of the district is 6,083 square kilometers, yielding a population density of 270.79 persons per square kilometer, while it was 239 and 159.6 persons per square kilometer during 1998 and 1981 population census.

5. Pakistan Bureau of Statistics Islamabad 1998; modified from the "District Census Report of District Ghotki"; Page: 2

6. Pakistan Bureau of Statistics Islamabad, 2017; data available at http://www.pbscensus.gov.pk/sites/default/files/bwpsr/sindh/GHOTKI_SUMMARY.pdf; (Accessed; 20 March 2018)

Table 1.2: Taluka Wise Population Distribution During 2017⁷

Taluka Name	Population	No. of Household	Average HH size	Area in KM ²	Density of Population
Daharki Taluka	310,079	54,127	5.7	2,088	148
Gotki Taluka	506,919	91,848	5.5	763	664
Khangarh Taluka	149,008	27,740	5.4	1,986	75
Mirpur Mathelo Taluka	327,944	62,712	5.2	593	553
Ubauro Taluka	353,289	60,403	5.8	653	541
Gotki District	1,647,239	296,830	5.55	6,083	271

District Ghotki is comprised of five Talukas namely Daharki, Ghotki, Khangarh, Mirpur Mathelo and Ubauro. The five Talukas share the population as follows: Taluka Ghotki 30.77%, Taluka Daharki 18.82%, Taluka Ubauro 21.44%, Taluka Mirpur Mathelo 19.90% and Taluka Khangarh 09.04%. The district headquarter namely Ghotki is situated in Taluka Mirpur Mathelo. The vast majority of the population is Muslim, with Hindus, Marwari's and other casts making up the rest of the numbers.

1.5. Agriculture and Related Sectors

1.5.1. Agriculture

Agriculture is the main source of livelihood for

majority of the population in Ghotki district. Only a handful of people have big land holdings here while the rest of the population are either small land holders or landless harees, who survive on daily wages living a hand to mouth life. According to below given table 1.3, the total reported area of District Ghotki is 629,000 hectares, consisting of 232,000 hectares of cultivated areas, 258,000 hectares as cropped area. Total un-cultivated areas is 397,000 hectares, out of which 19,000 hectares is covered by the forest, 117,000 hectares by cultivable waste and 261,000 hectares is not available for cultivation⁸. Principal crops grown in the district are Wheat, Cotton, Rice and Sugarcane while other minor crops are Jowar, Maize, Gram, Rapeseed and Mustard, and Tobacco etc.

Table 1.3: Land Utilization in District Ghotki (2014-15)

Total Reported Area (in Hectares)	Total Cultivated Areas	Cropped Areas	Uncultivated Areas
629,000	232,000	258,000	397,000

7. http://www.pbscensus.gov.pk/sites/default/files/bwpsr/sindh/GHOTKI_SUMMARY.pdf; (Accessed; 23 April 2018)

8. Bureau of Statistics, Planning and Development Department, Government of Sindh 2016; "Development statistics of Sindh 2014-15; available at file:///C:/Users/HP/Desktop/UNDP/Sindh%20Province/Ghotki%20District/Desk%20Review/Development-Statistics-2016-final.pdf; Page;77, 78 & 108 (Accessed: 24 April 2018)

1.5.2. Irrigation

Because of the scant rain that this district receives, cultivation is mainly dependent on canals. In this District, the main source of irrigation is the Ghotki feeder which flows from river Indus at Guddu Barrage and radiates into several small canals irrigating large part of the district. The other means of irrigation are a few privately owned wells and tube wells. According to above statistical data source, the total irrigated area of the district during 2012-13 was 104,833 hectares while un-irrigated areas was 27,890 hectares of land.

1.5.3. Forestry

The total forest coverage is at 102,745 hectares. Some of the more sizeable woodlands of the district are Adilpur Forest, Ranwati Forest, Jahanpur Forest, Belo Mirpur and Jarwar Forest. The riverine forests of Sindh generally follow the course of the river Indus. Some of the riverine blocks have lately been converted into inland forests owing to the construction of canals and bunds by the Irrigation department for the purpose of cultivation and protection from disastrous floods.

Because of people cutting down trees for timber and cultivation are also responsible for the separation of the wooded area into the patches and blocks which characterize the district today. Certain riverine forests were reserved by the Mirs for the purpose of the chase and strictly protected from interference and trespassing by ordinary people. The trees were thus protected and in fact more were planted and carefully cared for. Traces of canals and dykes testify even now how thoroughly this was done.

1.5.4. Livestock

There are good breeds of buffaloes and cows found in the district and livestock rearing forms an important part of domestic livelihoods. People keep these animals for producing milk, ghee/butter and other dairy products. Horses and Donkeys are also reared as livestock animals in Ghotki District. They are used for cart driving, transport and riding etc. The number of horses is gradually decreasing with the rise in the number of motor vehicles and improved metaled roads. The Taluka-wise livestock population in the district during 2012 is given below.

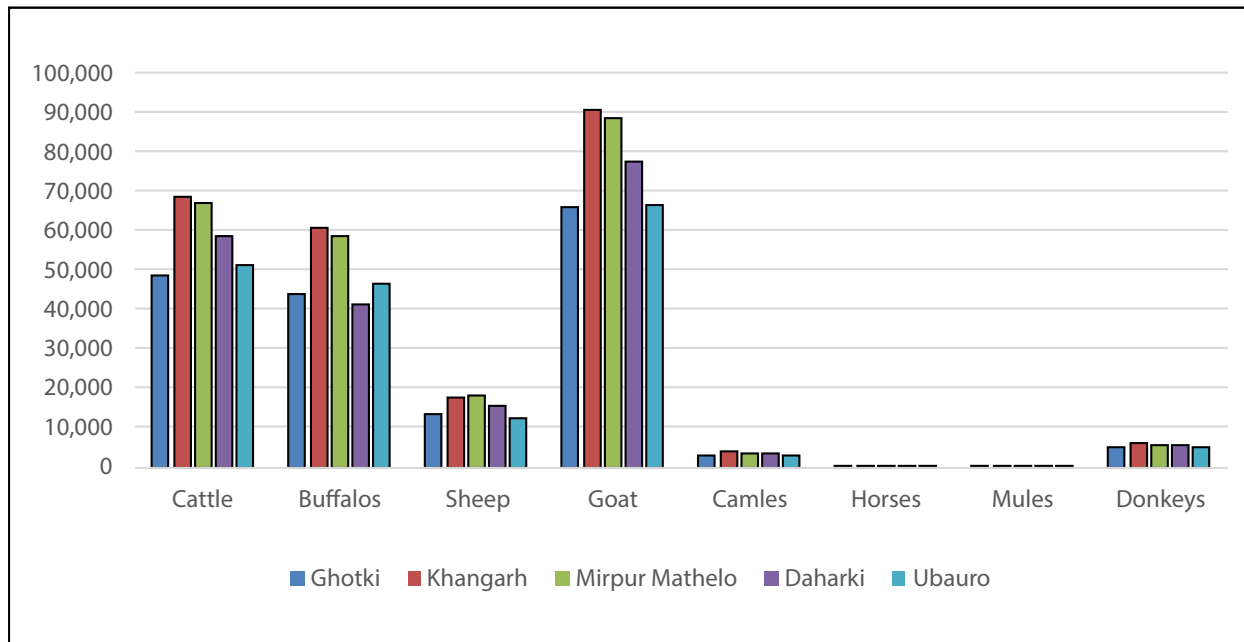


Figure 1.4: Livestock Population of District Ghotki-2012⁹

9. Ghotki District Administration; "Revenue Department"; 2017

1.6. Industry

Ghotki is one of the leading districts in terms of its contribution to the national exchequer and employment generation. It is the 2nd largest revenue generating district in Sindh Province after Karachi and has industrial installations of national importance. The different industries that have been setup in Ghotki include Gas Fields, Fertilizer Plants, Power Generation Plants and Sugar Mills.

Table 1.3 shows the number of industrial units available in the District. Engro Chemical Pakistan (Pvt.) Ltd and Pak Saudi Fertilizer limited are two very important fertilizer plants that are located here. These two plants are one of the biggest producers of fertilizers in Pakistan and their products are supplied and retailed all over the country.

Since cotton is one of the major crop of the District, there are 38 cotton ginning factories functioning in various talukas of the district. A large number of skilled, semi-skilled and un-skilled labor force is gainfully employed in these industrial units. The presence of these industries are playing a vital role in the socio-economic development and uplift of the people living in the district. District Ghotki has two gas fields namely Mari gas field, located in Daharki, and Qadirpur gas field. In terms of production capability, Mari gas field is comparatively bigger than Qadirpur. WAPDA (Guddu Thermal) and Sui Southern Gas Company are the main users/customers of natural gas produced by these gas fields.

Table 1.4: Number of Industrial Units Situated in District Ghotki¹⁰

Flour Mills		National and Multinational Companies		Multi-national Companies	
1	Daharki Flour Mil	10	O.G.D.C Field Qadirpur Ghotki	19	JDWP, Sugar Mills Ghotki
2	Al-Ghazi Flour Mill Mureed Shaikh	11	Libert Power Plant Mirpur Mathelo	20	SPUD, Energy
3	Raja Flour Mil Khangarh	12	FFC Mirpur Mathelo	21	SAIF Energy
4	Chand Flour Mil Sarhad	13	Engro Chemical Ltd. Daharki	Sugar Mills	
5	Jam Flour Mil Ghotki	14	Mari Gas Field Daharki	22	Allianc Sugar Mills Ubauro
6	Ashok Flour Mil Ghotki	15	Tullo Company Khenjo Ubauro	23	JDW Sugar Mills Unit-II Ghotki
7	Jam Flour Mil Adilpur	16	OMV, Company Khangarh	24	Sardar Ghulam Mohammad Sugar Mills Khangarh
8	S.S.D. Flour Mil Ghotki	17	Foundation Power Plant Dad Laghari	25	Daharki Sugar Mills
9	Ashok Flour Mil Channa Petrol Pump Ghotki	18	Engro Powergen Ghotki	26	Gulf Sugar Mill Ubauro

10. District Government Office, November 2017

1.7. Transport and Communications

Important means of transport in the district are roads and railways. District Ghotki has a total of 300km of roads, out of which 100km are un-metalled roads. The Pakistan Railways main line from Karachi to Peshawar and vice versa passes through this district. There are seven railway stations in the district. All talukas are connected with the district headquarters either by roads or by rail and the district is also connected to the National Highway running from Karachi to Peshawar.

Ghotki District is furnished with a telecom-munication network which helps the people stay connected with the rest of the world. Besides this postage and telegraph offices are also spread and available throughout the district.

1.8. Health

Lack of adequate nutrition facilities, marginal sanitary conditions, limited medical provisions and least

parental care are the major causes of existing bad health and high infant mortality rate in the district. Sufficient health facilities now exist due to steady progress which have also resulted in better sanitation. District Health Department is managing a total of 71 public health facilities which are in operation besides there are 45 People's Primary Healthcare Initiative (PPHI) controlled medical units. The District has a fair number of medical and eye clinics and hospitals fully functional in the private sector.

1.9. Education

As per the District Education Department's figures, the district's overall literacy rate is around 47%. There are total of 1,960 government schools out of which 1829 are Primary Schools, 84 are Middle Schools, 8 are Elementary Schools, 32 are Secondary Schools and 7 are Higher Secondary schools. Beside Government educational institutions, there is a network of private schools some with good reputations operating at various places all over the district.

Table 1.5: Number of Government Schools in District Ghotki 2014-15¹¹

School Level	No. of Schools	Enrolment			Teachers			Student/Teacher Ratio
	Total	Boys	Girls	Total	Male	Female	Total	
Primary	1,829	96,805	42,145	138,950	2,902	442	3,344	42
Middle	84	5,463	3,526	8,989	246	53	299	30
Elementary	8	1,095	611	1,706	20	16	36	47
Secondary	32	16,430	5,669	22,099	562	62	624	35
Higher Secondary	7	9,725	3,749	13,474	276	65	341	40
Grand Total	1,960	129,518	55,700	185,218	4,006	638	4,644	40

11. Reform Support Unit, Education and Literacy Department, Government of Sindh 2014; "District Education Profile"; available at <http://www.rsu-sindh.gov.pk/contents/SEMIS/SEP2014-15/Ghotki%20District%20Profile%202014-15%20Final.pdf>; Page 1-12 (Accessed: 24 April 2018)

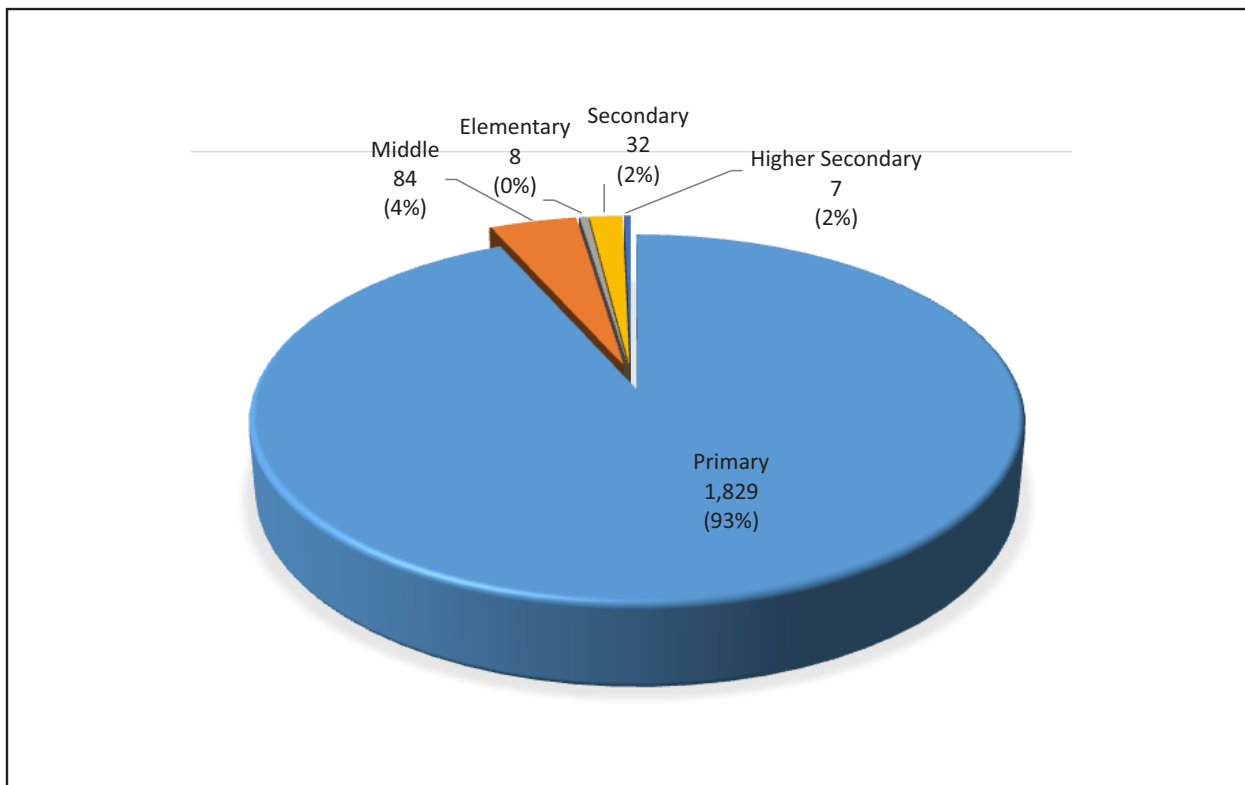


Figure 1.5: Number of Schools in District Ghotki

Chapter - 2

Risk Profile of District Ghotki



2.1. Situation Analysis

After the recent episode of disasters faced by the district, the District Authority realized intense need of conducting proper multi-hazard, vulnerability and risk assessment at various levels, which can help not only the disaster management practitioners but also the development practitioners to safeguard their resources against any impending disasters. In this regard, the National Disaster Management Authority and World Food Program, under the Building Disaster Resilience Program of UK-DFID, are developing a database by conducting multi-hazard, vulnerability and risk assessment for District Ghotki and Kashmore which will soon be available with the district government authorities for planning and implementation.

In order to know the hazard and risk profile of District Ghotki, different consultative meetings were held with various government and non-government stakeholders at the District. Besides, day long consultation workshops were also held at District and Taluka level with the Government and Non-Government officials including representatives from the local government and union council level volunteers. Table number 2.7 and Figure 2.4 at the end

of the chapter show high, moderate and low at risk union councils in District Ghotki. However, there is an urgent need to conduct a detail MHVRA for the district at a macro level and for some cities at micro level to get a real picture of villages that are at high risk in the district. The efforts of NDMA/WFP to develop a detailed MHVRA for District Ghotki is a first step towards achieving that milestone. A detailed picture below gives an overview of the hazard profile of the district.

2.2. Hazards Profile

2.2.1. Floods

Flooding is a major threat to the people living especially in Katcha areas of two Talukas namely Ghotki and Ubauro. The 49,067 people living in the Katcha areas of these talukas are most at risk. One of the peculiar features of this area is the nomadic living style, poverty, low literacy rate and a tribal setup that is common among these people, this aids to the problem at hand and makes the people more vulnerable to harm from any potential disasters. Some of major flooding and damages occurred during the current decade in the district has been highlighted in Table No. 2.1¹²;

Table 2.1: Flood Damages in District Ghotki

2010 Flood	2011 Flood
<ul style="list-style-type: none"> ⊙ People died: 05 ⊙ People injured: 662 ⊙ People Affected: 49,950 ⊙ Villages Affected: 133 ⊙ People Evacuated: 52,933 ⊙ Area Affected (acres):105,157 ⊙ Health (Treated): 63,937 ⊙ Houses fully damaged: 1,700 ⊙ Houses partially damaged: 525 ⊙ Cattle head perished: 250 ⊙ People died: 34 ⊙ People injured: 143 ⊙ People affected: 342,300 ⊙ UCs affected: 40 ⊙ Villages affected: 3,268 	<ul style="list-style-type: none"> ⊙ People died: 11 ⊙ People injured: 19 ⊙ Govt offices building fully damaged: 95 ⊙ Govt offices building partially damaged: 78 ⊙ Standing cropped badly damaged: 259,717 Acre ⊙ Katcha houses Fully damaged: 9,942 ⊙ Katcha houses Partially damaged: 19,313 ⊙ Pakka houses fully damaged: 21 ⊙ Pakka houses Partially damaged: 44 ⊙ Road network partially/fully damaged (Km): 160 ⊙ People died: 2 ⊙ People affected: 12,372 ⊙ UCs affected: 9 ⊙ Villages affected: 227 ⊙ Houses fully damaged: 1,568

12. District Government office Ghotki; April 2018

2012 Flood	2013 Flood
<ul style="list-style-type: none"> ⊙ People died: 34 ⊙ People injured: 143 ⊙ People affected: 342,300 ⊙ UCs affected: 40 ⊙ Villages affected: 3,268 	<ul style="list-style-type: none"> ⊙ Houses partially damaged: 1,929

2.2.2. Drought

Drought, a slow occurring hazard, is also in existence but not as frequent as floods. Its emergence is always experienced over an extended period of time span. The District with total desert area of 1335.94 Sq.km has rainfall spread varying from 0.59 mm to 29.62 mm. The desert dwellers of District Ghotki, which was one of the severely affected districts during 1999-2002 droughts, face drought conditions once in every 3-4 years¹³.

2.2.3. Heat Wave

Due to climatic changes and buildup of population around the industrial units, the temperature rises to very high and dangerous levels during certain days of June-July. It can go to as high as 45-50oC. Such high temperatures can cause a serious case of heat stroke and pose a genuine risk towards the life and well-being of the people. As mentioned above, the temperature is rising due to anthropogenic activities resulting in global warming. Summers have become hotter and thus affect the lives of the people engaged in outdoor activities during scorching sun hours.

2.2.4. Water Logging and Salinity

The flat terrain and sandy soil of areas along the river Indus, which includes the Katcha area of Taluka Ubauro and Ghotki become waterlogged after heavy rains, and it becomes very difficult to drain out the standing water from these fields. It is recommended that the government provides pumping machines to pump stagnant water from the field during monsoon season so that these lands can be reclaimed and cultivated. According to District Agriculture Department, around 70,000 to 75,000 acres of district's land has been

affected and 12,000-14,000 acres of precious agricultural land has been rendered barren due to water logging.

2.2.5. Fog and Frost

Fog is common during the winter months and can severely affect visibility during this time. Frost is also experienced during the cold winters here and is harmful for the crops and other types of vegetation in the district. It is also unamicable for humans and animals.

2.2.6. River Erosion

Compare to Punjab, river erosion in Ghotki is not as severe. In Sindh, river Indus flows on a ridge, however, in some areas the problem exists. There is scarcity of data to ascertain the annual erosion rate or to estimate number of people affected and the financial losses sustained by them.

2.2.7. Urban and Industrial Fire

The rapid urbanization and industrialization in the Mirpur Mathlo and Ghotki Taluka are increasing the risk of a fire hazard, especially in the industrial areas and along the main highway. Incidences of oil tanker accidents are also common on the main highway which pose an increased risk of a fire hazard for the local population.

2.2.8. Road Traffic Accidents

Transport accidents are getting worse in the District. Hundreds of people involved every year in transport related accidents. The main causes reported are over

13. Rural Development Policy Institute (RDPI) and Plan International Report 2010; "District Ghotki Hazards, Vulnerability and Development Profile"; available at <http://rdpi.org.pk/wp-content/uploads/2016/06/District-Profile-Ghotki.pdf>; Page: 04; (Accessed: 24 April 2018)

speeding, wrong turns, one wheeling and lack of awareness about the traffic rules.

2.2.9. Industrial Hazards

In terms of contribution to national exchequer and employment generation, Ghotki is one of the champion districts. After Karachi, it is said to be the 2nd largest revenue generation district in Sindh. It houses industrial installations of national importance including Gas Fields, Fertilizer Plants, Power Generation Plants and Sugar Mills. District environment is at stake besides the health and lives of the district people due to industrial mal practices and government's inability in fully imposing and enforcing related control processes for waste disposal. Land has been badly affected by virtue of chemical discharge in the drain spreading 28 km long with 12 km width in the district. Ambient air is being impacted due to release of harmful gases by one of the four Chemical Fertilizer Manufacturing Plants in the district¹⁴.

2.3. Vulnerability Profile

2.3.1. Vulnerability Context of the District

Vulnerability is the extent to which communities, structure, service or geographic area is likely to be damaged or disrupted by the impact of a particular

hazard. Vulnerability profiling is the process of estimating the susceptibility of 'elements at risk' to various hazards. Some of the vulnerability factors observed during these disasters were as follows;

⊙ Encroachments in Katcha Area

Katcha areas in two Taluka of Ubauro and Ghotki have an approximate population of 49,067, and are extremely vulnerable due to the ever present threat of river flooding. Some of the peculiar features of this area are nomadic living style, poverty, low literacy rates and tribal setup, all of which add to the threat to the lives and properties of these people.

⊙ Zamindari Bunds

Illegal bunds constructed by local elites/ organizations along the river bed for saving their land/establishment from flood are called Zamindari bunds. Zamindari bunds hinder the natural flow of flood water causing excessive pressure on actual bunds; law empowers and requires Irrigation Department to carry out operation against such bunds.

⊙ Vulnerable Points in Bunds

These points along the bunds are determined in light of the behavior of the river during the past floods. Special arrangements are required to ensure the safety of the vulnerable points. Some of the vulnerable points along the Bunds of Ghotki Feeder Canal Area are mentioned below in table 2.2¹⁵;

Table 2.2: Vulnerable Points Along the River in District Ghotki

Sr. #	Vulnerable Point	Division
1	Qadirpur Loop Bund Mile 5/0 to 8/4.	Mirpur Division
2	Qadirpur Shank Bund Mile 0/5 to 2/6	Mirpur Division
3	Qadirpur Bund Mile 10/4 to 11/4	Ghotki Division
4	Baiji Bund Mile 7/5 to 7/6	Ghotki Division

⊙ Tribal Clashes

Because of massive tribal clashes and rivalries amongst the major tribes in the district, people strongly hesitate to leave their properties despite constant flood warnings. During flood, the people wish to live with their fellow tribesmen in or outside camps which

creates big adjustment problems. Most villagers also hesitate to leave their land because of their cattle.

⊙ Financial Constraints

After the system of Local Governments was repealed and the Commissionerate System was introduced, the

14. Rural Development Policy Institute (RDPI) and Plan International Report 2010; "District Ghotki Hazards, Vulnerability and Development Profile"; available at <http://rdpi.org.pk/wp-content/uploads/2016/06/District-Profile-Ghotki.pdf>; Page: 04-05; (Accessed: 24 April 2018)

15. Flood fighting contingency plan, Ghotki Feed Canal Area water board, Government of Sindh 2017; Page: 2-10

districts have considerably lesser funds available to them. There are no funds provided to the districts in lieu of "Disaster Management". In case of any disaster, the districts have to take urgent rescue and relief measures including immediate provision of dry & cooked ration, dewatering of the areas, provision of immediate shelter, provision of earthen ways to the low lying villages etc. All this has to be done before the Provincial Government and other stakeholders actually come into play. Immediate provision of "Disaster Management Funds" on disposal of Deputy Commissioners is the need of the hour.

2.3.2. Population

According to 2017 unpublished statistics by the Pakistan Bureau of Statistics, the District has a total population of 1,647,239. The urban and rural population figures are 403,538 (24.49%) and 1,243,701 (75.5%) respectively¹⁶. The number of household are 296,830 with ratio of 5.55 person are living per household. The total area of the district is 6,083 square kilometers, yielding a population density of 270.79 persons per square kilometer, while it was 239 and 159.6 persons per square kilometer during 1998 and 1981 population census.

District Ghotki is the 12th most populous district out of 29 districts of Sindh and contains 3.18% population of the province. The current population density of the district is estimated to be 270.79 persons per square kilometers, rising from 30 persons/sq.km recorded in 1951-the time of the first census of Pakistan. Since then there has been a 6-fold increase in the population density of the district. Since 1951 onward, the proportion of urban population in District Ghotki is increasing due to job opportunity and presence of industries in the district.

2.3.2.1. Rural/Urban Distribution

The rural population of the district is 1,243,701 constituting 75.50% of the total population in the district in 2017. Rural/Urban population distribution has also been shown in Figure 2.2 below;

2.3.2.2. Gender Ratio

According to 2017 unpublished statistics, the total male population of District Ghotki is 849,226, while female population contribution is 797,051. The rural/urban ratio can be expressed from table 2.3 below;

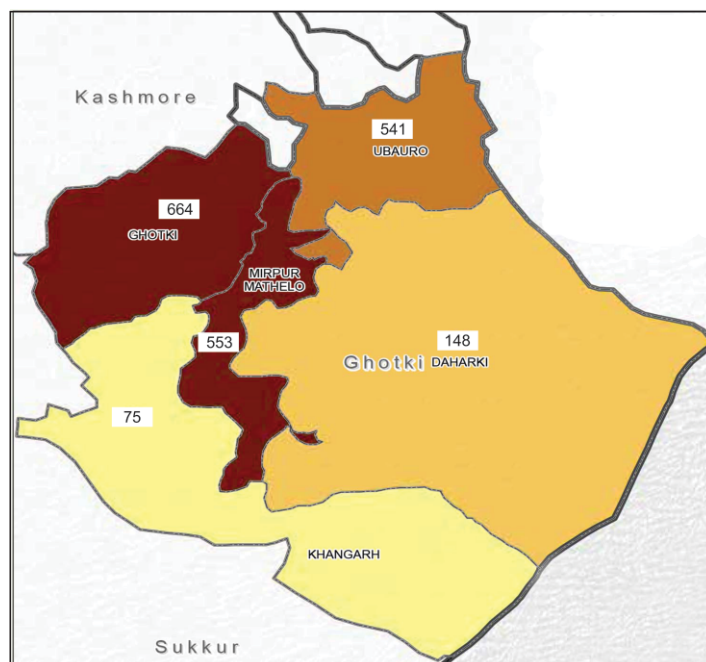


Figure 2.1: Population Density Map of District Ghotki

16. Pakistan Bureau of Statistics Islamabad, 2017; data available at http://www.pbscensus.gov.pk/sites/default/files/bwpsr/sindh/GHOTKI_SUMMARY.pdf; (Accessed; 20 March 2018)

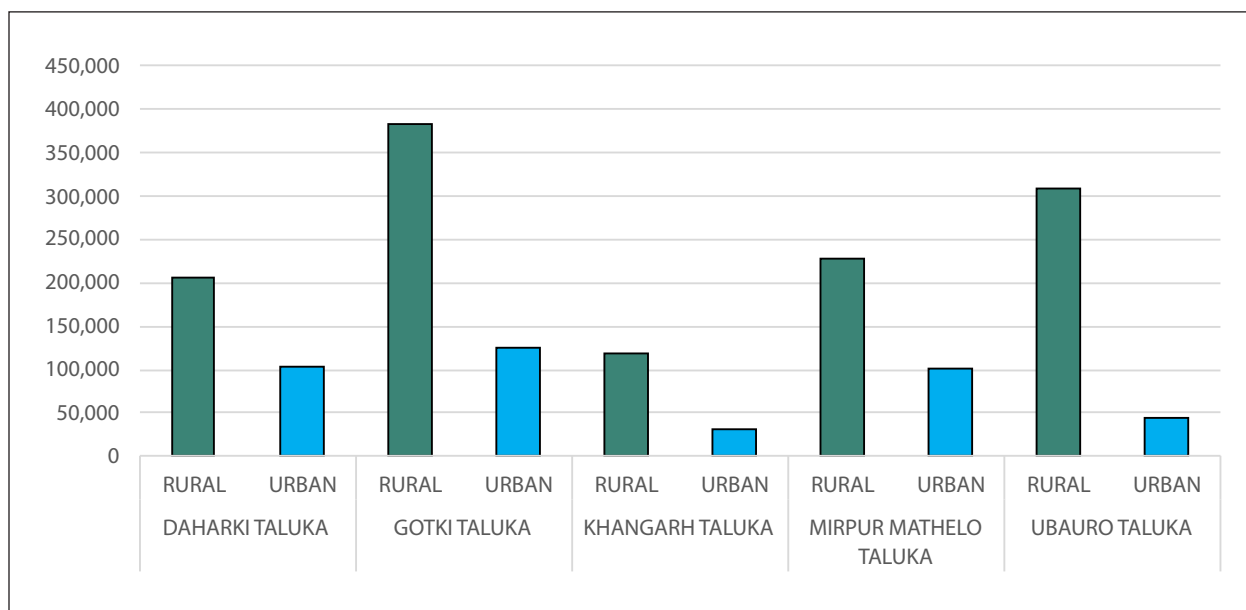


Figure 2.2: Taluka Wise Rural/Urban Population Distribution During 2017¹⁷

Table 2.3: Gender Ratio in District Ghotki 2017

District	Rural	Urban	Total
Population	1,243,701	403,538	1,647,239
Male	640,467	208,759	849,226
Female	602,300	194,751	797,051
Trans-gender	13	28	41

2.3.2.3 Persons with Disabilities

Apart from gender ratio, the People with Disabilities (PWDs) constitute 5.50% of the total population of the district, among which 59.13% are males and 40.87% are females. Cripples, deaf and mute people make up 9% of the total disabled population the rest of the suffered from other categories of disability.

2.3.3 Housing and Living Conditions

As per the population census of 2017, average household size of the district is 5.55 persons per HH. Table 1.2 above shows average HH size among the

Talukas which shows HH size as 5.6 in rural and 5.5 persons in urban areas

Existing heavy industrial units have always remained a source of attraction for the labor force from other parts of Sindh province and the country. 91.03% of district housing are used as own house compared to only 2.25 living in the rented houses. In rural area the figure is 94.19% as compared to 79.49% in the urban area.

Further 6.39% housing units used RCC and RBC in the roof construction with majority, i.e., 51.775 of house owners used Wood/Bamboo and 39.92% T-iron/Garder for roofs construction. The Rural/rural distribution is depicted in Figure 2.3 below¹⁸.

17. Source: Pakistan Bureau of Statistics Islamabad, 2017 and available at http://www.pbscensus.gov.pk/sites/default/files/bwpsr/sindh/GHOTKI_SUMMARY.pdf

18. Pakistan Bureau of Statistics 2016; "Pakistan social and living standards measurement survey (PSLM-2014-15)"; available at http://www.pbs.gov.pk/sites/default/files/pslm/publications/PSLM_2014-15_National-Provincial-District_report.pdf; Page: 344, 354, 374; (Accessed; 05 November 2017)

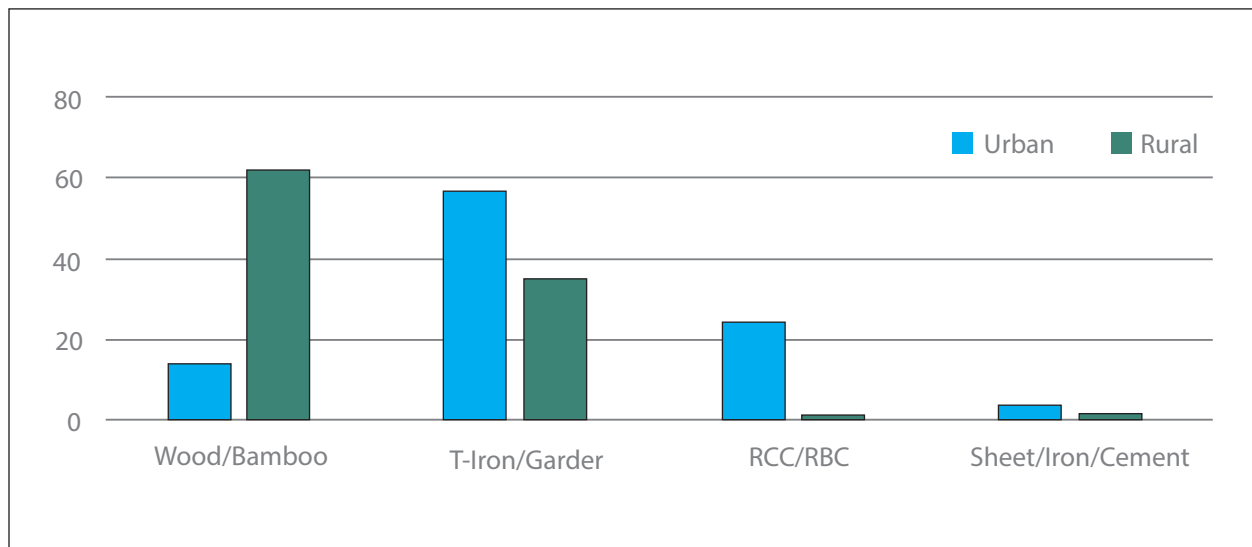


Figure 2.3: Percentage wise Distribution of HHs with Roof Construction Material

Despite having some of the country's biggest gas reserves including Qadirpur gas field, Mari Gas field and others, this cleaner and convenient fuel option is not available to majority of the households in Ghotki. 98% rural and 61% urban households continue to depend upon biomass fuels including wood, crop residues and cow dung for their everyday energy needs.

Only 1/10th of HHs have an access to piped water supply. In the urban houses, hand pumps and motor pumps are the major sources of water for HH consumption with 85% rural HHs dependent on hand pumps¹⁹.

2.3.3.1. Housing Occupancy

The number of rooms per house, as per statistics of Pakistan Social and Living Standards Measurement (PSLM 2014-15) are as follows¹⁸:

- ⊙ **District Ghotki:** One Room: 39.83%, 2-4 Rooms: 58.83%, 5 and more rooms: 1.43%
- ⊙ **Urban Areas:** One Room: 27.94%, 2-4 Rooms: 70.02%, 5 and more rooms: 2.49%

- ⊙ **Rural Areas:** One Room: 43.11%, 2-4 Rooms: 55.76%, 5 and more rooms: 1.14%

2.3.3.2. Energy Resources

According to the PSLM 2014-15 available data, the energy resource distribution is as follows²⁰:

- ⊙ **District Ghotki:** Electricity: 95.30%, Gas/Oil: 2.23%, Wood and Candle: 1.99%
- ⊙ **Urban Areas:** Electricity: 95.01%, Gas/Oil: 3.91%
- ⊙ **Rural Areas:** Electricity: 95.37%, Gas/Oil: 1.76%, Wood and Candle: 2.53%

2.3.3.3. Source of Drinking Water

Easy access to safe drinking water is a basic human need. In District Ghotki, hand pumps, tap water and motor pumps are the primary sources of water for household consumption in urban houses, rural areas mainly depend on hand pumps for water due to unrelenting power outages and inordinate poverty. According to PSLM 2014-15 available data, around 74% of population is using hand pumps for drinking

19. Rural Development Policy Institute (RDPI) and Plan International Report 2010; "District Ghotki Hazards, Vulnerability and Development Profile"; Page: 18 available at <http://rdpi.org.pk/wp-content/uploads/2016/06/District-Profile-Ghotki.pdf>; (Accessed: 20 March 2018)

purposes with rural/urban ratio as 81/49 respectively. Tap water and motor pumps are more common in urban areas with 10% and 38% use respectively²⁰.

2.3.3.4. Availability of Bathroom and Latrine Facilities

Household sanitary conditions in the district, with respect to the availability of bathroom and latrine facilities, are not very encouraging when compared to other districts of Sindh. Separate bathroom facilities are available to only 13.05% of the housing units in the district. In urban centers it is relatively higher with 35.54% of the population having access to separate bathrooms while in rural areas only 9.46% have this privilege. 30.57% of the population has shared bathrooms available while 74.79% of the public have no access to bathrooms at all. Similarly, separate latrine facility is available to only 14.59% housing units in the district while 12.14% have shared facilities available to them.

2.3.4. Education and Literacy

As per District Education Department figures, the district's over all literacy rate was around 47% during 2014-15 while it was 29% during 1998 which shows considerable improvement during this 17 year period. There are a total of 1,960 government schools in the district out of which, 1,829 are Primary Schools, 84 are Middle Schools, 08 are Elementary Schools, 32 Secondary Schools and 07 Higher Secondary schools²¹.

The literacy rate among females from rural areas is quite low. 7.52% of rural women/girls compared to 32.72% urban women/girls are literate. In comparison male literacy situation is much better with 40% of men

from rural areas and 64.6% from the urban population able to read and write. Government schools are catering to the educational needs of the majority of both urban and rural children as 94% rural and 75% urban children of primary school age are enrolled in the government schools²².

There is an unequal and dis-proportionate availability of schools, with girls being at a big disadvantage due to a dearth of schooling institutions available to them. For instance, for every 6 primary schools for boys, there is one such school for girls, and against 7 high schools for boys there is only one high school for girls. In 2003-04, there were only 4 girls' high schools, no intermediate and one-degree college for girls in the whole district having a population of more than one million.

2.3.5. Health

Inadequate nutrition, bad sanitary conditions, insufficient medical facilities and minimum parental care all contribute to the prevalence of ill health and a high rate of infant mortality in the district. Steady progress though has taken place over time and there are now sufficient medical facilities some public others privately operated that have helped improve the situation. There are a total of 71 public health facilities that are currently operational in the district, these fall directly under the management of the District Health Department. 45 PPIH controlled medical facilities are in service as well (Table 2.4).

Besides this, a good number of private medical clinics as well as hospitals are also open for business in the district. In the private sector, there are number of clinics and hospitals with different specialization are providing health care services in the district.

20. Pakistan Bureau of Statistics 2016; "Pakistan social and living standards measurement survey (PSLM-2014-15)", available at http://www.pbs.gov.pk/sites/default/files//pslm/publications/PSLM_2014-15_National-Provincial-District_report.pdf; Page: 385, 406; (Accessed; 24 April 2018)

21. District Education Profile; Reform Support Unit, Education and Literacy Department, Government of Sindh, 2014-15

22. District Ghotki Hazards, Vulnerability and Development Profile developed by RDPI and Plan International during 2010

Table 2.4: Number of Government Hospital & Dispensaries²³

Descriptions	Number
Health Facilities Under Control of DHO	26
Health Facilities Under Control of PPHI	45
Total Health Facilities	71
No. of District HQ Hospital	01
No. of Taluka HQ Hospitals	04
No. of Rural Health Centers	03
No. of Basic Health Units	34
No. of MCH Centers	03
No. Government Dispensaries	13
No. Experimental Dispensaries	13

2.3.6. Agriculture

For the majority of the district population, agriculture is the backbone of economy and source of livelihood. As such Ghotki is a main contributor of agriculture product. Recent statistics made public by the Sindh Government shows Ghotki standing first in terms of area and production of cotton, 3rd for dates production and 4th in wheat production²⁴. Important agriculture related trends include:

- ⊙ 71% or 397,000 hectares of the district's land is not cultivated. 61% of the district's land is not available for cultivation. Less than 1% area of the district can be classified as forest area. This forest cover is also shrinking rapidly. From 2002-03 to 2004-05, there was a 14% decline in the forest area.
- ⊙ From 2000-01 to 2003-04, there was a 53% increase in the irrigated area (from 106,543 to 160,591 hectares). Compared to this there was a 240% increase in un-irrigated area (from 937 hectares to 3,189 hectares).
- ⊙ During the same period, there was a 47% increase in canal irrigated area compared to 103% increase in tube well irrigated area. 89% of the total land cultivated is irrigated by means of a network of canals.
- ⊙ From 2001 to 2004, there was a 24% decline in the number of fishermen. However, there was an 11% increase in fish production, during this period.

- ⊙ Unlike some other drought hit districts of Sindh, an increase in the number of livestock was recorded during the inter livestock census period. From 1996 to 2000, there was a 43% increase in cattle, 35% in buffalo and 35% in sheep. During the same period a 67% decline in goat, 50% in camel and a 23% drop in the number of donkeys was recorded. The decrease in camel and donkeys population points to a decrease in the utilization of these animals for transport, as animal drawn vehicles are continuously being replaced with motor transport.
- ⊙ Like all other agricultural areas of the country, use of chemical fertilizers is on the rise. From 1999 to 2003, a 31% increase in the use of chemical fertilizers was recorded.

Due to the topography and climatic conditions of Ghotki, agricultural output and produce is extremely vulnerable. Consultation meetings brought out that crops are exposed to multiple hazards including floods, drought, water logging and salinity.

2.3.7. Livestock

Livestock is considered a secondary source of income by the people of the District. It also helps provide sustenance and fulfills the nutritional needs of a family. People keep livestock animals for producing milk, ghee, butter. Horse and donkeys are also commonly raised by the locals of Ghotki. Horses and buffaloes are

23. Source: District Government Health Department, Ghotki 2017

24. District Ghotki Hazards, Vulnerability and Development Profile developed by RDPI and Plan International during 2010

used for pulling carts and riding etc. The number of horses is gradually decreasing with the rise in the number of motor vehicles and the improvement in the

network of metaled roads. The taluka wise livestock population in the district during 2012 is given below table 2.5.

Table 2.5: Livestock Population of District Ghotki-2012²⁵

Taluka	Cattle	Buffalos	Sheep	Goat	Camels	Horses	Mules	Donkeys	Total
Ghotki	48,641	43,584	13,156	65,648	2,720	354	113	5,020	179,236
Khangarh	68,451	60,574	17,468	90,549	3,746	512	142	6,028	247,470
Mirpur Mathelo	66,754	58,642	18,260	88,375	3,652	498	139	5,717	242,037
Daharki	58,428	41,280	15,343	77,125	3,249	429	125	5,440	201,419
Ubauro	51,369	46,576	12,458	66,470	2,824	352	118	5,015	185,182
Total	293,643	250,656	76,685	388,167	16,191	2,145	637	27,220	1,055,344

Significant losses in the livestock sector were observed during heavy rain/floods of 2011-2014 and also during the drought which hits the district from time to time. A total of 459 cattle perished in the floods of 2012.

2.4. Capacity/Resources Profile

As mentioned earlier, District Ghotki is the 2nd highest revenue generating district after Karachi because of the presence of 14 industrial units (Table 2.6).

Furthermore, being located on the main highway, the district is connected to all the important cities of Punjab and Sindh Province. From an agricultural point of view, the district is blessed with fertility and has high agricultural productivity, which is not only sufficient to meet the food, dairy and fodder requirements of the district but it also helps provide agriculture commodities to other adjacent districts especially Karachi, Hyderabad and Sukkur.

Table 2.6: No. of Industrial Units in District Ghotki²⁶

S #	Industrial Unit Name	Taluka wise location
1	Oil and Gas Company Qadirpur	Ghotki
2	Engro Fertilizers Company	Daharki
3	Fauji Fertilizers Company	Mirpur Mathelo
4	Mari Petroleum Company	Daharki
5	TNB liberty power plant	Daharki
6	Engro powergen Qadirpur	Ghotki
7	Foundation Power plant Dad Laghari	Daharki
8	OMV Rahmat Gas Field	Khangarh
9	Spud Gas Company Limited	Daharki
10	Alliance Sugar Mills	Ubauro
11	Daharki Sugar Mills	Ubauro
12	Gulf Sugar Mills Limited	Ubauro
13	Sardar Ghulam Mohammad Sugar Mills	Khangarh
14	JDW Unit -III Sugar Mills	Ghotki

25. Livestock Department, Government of Ghotki, 2017

26. Ghotki District Government office Ghotki, 2017

One of the lacking capacities identified during consultation meetings was that the government doesn't have enough capacity and resources to effectively respond and manage a disaster or an emergency situation. The mindset of the people and government is still skewed towards a reactive approach and there is a severe need to change that mindset of the people. A shift in the paradigm from reactive to proactive approach is required.

Although the District Government has their own coping mechanism and they try to keep themselves prepared to face any imminent threats, a separate district disaster management authority needs to be established and capacitated. At the moment the charge of District Disaster Management Officer is given on ad-hoc basis.

There is a strong network of International and National NGOs working in the district on various development and emergencies related projects. However, there is a dire need to strategize and properly plan to implement the identified projects by these I/NGOs with mutual consensus and agreement.

2.5. Risk Analysis

The qualitative and quantitative level of risk Assessment is an essential aspect for planning risk reduction measures. The disaster risk ranking at union council level in below figure 2.4 and table 2.7 for District Ghotki is collected and collated from various primary and secondary sources. According to the National Disaster Management Plan 2012-2022

Volume I, District Ghotki is one of the high priority districts with a rank of 53 out of 80 target districts²⁷. Furthermore, according to the National Disaster Management Plan Implementation roadmap 2016-2030, prepared by the National Disaster Management Authority; District Ghotki is a high priority district for disaster risk reduction and is part of the first phase of the implementation plan of 2016-2018.

Besides the above source, it is also worth to mention that under the UK-DFID funding support for "Building Disaster Resilience in Pakistan (BDRP)" programme, detail risk and resilience profiling of 75 villages in 7 hazard prone Union Councils namely Qadir Pur, Hussain Belli, Bago Daho, Ranwati, Syed Pur, Lohi and Chandia have already been completed and are available with the Concern Worldwide Pakistan and allied consortium partners²⁸. The data or required information can also be used or referred for the PDMA MHVRA initiatives.

The risk map of District Ghotki in figure 2.4 attempts to show that the geographical distribution of vulnerability/exposure or fragility is characterized as low, moderate and high through series of consultation meetings and focus group discussion carried out during the consultation workshop at District and Taluka level. The list of Union Councils is also being ranked as high, medium and low for disaster risk reduction below in table 2.7. There is dire need to carryout field based scientific studies for ranking and prioritizing these UCs through detail multi-hazard, vulnerability and risk Assessment surveys at macro and micro level.

27. National Disaster Management Authority, Islamabad; "National Disaster Management Plan, 2012-2022"; Page: 31

28. Concern Worldwide led consortium of non-government organizations, Islamabad working in District Kashmore under "Building Disaster Resilience in Pakistan, programme 2017-18

Table 2.7: List of at Risk Union Councils Identified During the Consultation Workshop²⁹

S. #	Name of Union Council	Ranking			Name of Talukas
		High	Moderate	Low	
1	Hussain Beli	High Risk			Ghotki
2	Qadir Pur	High Risk			Ghotki
3	Chandia	High Risk			Ubauro
4	Wahi Ghoto	High Risk			Mirpur Mathelo
5	Abbwara	High Risk			Khangarh
6	Umer Daho No 28		Moderate Risk		Ghotki
7	Bago Derho		Moderate Risk		Ghotki
8	Lohi		Moderate Risk		Khangarh
9	Khambra		Moderate Risk		Ubauro
10	Mithri		Moderate Risk		Khangarh
11	Khanpur Mahar		Moderate Risk		Khangarh
12	Jevan Shah		Moderate Risk		Ubauro
13	Ghotki 1		Moderate Risk		Ghotki
14	Ghotki 2		Moderate Risk		Ghotki
15	AdilPur		Moderate Risk		Ghotki
16	Dad Laghari			Low Risk	Daharki
17	Yaroo Lund			Low Risk	Daharki
18	Khenjar			Low Risk	Daharki
19	Daharki			Low Risk	Daharki
20	Saidno Mailk			Low Risk	Daharki
21	Berutta			Low Risk	Daharki
22	Ruk			Low Risk	Ghotki
23	Khokhara			Low Risk	Ghotki
24	Beriri			Low Risk	Ghotki
25	Sonopitani			Low Risk	Mirpur Mathelo
26	Jarwar			Low Risk	Mirpur Mathelo
27	Garhi Chakar			Low Risk	Mirpur Mathelo
28	Dhangro			Low Risk	Mirpur Mathelo
29	Mirpur Mathelo 1			Low Risk	Mirpur Mathelo
30	Mirpur Mathelo 2			Low Risk	Mirpur Mathelo
31	Ranwati			Low Risk	Ubauro
32	Ghangel Malik			Low Risk	Ubauro
33	Ubauro			Low Risk	Ubauro
34	Langho			Low Risk	Ubauro
35	Kamon Shaheed			Low Risk	Ubauro

29. List withdrawn based upon focus group discussion during first consultation workshop organized at Sukkur, 2nd consultation workshop for District level government and non-government officers while 3rd for Taluka level officials, local government officials and community volunteers at Ghotki.

Based on the group exercises carried out among four different team members during the consultation workshops organized at District and Taluka level with the Government and non-government stakeholders,

the list of at risk union councils have been prepared. According to the above table there are five union councils namely Hussain Belli, Qadir Pur, Chandia, Wahi Ghototo and Aawara are at high risk to various hazards.

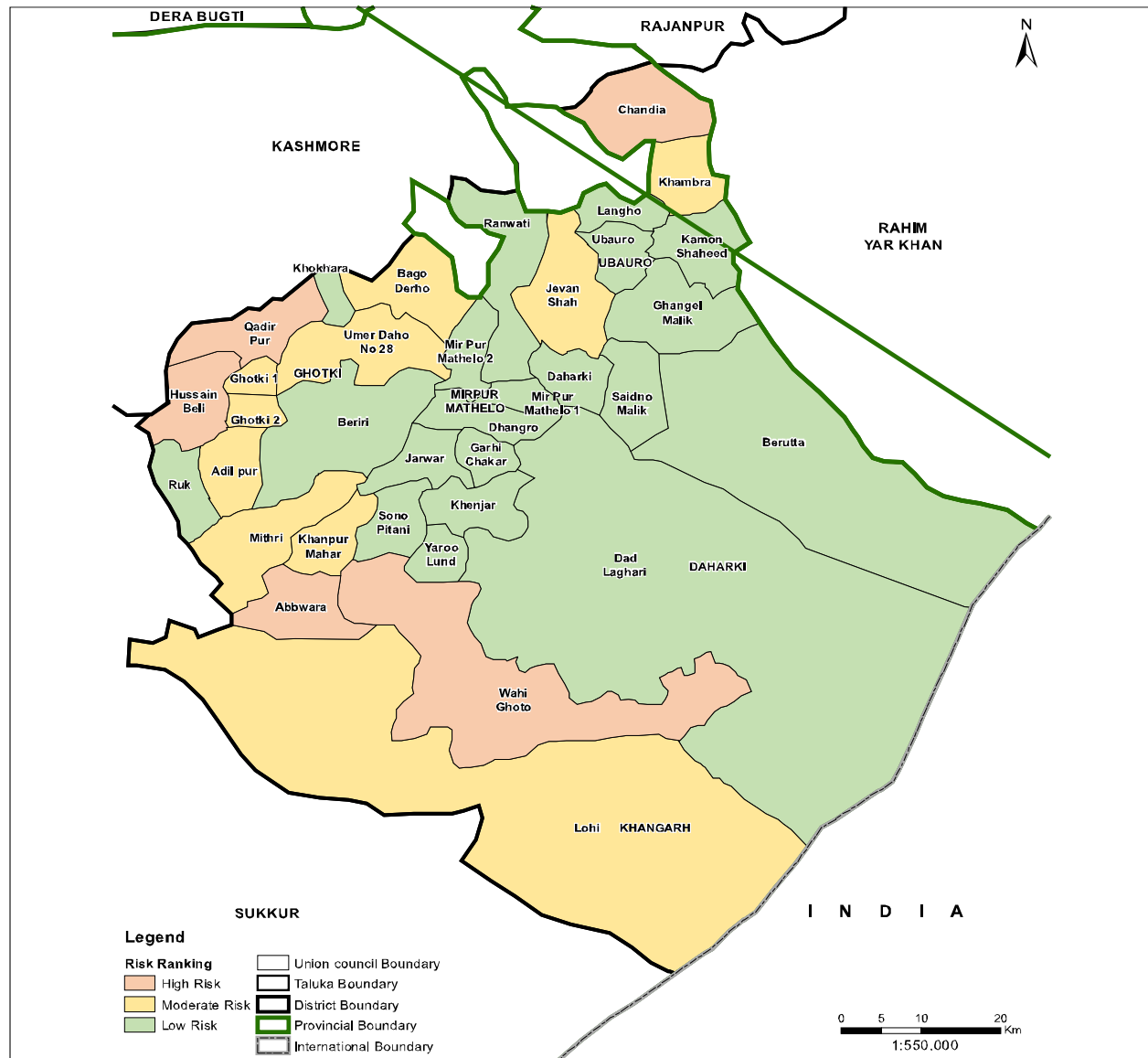


Figure 2.4: Union Council Wise Risk Map of District Ghotki³⁰

30. Map drawn based upon focus group discussion during first consultation workshop organized at Sukkur, 2nd consultation workshop for District level government and non-government officers while 3rd for Taluka level officials, local government officials and community volunteers at Ghotki.

Chapter - 3

Disaster Risk Management at District Level



3.1. District Disaster Management Authority (DDMA)

With the promulgation of the National Disaster Management Act 2010, the National Disaster Management Authority in Pakistan is striving hard to establish a robust Disaster Management System in the country with more focus on establishing and strengthening the Disaster Management Authorities at the District level, which play a key role in reducing hazard's risk and in responding to emergencies at local level. Although the pace is slow due to various reasons, the system is shaping up day by day although depending upon province to province and district to district that how much the disaster management system is gearing up.

Like other Districts, the DDMA in District Ghotki has been created under the NDM Act 2010, Chapter IV Section 18 and the law defines their composition and also outlines their functions, duties and powers. The act envisages that each provincial government shall, as soon as may be after issue of notification in the official gazette, be able to establish District Disaster Management Authority for every district. According to the NDM Act 2010, the DDMA will work as a coordinating body of all government agencies and non-government organizations operating in the district and be responsible as a focal authority in the conduct and implementation of plans and actions on disaster management. The Act has proposed the following organizational structure for all district level DDMA³¹;

- (a). Head of the local council at the district level (by whatever name called) who shall be Chairperson, ex-officio;
- (b). The Deputy Commissioner/District Coordination Officer;
- (c). The District Police Officer, ex-officio;
- (d). The Executive District Officer Health; and
- (e). Such other district level officers, to be appointed by the District Government

As for at the District Government Ghotki level, the following structure of DDMA is available and adopted to meet any crisis situation³²;

- (a). Deputy Commissioner
(Chairman)
- (b). Superintendent of Police
(Member)
- (c). ADC-I & ADC-II
(Members)
- (d). District Health Officer
(Member)
- (e). Deputy Director Social Welfare
(Member)
- (f). Representative of Civil Society
(Member)
- (g). Deputy Director, Civil Defense
(Member/Secretary)

Besides District Government Ghotki has proposed various other committees that can be formed for effective division of labor that can guarantee success in any disaster event. Each committee has a defined jurisdiction and area of operation. Following are the details of committees:

- ⊙ District Disaster Management Authority (DDMA)
- ⊙ Taluka Flood Relief Committee (Ghotki, Ubauro, Daharki, MPM, Khangarh)
- ⊙ District Health Committee
- ⊙ District Livestock Treatment Committee
- ⊙ District Security Committee
- ⊙ District NGOs Management Committee

With past experiences from all over the world, now DRR is considered as a cross cutting theme. Therefore, involvement of all stakeholders is of extreme importance to ensure a well-coordinated mechanism to prepare for effective response for handling the disasters. Based on best practices in the DRR, the DDMA shall consist of following members, as may be prescribed by the PDMA or Provincial Government and unless the rules otherwise provide;

31. National Disaster Management Authority 2018, "National Disaster Management Act 2010"; Chapter IV; Section 18; Page: 740-741

32. District Government Office through ADCII, District Ghotki, 2017

Table 3.1: Proposed List of Members for DDMA³³

Sr.#	Name of Department	Designation
1	District Chairman/Deputy Commissioner	Chairperson DDMA
2	Additional Deputy Commissioner	DDMO/Secretary
3	District Police Officer	Member
4	District Officer (Revenue)	Member
5	Two elected representatives nominated by the chair	Members
6	Representative of Pak Army	Members
7	Representatives of NGOs/Civil Societies	Members
8	District Officer (Works & Services)	Member
9	District Health Officer	Member
10	District Civil Defence Officer	Member
11	District Social Welfare Officer	Member
12	District Education Officer (male and female)	Member
13	District Officer (C&W)	Member
14	District Agriculture Officer	Member
15	Executive Engineer Irrigation	Member
16	Executive Engineer Public Health	Member
17	Administrators of Taluka Municipal Administrations	Members
18	All Taluka Municipal Officers in the District	Members
19	Representative of Pakistan Red Crescent Societies	Member

Under the direction of the Deputy Commissioner, the DDMO will be deputized to accomplish their duties at secretariat for the DDMA. According to NDM Act 2010, the secretariat will be composed of the Deputy Commissioner, who will serve as chairperson, whereas a DDMO as executive officer and a minimum of three staff members who will be incharge of their tasks, namely Technical Support (Training and Education), Operation Group and Finance and Admin support. The number of staff, procedures and TORs of the secretariat will be developed by the DDMA³⁴. The secretary DDMA will be appointed as District Disaster Management Officer (DDMO) who will provide administrative support to the DDMA and will work directly under the supervision of Deputy Commissioner of the district Ghotki.

3.1.1. Proposed Functions of DDMA

3.1.1.1. Powers and Functions of Chairperson of the DDMA³⁵

Refer to the NDM Act 2010, the District Disaster Management Authority will be a district planning, coordinating and implementing body for disaster management and will guarantee to take all conceivable measures for the purposes of disaster management in the district in accordance with the guidelines laid down by the NDMA and the PDMA Sindh.

33. National Disaster Management Authorities; "National Disaster Risk Management Framework 2007" and "National Disaster Management Plan 2012-2022".

34. National Disaster Management Authority 2018, "National Disaster Management Act 2010"; Chapter IV; Section 18; Page: 741-745; "National Disaster Risk Management Framework 2007" and "National Disaster Management Plan 2012-2022".

35. National Disaster Management Authority 2018, "National Disaster Management Act 2010"; Chapter IV; Section 18; Page: 741-745; "National Disaster Risk Management Framework 2007" and "National Disaster Management Plan 2012-2022".

3.1.1.2. Powers and Functions of the DDMA

Following powers and functions of DDMA have been defined in the National Disaster Management Plan 2012-2022:

- ⊙ Prepare a disaster management plan including district response plan for the district;
- ⊙ Coordinate and monitor the implementation of the National and Provincial DRR Policies, National, Provincial and District Disaster Management Plans;
- ⊙ Ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of their effects are undertaken by the departments of the government at the district level as well as by the local authorities;
- ⊙ Ensure that the guidelines for prevention, mitigation, preparedness and response measures as laid down by the National Authority and the Provincial Authority are followed by all departments of the government at the district level and the local authorities in the district;
- ⊙ Give directions to different authorities at the district level and local authorities to take such other measures for the prevention or mitigation of disasters as may be necessary;
- ⊙ Lay down guidelines for preparation of disaster management plans by the departments of the government at the district level and local authorities in the district;
- ⊙ Monitor the implementation of disaster management plans prepared by the departments of the government at the district level;
- ⊙ Lay down guidelines to be followed by the departments of the government at the district level;
- ⊙ Organize and coordinate specialized training programs for different levels of officers, employees and voluntary rescue workers in the district;
- ⊙ Facilitate community training and awareness programs for prevention of disaster or mitigation with the support of local authorities, governmental and non-governmental Organizations;
- ⊙ Set up, maintain, review and upgrade the mechanisms for early warnings and dissemination of proper information to the public;
- ⊙ Prepare, review and update district level response plans and guidelines;
- ⊙ Coordinate with, and give guidelines to, local authorities in the district to ensure that pre-disaster, during disaster and post-disaster management activities are carried out promptly and effectively;
- ⊙ Review development plans prepared by the departments of the government at the district level, statutory authorities or local authorities with a view to make necessary provisions therein for prevention or mitigation of disasters;
- ⊙ Identify buildings and places that could, in the event of a disaster situation, be used as relief centers or camps and make arrangements for water supply and sanitation in such buildings or places;
- ⊙ Establish stockpiles of relief and rescue materials and ensure preparedness to make such materials available on short notice;
- ⊙ Provide information to the Provincial Disaster Management Authority relating to the different aspects of disaster management;
- ⊙ Encourage the involvement of non-governmental organizations and voluntary social-welfare institutions working at the grassroots level in the district for disaster management;
- ⊙ Ensure communication systems are in order and disaster management drills are carried out periodically;
- ⊙ Perform such other functions as the provincial government or provincial authority may assign to it or deem necessary for disaster management in the district;

For knowing detail function, roles and responsibilities of the DDMA, it is suggested to refer to National Disaster Management Act 2010"; Chapter IV; Section 18; Page: 741-745 available at NDMA website under <http://www.ndma.gov.pk/plans/NDMA-Act.pdf>

3.2. Taluka Disaster Management Committee (TDMC)

At Taluka level disaster management, a committee structure has been proposed which can be called as Taluka Disaster Management Committee (TDMC). TDMC at this level is the frontline authority for disaster management. TDMC will synchronize and implement disaster risk management activities in line with district management plan at Taluka level. For many

departments, this is the lowest level of administration where they interface directly with communities and could play a significant role in promoting disaster risk reduction³⁶.

3.2.1. Organizational Structure and Members of TDMC

Taluka Mukthiyarkar or Administrative head of Taluka

shall be appointed as a Chairperson of TDMC and the Taluka Municipal Officer (TMO) shall be the secretary with consultation of DDMA, working directly under DDMO and will provide support and give information of the union councils of the concerned Taluka. TDMC will be a bridge between Government and the community in relation to disaster management.

Table 3.2: Proposed List of Members for TDMC

Sr.#	Name of Department	Designation
1	Administrative head of Taluka (CMO Municipal)	Chairperson TDMC
2	Taluka Municipal Officer (Town Officer)	Secretary, TDMC
3	Revenue Department representative at Taluka level	Member
4	Representative from line department at Taluka level	Member/s
5	All elected members (Male and Female)	Members
6	UCDMC representatives (President from each committee)	Members
7	Representative of NGOs and LSOs	Member

The member/s can be added in the Taluka level structure as per ground realities and need by the Taluka Administration in consultation with District Disaster Management Authority.

3.2.2. Proposed Functions of TDMC

The National Disaster Risk Management Framework Page 54 clearly elaborates Taluka administrations as the frontline of disaster management where disaster activities are actually implemented. As per NDM Act 2010³⁷ and subject to the directions of the DDMA, the TDMC shall;

- ⊙ Ensure that its officers and employees are trained for disaster management
- ⊙ Ensure that resources relating to disaster management are so maintained as to be really available for use in the event of any threatening disaster situations or disaster.
- ⊙ Ensure that all construction projects under its or within its jurisdiction conform to the standard and

specifications laid down for prevention of disasters and mitigation by the NDMA, PDMA and DDMA.

- ⊙ Carryout relief, rehabilitation and reconstruction activities in the affected areas in accordance with the PDMA and DDMA plans.
- ⊙ The TDMC may take such other measures as may be necessary for the disaster management.

3.3. Union Council Disaster Management Committee (UCDMC)

Union councils were considered as the lowermost level in the government structure having elected representatives from the village and ward levels for these bodies. Under the Sindh Local Government Act 2013, Union Councils are to assist the relevant authorities during disasters and natural calamities and assist in relief activities. Union councils can play an important role in advocating demands of communities to the District and Taluka Disaster Management Committees.

36. The list of committees and possible members have been proposed by the consultant based on reviewing different disaster management plans at national and international level also refer to National Disaster Management Act 2010"; Chapter V; Section 25; Page: 745 available at NDMA website under <http://www.ndma.gov.pk/plans/NDMA-Act.pdf>; (Accessed: 24 April 2018)

37. Refer to National Disaster Management Act 2010"; Chapter V; Section 25; Page: 745 available at NDMA website under <http://www.ndma.gov.pk/plans/NDMA-Act.pdf> (Accessed: 24 April 2018)

3.3.1. Organizational Structure and Members of UCDMC

Union Council Disaster Management Committee (UCDMC) was proposed to be established to

coordinate and implement disaster risk management activities at the UC level. Head of the local council or Administration shall be the chairperson of the UCDMC. The composition of the UCDMC is as follows.

Table 3.3: Proposed List of Members for UCDMC³⁸

Sr.#	Name of Department	Designation
1	Union council Chairperson or local Council Administrator	Chairperson
2	Union Council Secretary	Secretary, UCDMC
3	All elected UC members (Male and Female)	Member
5	Halqa Tapaydar	Member
6	SHO Police/Representative	Member
7	Representative of RHC/BHU	Member
8	Representative of schools (selected Principal)	Member
9	Representative of local NGO	Member
10	Religious leader (selected Pesh Imam)	Member
11	Representative of VDMC (selected)	Member

The member/s can be added to the UC level structure as per ground realities and need by the UC Administration in consultation with Taluka and District administration.

3.3.2. Proposed Functions of UCDMC

1. Compiling VDMC level maps and preparing MHVRA and social mapping at UC level;
2. Preparing UC level disaster management plan, including disaster/emergency response plan;
3. Identification, mobilization and disposal of required financial, technical and logistical resources for disaster management operations;
4. Mobilization of community for maintaining public ways, public streets, culverts, bridges and public buildings, de-silting of canals and other development activities;
5. Coordination with the village in case of emergency in order to get quick information about the severity and extent of a disaster impact and report it to the TDMC and DDMA;
6. Committee will make arrangements for acquiring necessary equipment/ emergency response kits for disaster/ emergency response management;

7. Committee will ensure and be actively involved in building the capacities of UCDMCs and VDMCs members;
8. Conducting search and rescue operations in coordination with the Civil Defense, PRCS and Police;
9. Providing assistance to other government and non-government stakeholders for effective disaster risk reduction and emergency response;
10. Monitoring NGO activities and provide necessary support to ensure community Participation by establishing coordination mechanisms among NGOs and local council.

3.4. Village Disaster Management Committee (VDMC)

Subsequent to the UCDMC, the next lower tier of the DM committee can be called as Village Disaster Management Committee (VDMC). The VDMC will play a pivotal role as the committee members are at the forefront against disasters. Therefore, the stronger and organized committees are, the more effective the response would be.

38. The list of committees and possible members have been proposed by the consultant based on reviewing different disaster management plan at national and international level.

3.4.1. Proposed Functions of VDMC

1. VDMC will analyze the disaster risk and make efforts to reduce the risk of these disasters on village level;
2. VDMC will develop social, hazard and risk maps and will prepare a village disaster management plan;
3. The committee will conduct trainings for volunteers through UCDMC. For this purpose, committee will prepare the list of volunteers on village level;
4. To make the people aware about the natural disasters, and their management and safety from disasters through these volunteers on village level;
5. The committee will try for prevention of natural disasters through close coordination with UCDMC, TDMC and DDMA;
6. The committee will arrange and provide volunteer to cope with the disaster situation. They will also help Government Departments during natural and man-made disasters;

7. The committee will establish a uniform system of early warnings and disseminate the vertical flow of information;
8. The committee will identify safe evacuation routes and centers in the jurisdiction of concerned villages;
9. Committee will closely coordinate and will arrange regular meetings with UCDMC and will follow the instructions given by UCDMC and TDMC.

3.5. Key Stakeholders and Their Role in Disaster Management

Following are the significant disaster management activities that the line department, local administration, institution and other district stakeholders are expected to execute at three different stages known as pre, during and post disaster management. The list of functions given below is only a symptomatic one³⁹.

3.5.1. District Disaster Management Authority (DDMA)

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Lay down guidelines for preparation of disaster management plans by the government departments at the district level and local authorities; ⦿ Monitor and ensure implementation of the DDMP; ⦿ Organize and coordinate specialized DRR related training programs for all stakeholders and volunteers; ⦿ Set up, maintain, review and upgrade the mechanism for multi-hazard early warnings, dissemination and education of proper information to public; 	<ul style="list-style-type: none"> ⦿ Activate the DEOC as early as possible after a disaster occurs; ⦿ Carryout rapid damage and needs assessment and develop a flash report for assistance and report to PDMA and other relevant stakeholders; ⦿ Close liaison with the Provincial Emergency Operation Centre (PEOC) and update with damage and needs; 	<ul style="list-style-type: none"> ⦿ Support PDMA Sindh for carrying out detail damage and needs assessment and develop the detail report; ⦿ Maintain close liaison with the PEOC Sindh and UN clusters for needs assessment and effective response; ⦿ Continue and monitor early recovery and rehabilitation activities with the support of I/NGOs, UN Clusters and other stakeholders;

39. National Disaster Management Authority; Extracted from the "National Disaster Management Plan 2012-2022", available at [http://www.ndma.gov.pk/plans/NDMP-Main%20Vol.pdf Appendix – II; Page: A-II-1 to 37 \(Accessed: 24 April 2018\)](http://www.ndma.gov.pk/plans/NDMP-Main%20Vol.pdf Appendix – II; Page: A-II-1 to 37 (Accessed: 24 April 2018))

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Co-ordinate with, and give guidelines to, local authorities in the district to ensure that post-DM activities are carried out promptly and effectively; ⦿ Review development plans prepared by the government departments, statutory or local authorities with a view that DRR has been integrated into the development activities and projects of the plan; ⦿ Identify buildings and places which could, in the event of a disaster situation, be used as relief centers or camps and make arrangements for water, sanitation and hygiene in such buildings or places; ⦿ Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice during any emergency or disaster; ⦿ Encourage the involvement of Pakistan Red Crescent Societies, non-government organizations and voluntary social welfare institutions working at the grassroots level for disaster management; ⦿ Develop pool of Master Trainers at Community and District Government level; ⦿ Take support of the Civil Defence, PRCS and non-government organizations to establish UC and Village Level Disaster Management Committees and ensure their sustainability; ⦿ Develop a pool of volunteers and their database for effective emergency response at the grassroots level for disaster risk reduction; 	<ul style="list-style-type: none"> ⦿ Mobilize TDMC, UCDCMs, VDMCs, PRCS, non-government organizations and voluntary social-welfare institutions for effective response. Take extreme care to evacuate or take care of the highly vulnerable and socially excluded groups; ⦿ Provide shelter, food, drinking water and essential provisions, healthcare and services, and establish emergency communication systems in the affected area and at evacuation/shelter places established by the Revenue Department; ⦿ Control and restrict vehicular traffic to, from and within, the vulnerable or affected area; ⦿ Control and restrict the entry of any person into, his movement within and departure from, a vulnerable or affected area; ⦿ Control and restrict the entry of any person into, his movement within and departure from, a vulnerable or affected area; ⦿ Remove debris, conduct search and carry out rescue operations. Make arrangements for the disposal of the unclaimed dead bodies; ⦿ Direct any department of the Government of the Province or any authority or body under that government at the district level to take such measures as are necessary in its opinion; ⦿ Construct temporary bridges or other necessary structures and demolish structures which may be hazardous to the public or aggravate the effects of the disaster; 	<ul style="list-style-type: none"> ⦿ Facilitate specialized and technical trainings of the government stakeholders and I/NGOs for reconstruction and recovery process; ⦿ Build the capacities by providing trainings to masons, carpenters etc. for the reconstruction and recovery of the physical infrastructures; ⦿ Review and update development plans prepared by the departments of the government at the district level, statutory authorities or local authorities with a view to make necessary provisions therein for prevention or mitigations of disasters; ⦿ Hire the services of experts and consultants in the relevant fields of recovery and rehabilitation to advise and assist as it may deem necessary; ⦿ Review the DDMP and Contingency Plans in light of lessons learnt and improve the response mechanism.

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Ensure communication systems are in order and disaster management drills are carried out periodically; ⦿ Give directions for the functionality and maintenance of the resources available to any department of the Government and the local authority in the district; ⦿ Arrange commemoration days of important past disaster events and use public gathering platforms; ⦿ Ensure that the non-government organizations carry out their activities in an equitable and non-discriminatory manner. 	<ul style="list-style-type: none"> ⦿ Direct any department of the Government of the Province or any authority or body under that government at the district level to take such measures as are necessary in its opinion; ⦿ Construct temporary bridges or other necessary structures and demolish structures which may be hazardous to the public or aggravate the effects of the disaster; 	

3.5.2. Taluka Municipal Administration (TMA)

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Give technical inputs and approve bylaws related to disaster resilience practices in local context through Taluka councils; ⦿ Suggest, prioritize and approve budgetary requirements for disaster mitigation practices; ⦿ Integrate DRR in short and long term development plans within the municipality/Taluka with a focus on embedding proper planning code and suggesting DRR measures for the highly vulnerable and socially excluded groups; ⦿ Ensure that the multi-hazard, vulnerabilities and risk Assessments have been done, and maps have been developed and prioritized risk prone areas in the municipality/Taluka are identified; ⦿ Strict compliance of the land use planning and zoning based on MHVRA conducted; ⦿ Ensure the implementation of bylaws related to encroachment at hazardous places, building codes, land use planning and zonation etc.; ⦿ Identify evacuation/shelter places to face any disaster/emergency; 	<ul style="list-style-type: none"> ⦿ Coordinate with the UCDMCs/VDMCs for effective emergency response; ⦿ Make arrangements for sanitation, cleanliness, disposal of garbage and carcasses, drainage and sewerage system caused and disrupted by a disastrous event ⦿ Continue search and rescue activities and removal of debris; ⦿ Ensure health facilities are operationalized and roads are open to have access to health services during the disaster; ⦿ Facilitate formation of voluntary organizations for assistance and help of the victims alongside the international and national humanitarian agencies; 	<ul style="list-style-type: none"> ⦿ Mobilize community for maintaining public ways, public streets, culverts, bridges and public buildings, de-silting of canals and other development activities; ⦿ Facilitate the formation of co-operatives for improving economic returns and reduction of poverty and vulnerability; ⦿ Dispose of debris from street and houses and promote cleanliness and encourage plantation of trees in public places;

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Prepare contingency plans for the TMA and organize regular drill/simulation exercises; ⦿ Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice during any emergency or disaster; ⦿ Identify the frequently disrupted sites of sewerages, water supply and sanitation and hence highlight for durable solutions. 	<ul style="list-style-type: none"> ⦿ Conduct rapid damages and needs Assessment of the survivors in order to start relief activities accordingly. Prepare flashes appeal and report to DDMA and PDMA Sindh and other relevant higher level authorities; ⦿ Report cases of PWDs, destitute and socially excluded groups to district government and higher authorities in order to streamline their special needs in relief and response operation 	<ul style="list-style-type: none"> ⦿ Support in providing accurate, detailed and useful information for preparing detailed damages and needs Assessment reports by the DDMA/PDMA Sindh etc.

3.5.3. Forest Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Take care of the protection of forests, wildlife and the aquatic resources; ⦿ Training of staff in firefighting, handling of animals, conservation of species and wildlife and first aid etc.; ⦿ Develop disaster risk management plan with regards to the mandate of the department; ⦿ Coordinate with the PDMA and other scientific agencies to gather information about hazards and risks prevalent in rangelands that may lead to desertification; ⦿ Build capacity of the staff of department on disaster risk management in wildlife sector; ⦿ Supply of drought resistant seeds of tree species to farmers and communities; ⦿ Control grazing of animal in rangeland areas that have endangered tree species; ⦿ Ensure a pollution free livable environment in the areas of mandate; ⦿ Publish materials for communities and other stakeholders about seasonality of hazards and risks in areas of grazing for pasture & water. 	<ul style="list-style-type: none"> ⦿ Coordinate emergency response activities through the PDMA and make available all kinds of resources to PDMA if required upon the receipt of any disaster situation report; ⦿ Constitute a Rescue Unit/Disaster Management Unit to cope with any disaster challenge like fire, floods, etc.; ⦿ The functional units of Sindh Wildlife & Parks Department may be divided into three regions i.e. Northern Zone, Central Zone, and Southern Zone; ⦿ Equipment required for floods, storms, fire and earthquake are motor boats, water lift pumps, special vehicles to shift birds and animals, firefighting equipment, etc. 	<ul style="list-style-type: none"> ⦿ Supply of drought resistant seeds of tree species to farmers and communities; ⦿ Ensure a pollution free livable environment and take measures for rehabilitation of the species in the forest areas; ⦿ Publications of materials for communities and other stakeholders about seasonality of hazards and risks in areas of grazing for pasture of wildlife and forests; ⦿ Develop recreational facilities in a disaster resilient manner in the rangeland areas; ⦿ Technical advice for rangeland planting and raising of tree nurseries for forestation and reforestation programs.

3.5.4. Livestock Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Arrange fodder for livestock before disaster; ⦿ Capacity building of formers on disaster preparedness and livestock management; ⦿ Ensure safe fodder storage for livestock in the area; ⦿ Early vaccination before any calamity for livestock; ⦿ Promotion/Adaptation of disaster resilience measures; ⦿ Formation of value chain groups; ⦿ Maintain emergency stock of vaccination and fodder etc.; ⦿ Mass awareness regarding epidemics and diseases of livestock and poultry. Regular vaccination is an effective tool to prevent diseases. 	<ul style="list-style-type: none"> ⦿ Provide guidelines for evacuation and cattle management of relief camps, ⦿ Vaccination and treatment for livestock; ⦿ Damage and needs Assessment of livestock; ⦿ Close coordination and management reporting; ⦿ Arrange feed and fodder for surviving livestock. 	<ul style="list-style-type: none"> ⦿ Livestock vaccination; ⦿ Ensure foods and fodders availability; ⦿ Advocacy series for rehabilitation; ⦿ Ensure availability for fodders for post disaster rehabilitation

3.5.5. Agriculture Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Prepare Agriculture Disaster Risk Management Operational Plan and contingency plan and organize regular drill/simulation exercises. It is worth to mention that FAO has already prepared the said plan for Agriculture department; ⦿ Maintain emergency stock of seeds; ⦿ Creating community seed banks at the UC level to support the small farmers with minimum seed requirements after any disaster to enable them to resume and regenerate agriculture based livelihood activities; ⦿ Mass awareness regarding epidemics and diseases of crops; ⦿ Regular surveillance of water sources, which may be damaged or cause flooding during monsoon; ⦿ Closely coordinating with Pakistan Meteorological Department and the media to ensure that early warning messages are appropriately relayed / disseminated to hazard prone communities. It will help people to plan for sowing/planting and harvesting crops accordingly; 	<ul style="list-style-type: none"> ⦿ Immediately, start interacting with DDMA/DC office for coordinating emergency response activities; ⦿ Make available all the technical and material resources to be made part of the relief effort; ⦿ Carryout agriculture sector's damages/losses and needs Assessment and prepare flash report for response; ⦿ Help other relevant departments in establishing relief camps in safe places; 	<ul style="list-style-type: none"> ⦿ Prepare detail report of agriculture sector damages/losses and needs and submit it to DDMA/DC office for onwards transmission to PDMA/NDMA; ⦿ Repair and rehabilitation of water sources to ensure that agriculture activities are resumed as early as possible; ⦿ Provision of seeds, fertilizers and other agro-inputs/implements to farmers as disaster early recovery support;

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Arrange different trainings on impact of global warming and climate change and adopting of agriculture crops and enhance the productivity for the farmers; ⦿ Promote adoption of flood and drought resilient crops through research and dissemination to farmers with the help of agricultural extension workers. 		<ul style="list-style-type: none"> ⦿ Document lessons learned and revise the departmental contingency and Agriculture Disaster Risk Management Operational Plan accordingly.

3.5.6. Irrigation Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Equip irrigation department to mitigate floods and droughts with technical & managerial capacity and modern gadgetry and practices; ⦿ Ensure development & maintenance of flood protection systems in the pre-flood season; ⦿ Identify and mapping of the most vulnerable points of irrigation canals & headwork's in the district and takes corrective measures; ⦿ Demonstrate/assist & train local communities facing localized or regional droughts on cheaper rainwater harvesting and storage techniques; ⦿ Establish a mechanism of early warning transmission, up and downstream across communities and establish special flood warning centers at UC level, with support of district administration and CSOs; ⦿ Develop and regularly review the district level plans on water management; ⦿ Identify and discourage encroachment(s) of various waterways, with the help of other district authorities; ⦿ Closely monitor discharge rates in the major water bodies, passing through the district and for this purpose optimize the functionality of the installed gauges; ⦿ Arrange protection material such as sandbags, stones, machinery, human resources and other material to be used at the time of need especially before the onset of monsoon. 	<ul style="list-style-type: none"> ⦿ Ensure establishment and operationalization of flood control cell in proper order; ⦿ Maintain liaison with field staff, Provincial Irrigation Department and district authorities; ⦿ Institutionalize regular patrolling of vulnerable points/irrigation canals and breach sites to warn potential victims on time; ⦿ Create and disseminate flood situation reports among the stakeholders. 	<ul style="list-style-type: none"> ⦿ Do the stocktaking exercise of disaster affected areas and examines all the existing flood protection systems like protection walls, spurs studs and head works of the irrigation canals; ⦿ Estimate and collect damages data and do need Assessment in terms of repair / maintenance and disseminate the information to the relevant stakeholders for securing needed resources; ⦿ Coordinate the repair work of damaged irrigation infrastructures; ⦿ Prepare a sectoral specific recovery plan in line with Agriculture Disaster Risk Management Operational Plan.

3.5.7. Revenue Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Being one of the key district departments, Revenue has to do a lot with disaster mitigation, preparedness and response. Keeping this in mind, ⦿ Support DDMA for carrying out the MHVRA which will help in identifying and prioritizing the most vulnerable areas for concerted efforts; ⦿ Inform the office of the DC and DDMA about the available financial resources against the contingency/disaster management plan and present a clear picture of gaps to be filled either by the district government's own funds or by the provincial government's funds through PDMA; ⦿ Prepare and regularly update the contact list of Patwaris (revenue officials) to ensure that they are contacted and deployed in any looming emergency; ⦿ Capacity building of the revenue official in DRR and formal training on damages and needs Assessment would make them a very useful resource for accurate data collection for the district; ⦿ Regular liaison with the UC and village level disaster management committees and volunteers in order to take their help during any emergency. 	<ul style="list-style-type: none"> ⦿ Establish the shelter places in coordination with other line departments, NGOs and philanthropists and evacuate the affected people; ⦿ Keep track of in-coming relief support, develop a relief distribution mechanism, and start providing assistance to the disaster affected population; ⦿ Coordinate with the District Finance & Planning department to ensure timely release of required funds through the DC's office; ⦿ Collect, verify and disseminate information about relief assistance being provided by the government and non-governmental actors; ⦿ Assess relief needs on a daily basis and prioritize to meet the most urgent needs of the affected people. It is of vital importance to prepare a sheet of required assistance on a weekly basis and gradually make it a fortnightly and then a monthly exercise; ⦿ Assess the overall situation and determine the likely timeframe of the evacuation/shelter places' population return to their homes. 	<ul style="list-style-type: none"> ⦿ Start carrying out detailed damages and losses report and support DDMA offices for detailed report; ⦿ Before the early recovery and rehabilitation activities take place, identify and prioritize areas of interventions by the government, NGOs sector and CBOs. ⦿ Inform I/NGOs and the UNO about the district's priorities and facilitate their work; ⦿ Regularly monitor and supervise early recovery and rehabilitation activities; ⦿ Prepare and provide a progress update to the district administration and other relevant stakeholders; ⦿ Prepare budgetary estimates for reconstruction activities if the damages are massive.

3.5.8. Health Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Undertake MHVRA for health facilities and services; ⦿ Develop a health risk management plan for the whole district based on MHVRA; ⦿ Integrate disaster preparedness and response capacities into all existing and future health programs at the district level; ⦿ Devise strategies for community involvement in all aspects of emergency preparedness, response and recovery with regard to the health sector. A pool of community health workers (CHWs) should be established or strengthened and can be linked to the UC and village level DM committees; ⦿ Health related data should be maintained and updated on priority basis along with data of at-risk communities and other elements that are available digitally; ⦿ Identify safe evacuation places in the health facilities and conduct regular emergency response and evacuation drills with all health officials; ⦿ With the support of DDMA, CHWs along with UCDMCs and VDMCs can be engaged to collect at-risk population data. 	<ul style="list-style-type: none"> ⦿ Set-up medical camps and mobilize emergency health teams, including mobile hospitals; ⦿ Mobilize all available health resources and possible assets for emergency interventions; ⦿ Provide daily update on health response and highlight gaps/needs accordingly; ⦿ Keep the disaster-hit communities posted about any likelihood of epidemics and the precautionary measures. CHWs can be mobilized to gather data and report. This is very important to prevent a secondary wave of deaths in affected areas; ⦿ Guide and facilitate the non-governmental organizations in addressing the priority health needs in the most vulnerable areas; ⦿ Conduct rapid damages/ losses and needs Assessment of the health sector and prepare flash reports. 	<ul style="list-style-type: none"> ⦿ Carrying out detailed damages and loss Assessment in the health sector; ⦿ Regular and vigilant health risks monitoring to deal with post-disaster diseases /epidemics; ⦿ With available resources, start repairing or retrofitting the damaged health infrastructure in order to cater to the health needs of the affected population during early recovery and rehabilitation stages; ⦿ It is important for the health officials to make sure that the drinking water is not contaminated. Similarly, proper dumping of hospital waste is necessary to be taken care of; ⦿ Regularly monitor and supervise early recovery and rehabilitation activities in the health sector.

3.5.9. Education Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Conduct MHVRA for all educational facilities; ⦿ During the construction of new school buildings or any other educational facilities, proper designing, keeping in view the need of PWDs, should be incorporated in the structure; 	<ul style="list-style-type: none"> ⦿ Mobilize teacher and student volunteers to assist in the search & rescue operations to be followed by setting-up emergency evacuation and relief camps at already identified educational facilities; 	<ul style="list-style-type: none"> ⦿ Undertake a detailed Assessment of damages inflicted by the disaster on the educational facilities. On the basis of this report, determine short, medium and long-term needs of the education sector in the district;

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Prepare Emergency Response Plan and disaster management plan for educational facilities and arrange regular drills and exercises during non-disaster phase; ⦿ Gather information about I/NGOs & CBOs working in the district in the education sector and make sure they mainstream DRR aspect into their project activities; ⦿ Identify schools that can be used as temporary evacuation centers for displaced population. It is important that the identified facilities have water, proper sanitation and latrine facilities; ⦿ Engage active students through Girls Guide, Boy Scout Teams, and Parent Teacher Committees (PTCs) to conduct regular trainings on emergency response management for students, teachers and parents; ⦿ Identify safe evacuation places in the school and organize regular emergency response & evacuation drills with students and teachers; ⦿ Promote the spirit of volunteerism amongst students through awareness raising and training; ⦿ Build capacities of teachers on school safety during emergencies and disasters; ⦿ Educational facilities related data should be maintained and updated on a regular basis along with data on those who are more vulnerable, that include children under age of 10 and special persons; ⦿ Mass awareness and capacity building of the vulnerable groups through education & trainings and can disseminate messages by using students as a medium. 	<ul style="list-style-type: none"> ⦿ In case of flood, inform teachers of those schools where the water can probably hit the school building and cause damages. This information will help teachers to take any emergency preparedness measures with support from local communities; ⦿ Conduct preliminary damages and needs Assessment and submit flash reports to higher authorities, DDMA and DC office; ⦿ Temporary shelters in the form of the school's buildings can be provided for displaced population during a disaster, having water supply and latrine facilities available mostly in the buildings. Teachers can be used as a valuable working force for smoothly running of the emergency operating centers established at evacuation sites. 	<ul style="list-style-type: none"> ⦿ Plan and provide provisional assistance for education after a disaster to ensure continuity of learning; ⦿ Rehabilitation and restoration of damaged educational facilities should be given high priority. PTC can be an effective bridge or communication channel for long term rehabilitation and reconstruction activities; ⦿ Nonstructural activities including preparedness, trainings, drills, awareness campaigns and celebration of the commemoration day in the schools should be continued.

3.5.10. Police Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Prepare details of inventory available at each police station that may be used during any disaster or emergency; ⦿ Prepare contingency and DM plans for the department; 	<ul style="list-style-type: none"> ⦿ Ensure law and order during any disaster situation in the affected areas; ⦿ Ensure security measures at evacuation points, in 	<ul style="list-style-type: none"> ⦿ Keep order and prevent obstruction on public places; ⦿ Aid and cooperate with other agencies for the prevention of

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Working with the Pakistan Meteorological Department and DC office, support in dissemination of warning to the affected communities; ⦿ Support district government authorities in the process of evacuating affected population to safer places. 	<p>evacuating areas, at relief centers and godowns;</p> <ul style="list-style-type: none"> ⦿ Provide assistance in emergency warning, rescue, relief and evacuation operation; ⦿ Ensure that over-loaded trucks are not coming/going to disaster affected areas; ⦿ Divert traffic where necessary to keep the running of emergency relief operations; ⦿ Ensure security of humanitarian workers who perform duties during disaster; ⦿ Prevent harassment of women and children during any emergencies. 	<p>destruction of public property by violence, fire or natural calamities;</p> <ul style="list-style-type: none"> ⦿ Provide assistance to victims of road accidents; ⦿ Protect life and property of citizens; ⦿ Preserve and promote public peace.

3.5.11. Civil Defence Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Assist local administration/armed forces in rescue, evacuation and relief measures; ⦿ Render first aid, fire safety and rescue trainings to communities, individuals and organizations during peacetime; ⦿ Develop an emergency evacuation plan and conduct regular drills and exercises; ⦿ Create community awareness on public safety; ⦿ Recruit/induct operational staff for search and rescue teams with required specialized skills and equipment; ⦿ Ensure provision of trained rescue workers/Razakars and first aid staff; ⦿ Educate and train volunteers on DRR, emergency response management; ⦿ Participate in emergency drills with other stakeholders; 	<ul style="list-style-type: none"> ⦿ Undertake search & rescue activities immediately after a disaster; ⦿ Assist in restoration of essential traffic so as to carry out rescue work without any hindrance or obstruction; ⦿ Render first aid to injured persons and transport them to nearest hospitals facilities; ⦿ Ensure evacuation to avoid further loss of life and property; ⦿ Assist in debris clearance and restoration of essential services to the affected buildings; ⦿ Search and defuse unexploded bombs in the affected areas; ⦿ Work with the fire brigade in rescue and first aid operations related to fire and other rescue incidents. 	<ul style="list-style-type: none"> ⦿ On the basis of the response activities that are performed, make a detailed Assessment of the capacities of the department and identify gaps and requirements; ⦿ Prepare a plan of action for the department and start resource mobilization accordingly.

3.5.12. Social Welfare Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Develop disaster management and contingency plans with regards to the mandate of the department; ⦿ Raise awareness of staff of the department about special vulnerabilities and capacities of women and children in relation to disasters; ⦿ Encourage involvement of women and PWDs in disaster risk management activities; ⦿ Promote awareness amongst women and PWDs in hazard-prone areas about disaster risks and disaster preparedness; ⦿ Develop capacities of women, PWDs and children focused organizations on disaster risk and emergency management; ⦿ Ensure that needs of women survivors are addressed in post disaster situations during the relief rehabilitation and reconstruction phases; ⦿ Properly plan and provide shelter to the affected women, beggars, drug rehabilitation for addicts, special education, blind institute, registration of the disabled, child protective measures and rehabilitation of other socially excluded groups; 	<ul style="list-style-type: none"> ⦿ Facilitate participation of women and PWDs in the management of relief, rehabilitation and reconstruction activities; ⦿ Activate and use the emergency phone numbers as helpline for child protection during a disaster; ⦿ Provide shelter provision to affected women, support in damages and needs Assessment of the affected area, service provision through formal shelter provision to missing or unaccompanied children. 	<ul style="list-style-type: none"> ⦿ Support post-disaster rehabilitation of livelihoods of women survivors, which is mostly in the informal sector and is usually ignored; ⦿ Support the district government and PDMA Sindh for re-unification of missing unaccompanied children, women, PWDs, rehabilitation of families and psychosocial support provision.

3.5.13. Works & Services Department

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Develop district guidelines for safer construction in hazard-prone areas through multi hazard approach; ⦿ Ensure DRR checklist of PC-1 has been seriously implemented in all new schemes; ⦿ During the construction of any new buildings, proper designing keeping in view the need of PWDs should be incorporated in the structure; ⦿ Ensure environmental impact Assessment studies have been conducted for all new schemes; 	<ul style="list-style-type: none"> ⦿ Send information to other district departments on road conditions, especially regarding blocked or impassable roads after a disaster; ⦿ Ensure to drain the flood water from roads and remove debris from under the bridges for smooth flow of water; 	<ul style="list-style-type: none"> ⦿ Undertake a detailed Assessment of damages of government buildings, roads infrastructure including bridges, culverts, etc.;

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Conduct training of builders, contractors and masons on safer construction methods and provide guidance on adopting inclusive DRR measures during the construction; ⦿ Monitor construction of buildings and infrastructure to ensure that safer construction techniques are followed; ⦿ Incorporate disaster risk assessment in the planning process for construction of new roads and bridges; ⦿ Construct, maintain & repair district and rural roads, bridges, tunnels, causeways etc.; ⦿ Develop guidelines on conduct of damage and loss Assessment of infrastructure and government buildings in the event of a disaster, and conduct Assessments after disasters. 	<ul style="list-style-type: none"> ⦿ Monitor disaster situation (in case of flood and landslide) with regard to roads and coordinate with other district departments for transporting relief items to the affected areas. 	<ul style="list-style-type: none"> ⦿ Prepare a report of damages to be shared with the district and provincial authorities along with budget requirements for the rehabilitation and reconstruction of damaged/destroyed infrastructure.

3.5.14. Public Health Engineering

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Repair and maintenance of the structure in command areas; ⦿ Preparation of contingency plan highlighting resources available to the organization. 	<ul style="list-style-type: none"> ⦿ Collect damages data and prepare reports for onward submission. 	<ul style="list-style-type: none"> ⦿ Rehabilitation of the damaged infrastructure, including protection walls, retaining walls, check dams, water ponds, surface water tanks, land leveling, field terracing, small dams, spurs etc.

3.5.15. Media

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Develop understanding with the subject of DRM; ⦿ Look into DRM capacities of the district departments and NGOs operating in the district. It will be very helpful to identify gaps (preparedness & response) and inform the concerned authorities and hazard prone communities; ⦿ Keep a close eye on development schemes and assess with help from technical experts as to what extent such schemes are going to be beneficial for hazard prone communities; 	<ul style="list-style-type: none"> ⦿ Monitor emergency relief activities and identify gaps and the required needs of the most vulnerable people (elderly, women, children, religious minorities, etc.); ⦿ Keep track of the in-coming external relief assistance and play a role of a watchdog so that the aid is spent judiciously on disaster victims; ⦿ Compile success stories of disaster survivors & share their courageous efforts through electronic & print media; 	<ul style="list-style-type: none"> ⦿ After any disaster, the most significant part that a media person can play is to gather as much information as possible about damages and losses and the response efforts. It helps the government authorities and other stakeholders to prepare more informed action plans for early recovery and rehabilitation;

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> Inform communities about any impending hazard on the basis of information that you may have received from the Met Department. This is called early warning dissemination. Correct early warning and its timely dissemination can save lives and property of the hazard prone communities. 	<ul style="list-style-type: none"> Besides, identifying gaps and objectively criticizing the response efforts, it is always useful to acknowledge and appreciate the good work of government and non-governmental actors involved in emergency response. 	<ul style="list-style-type: none"> Continue monitoring early recovery and rehabilitation activities.

3.5.16. Pakistan Army

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> In consultation with NDMA, PDMA Sindh and other line department, identify areas that are most likely to be impacted in case of a disaster; Prepare a disaster response plan and conduct regular drills and exercises; Accordingly, prepare and upgrade necessary equipment, manpower and other necessary material to be used/deployed immediately after a disaster; Conduct regular capacity building programs for soldiers so that they are able to carry out emergency relief activities effectively; Evacuate people to safer areas and designated evacuation centers before and after a disaster. 	<ul style="list-style-type: none"> Provide search and rescue services where needed; Evacuate people to safer areas and evacuation centers and focus on giving priority to women, children and PWDs. Maintain close liaison with the District Government and DDMA and if required, establish emergency relief centers and provide disaster victims with lifesaving food, shelter and health facilities; Install temporary bridges where appropriate to ensure mobility of affected populations and smooth transportation of relief items; Provide logistic back-up in terms of trucks, boats, helicopters etc. to the civil administration, if need be. 	<ul style="list-style-type: none"> Supplement early recovery efforts of civilian administration and the humanitarian community; Reconstruct / repair roads and bridges at important locations.

3.5.17. I/NGOs and PRCS

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> Support in developing disaster management plans at all levels and help DDMA for its implementation; Mobilize communities and develop local level capacities on disaster risk reduction; 	<ul style="list-style-type: none"> Facilitate local authorities in emergency relief operations (search& rescue, establishment of evacuation/relief camps, food distribution to displaced, provision of health services, etc.); 	<ul style="list-style-type: none"> Mobilize disaster affected communities for early recovery and rehabilitation efforts;

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Help and provide technical support in conducting MHVRA under the supervision of and with close coordination with the DDMA; ⦿ Provide all necessary trainings, conduct drills/exercises and provide necessary equipment to the DRR committees with the close coordination of the DDMA; ⦿ Support DDMA in establishing the Taluka/UC/Village level disaster management committees according to the set criteria of the PDMA Sindh; ⦿ Participate in DRM activities such as training, public education, damage assessment, rehabilitation and construction projects; ⦿ Implement programs on disaster risk reduction through structural interventions; ⦿ The PRCS is to assist the district government in crises, emergencies and disasters. 	<ul style="list-style-type: none"> ⦿ Establish information management centers at evacuation/relief camps with close coordination of the DC office and the DDMA. 	<ul style="list-style-type: none"> ⦿ With the support of DMCs assess damages/losses and needs and contribute it to the district government's data; ⦿ Prepare village level early recovery and rehabilitation plans and mobilize resources for their implementation; ⦿ Provide emergency livelihood support to communities in terms of providing agriculture inputs, conditional cash grants, etc.; ⦿ Work on promoting community based disaster risk management.

3.5.18. Private Sector⁴⁰

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ District administration/DDMA to ensure much closer coordination for establishing public private partnership on DRR and emergency response management; ⦿ Conduct multi-hazard, vulnerability and risk assessment inside and outside industries, surroundings and enlist elements at risk and vulnerable points; 	<ul style="list-style-type: none"> ⦿ Ensure business continuity with least disruption and secure damages; ⦿ Conduct rapid damage and need assessment inside and outside industries and report to DDMA and management; ⦿ Ensure emergency services provision to employee and if possible to surrounding communities and DDMA; 	<ul style="list-style-type: none"> ⦿ Post damage and needs assessment of assets and vicinity and report to management and DDMA for further support; ⦿ Restoration of critical infrastructure to ensure business continuity;

40. Disaster Management: A Role for the Private Sector Hari Srinivas Policy Analysis Series E-019. March 2015; available at

<http://www.gdrc.org/uem/disasters/dm-privatesector.html>

The role of the private sector in emergency preparedness, planning, and response By Evan Wolff and George Koenig CHAPTER 6; available at <https://www.atlanta-businesslitigation.com/The-Role-of-the-Private-Sector-Article.pdf>

What role does the private sector have in supporting disaster recovery, and what challenges does it face in doing so? Anita chandra, shaela moen, clarissa sellers; available at https://www.rand.org/content/dam/rand/pubs/perspectives/PE100/PE187/RAND_PE187.pdf

Before Disaster	During Disaster	After Disaster
<ul style="list-style-type: none"> ⦿ Based on MHVRA, planning for business continuity during emergencies, critical infrastructure protection, key assets and secure digital analogue and data record through necessary retrofitting and repairing; ⦿ Identify safer evacuation sites at industrial units, provision of basic life support, assign event commander, and conduct regular drills and simulations exercises for safer evacuation; ⦿ Provision of emergency response kits and fire extinguishers at evacuation sites and at other important sites inside the industrial units; ⦿ Capacity enhancement in relation to first aid, search and rescue, fire safety, chemical, biological and radiological hazards through trainings, refresher courses and hands on exercises; ⦿ Formation of Emergency Response Committees inside Industries responsible for ERM/DRR and maintaining close liaison with the DDMA and District Government. 	<ul style="list-style-type: none"> ⦿ ERM Committees actively engage to provide assistance including volunteers to support DDMA for emergency response throughout the recovery process; ⦿ Establish relief camps to support DDMA and District Government, ensure support in the form of skilled services, technical manpower or in-kind donations of goods or services for emergency response; ⦿ Stockpiling of emergency goods and services to support DDMA for quick response and relief services; ⦿ Ensure quick response for protecting critical infrastructures and key assets and to secure all types of important data. 	<ul style="list-style-type: none"> ⦿ Contributing district government through recovery financing.

3.6. DRM Operational Matrix/ Standard Operating Procedures for Emergency Response

District Emergency Operation Center (DEOC) should develop a well-defined Standard Operating Procedures (SOPs). The SOPs for emergency response can be divided into three key sections, (a). the actions common for all disasters by establishing DEOC that cover the actions on receipt of early warning, safe evacuation, actions for response activation i.e. search and rescue, initial damage and needs assessment, relief distribution, monitoring, deactivation of response, recovery actions; (b). The coordination and information dissemination system along with evacuation measures and (c). The specific contingency planning and response actions to the floods.

3.6.1. District Emergency Operations Centre (DEOC)

In order to deal with disasters in the district in efficient and well-coordinated manners, the DEOC has been established at District Administration Secretariat, equipped with all available communication facilities. The DEOC will serve as the hub for receiving early warning and issuing information to public at all levels in the district, taking measures to evacuate people, updating relevant departments and response agencies, and providing up-to-date information to media etc. The DEOC will also take lead in the coordination and management of relief operations and early recovery in the affected areas in the district. All concerned departments and humanitarian agencies will be coordinated by the DEOC at district level.

3.6.1.1. Organizational Structure of DEOC

The DEOC has been located at Deputy Commissioner (DC) Office in the district headquarter, equipped with all available communication facilities. The DEOC will be overall supervised and directed by the District Chairperson/DC of the district. The DEOC will be headed by the Coordinator and supported by the operations, communication, public information, administration and logistics support teams. DEOC will be working round the clock during the disaster time. In non-disaster times, DEOC will be working during normal office hours and will focus on emergency preparedness and contingency planning.

3.6.1.2. Functions of DEOC

- ⊙ Monitor the situation and make everything ready and functional in the DEOC;
- ⊙ Receive early warnings, screen and issue disaster alerts and warnings from nodal agencies and other sources, and communicate the same to all designated authorities and stakeholders;
- ⊙ Issuance of early warnings to the concerned communities;
- ⊙ Coordinate with NEOC at NDMA, PEOC at PDMA Karachi, concerned departments and other stakeholders;
- ⊙ Monitor emergency operations and make efforts for preventing secondary hazards;
- ⊙ Conduct rapid assessment of the relief needs by collecting information from the affected area and circulate to PDMA Sindh and other concerned departments and stakeholders;
- ⊙ Deploy evacuation, medical, search and rescue teams in the affected area;
- ⊙ Provide relief assistance in terms of relief camps, medical and sanitation facilities and temporary shelter to the affected population in the district;
- ⊙ Liaison with concerned departments and stakeholders engaged in emergency response by anticipating resource inventory;
- ⊙ Forward urgent information to relevant agencies for immediate action and arrange daily briefings

on disaster situations for general public and specific groups;

- ⊙ Record keeping and preparation of consolidated reports and response plans and projects⁴¹.

3.6.2. Power and Function of DEOC Coordinator

Following are the power and function of DEOC Coordinator:

- ⊙ Under the guidance of the Deputy Commissioner, the coordinator is responsible for managing the DEOC and its operation in disaster/emergency according to the agreed policy, procedures and strategies;
- ⊙ Certify information gathering and define technical information requirements in order to develop and advise for a possible emergency response;
- ⊙ Responsible to activate the DEOC properly according to the agreed procedures;
- ⊙ Responsible to develop and review the communication mechanisms with the department, PEOC and NEOC, department representatives armed forces, NLC, UN, Media, and I/NGOs, so that all these stakeholders get information on time;
- ⊙ Liaise with different humanitarian organizations involved in the humanitarian response;
- ⊙ Ensure that the DEOC has informed all relevant department representatives in the district during the alert stage to get ready for the disaster/emergency;
- ⊙ Ensure that the early warning is disseminated at every level so that everyone is informed in the district, and coordinate and review the preparedness of DEOC in the alert, warning and for responses;
- ⊙ Make sure that the operation team of DEOC has developed plans for possible deployment of doctors, search & rescue teams and other appropriate services are ready to be deployed;
- ⊙ To coordinate Assessments, relief supplies management and distribution etc. during crisis

41. National Disaster Management Authority; "National Disaster Risk Management Framework 2007; and "National Disaster Response Plan 2010"

coordination with external stake-holders, in order to provide support to the disaster affected areas throughout the district;

- Develop and implement security guidelines for the DEOC staff and for the humanitarian organizations.

3.6.3. Standard Operating Procedure-Activation Procedure for DEOC⁴²

Standby Position (Stage 1)	Activation Procedure (Stage 2)	Stand down procedure (Stage 3)	Operationalization of DEOC
In situation of any well-known disaster, the DEOC Coordinator will gather authentic and up-to-date information from respective organizations and he/she will advise DC/DDMA and will seek alert/activation approval. Approval of Alert phase is notified to the key departments at district and below district level, PEOC and NEOC.	The next stage of the DEOC process is called the activation stage. In this stage, a notification for full activation will be issued and the DEOC will remain fully operational at 24/7 basis. The DEOC Coordinator will inform all concerned departments, PRCS, Pakistan Army, Media, PEOC and NEOC.	The Stand down Procedure is the third stage of the DEOC. At the stand down procedure, the overall situation is reviewed. After reviewing the situation and consulting with Taluka/town administration, Coordinator DEOC will advise chairperson DDMA for stand down. Consequently, getting the approval of PDMC, Chairperson DDMA will approve the stand down of the DEOC. DEOC/DDMA will notify the key departments at all levels, PDMA Sindh and NDMA etc. At the end, the final report will be circulated to key stakeholders.	On the full activation of District Emergency Operation Center, the DEOC Coordinator will be responsible to fully equip the DEOC and provide all facilities to the representatives of departments who will be present in DEOC during a disaster situation. For the full and effective activation of DEOC, it is important that stocks of emergency food, office supplies, satellite phone sets, generators, logs, status boards, maps, screens and multimedia projectors and other necessary equipment must be available.

3.7. Women and Other Vulnerable Groups Engagement

Women, children, people of old age and People with Disabilities are always considered as the most vulnerable elements and normally suffer more than others during any kind of disaster. Their involvement is vital for effective disaster risk management. In a disaster situation, there is need to particularly focus on gender equality and the specific needs of female, children, people of old age and PWDs before, during and after the disaster events. The DDMA will ensure to

encourage all stakeholders to include women and PWDs for their active participation and will ensure that they have been mainstreamed in the planning, implementation and M&E process of all DRM related interventions.

3.8. Early Warning System and Communication Plan

Coordination and information dissemination mechanisms among the relevant organizations and at risk communities are important at the time of disaster.

42. National Disaster Management Authority; "National Disaster Response Plan 2010"

It is commonly observed as general practice that in case of any imminent threats, the District administration approach to Pakistan Meteorological Department, NDMA or PDMA and use media sources for getting authentic and up-to-date early warning about the threat. At District level, the district administration normally disseminate early warning through Patwari and Tehsildar from Revenue department and area SHO from Police department who are further responsible to communicate early warning. However, there is severe gap on taking coordinated action on how and where to evacuate the affected communities. Further, there is lack of close coordination among the relevant government department and the target communities and there is big gap of mistrust due to many avoidable reasons. As a result affected communities are always at high risk as they always confuse and feel hesitation to take action of evacuation as they can't leave their livelihood assets behind and similarly at government level, they don't have enough resources to rescue their livestock assets.

For an effective early communication of warning, the DDMA will involve related district and provincial level department stakeholders to establish effective coordination and information dissemination mechanisms in order to upgrade an early warning system. It is of utmost priority for the DDMA to conduct regular drills and simulation exercises during peace time on coordination and management of the disaster so that all line departments have full understanding and are fully onboard on how to respond and coordinate with other line departments. In case of any eminent disaster, the warning of disasters threat received will be passed on directly to the DDMO/Coordinator of the DEOC, who will direct the information to the most needed department and communities (as per the nature of disaster) to take immediate steps.

3.9. Early Warning & Information Dissemination

Based on past experience of dealing with the disaster situation, there are always uncertainties for the district government on taking appropriate actions well on time to inform the general public about the impending disaster. Similarly it is also severely observed that whenever early warnings are issued to the affected

communities, they feel hesitation to act upon due to many socio-economic reasons. There is dire need to develop an end to end early warning system through strong and tested coordination mechanism to issue early warning at right time by using appropriate tools and effective channels to reach to general public well on time so they can take appropriate actions for early evacuation.

DDMA will guarantee all public warnings and information dissemination through the secretariat upon recommendation of the chairperson of the authority. Dissemination of warnings and information in disaster situation is the core responsibility of DDMA/DEOC. DDMA will ensure that all public warnings will be distributed through the secretariat. The information which is conceded on to the public during pre, during, and post disaster, which includes warnings, and directions for evacuations and service access to affected populations is also part of the DDMA's responsibility. For the information dissemination, electronic and print media will be used to distribute the warning to the general public and concerned authorities for appropriate standby preparedness and response measures.

3.9.1. Reporting & Media Briefing

Altogether accountable departments and organizations are to submit regular updated situation reports to the DEOC, while the role of the DEOC coordinator will be to analyze the received reports and circulate regular updates and situation reports among all concerned stakeholders. DEOC will be the hub for providing up-to-date information and will arrange media briefings and interviews with key personnel and media channels for proper dissemination of the information concerning disaster situation in order to reduce the risks.

3.9.2. Coordination in Assistance

In case of disaster events that overwhelm the capacity of the resources in the district (stage 2 emergency), the requests for any assistance from outside the district will be made by the District Chairman or Deputy Commissioner to the PDMA. The Taluka Administration and Union Council bodies will make requests to the

District Authorities for the possible involvement of any concerned departments to meet the disaster situation. However, the DEOC will arrange the coordination mechanism by inviting all concerned I/NGOs, UN

Clusters and other organizations to focus their efforts by working together with DDMA for reducing the impacts of the disaster.

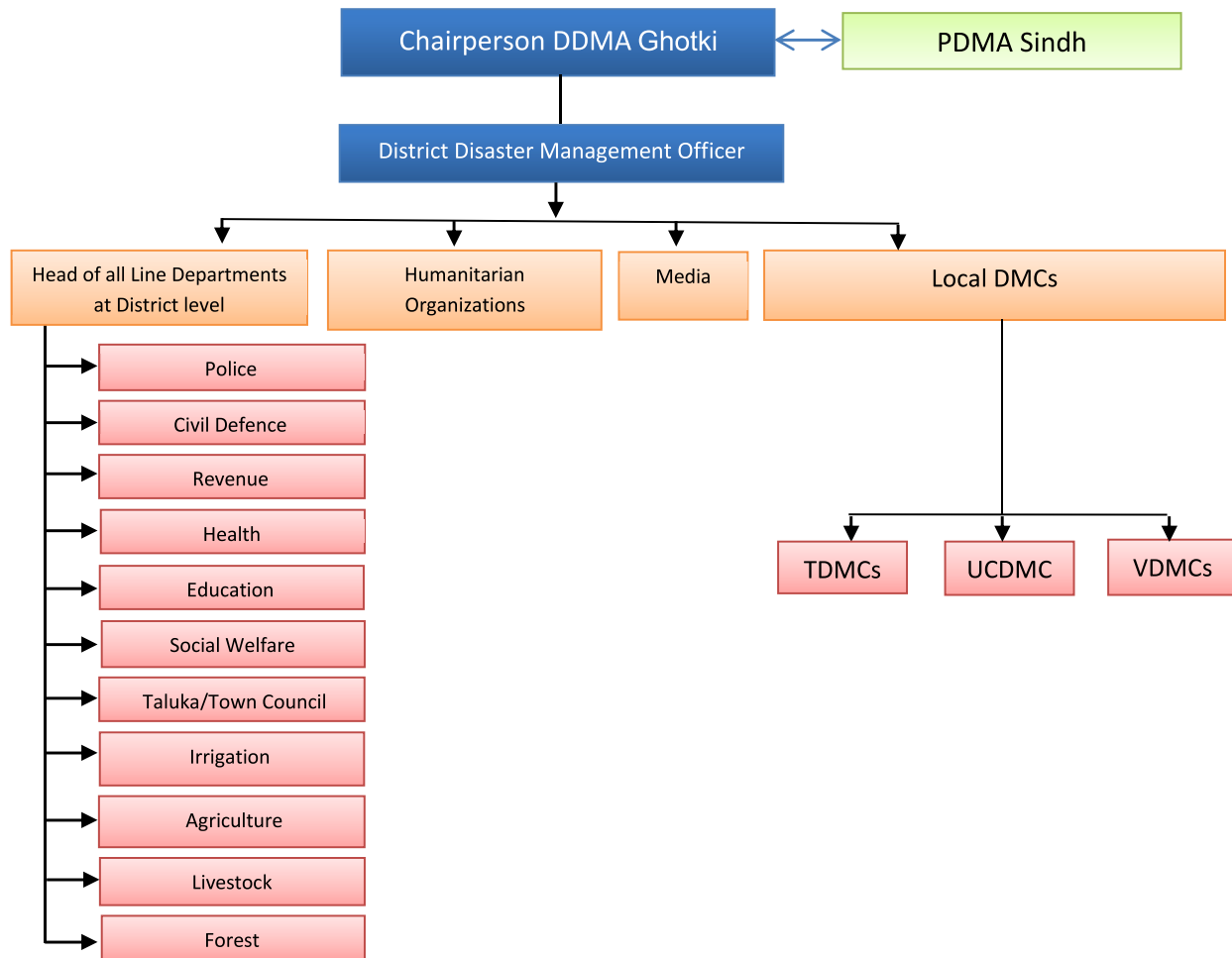


Figure 3.1. Emergency Response Coordination Mechanism at District Level

3.10. Evacuation Procedure, Including Designated Pick Up Point

The aim of designing operational mechanism for safe evacuation is to protect the vulnerable population well in advance and to evacuate them to safer locations, in order to save lives and further losses that might be affected by the floods threats. Therefore, a variety of preparedness measures need to be taken in advance against the prevailing hazards that can potentially hit Ghotki. The DDMA needs to collect disaster risk information in collaboration with nodal agencies in advance. If any

emergency risks are recognized, DDMA shall provide information on evacuation preparedness, evacuation directives and evacuation orders to residents in the disaster prone areas. Following are the measures to be adopted in evacuation which can be implemented and monitored by the local decision makers to make evacuation efficient and safer.

3.10.1. Leading Evacuation

After the occurrence of disaster, DDMA shall lead evacuation of residents with the close coordination

of concerned departments/DM committees and target communities, taking into account that securing lives of the residents is the first priority. When leading evacuation, local governments shall need to put effort into disseminating various information on evacuation sites, evacuation routes and high-risk areas from disasters, outline of damage and other related matters that help smooth evacuation.

3.10.2. Establishing and Managing Evacuation Sites and Pick Up Points

DDMA should ensure to enlist evacuation sites and pick up points well in advance at various localities during peace time. During any disaster situation, the DDMA shall designate emergency evacuation sites, such as urban parks, community halls and schools. With the coordination of local government authorities, I/NGOs, CSOs and disaster management committees, the DDMA shall also need to put effort into developing necessary facilities at evacuation sites, such as water tanks, wells, temporary toilets, blankets and telecommunication equipment. In addition, local government shall pay special attention to the people in vulnerable groups such as the elderly, handicapped, infants and women at evacuation sites. DDMA will properly manage each evacuation site and will need to put effort into distributing information, food, water and cleaning supplies, in cooperation with evacuees, residents and community level disaster management committees. In light of this, DDMA will request cooperation from other government authorities if needed.

3.10.3. Emergency Drills and Simulations

The DDMA along with PRCS, Civil Defence, Social Welfare and other government and non-government stakeholders will plan emergency response exercises and drills on various scenarios to assess and build the capacities of the resource persons supposed to be involved in emergency management. To reduce the impact of the imminent disaster in district Ghotki, agencies and

departments shall always be ready and conduct regular drills/exercises based on the hazard scenarios and sectorial response plans.

In this regard, NDMA model of developing pool of trained volunteers as emergency responders in the form of GOERE at government department level and MOVEER at community level for effective emergency response can be adopted. At the government department level, a workforce of "Government Officials Emergency Response Exercise (GOERE)" while at community level, a cadre of boys scout and girls guide to be trained as "Mobilization of Volunteers Emergency Response Exercise (MOVEER)", which can be closely linked with the DDMA for effective emergency response management. In a pre-disaster situation, DDMA will plan and carry out emergency preparedness and response exercises or drills with GOERE and MOVEER team to ensure that disaster response drills are conducted in the disaster-prone areas to maintain the readiness of communities and departments, with regards to operational procedures, personnel, equipment and orderly response.

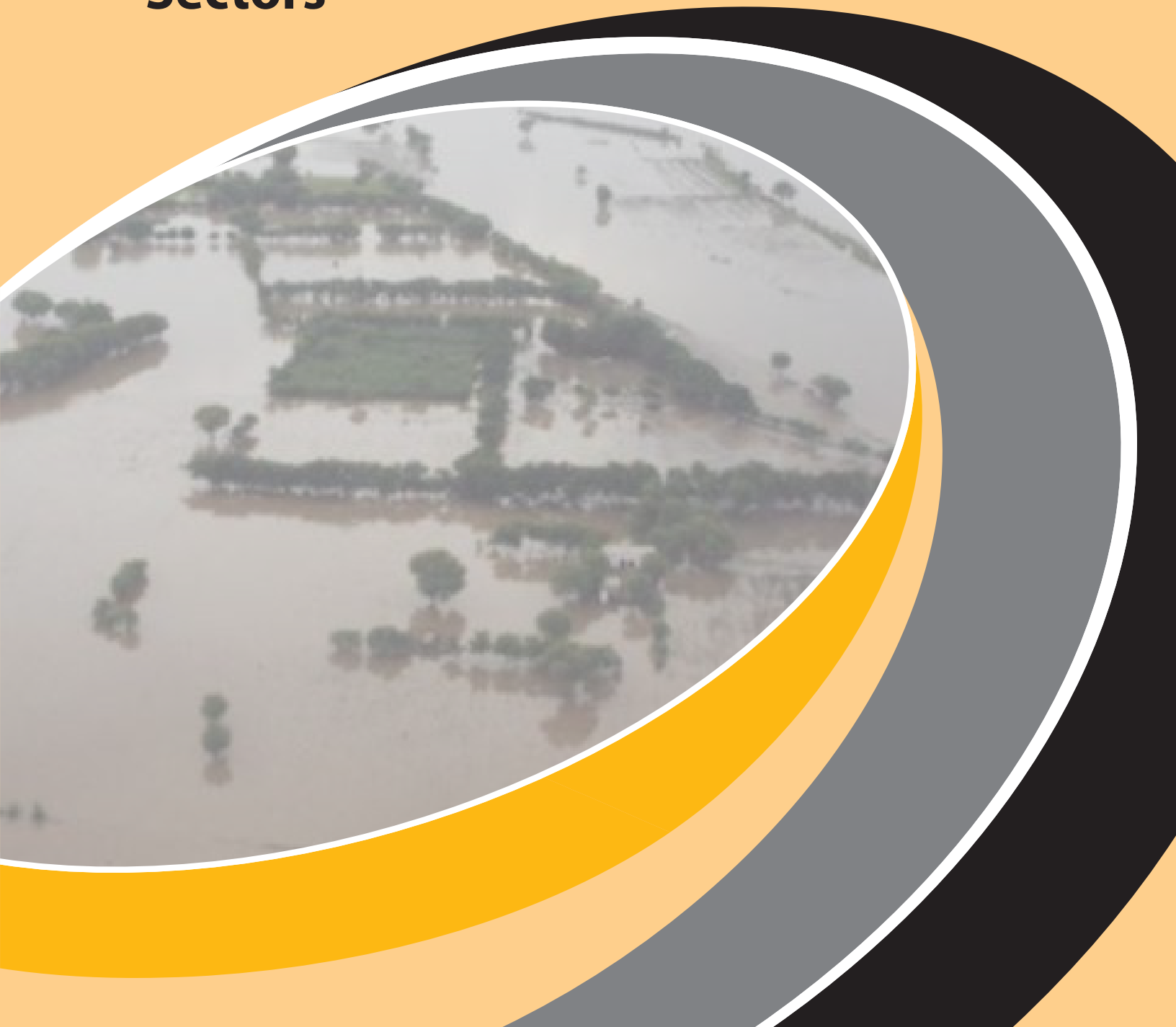
3.10.4. Responsibility for Organizing Drills and Scheduling

The DDMA will lead the drill activities on pre and post scenarios of disaster/emergency at district level. The government departments and humanitarian agencies shall also conduct drills based on the hazard scenarios and sectorial response plans. DDMA, however, should ensure regular monitoring and gauge the implementation.

The training and education officer of DDMA will develop an annual calendar for conducting the drills on a regular basis. The DDMA will make arrangements for organizing the emergency drills at the district and below levels by following the scheduled plan in the document. Each department and DM committee may organize their sectorial drills at realistic and convenient schedule.

Chapter - 4

Developing Strategies for Mainstreaming DRR into Different Sectors



4.1. Rationale

The development process does not necessarily reduce vulnerability to natural and man-made hazards. It is very true when we look into perspectives of unplanned development, and plenty of examples can be quoted about how such unplanned and haphazard developments have increased the vulnerabilities of communities in the country during recent years. On the other hand, we are witness to the fact that during recent decades, episodes of multi-nature disasters have disrupted development activities and caused loss of precious lives and properties and damaged or destroyed infrastructure within fractions of time. The same has resulted in huge losses to the economy of Pakistan. After facing incidents of heavy destruction, there is felt an obvious and urgent need to mainstream DRR into all development projects and programs to safeguard the infrastructure, lives and other livelihood sources.

Mainstreaming requires analysis both of how potential hazard can affect the performance of policies, programs and projects, and of the impact of those policies, programs and projects, in turn, on vulnerability to natural and man-made hazards. This analysis should lead on to the adoption of related measures to reduce vulnerability, where necessary, treating risk reduction as an integral part of the development process rather than as an end in itself.

In Pakistan, after the devastating 2005 Kashmir earthquake and the super floods of 2010, there has been an increased recognition of the need to mainstream disaster risk reduction into development processes. After establishing the National Disaster Management Authority, the UN Partners Organizations under One UN DRM Joint Program initiated mainstreaming DRR into 10 ministries at the national level during 2009-2012. There was encouraging progress but after the devolution of 18th amendment, most of the ministries at National level devolved and became Provincial chapters. Since then, the advancement of mainstreaming has been very slow despite the growing concern of relevant organizations.

This chapter presents the proposed DRR mainstreaming strategies in selected sectors as a model for disaster risk reduction planning and implementation. Through consultation meetings and workshops at Taluka and District level at Ghotki, there was a sincere focus to suggest such measures that can be adopted to reduce the risk of disasters in target sectors.

It is worth mentioning that the suggested interventions in this DDMP are aligned with the National Disaster Management Plan 2012-2022 priority areas No.7, National DRR policy 2012 section 4.6, and SFDRR 2015-2030 priority area number 3. These specified sectors are as follows;

1. Education Sector
2. Health Sector
3. Housing and Infrastructure Sector
4. Agriculture Sector

4.2. Mainstreaming DRR Into Education Sector

Despite the fact that lot of work has been done all over the country in mainstreaming DRR into education sector, however, after the formulation of National School Safety Framework during 2017, numerous initiatives are underway to mainstream DRR in education curricula at all levels (school, college, university). NDMA is committed to gear the process of developing DRR curricula in consultation with relevant forums. Similarly, an appropriate mechanism is underway to review with DRR lens the curricula of graduate and post-graduate level courses in architecture, engineering, and earth sciences, etc.

Priority area number 7 of the National Disaster Management Plan 2012-2022 highlight the need for mainstreaming DRR into education sector. It is of extreme importance for the district level developing planning to integrate DRR into all development practices and hence below are some of the interventions proposed for mainstreaming DRR into education sector at District Ghotki;

S.No.	Name of Proposed Interventions	Priority			Potentials implementing Partners
		Short Term (1-2 years)	Medium Term (2-3 Years)	Long Term (4-5 years)	
4.2.1.	Advocacy on mainstreaming DRR into education sector, especially in primary and secondary education in order to raise awareness and understanding about different.	X			Education Dept, DDMA, PDMA Sindh, NGOs and UNOs
4.2.2.	Allocation of resources for DRR mainstreaming in education in annual education budgets for the district.	X			P&D, District Govt, Education Dept, Planning and Finance Dept
4.2.3.	Training for senior management & relevant district government and non-government officers on how to mainstream DRR into education sector.		X		Education Dept, DDMA, PDMA Sindh, NGOs and UNOs
4.2.4.	Integrate DRR trainings into the formal and non-formal education.	X	X		Education Dept, DDMA, PDMA Sindh
4.2.5.	Develop pool of master trainers among education department on conducting MHVRA of educational institutions for prioritizing as more at risk schools align with the NDMA's MHVRA study carried out for Ghotki District recently. The master trainers will further conduct MHVRA of their schools and develop risk Assessment reports.		X		NDMA, PDMA Sindh and Education Dept, WFP
4.2.6.	Develop District level DRR preparedness plan for Education Department.	X			Education Dept and DDMA, CWW, IRC, WFP and other NGOs
4.2.7.	Develop School Safety Plan under the guidelines developed by the NDMA. This can be implemented in a selected number of schools on test pilot basis.		X	X	NDMA, PDMA Sindh and Education Dept, UNO and I/NGOs

4.2.8.	Retrofitting of selected school buildings to mitigate floods and other disasters.	X	X		Education Dept, DDMA, P&D and District Govt
4.2.9.	Engagement and strengthening of the Parent Teacher Councils/Committees for emergency response.	X	X	X	Education Dept, DDMA, I/NGOs, and UNO
4.2.10.	Develop pool of master trainers on SBDRM through PTC and cascade the same at other schools through master trainers.	X	X	X	Education Department, Concerned school admin, DDMA, UNO and I/NGOs
4.2.11.	Provision of emergency response kits to schools and conducting mock drill and simulation exercise in schools on regular bases.	X	X	X	Education Dept, Concerned school admin, DDMA, UNO and I/NGOs
4.2.12.	Identify safer evacuation sites inside schools & outside in the community for safer evacuation, and identify the safer routes to reach to shelter places identified in advance by the SMC & PTC.	X	X	X	Education Dept, Concerned school admin, DDMA, UNO, PRCS, I/NGOs
4.2.13.	Construction of ramps for students with disabilities.	X	X	X	Education Dept, Concerned school admin, DDMA, UNO and I/NGOs
4.2.14.	Construction or reinforce, retrofit the emergency exist in the school and conduct regular exercises on how to evacuate.		X	X	C&W, Education Dept, District Govt finance and planning dept and P&D
4.2.15.	Arrange firefighting equipment and conduct necessary trainings of teachers and students.		X	X	Civil Defence, DDMA, Education, I/NGOs and CSOs
4.2.16.	Retrofitting works for improving the safety of schools identified as vulnerable schools.			X	C&W, Education Dept, District Govt Finance and Planning dept and P&D
4.2.17.	Promote hazard resilient construction of new schools. Utmost try to build all structures above the high flood level.		X	X	C&W, Education Dept, District Govt Finance and Planning dept and P&D
4.2.18.	Organize commemoration rallies on each important disaster day.	X	X	X	Schools and Education Dept and DDMA with the support of I/NGOs, CSOs and UNOs
4.2.19.	Develop pool of master trainers through TOT in school based disaster risk management training programs for staff of education department teachers, PTCs and students.	X	X	X	Education Dept, PDMA, DDMA, UNO and I/NGOs

4.2.20.	Provision of emergency fund to education department for immediate response which includes, repair of infrastructure, support to affected poor students and parents after any disaster.	X	X	X	Education dept, DDMA, Education Directorate, TDMCs, UNO, INGOs and CSOs.
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4.3. Mainstreaming DRR into Health Sector

The Government of Pakistan being a signatory and an active member of the Sendai Framework for Disaster Risk Reduction has taken the responsibility to prevent and reduce disaster risk through cooperation with shared responsibility between the Government departments at federal and provincial levels. The SFDRR articulates the resilience of health system & infrastructure as part of the multi sector approach that contributes in managing health risks of disasters. Health is included in the expected outcome and the goal of the Sendai Framework for Disaster Risk Reduction.

Being one of the important goals of SFDRR, the health sector has to prevent new and reduce existing disaster risks through the implementation of integrated, technological and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and

recovery, and thus strengthen resilience. Four out of the seven global targets stated in the SFDRR are directly related to health - including reducing disaster mortality and the number of affected people, disaster damage to critical infrastructure and disruption of basic services, including health facilities.

The recently held SFDRR conference in Bangkok Thailand during 10-11 March 2016 has re-commended seven principles that could assist countries in implementing the health aspects of the SFDRR. It focuses on the promotion of systematic integration of disaster risk reduction in the national health policies and strategies. The focus is on the increasing availability and accessibility to multi-hazard early warning systems and disaster risk information to build resilient health systems. This will be achieved by integrating disaster risk management into all levels of healthcare and the capacity building of health staff and community health workers in disaster risk prevention and reduction. The following interventions have been proposed for integrating DRR into health sector;

S.No.	Name of Proposed Interventions	Priority			Potentials implementing Partners
		Short Term (1-2 years)	Medium Term (2-3 Years)	Long Term (4-5 years)	
4.3.1.	Advocacy on mainstreaming DRR into health sector at district level.	X			PDMA Sindh, Health Dept, DDMA & WHO
4.3.2.	Training courses for senior health practitioners and relevant district government and non-government officers on how to mainstream DRR into health sector.	X			PDMA Sindh, Health Dept, DDMA and WHO

4.3.3.	Capacity assessment and resource mapping of health facilities with reference to emergency response management and DRR.	X			Health Dept and respective health facilities
4.3.4.	Develop/strengthen health cluster at district level and conduct regular meetings for effective coordination and data sharing.	X	X	X	WHO, Health Dept and all programme heads and MS of hospitals, DDMA and I/NGOs
4.3.5.	Conduct research on "Impact of industrial hazards on health hazards".			X	Health Department and Industrial units present in the district
4.3.6.	MHVRA of health facilities align with the NDMA's MHVRA study carried out for Ghotki District and identify health facilities more at risk for strengthening and capacitating.	X			WHO, Health Dept and DDMA, NGOs and other UNOs
4.3.7.	Enhance the safety functionality and resilience of critical health infrastructure and facilities by conducting safety assessments, strengthening the implementation of the Safe Hospital Initiative, and applying the principles of "Building back better" in recovery and reconstruction.	X	X		Health Dept, District Administration, Finance and planning Dept and P&D
4.3.8.	Retrofitting of vulnerable hospitals/health facilities identified during the MHVRA exercise.		X	X	Health Dept, District Administration, Finance and planning Dept and P&D
4.3.9.	Fixing and retrofitting of non-structural equipment and life line equipment in all hospitals.			X	Health Dept and respective hospitals and DDMA
4.3.10.	Establishment of mobile health units that can be beneficial during emergencies and disasters.		X	X	Health Dept, PDMA, and DDMA
4.3.11.	Stockpiling of emergency medicines for health facilitators to provide basic health care especially in vulnerable areas during disasters.	X	X	X	Health Dept, PDMA, WHO, DDMA, I/NGOs and UNOs
4.3.12.	Developing database of registering private and public sector ambulances throughout the district Ghotki for effective emergency responses.	X	X	X	Health Dept

4.3.13.	Conduct training courses on “Hospital Preparedness for Emergencies” for hospital management staff. For this purpose NDMA HOPE/PEER model can be applied.		X		NDMA, NHEPRN, Health Dept and respective target hospitals
4.3.14.	Conduct regular drills and mock exercises on Mass Causality Incidences.		X	X	NDMA, NHEPRN, Health Dept and respective target hospitals
4.3.15.	Conduct training courses on CBDRM-H for Community Health Workers especially of LHWs, LHV and LHSs and develop pool of master trainers.		X	X	WHO, UNICEF, Health Dept, and NGOs
4.3.16.	Conduct training courses on Reproductive Health & Gender Based Violence/ Women Protection adopting UNFPA model.		X	X	UNFPA, Health Dept, and NGOs
4.3.17.	Provision of new born baby kits, clean delivery kits and dignity kits		X	X	UNFPA, Health Dept, and NGOs
4.3.18.	Develop Emergency Preparedness Plan for District Health Department.	X			Health Dept, DDMA, WHO and I/NGOs
4.3.19.	Develop Emergency Preparedness Plan for DHQ and other private hospitals.	X	X		Health Dept, DHQ, THQ and WHO and any NGOs
4.3.20.	Establishment of Disposal Management System of hospital (Bio-hazard wastes) and industrial wastes through public private partnership by engaging different companies as part of corporate social responsibility.		X	X	DDMA, Health department and private companies
4.3.21.	Strengthening of the Disease Early Warning System (DEWS) and conduct training on DEWS.		X	X	Respective hospitals and Health Dept
4.3.22.	Conduct Minimum Initial Service Package (MISP) courses and develop pool of master trainers.		X		UNFPA, NHEPRN, Health Dept and respective hospitals
4.3.23.	Capacity building on WASH, Health and Hygiene trainings and awareness campaigns.	X	X		Health Dept, PDMA, and DDMA

4.4. Mainstreaming DRR into Housing and Infrastructure Sector

Disaster leaves major impact on housing and infrastructure in District Ghotki. Especially poor farmers living in remote Katcha areas of two talukas namely Ghotki and Ubauro are at verge of flood disaster's threats. With rains and floods as frequent threats, the Katcha area's houses and infrastructure are more prone to flooding. On top of that the use of poor

quality material, predominantly Katcha houses made of adobe, with poor housing design and construction to sub-standard designs and building codes make their properties more prone to disaster threats. Further, due to lack of financial resources and awareness, there is no proper maintenance and implementation of post disaster recovery programs, which pose threats to their lives and properties. Below we proposed some of the interventions that can be adopted to strengthen the housing and infrastructure in District Ghotki;

S.No.	Name of Proposed Interventions	Priority			Potentials implementing Partners
		Short Term (1-2 years)	Medium Term (2-3 Years)	Long Term (4-5 years)	
4.4.1.	Awareness raising on mainstreaming DRR into housing and infrastructure. Strict compliance of planning commission of Pakistan's DRR Checklist for construction of new housing and infrastructure schemes.	X			District Works and Services Dept, Housing & Physical Planning Dept, DDMA, PDMA, UNHABITAT, P&D, I/NGOs and UNOs
4.4.2.	Make available to poor households (especially women and PWDs) technology options on safer but low-cost and appropriate housing designs, construction materials and building techniques. DRR Planners, District authorities should identify safe land and location for low income and safe citizens who are living near the flood prone areas.	X	X	X	District Works and Services Dept, Housing & Physical Planning Dept, UNHABITAT, DDMA, PDMA, P&D, I/NGOs and UNOs
4.4.3.	Conduct series of training and develop master trainers through TOT on mason and carpenter trainings. Cascade trainings to all other areas and Talukas.		X	X	District Works and Services Dept, Housing & Physical Planning Dept, UNHABITAT, I/NGOs and CSOs
4.4.4.	Introducing low interest housing loans with easy repayment schedules for poor households especially in riverine and desert areas by involving organizations having experience and resources to manage such schemes.		X	X	All Banks, Micro finance banks, NGOs and District Govt

4.4.5.	Introduce and encourage of use of alternative energy technologies like solar panels, solar lanterns in villages not currently provided with electricity from national grid. The option of introducing wind mills for electricity generation in the desert zone on suitable wind corridors should also be studied or assessed.	X	X	X	Private sectors Dept, Housing & Physical Planning Dept
4.4.6.	Provide soft loans to households to buy alternative energy equipment/devices.			X	HBFC, Housing & Physical Planning Dept
4.4.7.	MHVRA available infrastructure and housing schemes in light on MHVRA conducted by WFP/NDMA and identify vulnerable points for reconstruction or retrofitting.	X			District Works and Services Dept, Housing & Physical Planning Dept, I/NGOs and CSOs
4.4.8.	Identify, strengthen and regular maintenance of safe/evacuations roads and find alternative safe routes that can be used in case of emergency or disaster.	X	X		District Works and Services Dept, DDMA and I/NGOs
4.4.9.	Construction of new drainages and improvements in existing systems.	X	X	X	District Works and Services Dept, CWW, IRC and other I/NGOs
4.4.10.	Public latrines construction and regular repairs through private partnership.		X	X	Private companies, District Works and Services Dept, CWW, IRC, I/NGOs & CSOs
4.4.11.	Introduce Model shelters in flood prone areas.		X	X	District Works and Services Dept, Housing & Physical Planning Dept, I/NGOs and CSOs
4.4.12.	Construction of safer evacuation sites at specified places.	X	X	X	Private companies, District Works and Services Dept, I/NGOs & CSOs
4.4.13.	Strengthening link roads and paths.	X	X	X	District Works and Services Dept, Housing & Physical Planning Dept, I/NGOs and CSOs
4.4.14.	Construction of flood protection embankments/ bunds.	X	X	X	District Works and Services Dept, Housing & Physical Planning Dept, I/NGOs and CSOs
4.4.15.	Strengthening of houses and infrastructure based on MHVRA.	X	X	X	District Works and Services Dept, Housing & Physical Planning Dept, I/NGOs and CSOs

4.4.16.	Capacity Building of Revenue and other relevant departments on Damage Need Assessment.	X	X	X	DDMA, Social Welfare dept, CWW/IRC and other NGOs and CSOs
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4.5. Mainstreaming DRR into Agriculture Sector

Agriculture is the backbone of Ghotki's economy and a source of livelihood for the majority living here. Ghotki is an important contributor of agriculture products. According to the recent statistics released by the Government of Sindh, Ghotki stands first in terms of area and production of cotton, ranked 3rd for dates production and 4th for the amount of wheat produced in the district.

Agricultural output and produce is extremely vulnerable due to the topography and climatic conditions prevalent in Ghotki. Prevailing Natural hazards specifically riverine flooding are major sources of misery for the agricultural sector in District Ghotki. Marred by consistent losses in the aftermath of episodes of floods, the agricultural sector remains one of the most vulnerable sectors in the district. Below are some of the proposed interventions extracted from the Agriculture Risk Management Operational Plan developed by FAO that can be adopted to increase the capacities of the agriculture sector in District Ghotki;

S.No.	Name of Proposed Interventions	Priority			Potentials implementing Partners
		Short Term (1-2 years)	Medium Term (2-3 Years)	Long Term (4-5 years)	
4.5.1.	Capacity building of farmers on climate smart agriculture and hazard resilient technologies and practices.	X	X		DDMA, FAO, agriculture dept, I/NGOs and CSOs
4.5.2.	Promotion of improved household nutrition through vegetables production and training.	X	X		DDMA, FAO, agriculture dept, I/NGOs and CSOs
4.5.3.	Conduct sector wise detail MHVRA and Hazard, Livelihood and Vulnerability capacities of these sectors and develop sectoral DRM plans.	X			PDMA, DDMA, P&D, FAO, Agriculture, Livestock, Irrigation, and I/NGOs
4.5.4.	Based on MHVRA and DRR planning, arrange various trainings on developing specific disaster resilient infrastructural measures and carryout retrofitting and necessary repairing.	X	X	X	PDMA, DDMA, Agriculture, Livestock, Irrigation, I/NGOs and UNO
4.5.5.	Arrange district-level FFS & LFFS programmes, ensure its implementation and conduct TOTs and develop pool of master trainers on FFS/LFFS.	X	X	X	Agriculture, FAO, I/NGOs and CSOs

4.5.6.	Building capacities of staff on standardizing the damage and need assessment formats and collect up-to-date data to respond to emergencies in effective manners.	X	X	X	NDMA, DDMA, agriculture, irrigation and livestock sectors
4.5.7.	Carry on research on introducing traditional, hybrid, and GMO seeds and updating of Agriculture Extension curriculum.	X	X	X	Agriculture and agriculture extension programme
4.5.8.	Undertake soil testing to update land classification and cropping patterns.	X	X	X	Agriculture and agriculture extension programme
4.5.9.	Promote flood resilient grain, seed, and fodder storage at communal and/or household level for poor farmers.	X	X	X	Agriculture, agriculture extension programme, NGOs and CSOs
4.5.10.	Create seed banks at village level.	X	X	X	Agriculture and agriculture extension programme
4.5.11.	Introduce solar water pumps and fix, replace, or add tube wells for supplemental irrigation.	X	X	X	Agriculture, agriculture extension programme and energy department
4.5.12.	Promote crop diversification to distribute livelihood risks. This should include crops with different cropping calendars than main crops.	X	X	X	Agricultural Department (AEW)

Chapter - 5

Annexure



Annexure - i: List of Basic Terminologies Relevant to This Plan

Term	Definition
Acceptable risk	The level of potential losses that a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions.
Adaptation	The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Building code	A set of ordinances or regulations and associated standards intended to control aspects of the design, construction, materials, alteration and occupancy of structures that are necessary to ensure human safety and welfare, including resistance to collapse and damage.
Capacity	The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.
Contingency planning	A management process that analyses specific potential that might threaten society and establishes arrangements in advance to enable timely, effective and appropriate responses to such events.
Disaster	A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.
Disaster risk	The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period.
Disaster risk management	The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.
Disaster risk reduction	The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.
Disaster risk management plan	A document prepared by an authority, sector, organization or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.
Early warning system	The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss.

Emergency management	The organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.
Exposure	People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.
Geological hazard	Geological process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
Hazard	A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
Mitigation	The lessening or limitation of the adverse impacts of hazards and related disasters.
Natural hazard	Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
Preparedness	The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.
Prevention	The outright avoidance of adverse impacts of hazards and related disasters.
Public awareness	The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.
Recovery	The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.
Response	The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected.
Retrofitting	Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.
Risk	The combination of the probability of an event and its negative consequences.

Risk Assessment	A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.
Risk management	The systematic approach and practice of managing uncertainty to minimize potential harm and loss.
Risk transfer	The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.
Structural and non-structural measures	Structural measures: Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard-resistance and resilience in structures or systems; Non-structural measures: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education.
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Technological hazards	A hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities, that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
Vulnerability	The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Annexure - ii: List of Important Contact Numbers

Name	Designation	Tel# Office	Tel. # Res/Cell NO:
Revenue Department			
Syed Aijaz Ali Shah	Deputy Commissioner	0723-652016	0300-3438777
Mr. Saleemullah Odho	Additional Deputy Commissioner-I	0723-661765	0333-7226687
Lt. (R) Mohammad Khalid Saleem	ADC-II (Focal Person)	0723-661566	0345-2549181
Mr. Mansoor Ahmed Khan Baloch	Assistant Commissioner Ubauro	0723-688652	0300-8881723
Mr. Mohammad Usman Abdullah	Assistant Commissioner MPM	0723-651652	0345-5289861
Mr. Omer Liaqat Randhawa	Assistant Commissioner Daharki	0723-642191	0321-4688222
Mr. Mohammad Adnan Zahid	Assistant Commissioner Khangarh	0723-653799	0346-4659341
Mr. Mohammad Ikramullah Malik	Assistant Commissioner Ghotki	0723-681333	0300-4392414
Mr. Lala Insaf Pathan	Mukhtiarkar Ghotki	-	0301-3982007
Mr. Qurban Mirani	Mukhtiarkar Khangarh	-	0301-3824873
Mr. Nazeer Ahmed Mahar	Mukhtiarkar Mirpur Mathelo	-	0300-9316601
Mr. Naseer Khalidi	Mukhtiarkar Ubauro	-	0300-3118872
Mr. Ashraf Ali Pitafi	Mukhtiarkar Daharki	-	0300-3260408
Works & Services			
Agha Ziaullah	S.E (W&S)	661422	0336-3152119
Mr. Ghulam Shabir Shaikh	XEN (Building) Mirpur Mathelo	-	0300-2550400
Mr. Ghulam Shabir Kalwar	XEN Highway Division Ghotki	-	0301-2513534
Mr. Abdul Karim Shaikh	XEN Education & Works	-	0300-2278294
Education Department			
Abu Bakar Mahar	District Education Officer (Secondary)	-	0300-3193756
Hafiz Shahab ud din Indhar	District Education Officer (Primary)	-	0300-8016642

Health Department			
Mr. Khuda Bux Memon	District Health Officer	0723-65001-65003	0333-2318380
Police Department			
Mr. Masood Ahmed Bangash	Superintendent of Police	0723-651582	03007081932
Agriculture Department & Forest Department			
Mr. Ubaid Ahmed Khohawar	Deputy Director (Agriculture: Extension)	0723-652492	0301-3838728
Mr. Aamir Ali Shah	Forest Officer	0723-652050	0333-7131220
Mr. Ziadullah Leghari	Divisional Forest Officer	0723-651677	0300-8333867
Social Welfare Department			
Mr. Khan Mohammad Mahar	Deputy Director, Social Welfare	0723-682400	03000360819 0333-7221484
Mr. Sadar Din Malik	DDO, Social Welfare	0723-682400	0302-3118837
WAPDA Department			
-----	XEN WAPDA SEPCO Ghotki	0723-681961	0300-9314353
Mr. Muzaffar Hussain Khohawar	XEN WAPDA SEPCO Mirpur	0723-651738	0300-3023316
Irrigation Department			
Mr. Masood Ahmed Seehar	Director WBAC Ghotki	0723-684568	0301-3816011
Mr. Younis Domki	XEN Irrigation Ghotki Division	0723-684826	0300-3115350
Mr. Ameer Bux Bozdar	XEN Irrigation Mirpur Mathelo	0723-652168	0300-3075955
Mr. Zahid Hussain Qureshi	XEN Tube Well Division Ghotki	0723-684372	0333-7124614
Mr. Hazoor Bux Samejo	XEN Irrigation Daharki	0723-652168	0300-3413092
T&T Department			
Mr. Fida Hussain Khatiyani	DE Telephone Ghotki	0723681060-1	0333-2692781
Agriculture Workshop			
Mr. Mumtaz Ali Abbasi	Assistant Engineer	0723-680206	0302-5855568

District Food Controller			
Mr. Rahul Kumar	District Food Controller Ghotki	0723-652207	0308-4441300
Public Health Engineering Department Mirpur Mathelo			
Mr. Abdul Rauf Kolachi	XEN, Mirpur Mathelo	0723-652395	03363441834 03075225321
District Information Officer Ghotki			
Rafia Bano Shaikh	District Information Officer Ghotki	0723-66188	0300-7064862
District Council District Ghotki			
Saeed Akbar Mahar	Chief Officer, District Council	0723-661397	0300-3150515
Local Government Department Ghotki			
Vacant	Assistant Director Local Govt.	-	-
Live Stock / Animal Husbandry Department			
Abdul Sami Shaikh	Deputy Director, Animal Husbandry		0300-3195707
Utility Stores			
Adnan Siddique	Regional Manager	0723-681681	0300-8374443
Irshad Ahmed	Sales Manager		0300-3134143

Annexure - iii: Contact List of I/NGOs and Private Sector

Sr. #	Name	Focal Person	Designation	Contact #	Email
List of I/NGOs					
1	Plant International	Raja Iftikhar Aurangzeb Panhwar	Project Manager DTL	0300 -5146140 0332 -2226161	Aurangzeb.Panhwar@plan-international.org
2	ACF, International	Haq Nawaz Amlak Das	Project Manager DTL	03456888839 0332 -3961001	amlakh.84@gmail.com
3	International Rescue Committee (IRC) Int: Ghotki	Tashfeen Shah Wasim	Project Manager Coordinator	0315 -5003907 0313 -2112677	muhammad.khan@rescue.org
4	Mercy Corps International	Nighat Sultana	District Coordinator	0306 -8357442	nsultana@mercorps.org
5	Jhpiego (MChip) International	Qurban Chajro	District Coordinator	0302 -5554770	chhajro@jhpiego.org
6	NCHD Mirpur Mathelo	Qamarunnisa Mahar	District Manager	0723 -652550 0333 -949758	iqbalmpa@gmail.com
7	RSPN	Fareed Pathan Roshan Panhwar	District Manager	0300 -3170052	roshanali.panhwar@gmail.com
8	NRSP	Samina Ashraf Siddique Mir Aijaz	Programme Manager	0301 -8580155 0301 -8580190	mirzaejaz@gmail.com, siddiquekhanjdw@gmail.com
9	Indus Resource Center Mirpur Mathelo	Naheed Akhtar Saleem Ahmed	District Coordinator Programme Office	0336 -2860851 03337503887	shahzad_ahmed09@yahoo.com
10	Engro Foundation	Dr. Sadoro Naz Keerio	District Coordinator	0302 -8297356	drkeerio@engro.com
11	Village Development Org (VDO) Ghotki		Ali Hassan Mahar	0300 -3192270	vdoaligt@gmail.com
12	RDPI Rural Development Policy Institute	G M Soomro	District Program Manager	0723 -680190 0333 -7347604	gm@rdpi.org.pk gm_sumro@yahoo.com
13	Hwa Foundation	Hafiz Manzoor	CEO	0723 -684368 0301 -3834516	info@hwa.org.pk
14	Roshni Taraqiyati Tanzeem	Raja Mujeeb	Gen. Secretary	0723 -684041 0333 -7224475 0300 -3195231	ghkroshni@gmail.com roshnigt@yahoo.com
15	Sewai Foundation	Ghulam Sarwar	CEO	0300 -9318831	sewaifoundation@gmail.com

16	Gul Welfare Association	M. Usman	Gen. Secretary	0300 -3190274	gulfoundationgtk@gmail.com
17	Allakh Welfare Association	Ghulam Shabir	Gen. Secretary	0300 -3263491	allakh_ghotki@yahoo.com
18	Laat Human Development Organization	Ramesh Kumar	General Secretary	0723 -65010 0333 -3195426	www.laat.org.pk
19	SHADOW HDO	Zahid Ali	President	0333 -7132302	info@shdo.org.pk
20	SSDO Sachal Social Development Organization	Ali Nawaz	Gen. Secretary	0300 -3267684	sachaldevelopment@hotmail.com
21	GRDO Gul Rural Development Organization	Ghulam Sarwar	President	0301 -3258788	grdompm@yahoo.com
22	Change Foundation	Zahid Ali Shah	Information Sec	0334 -2595180	change.foundationpk@yahoo.com
23	Jeejal Foundation	Javed Ahmed	President	0301 -8319019	jeejalfoundation@gmail.com
24	VNG Voice of New Generation	Shahid Soomro	General Secretary	0300 -3195584	vngghotki@yahoo.com
25	CSOP Civil Society Organization for Peace	Imdad Ali	President	0300 -3192172	Imdadcs04p@gmail.com
26	HANDS	Moosa Jamali	District Executive Manager	0300 -3041768	ghotki@hands.org.pk moosa.jamali@hands.org.pk
27	MRDO Marvi Rural Development Organization	Shakoor Mangi	District Coordinator	0313 -3466572	shakoor.mangi@gmail.com
28	SRSO	Asad Jatoi	District Manager	0300 -2611788	asadajatoi@gmail.com
29	Al-Khair Welfare Association	Aftab Ahmed	General Secretary	0308 -3136651	aftabghunio99@gmail.com
30	LDF	Qurban Ali	Finance Secretary	0301 -3838960	ldfghotkisindh@gmail.com
31	Al-Khair Foundation	Shabir Ahmed Bhutto	Secretary	0344 -3375242	akfghotki@gmail.com
Private Sector					
32	Mr. Aun Muhammad	Engro Fertilizer	Prog. Services	03018273367	
33	Mr. Muhammad Sarfaraz	OGDCL	HSE Officer	03007080683	

