

PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



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A PROFILE OF DISTRICT GHOTKI



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Shrine Bharchundi Sharif, Daharki
District Ghotki, Sindh

“Disaster risk reduction has been a part of USAID’s work for decades.we strive to do so in ways that better assess the threat of hazards, reduce losses, and ultimately protect and save more people during the next disaster.”

Kasey Channell,

Acting Director of the Disaster Response and Mitigation Division of USAID’s
Office of U.S. Foreign Disaster Assistance (OFDA)

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District Ghotki

July 2014

“Disasters can be seen as often as predictable events, requiring forward planning which is integrated in to broader development programs.”

Helen Clark, UNDP Administrator, Bureau of Crisis Prevention and Recovery. Annual Report 2011

Disclaimer

iMMAP Pakistan is pleased to publish this district profile. The purpose of this profile is to promote public awareness, welfare, and safety while providing community and other related stakeholders, access to vital information for enhancing their disaster mitigation and response efforts.

While iMMAP team has tried its best to provide proper source of information and ensure consistency in analyses within the given time limits; iMMAP shall not be held responsible for any inaccuracies that may be encountered. In any situation where the Official Public Records differs from the information provided in this district profile, the Official Public Records should take as precedence.

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NOTE:

This district profile is a live document and it will continue to improve based on its users feedback and upon availability of more accurate and authenticated sources as and when they become available. It's not always possible to publish these profiles in hardcopy format; however iMMAP will ensure that these updates are made available on DRR Pakistan Information Management Portal. For updated version of following profile, please visit www.drrpakistan.pk/pesa.

Any questions/ comments concerning information presented in this report can be addressed to:

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Credits

iMMAP has been providing Information Management [IM] and Disaster Risk Reduction [DRR] capacity building services in Pakistan since 2010. Based on our lessons learned, while interacting with thousands of humanitarian partners and government officials, both national and international; we believe that the following are 7 basic requirements to improve Disaster Response and Management life cycle:

1. Information Management [IM] is a must for effective disaster response and monitoring;
2. Coordination among all stakeholders [both national and international] is of utmost importance to reduce redundancy and duplication in such critical situations – going beyond clusters and getting connected with local community representatives;
3. Appropriate logistic arrangements are critical for humanitarian relief and mitigation. However, it must be born in mind that logistic requirements drastically vary from disaster to disaster, based on its time, geography, and nature;
4. Disasters and Development are intimately connected. Its important that all disaster responders are aware of the long term implications of their actions of relief and early recovery;
5. It is important that we, as disaster responders, take full responsibility of self-accountability and transparency not only to the satisfaction of the government officials but the general public as well. Not-for-profit sector must be driven by a cause!
6. National, Regional, and International Public/ Private Partnerships [PPP] is the only way to implement sustainable Disaster Risk Management [DRM] measures;
7. Media must be integrated in our response efforts. This vastly helps to disseminate the right information, minimize duplication of efforts, and make all stakeholders aware of your organization's input/activities.

Pakistan Emergency Situation Analysis [PESA] is a series of District Profiles (DP), which is developed with the above-mentioned 7 basic requirements in focus. PESA DPs are one of the most effective iMMAP IM services in Pakistan, which directly contribute to thousands of humanitarian relief providers' effective emergency response and disaster management.

I can not conclude this note without thanking iMMAP Pakistan team that has contributed tirelessly, under extreme emergency pressure, to consistently deliver their best on time, during the 2010, 2011, 2012, and 2013 floods, 2013 earthquake in Balochistan, and the most recent drought emergency in Tharparkar, Sindh during 2014.

I particularly wish to express my great appreciation and thanks to my mentors, colleagues, and friends Mr. Fayyaz Ali Khan and Ms. Kathrin Lauer for their continuous feedback and reflection on the profiles quality. At many times, I parked their feedback, due to the time constraints of the service we have been trying to deliver. However, their feedback have always been valued and appreciated. Mr. Naeem Ahmad, being the M&E professional, has proven himself to be a gem for iMMAP. I also appreciate the efforts of other staff members who have been with us in the past and many new faces that joined iMMAP recently for their work with an exceptional dedication. This includes: Farooq Laghari, Qassim Jan, Sumbal Kazmi, Salman Mulk, Zohaib Fazal, Hadya Ali, Dr. Ahmad Ali Malik, Fatima Gillani, Fatima Ali, Laraib Malik, Zeeshan Ahmad, Sarfaraz Meher Din, Muhammad Javed Iqbal, Muneeb Muzamil, Mahwish Muzamil, Tariq Sardar, Wajid Ali, and last but not the least Nouman Ali, our amazingly skilled graphic designer.



Mehdi Bokhari
PESA Project Director

Foreword

Timely response to a disaster may save precious human lives and reduce economic costs. However, natural disasters, typically, occur unexpectedly. Consequently, in most cases, the afflicted population lacks the necessary tools and capacity to handle such tragic occurrences and the devastation is manifold more than it should be.

“Before the next disaster hits, now is the time to recommit to making smart investments that save lives, property, and money. Whether at home or abroad, measures to improve response, increase disaster management capacity, plan and prepare, can have dramatic dividends.” (Kasey Channell: Acting Director of the Disaster Response Team for USAID’s Office of U.S. Foreign Disaster Assistance.) It is so true, as preparation for unexpected calamities is a tough task. However, if certain precautions are taken, they might lessen the overall damage. This series of district profiles, prepared by iMMAP and funded by USAID, is one such effort to enhance Government of Pakistan, humanitarian organizations and all other stakeholders’ efforts towards rapid needs assessment, disaster response and mitigation.

These profiles are divided into four sections namely background information, disaster history and its impact, hazard vulnerability and capacity assessment (HVCA) and coordination and support services. Background information provides an overview of history, geography, culture, and communication infrastructure. It also provides detailed analyses of demography, livelihood, food security, health and education. The second section provides detailed history of disasters in the district; information about losses and damages; and gap analyses of above mentioned sectors. HVCA section provides detailed analyses of district hazards, vulnerabilities and capacities that exist in the local community. Coordination and support services section gives information on whom to contact in emergency/disaster situations. The motivation stems from the idea that at the time of disaster all the stakeholders in general and the donors and disaster managers in particular can have a fair idea of what to expect and how to prepare for. It is expected that this contribution of USAID and iMMAP would lead to a well-coordinated and coherent response by different humanitarian organizations on managing similar disasters.

Having stated the above, it is very candidly admitted that these profiles are by no means exhaustive and in fact require a lot more input to qualify these as good enough documents for disaster preparedness. However, these are live documents and would be improved upon as and when required. There appears to be an element of repetition, which is owed to the fact that while these documents depict the district profiles in normal circumstances, the same then provide a detail account of the impact of the 2010/2011 floods, the assistance provided by the government and the humanitarian organizations and the remaining gaps. Due to time and resources constraints, the information provided in these profiles is mainly base on secondary source data. Depending on the end users’ response and funding availability, this exercise would be extended to other districts of the country.



Major (Retd) Tahir Iqbal
iMMAP Pakistan
Chairman

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DISTRICT GHOTKI

AT A GLANCE

Population 1998 **900,712 persons**



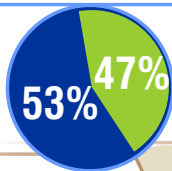
Population Density
226 per Sq. Km

3.26%

Average Annual Growth Rate (1981 - 98)



Male
766,372



Female
688,068



Average Household Size
5.5



Sex Ratio **110**
Males per 100 females



Pacca Housing Units

53,072 (29.91 %)



Housing Units having Electricity

105,301 (59.35 %)



Housing Units having Piped Water

25,589 (14.42 %)



Housing Units using Gas for Cooking

8,995 (5.07 %)



237,526
16%

Urban Population



Rural Population

Health & Education



Health Facilities

54



Educational Facilities

1,998

Literacy Rate
2012-13
(10+)

45%



Male
67%



Female
21%

1,216,915
84%

Administrative Units

Taluka	5
Union Councils	42
Mouzas	349

Infant Mortality Rate
81/1,000 Live Births

Under 5 Mortality Rate
101/1,000 Live Births

Maternal Mortality Ratio
314/100,000 Live Births

Electoral Representation

Male	315,776
Female	286,791
National Assembly Seat: 2	(NA-200, NA-201)
Provincial Assembly Seat: 4	(PS-5, PS-6, PS-7, PS-8)

Registered Voters
602,567

Ghotki - Reference Map

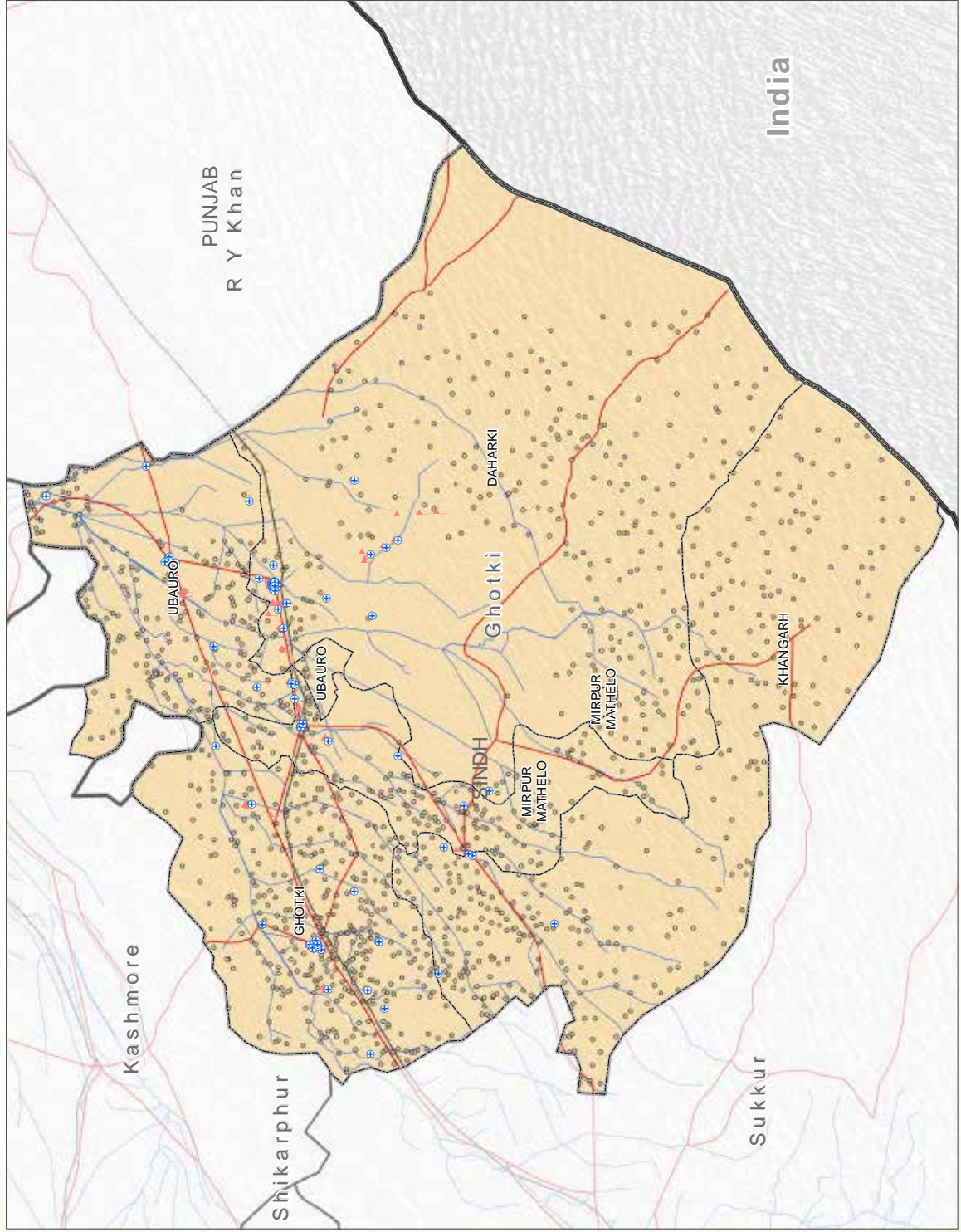
June, 2014



IMMAP - Solutions in Time

Legend

- Settlements
- Health Facilities
- Education Facilities
- Roads
- Railway
- Irrigation System
- International boundary
- Province boundary
- District boundary
- Taluka boundary



Map Doc Name: IMMAP_PAK_Ghotki RefMap_v02_06514
 Creation Date: June 25, 2014
 Projection/Datum: WGS84
 Web Resources: <http://www.immap.org>

Map data source(s):
 Ahasan Systems Private Limited : Admin boundaries, Hospitals, Schools
 National Geospatial Agency, Settlements
 SIDA : Irrigation and Drainage Authority (SIDA): Irrigation System
 National Geospatial Agency : Settlements
 Logistic Cluster-WFP: Roads, Railway

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Abbreviations

ACO	Agriculture Census Organization
BHU	Basic Health Unit
CD/GD	Civil Dispensary/Government Dispensary
CFW	Cash For Work
DCR	District Census Report
DDRMP	District Disaster Risk Management Plan
ECP	Election Commission of Pakistan
FAO	Food and Agricultural Organization
GER	Gross Enrolment Rate
GOS	Government of Sindh
HH	Household
NADRA	National Database and Registration Authority
NDMA	National Disaster Management Authority
NDP	National Drainage Program
NER	Net Enrolment Rate
NFIs	Non-Food Items
NGO	Non-Governmental Organization
NHA	National Highway Authority
PBS	Pakistan Bureau of Statistics
PCO	Population Census Organization
PDMA	Provincial Disaster Management Authority
PLW	Pregnant and Lactating Women
PSLM	Pakistan Social and Living Standard Measurement Survey
RHC	Rural Health Centre
RSU	Reform Support Unit
SDPI	Sustainable Development Policy Institute
SMCs	School Member Committees
SUPARCO	Space and Upper Atmosphere Research Commission
UC	Union Council
UNICEF	United Nations Children's Fund
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WFP	World Food Program
WHO	World Health Organization

1 Background Information

1.1 Introduction

1.1.1 History

District Ghotki is an important administrative unit of Sindh province that plays an important role in the economy, and trade of Upper Sindh. Historically, Alexander invaded India in 326 BCE and the ruins of Greek invasion can still be seen in this region. The Arab invasion, led by Muhammad Bin Qasim, in 711 A.D, made Sindh part of the Umayyad Caliphate. Ghotki was founded as a camp by an Ambassador General of Raja Ibn Selaj Birhman (a relative of Raja Dahar of Sindh) in 637 A.D. At that time it was named as Hath Sam. When, in 712 A.D, Mohammad Bin Qasim conquered Sindh by defeating Raja Dahar, Ghot Ibn Samed Ibn Patel, the grandson of Raja Dahar, was settled in the area as he converted to Islam and in whose name the Ghot tribe came into being. Arabs awarded many *Jagirs (Estates)* to Ghotas and named this village as "Daharwali", to honor their grandfather.

Later on, this region was ruled by different dynasties, including the Soomras (1024-1351), the Arghuns (1520-1650), the Kalhoras (1657-1783) and the Talpurs (1783-1843). When Britain invaded the subcontinent, General Charles Napier, a commander in the British Army, defeated the Talpur dynasty and conquered Sindh in 1843¹. After the British conquest of Sindh province, in 1847, they awarded huge blocks of irrigated fertile land to the Ghotia tribal chieftains in return for their loyalty to the British. Gradually, the town's name changed into Ghotki (of Ghotias)².

The British contributed in a number of ways towards the development of Sindh. General Charles Napier was appointed as the first Governor General of Sindh. The province was divided into different administrative units and assigned to *Zamindars* (landlords) to collect taxes for the British government. The British government developed these areas as urban centers. Consequently, people migrated from other districts and provinces as well and started to reside here. The British named these small developed areas as "Talukas".

1.1.2 Geography

District Ghotki lies in 69° 10' 12" to 70° 11' 20" east longitudes and 27° 19' 35" to 28° 19' 35" north latitudes. It is located in upper Sindh and is bounded on the north-west by district Kashmore, on the east by district Rahimyar Khan of Punjab, on the south-east by Indian State of Rajasthan and on the west by district Sukkur.

The district is divided into three clear physical parts i.e. desert area, cultivable area and flooded area (*katcha*). District Ghotki is spread over an area of 6,975 sq.km (1,555,528 acres) in which

¹ http://sukkurcity.com/sites/about/sukkur_at_Glance.aspx (accessed on 02/04/2013)

² A Brief Profile of Ghotki, Small & Medium Enterprise development Authority, Government of Pakistan

desert constitutes 25,000 acres of land. The desert area, which consists of hills of wind-blown sand, and is known as *Achhro Thar* (White Desert), stretches from Sanghar district to Cholistan desert of Punjab along with the border of the Indian state of Rajasthan. This desert is situated along the southern belt of district Ghotki.

River Indus flows from north-east to south-west of the district. The length of riverine tract is 87 KMs. The flood plain is called *Katcha* and is bounded by safety bunds. Forests abound in the area. The total area of the district under forest and *katcha* is 402,578 acres, which is 25.88% percent of the total area of the district³.

The cultivable area is located between the desert and the flood areas and lies in the center of the district. It is fertile land and is irrigated through Ghotki Feeder canal of Guddu barrage irrigation system.

1.1.3 Culture (Ethnicity, Religion and Politics)

Ghotki has a rich traditional Sindhi culture. Women usually wear *Shalwar Qameez* but quite often dress in the traditional attire, *Ghaghra* or *Parro* as well. Traditionally, women wear bangles. Men usually wear a *Shalwar Qameez* distinguished by broader bottoms, and a traditional Sindhi style cap.

According to the 1998 census, people of this district are pre-dominantly Sindhi speaking (92.29% of the total population) but Urdu (3.0%), Punjabi (2.98%) and Balochi (0.6%) are also spoken in the district. Islam is the major religion of this district as 93.06% of the population is Muslim, followed by Hindus (6.17%) and Christians (0.14%).

The *Mahar* family figures prominently in the politics of this district and fields candidate on all the national and provincial assembly seats. The *Mahars* have also lured local Jamiat Ulma Islam (JUI) stalwarts into supporting their candidates in exchange for a share in the stakes⁴. Other prominent political figures of this area belong to the Lund family. This district is represented by two national assembly and four provincial assembly seats. In the general elections of 2013, *Mahar* family contested the elections on the tickets of Pakistan People's Party (PPP). Hence, the family vote, coupled with the PPP share of votes, ameliorated victory for the *Mahar* family. Resultantly, PPP swept the entire district and won all the national and provincial assembly seats⁵.

1.1.4 Administrative Division

District Ghotki has its district headquarters at Mirpur Mathelo city. This district has five talukas, named: Ghotki, Khan Garh, Mirpur Mathelo, Ubauro and Daharki. It has 42 union councils and 287 mouzas (revenue village). Out of these mouzas, 260 are rural, 9 are urban, 15 are partly urban and three consist of forests.

³ Ghotki Area Profile, Flood Information Cell, HWA Foundation Ghotki

⁴ <http://archives.dawn.com/weekly/herald/herald65.htm>

⁵ Official results of Election Commission of Pakistan, (<http://ecp.gov.pk/electionresult/Search.aspx?constituency=NA&constituencyid=NA-200>) accessed on 03/06/2013

Table 1.1-1: Administration Division of District Ghotki

Ghotki	Kanungo Circles/ Supervisory Tapas	Patwar Circles/ Tapas	Number of Mouzas					
			Total	Rural	Urban	Partly urban	Forest	Un-populated
Ghotki District	13	75	287	260	9	15	3	-
Ghotki taluka	3	21	77	69	2	4	2	-
Khan Garh taluka	2	10	37	36	-	1	-	-
Mirpur Mathelo taluka	4	17	60	51	5	3	1	-
Ubauro taluka	2	15	65	59	1	5	-	-
Dahakari taluka	2	12	48	45	1	2	-	-

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

1.1.5 Road Network Infrastructure

Road network is considered as a vehicle for economic development and social change. Efficient road network not only develops a quick and efficient transportation system but also opens up new areas hitherto remained closed. It brings about social integration among rural and urban sectors and greatly assists in providing access to basic amenities such as education, health facilities, etc. It brings rural areas in constant touch with urban segment of a society and creates better understanding necessary for social change and political awareness.

Ghotki district covers an area of 6,432 sq. kms yet it has only 394 kilometers of good quality roads, which are inadequate for the area and its population⁶. National Highway (N-5) passes through this district, with a total length of 78km in the district. The existing road network in Ghotki district is fairly good. The district's headquarter, Mirpur Mathelo, is connected with its taluka headquarters of Ghotki, Khan Gharh, Ubauro, Dahakari through metaled roads. Two provincial highways comprising of a total length of 128 km are mentioned in the official statistics, provided by the government of Sindh⁷.

1.1.6 Irrigation

District Ghotki has a well-established irrigation system with Guddu Barrage being its major strength. Other than river Indus, Ghotki feeder canal and Kandhar canal are the main irrigation sources for this district⁸.

As the table 1.1.2 shows, irrigation is done mostly through canals and tube wells. Out of the 275 rural mouzas, 267 have canal irrigation and 158 have tube wells as well.

⁶ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp.262

⁷ <http://www.sindh.gov.pk/>

⁸ http://pakresponse.info/LinkClick.aspx?fileticket=ZPwAvvO_til%3D&tabid=86&mid=511

Table 1.1-2: Mouza Reporting Sources of Irrigation

ADMINISTRATIVE UNIT		RURAL POPULATED MOUZAS	NUMBERS OF MOUZAS REPORTING SOURCE OF IRRIGATION						
			CANAL	RIVER	TUBEWELL / WELL	RAVINE	SPRING/ STREAM/ KAREZ	ARID (BARANI)	FLOODING/ TORRENT
Ghotki District	Number	275	267	6	160	-	-	-	6
	Percent	100	97	2	58	-	-	-	2
Ghotki taluka	Number	73	69	3	63	-	-	-	6
	Percent	100	95	4	86	-	-	-	8
Khan Garh taluka	Number	37	37	-	10	-	-	-	-
	Percent	100	100	-	27	-	-	-	-
Mirpur Mathelo taluka	Number	54	54	-	20	-	-	-	-
	Percent	100	100	-	37	-	-	-	-
Ubauro taluka	Number	64	60	3	56	-	-	-	-
	Percent	100	94	5	88	-	-	-	-
Dahakari taluka	Number	47	47	-	11	-	-	-	-
	Percent	100	100	-	23	-	-	-	-

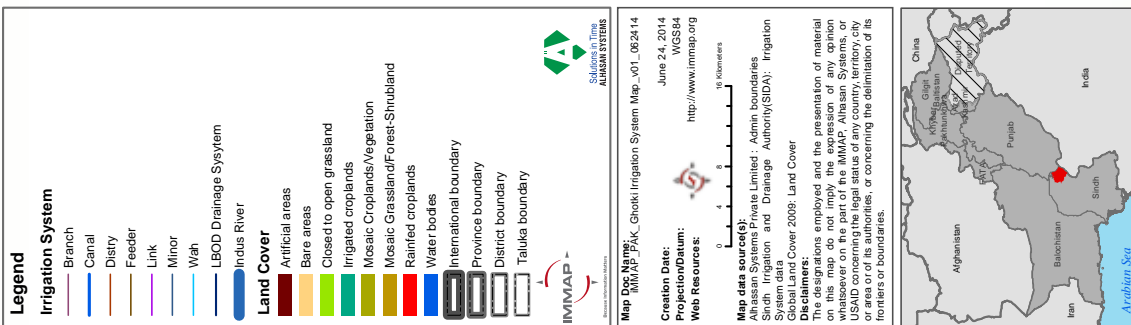
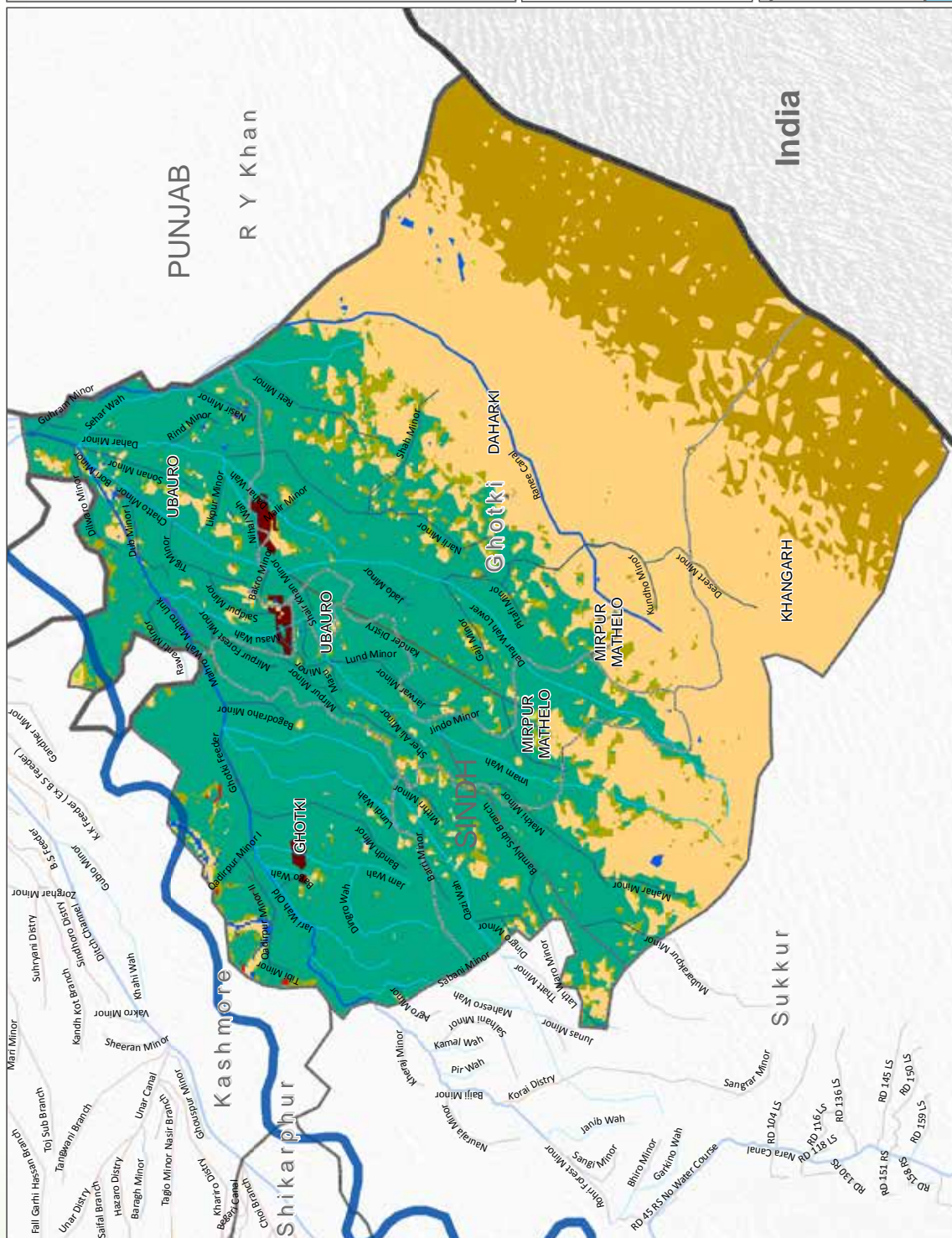
Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

In the year 2008-09, 98% of the net sown area was irrigated through canals and tube wells and of this irrigated area 99% was irrigated through. From 2009-09 to 2009-10, there is .01% decrease in canal irrigated area. The table below gives information regarding irrigation in the district.

Table 1.1-3: Irrigation by Type

	2008-09	2009-10
Canal	248,954	248,726
Tube well	1,952	1,926
Total Irrigated Area	250,906	250,652
Un-Irrigated	5,419	11,480
Total Sown Area	256,325	262,135

Source: Table 4.36 Sindh Development Statistics 2011



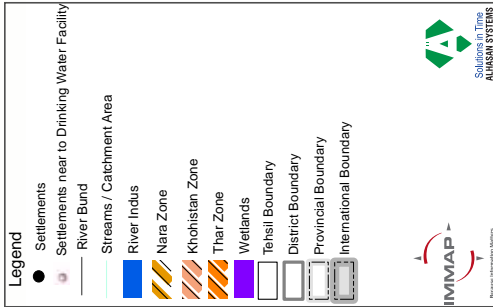
BACKGROUND INFORMATION

6

Sindh-Ghotki Surface/ Drinking Water Availability Map Date (June 2014)



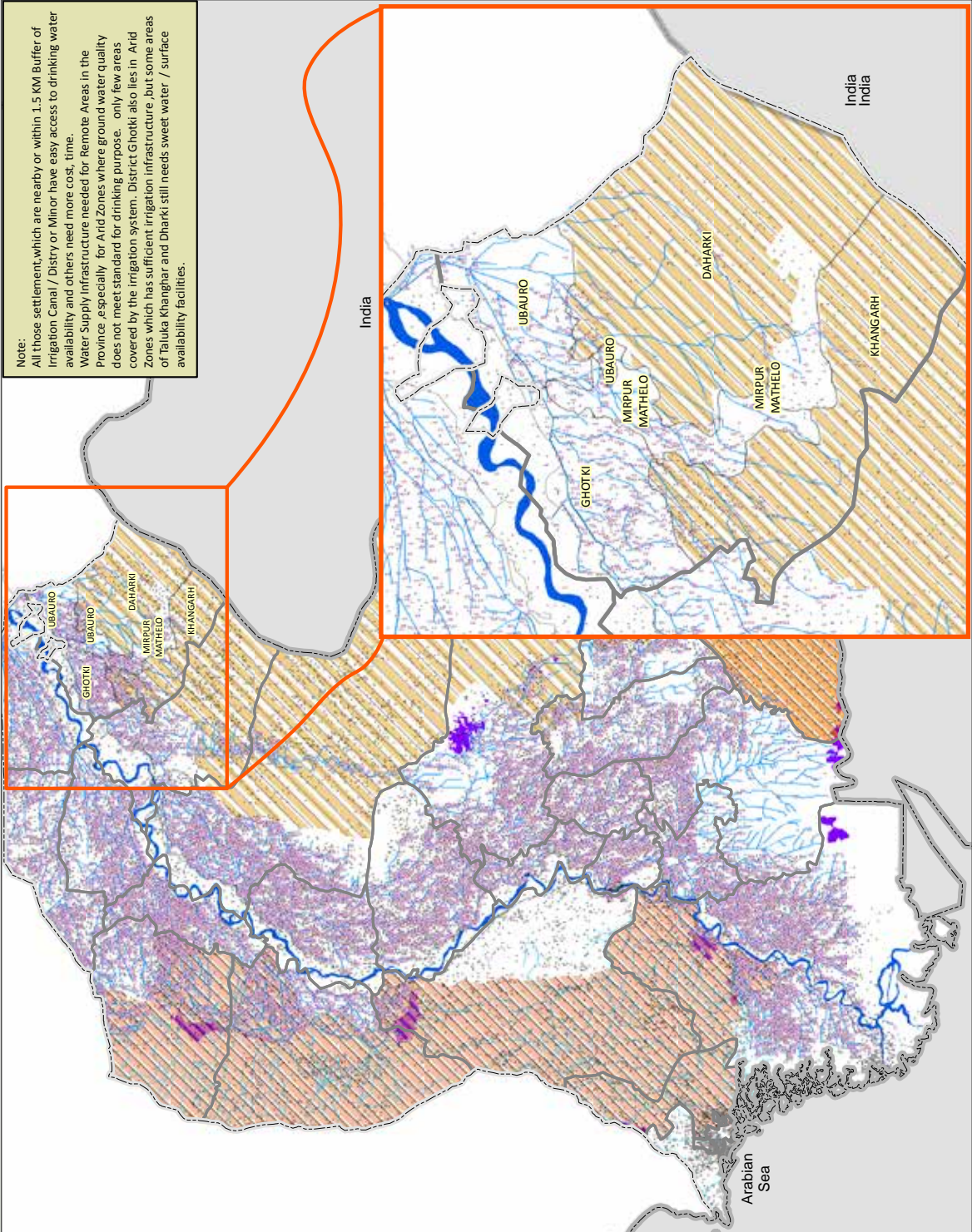
Note:
All those settlement, which are nearby or within 1.5 KM Buffer of Irrigation Canal / Disty or Minor have easy access to drinking water availability and others need more cost, time.
Water supply infrastructure needed for Remote Areas in the Province especially for Arid Zones where ground water quality does not meet standard for drinking purpose, only few areas covered by the irrigation system. District Ghotki also lies in Arid Zones which has sufficient irrigation infrastructure, but some areas of Taluka Khangarh and Daharki still needs sweet water / surface availability facilities.



Map Doc Name:
Alhaseen, Ghotki, Drinking Water Availability Map_AIL_400299
Creation Date:
28/06/14
Projection/Datum:
WGS 1984
Web Resources:
<http://www.aimap.org>

Map data source(s):
Alhaseen Pvt. Limited (Boundaries), National Geo-Spatial Agency, ASSESSMENT REPORT ON DROUGHT IN ARID ZONES OF SINDH (Verdeep), NASA, SDA (Sindh Irrigation and Drainage Authority).

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1.1.7 Solid Waste Management

“Solid Waste Management (SWM) is the generation, separation, collection, transfer, transportation and disposal of waste in a way that takes into account public health, economics, conservation, aesthetics, and the environment, and is responsive to public demands.”⁹

Solid Waste Management (SWM)

In district Ghotki, TMAs are responsible for the solid waste management, drainage and sanitation and water supply facilities. In each Taluka, certain schemes of water supply and drainage have been introduced by the government. Out of the total 22 water supply schemes of the district, 9 are operational and 13 are non-operational. There are a total of 40 drainage schemes, out of which 32 are operational and 08 are non-operational.¹⁰

Current Situation of Solid Waste Management (SWM)

The updated data on solid waste management in district Ghotki is not available but Taluka Municipal Administrations’ (TMA) annual plan and projects can be useful for understanding the situation. However, accordingly A proposed project plan by (North Sindh Urban Services Corporation (NSUSC) entails additional SWM Secondary collection equipment and SKIPS, System and replacement of old TMA system including New SMW Secondary Collection Equipment including road mechanical sweepers and Small Skid Loaders for all T1 and T2 Towns. While the estimated cost of the Project is US\$ 0.77 Million.¹¹

According to the Asian Development Bank project in February 2013, it has to be emphasized that in the beginning of 2012 the option to return the services of primary collection and street cleaning back into the service obligations of the local TMA’s of major districts (including Ghotki as still in the process of negotiations with its concerned TMA) was discussed. NSUSC shall focus in future on the secondary collection (transport from container place to dumping area), on the controlled disposal of waste, closure of secondary and tertiary disposal sites (dumps), implementation of new sanitary landfill sites and required transfer stations. Some of the predefined KPIs should therefore no longer be valid for NSUSC.¹²

Collection of Solid waste (As per Key Performance Indicators KPI)

The quantity of waste collected per day (Collected per NSUSC Unit) is shown in table 1, below.

Table 1.1-4: Quantity of Waste collected

Population Equivalent (PE) 2010	Volume/day m ³ /day] 2013	Collection Efficiency (%) 2013
197500	162,38	24%

Source: Asian Development Bank; Feb.2013: Technical Assistance on Improving Efficiency And Accountability of North Sindh Urban Services Corporation Limited

⁹ Journal of Environmental and Occupational Science Environ Occup Sci 2012; 1(2):129-131

¹⁰ Report on Tranche Condition (2006), Taluka Administration, District Government Ghotki, Sindh Devolved Social Services Program (SDSSP), Government of Sindh (<http://www.fdsindh.gov.pk/sdssp/TMA%20-%20Ghotki%20-%20LSU%20Assessment%20Report.pdf>) accessed on 03/06/2013

¹¹ (<http://www.scip.gos.pk/solidwaste.php>) accessed on 26/06/2014

¹² Asian Development Bank;Feb.2013: Technical Assistance on Improving Efficiency And Accountability of North Sindh Urban Services Corporation Limited

It could be analyzed that District Ghotki is further below the service level of >70% as planned for the end of 2012 (equal to beginning of 2013). Due to increased rate of Population equivalent (PE) as well as waste generation per year and the same level on available volume is the theoretical collection rate by the beginning of 2013.¹³

The following table 2. Show the final intermediate results after the procurement of proposed collection and transport equipment, the re-arrangement of existing equipment and following the proposed return of inefficient equipment to the TMA's.

Table 1.1-5: Final results after the procurement of the proposed equipment

Vehicle Fleet in operation								Containers and Collection facilities	Efficiency in %	
Volume/day [m ³ /day]	Dumper (Tractor+ Trailer)	NEW Tractor	Hook-lift (Master van)	Chinqchi	New Ricksaaf	NEW SL	NEW RL	Hook lift containers (2,5m ³)	Theoretical capacity in m ³ /w-day	theoretical %
162,38	2	2	1	1	1	2	1	7	174	107%

Source: Asian Development Bank; Feb.2013: Technical Assistance on Improving Efficiency And Accountability of North Sindh Urban Services Corporation Limited

¹³ Asian Development Bank; Feb.2013: Technical Assistance on Improving Efficiency And Accountability of North Sindh Urban Services Corporation Limited

1.2 Demography

1.2.1 Population Characteristics

In Pakistan, male population is more than the female population and is among those four countries where life expectancy for female, at birth, is less than that of males¹⁴. Sex ratio in Ghotki is 111 males per 100 females, which is more than the ratio at the National level that is 106¹⁵. Though there could be other possible reasons for such a difference in male to female ratio, one probable reason of this ratio could be underreporting of females during national surveys. Besides, a very high maternal mortality rate¹⁶ and poor health care at the district and provincial level¹⁷ are likely to be instrumental for this difference. District Ghotki, like majority of the other districts in Sindh, is rural by its characteristics and 84 percent of the population resides in rural area.

Table 1.2-1: Estimated Population of District for 2013

AGE GROUP (IN YEARS)	TOTAL			RURAL			URBAN		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
ALL AGES	1,454,440	766,316	688,125	1,216,915	643,079	573,836	237,526	123,237	114,289
00 -- 04	249,318	126,739	122,579	210,900	107,442	103,459	38,417	19,297	19,120
05 -- 09	255,021	135,756	119,266	216,321	115,582	100,739	38,701	20,174	18,527
10 -- 14	175,152	97,463	77,689	143,947	80,987	62,960	31,205	16,475	14,729
15 -- 19	142,934	75,576	67,358	117,574	62,530	55,044	25,360	13,047	12,314
20 -- 24	130,794	65,937	64,857	108,879	54,768	54,111	21,915	11,169	10,746
25 -- 29	111,956	58,116	53,839	93,790	48,590	45,200	18,166	9,526	8,639
30 -- 34	84,052	45,716	38,337	70,354	38,178	32,176	13,698	7,538	6,161
35 -- 39	60,205	31,891	28,314	49,918	26,460	23,457	10,288	5,431	4,857
40 -- 44	61,861	29,889	31,972	50,998	24,644	26,354	10,863	5,245	5,618
45 -- 49	48,369	25,369	23,000	40,367	21,098	19,269	8,002	4,271	3,731
50 -- 54	41,998	22,575	19,423	35,281	19,060	16,221	6,717	3,514	3,202
55 -- 59	27,123	15,137	11,986	22,628	12,572	10,057	4,494	2,566	1,929
60 -- 64	26,561	14,470	12,091	22,663	12,452	10,211	3,898	2,019	1,879
65 -- 69	13,543	7,530	6,012	11,443	6,411	5,032	2,100	1,119	980
70 -- 74	13,441	7,398	6,042	11,523	6,435	5,088	1,918	964	955
75 & ABOVE	12,113	6,753	5,360	10,330	5,870	4,460	1,783	883	901

Source: Estimated population on the basis of table 4, Census 1998

¹⁴ A profil for District Badin, 2009. South-Asia Partnership Pakistan <http://www.sappk.org/district-profiles-with-focus-on-livelihood-related-issues-0> retrieved on 05-03-2012

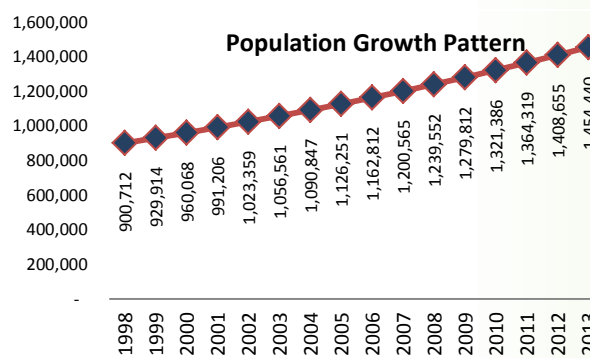
¹⁵ Labour Force Survey 2010-11: *Pakistan Bureau of Statistics*

¹⁶ 0.5 for Sindh, Pakistan Demographic and Health Survey, 2006-07: National Institute of Population Studies, Pakistan. pp. 179

¹⁷ Mean distance from hospital/dispensary is 12 km for Sindh: Pakistan Mouza Statistics, Table 15

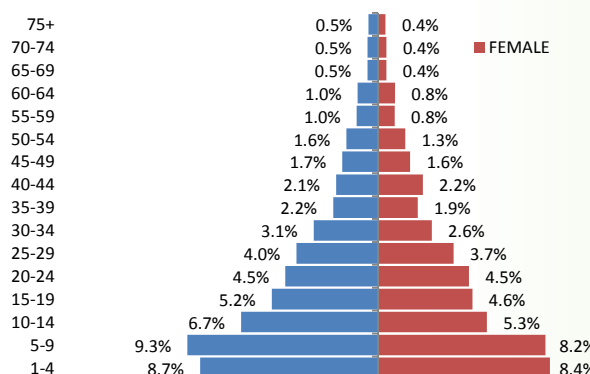
1.2.2 Population Growth Pattern

In 1998, the total population of the talukas that currently form the district was 900,712¹⁸. Population of district Ghotki has an estimated growth rate of 3.26% per annum, which means that the population will double itself in 21.47 years¹⁹ from 1998. 46.72 percent of the population is below 15 years of age and 2.69 percent is 65 years or above. The estimated population for 2012 is 1,408,605, showing 61% increase in 15 years from 1998.



1.2.3 Population Distribution by Age and Gender

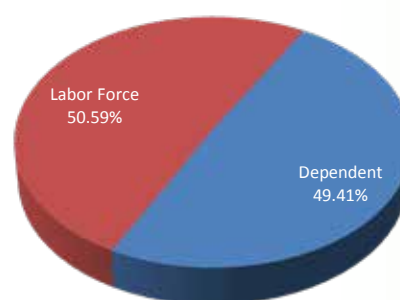
Out of the total population, 53 percent are males and 47 percent are females. Largest cohort of population is 5-9 years, which decreases with 5 years interval. Total population in this cohort is 255,021. Except the age group 45-49, in all the rest of the age groups, male population outnumbers female population.



1.2.4 Dependent Population

The economically dependent population is considered to be the population that is less than 15 years and more than 65 years of age. In addition to them, widowed, and/or divorced women are also considered dependent population. Dependent population in the case of Ghotki district is 49.41 percent of the total population and the working population is 50.59 percent, which shows that dependency ratio²⁰ in the district is 98 percent.

Dependent Population percent



¹⁸ http://www.pdma.pk/dn/Portals/0/Popu_Ghotki.pdf

¹⁹ Rule of 70 <http://controlgrowth.org/double.htm>

²⁰ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

Table 1.2-2: Population Details by Taluka

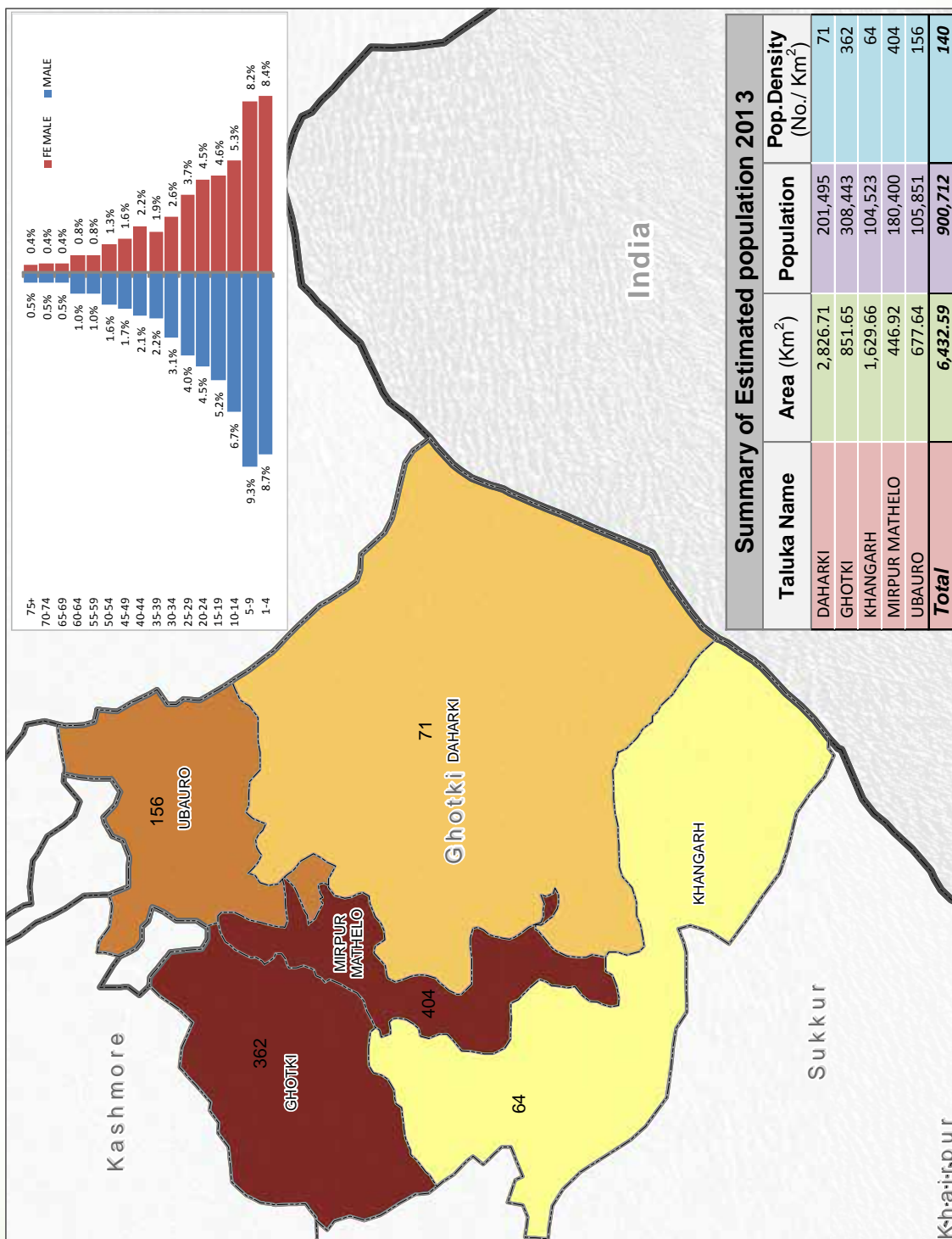
<i>Taluka</i>	Area Km ²	Population	Male	Female	Pop Density	Sex Ratio	Average HH Size	Estimated Households	UCs
DAHARKI	2,826.71	327,928	174,834	153,094	116	114	5.5	59,623	7
GHOTKI	851.65	463,387	242,727	220,660	544	110	5.5	84,252	15
KHANGARH	1,629.66	162,013	86,093	75,920	99	113	5.3	30,568	5
MIRPUR MATHELO	446.92	283,058	147,882	135,176	633	109	5.4	52,418	8
UBAURO	677.64	172,270	90,703	81,567	254	111	5.5	31,322	7
Total	6,432.59	1,408,655	742,238	666,417	219	111	5.5	258,184	42

Source: Estimated using Table 1 of Census 1998



Ghotki- Population Density Map

June, 2014



1.3 Livelihood

1.3.1 Main Sources of Livelihood/Income

Since district Ghotki is an agro-based rural district where 84% of the population reside in the rural areas, the sources of livelihood are less diversified for the resident population. While agriculture is the main source of employment for the rural population, in the urban areas of the district people are engaged in various other economic activities like trade, services, industry, personal business, and government and private jobs. Daharki, Ghotki and Mirpur Mathelo are the main trading centers of this district. Taluka Khangarh and Ubauro are more dependent on agricultural as compared to taluka Ghotki, Mirpur Mathelo and Daharki. Though Ghotki, Mirpur Mathelo and Daharki are also agro-based, here mega industries also provide livelihood earning opportunities to the resident population²¹.

The following table shows the number of rural mouzas reporting sources of employment in district Ghotki. Majority of the male population is associated with agriculture (in 75% of the rural mouzas). While in the category of some; services sector, personal business and labour are frequent in the male population.

The Agriculture Census 2000 classifies rural households under three broad categories: agricultural households that operate land as owner-cultivators or tenants, livestock owners, and non-agricultural households. Given the cultural trait of Sindh and its rural areas, where women actively work side by side with the men, the female participation in economic activity is reasonable in this district, as 44 mouzas (16%) have reported that women are also engaged in agriculture. In the category of some, services sector, personal business and casual labor are the main sources of livelihood for the female population.

Table 1.3-1: Number of Mouzas Reporting Sources of Employment

GENDER	QUANTIFICATION	SERVICE	AGRICULTURE	TRADE	INDUSTRY	PERSONAL BUSINESS	OVERSEAS EMPLOYEMENT	LABOUR
MALE	MOSTLY	3	208	3	-	-	-	19
	SOME	210	57	67	17	120	19	240
	NONE	62	10	205	258	155	256	16
FEMALE	MOSTLY	-	44	1	-	-	-	85
	SOME	43	58	8	6	57	6	164
	NONE	232	173	266	269	218	269	26

Source: Mouza Statistics of Sindh: 2008, Agriculture Census Organization

The categories under which these mouzas have reported against different livelihood sources are:

- Mostly: population of 50 percent and above
- Some: population between 1 percent and 50 percent
- None: less than or equal to 1 percent

²¹ Report on Tranche Condition (2006), Taluka Administration, District Government Ghotki, Sindh Devolved Social Services Program (SDSSP), Government of Sindh (<http://www.fdsindh.gov.pk/sdssp/TMA%20-%20Ghotki%20-%20LSU%20Assessment%20Report.pdf>) accessed on 03/06/2013

1.3.2 Agriculture

Agriculture sector plays a significant role in the overall economic performance of Pakistan. Currently, this sector provides employment opportunities to 45% of the labor force in Pakistan. This sector provides sources of livelihood to 60% of the population in the rural areas. Agriculture contributes 21% to the Gross Domestic Product (GDP) of Pakistan²².

Ghotki has tracts of fertile land with good agriculture productivity. As discussed in the previous section 1.1.2, the district is divided into three clear physical parts i.e. desert area, cultivable area and flooded area (*katcha*). The soil of cultivable area and *Katcha* is suitable for many food and cash crops including wheat, rice, cotton and sugarcane. The talukas on the north-western side of the district i.e., Ubauro, Ghotki, Mirpur Mathelo are fertile where agriculture is the major source of rural income. The main crops of *Rabi* season are wheat and maize and during Kharif, cotton, rice and sugarcane are cultivated. Agriculture production, because of the infertile lands, is comparatively low in the south-eastern talukas i.e., Daharki and Khandgarh. Though some parts of Khengarh and Daharki are fertile, most of the lands are barren.

Total reported area of the district is 630,000 hectares, out of which 178,000 hectares (28%) are cultivated. Within the cultivated area, 163,000 hectares are net sown²³ whereas 15,000 hectares are currently fallow lands²⁴. The remaining 72% of the total reported area is uncultivated; out of which 378,000 hectares are not available for cultivation and 55,000 hectares are culturable waste²⁵.

Table 1.3-2: Land Utilization Statistics of District Ghotki (000 Hectares)

Ghotki		Area
Reported Area		630
Cultivated Area	Total	178
	Net Sown	163
	Current Fallow	15
Un-cultivated Area	Total	452
	Culturable Waste ²⁶	55
	Forest	19
	Not available for Cultivation	378

Source: Sindh Development Statistics (2008)

²² Economic Survey of Pakistan (2011-12), Ministry of Finance, Government of Pakistan

²³ **Net Area Sown** means the area which has been sown at least once in a year. It will include areas under crops, fruits, vegetables etc.

²⁴ **Current Fallow** means the part of the cultivated area which has not been used for cropping during the year under reference but for which the total vacant period does not exceed three crop seasons.

²⁵ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS)

²⁶ **Culturable waste** means cultivable land not actually cultivated. It includes all grazing and other land, not included under forest. Sindh Development Statistics 2008, pp 81.

Area sown and production of food and cash crops in 2008-09 are reported in the Table 1.3.3.

Table 1.3-3: Food and Cash Crops Cultivated in District Ghotki

Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2008-09 (000 Tonnes)	Area Sown in 2010-11 (Acres) FAO
Food	Wheat	97.5	363.2	-
	Rice	33.1	65.5	23,754
	Jowar	5.5	3.8	-
Cash	Sugarcane	5.9	298.8	15,721
	Cotton	76.9	279.4*	225,973

Source: Crop Area and Production by Districts for 28 Years; 2008-09 *Pakistan Bureau of Statistics (PBS)*

*Production of cotton in 000 bales

1.3.3 Industry

District Ghotki is enriched with a variety of industries. Taluka Mirpur Mathelo is famous due to the mega project of Fauji Fertilizer Company (Ex-Pak Saudi Fertilizer Company). There are 07 cotton ginning factories, 03 rice mills, 01 oil mill, and 02 ice factories in Mirpur Mathelo. In addition to the Qadirpur Gas Field, there are a number of industries in taluka Ghotki, including oil mills and flour mills. Daharki is the richest taluka due to availability of natural resources. The big boom in oil & gas, and establishment of fertilizer and power plant are the major assets of this taluka. Four mega industries i.e. Mari Gas Company Ltd, Engro Chemicals, Liberty TNB Nau-Kot Power Plant and Tullow Pakistan Ltd are located in this taluka²⁷.

Detail of industries and factories established in Ghotki district is given below²⁸:

- Sugar Mills (02)
- Rice Mills (28)
- Flour Mills (15)
- Ice Factories (10)
- Oils Mills (20)
- Cotton Ginning Factories (07)
- Stabilizers and UPS making (02)
- Handicrafts
- Candle Making
- Spice Factories
- Fertilizers (02).

1.3.4 Livestock

Livestock sector maintains a unique position within the agriculture sector of Pakistan. It contributes 51% to the value addition in agriculture sector of Pakistan. It also contributes 9% to the GDP of Pakistan²⁹. Besides, this sector provides foreign exchange earnings, dairy products' needs, food security and daily cash income to the people of Pakistan. It helps to reduce the

²⁷ <http://www.fdsindh.gov.pk/sdssp/TMA%20-%20Ghotki%20-%20LSU%20Assessment%20Report.pdf>

²⁸ A Brief Profile of Ghotki, Small & Medium Enterprise development Authority, Government of Pakistan

²⁹ Economic Survey of Pakistan (2011-12), Ministry of Finance, Government of Pakistan

income inequalities, especially in the case of emergencies (floods, crop failure). Hence this sector is considered as most secure source of livelihood for small farmers and landless poor. The share of Sindh province in livestock population of Pakistan is 20%. The livestock population of district Ghotki is given in the following table:

Table 1.3-4: Livestock in District Ghotki

Livestock	Population
Cattle	281,697
Buffalo	246,801
Sheep	73,503
Goat	374,908
Camel	10,137
Horse	2,045
Mule	522
Ass	26,272
Domestic Poultry	437,248

Source: Livestock Census (2006)

1.4 Food Security

Food security can be broadly divided into four components³⁰:

- **Availability** of food in terms of sufficient quantity available through domestic production or imports
- **Access** to adequate resources given the socio-political and economic arrangements of the community
- **Utilization** Refers to the body's ability to make use of the nutrients provided. This requires clean water sanitation and health care
- **Stability** includes an all-time access and utilization of food without any fear of losing it due to any shock (natural calamity, economic shock). This component points out to sustainability of food in an area.

1.4.1 Availability

Wheat along with other crops like rice, cotton and sugarcane are produced in most of the rural mouzas of district Ghotki. Besides, vegetables and fruits are also produced in the district. As the following table shows, wheat and rice are cropped in 99% and 42% of the mouzas respectively, whereas cotton and sugarcane are cropped in 94% and 43% of the mouzas respectively. The overall crop based food production is insufficient in Ghotki district³¹.

Table 1.4-1: Number of Mouza Reporting Major Crops

ADMINISTRATIVE UNIT	NUMBERS OF MOUZAS REPORTING MAJOR CROPS							
	WHEAT	RICE	COTTON	SUGARCANE	MAIZE	PULSES	ORCHARDS	VEGETABLES
Ghotki district	272	119	259	123	17	10	12	20
Ghotki taluka	71	49	65	55	3	4	9	10
Khan Garh taluka	37	-	37	-	-	-	-	-
Mirpur Mathelo taluka	54	53	53	-	-	-	-	1
Ubauro taluka	63	5	60	52	10	6	2	9
Daharki taluka	47	12	44	16	4	-	1	-

Source: Mouza Statistics of Sindh: 2008, Agriculture Census Organization

Food availability not only depends on the obtainability of wheat but also depends on other cereals like maize etc. As far as cereal food is concerned, this district has surplus production for its food requirements. In addition to cereals, animal based food (meat, milk, milk products) availability is also important for total food availability, which is surplus in the district. Combining both, the crop based and animal based food production, district Ghotki is deficit in food production³². However, the trade and economic activities of this district ensure the availability of food through imports from neighboring districts.

³⁰ Define by Food & Agriculture Organization

³¹ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

³² Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

1.4.2 Access

Per capita availability of food items alone is not a reliable indicator of food security. If the available food is socio-economically not accessible to the masses, it cannot make a society food secure. The income level of the households reflects access to food, capacity of consumption and even food poverty. Average monthly income of a household (HH) in this district is less than Rs.11, 000/- which is considered as extremely low³³.

Child dependency (ratio between children and household members in economically active age group) is one of the limiting factors in meeting the daily needs of households and is an important indicator to measure access to food. The increased dependency ratio enhances the spending of the household on child care and food, which results in per capita reduction of socio-economic access to food. Child dependency ratio is reasonable in this district. The share of household expenditures on food is 61.8% of the total income in Sindh. So the inadequate level of income, high food expenditures, and high inflation (particularly food inflation) hinders access to food³⁴.

The table below shows physical access to food in district Ghotki by providing distances of different mouzas from the wholesale markets. Average distance from the fruit and vegetable markets of a mouza is 22 and 23 kilometres respectively whereas the distance from the grain market is 21 kilometres. Such long distances impede access to food.

Table 1.4-2: Distance of Mouzas from Wholesale Markets

Type of Facility		Rural Populated Mouzas	Overall Mean Distance (KM)	Mouzas by Distance (in Kilometres) by Facility				
				Less Than 1	1 - 10	11 – 25	26 – 50	51 & Above
Livestock Market	Number	275	14	6	120	127	20	2
	Percent	100		2	44	46	7	1
Grains Market	Number	275	21	2	102	92	61	18
	Percent	100		1	37	33	22	7
Fruit Market	Number	275	22	3	96	87	63	26
	Percent	100		1	35	32	23	9
Vegetable Market	Number	275	23	3	96	86	64	26
	Percent	100		1	35	31	23	9
Govt. Procurement Centre	Number	275	11	16	160	86	12	1
	Percent	100		6	58	31	4	

Source: Mouza Statistics of Sindh: 2008, Agriculture Census Organization

³³ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

³⁴ Ibid

1.4.3 Utilization

In addition to food availability and access, proper assimilation of food in the body is essential. Food utilization and stability depicts this absorption of food and its sustainability. Improved sanitation facility, clean drinking water, health infrastructure and individual health status along with female literacy play vital role in food absorption. According to Food Security Analysis (FSA) 2009, access to improved drinking water is reasonable in this district³⁵.

Table 1.4-3: Percentage Distribution of HH by Source of Drinking Water

Ghotki	Water Delivery System				
	Tap Water	Hand Pump	Motor Pump	Dug Well	Other
Total	16	68	16	0	0
Urban	9	42	49	0	0
Rural	18	73	9	0	0

Source: PSLM 2010-11

Sanitation conditions in district Ghotki are relatively better where 52% of the households use flush toilets and 48% of the households have non-flush toilets. The sanitation facility is comparatively poor in rural areas of the district and the female literacy rate is 17% only.

Table 1.4-4: Percentage Distribution of HH by Type of Toilet

Flush			Non-Flush			No Toilet		
Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
81	46	52	19	54	48	0	0	0

Source: PSLM 2010-11

In a nutshell, this district has sufficient availability of food, reasonable socio-economic access; and a better level of food utilization environment. Combining all the indicators of food security i.e. availability, access, utilization and stability; it can be ascertained that district Ghotki is a food secure district of Pakistan.

³⁵ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

1.5 Health and Immunization

1.5.1 Health Facilities

The total number of health facilities in district Ghotki is 54. There are three taluka headquarters hospitals and one district headquarters hospital.³⁶ These health facilities are sufficient for only 18% of the estimated 2012 population of the district³⁷. Table 1.5.1 shows the details of these health facilities.

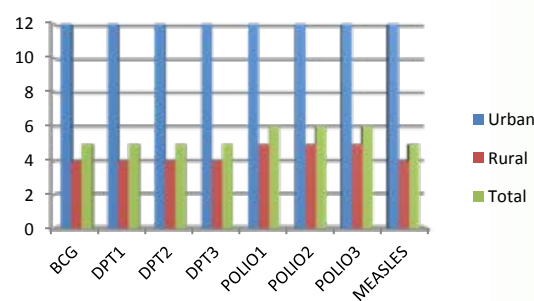
Table 1.5-1: Number of Health Facilities by Type

Type	Number	Bed Strength
Teaching Hospitals	0	0
District headquarter Hospital	1	100
Taluka headquarter hospitals	3	130
Rural Health centres	3	50
Basic Health units	32	64
Govt. rural dispensaries	11	-
MCH centres	3	-
Sub Health centres	1	-

Source: Ghotki Health Profile, 2012. TRF Pakistan

1.5.2 Immunization

Immunization coverage estimates are used to monitor immunization services, and to guide disease eradication and elimination efforts. This indicator is the measure of the percentage of children of age 12-23 months, who have received all the doses of BCG vaccine, three doses of polio & pentavalent vaccines and 1 dose of measles vaccine in a given year



In district Ghotki, around 42% pregnant women have received tetanus toxoid injections. In urban areas this percentage is 62% and in rural areas it is 38%³⁸. Record based³⁹ immunization data of district Ghotki shows that 5% (Male 4%: Female 7%) of the children aged 12-23 months have received full immunization. In the urban areas this percentage is 12 percent (Male 5%: Female 18%) and in the rural areas also it is 4% (Male 4%: Female 4%). The corresponding graph shows the percentage of children of 12-23 months that have been immunized by the type of Antigen based on records⁴⁰.

³⁶ <http://115.186.137.115/reports/hfa/sindh/HFA-Ghotki.pdf>

³⁷ WHO Standard is 2 health facilities and 25 beds per 10,000 people.

³⁸ Table 3.11, Pakistan Social and Living Standards Measurement Survey (PSLM)2012-2013

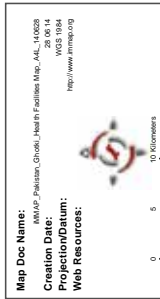
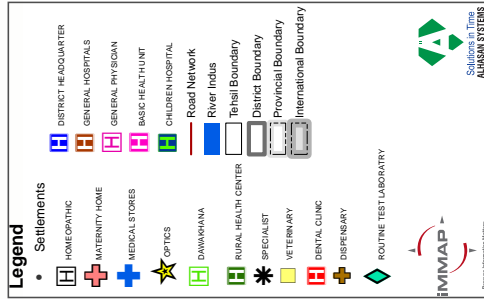
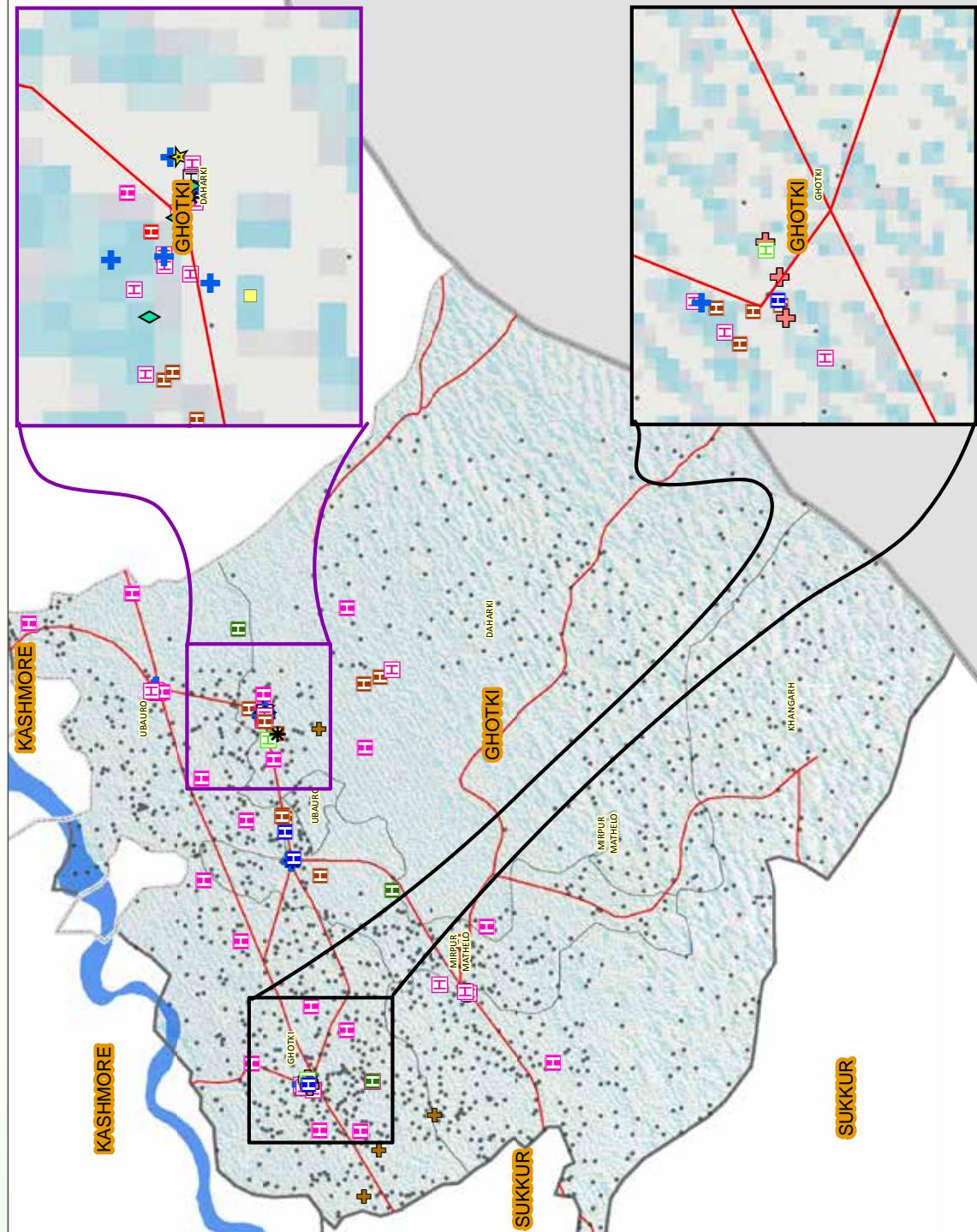
³⁹ Table 3.4 (b) Based on record: Children who reported having received full immunization who also have an immunization card, expressed as a percentage of all children aged 12-23 months. Also immunizations to be classed as fully immunized a child must have received: 'BCG', 'DPT1', 'DPT2', 'DPT3', 'Polio1', 'Polio2'

⁴⁰ Table 3.5: Pakistan Social and Living Standards Measurement Survey (PSLM)2010-2011

Sindh-Ghotki Health Facilities Map

Date (June 2014)

Health_Facilities_Ghotki
● call other values
Category



Map data source(s): (Boundaries), National Geo-Spatial Agency/ASSESSMENT REPORT ON DROUGHT IN ARID ZONES OF SINDH(Thardeep), NASA, SIDA (Sindh Irrigation and Drainage Authority).

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1.6 Education

1.6.1 Highlights

Literacy Rate (10 years and above)		45%
Adult Literacy Rate (15 years and above)		42%
GPI Primary		0.46
GPI Middle		0.89
GPI Secondary		0.26
GPI Higher Secondary		0.51
Population that has ever attended School		45
	Male	67
	Female	21
Population that has completed primary level or higher		39
	Male	58
	Female	17
Student Teacher Ratio		48
	Primary	50
	Middle	40
	Secondary	39
	Higher Secondary	44
Primary Participation Rate		45
	Male	58
	Female	29

Source: District Education Profile Ghotki and PSLM 2012-13

1.6.2 District School Enrolment Ratio

The education status is quite poor in Ghotki. The overall literacy rate (for the population of 10 years and above) is 45%; for males it is 67% and for females it is 21%. For the urban rural comparison, urban literacy rate is higher than the rural, which is 68%. Among urban community, literacy rate for male is 85% and for female it is 49%; whereas the rural literacy rate is 40%, and in the rural community, literacy rate for male is 63% and for female it is 15%. Adult literacy rate (for the population of 15 years and above) is 42%. Gross Enrolment Ratio⁴¹ (GER) for primary level in Ghotki is 69% (Male: 83%, Female: 50%), in urban community it is 93% (Male: 106%, Female: 79%) and in the rural community it is 64% (Male: 79%, Female: 44%). Net Enrolment Ratio⁴² (NER) for the primary level is 50% (Male: 59%, Female: 38%), in urban community it is 68% (Male: 73%, Female: 62%) and in the rural community it is 47% (Male: 57%, Female: 33%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural and Urban Gender at different levels.

⁴¹ Total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year.

⁴² Enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population.

Table 1.6-1: Gross and Net Enrolment Rates by Gender and Locality at Different Levels

Urban/ Rural/ District	Gender	Gross Enrolment Rates			Net Enrolment Rates		
		Primary Group (5-9)	Middle Group (10-12)	Matric Group (13-14)	Primary Group (5-9)	Middle Group (10-12)	Matric Group (13-14)
Urban	Male	106%	63%	76%	73%	27%	15%
	Female	79%	46%	59%	62%	24%	21%
	Total	93%	55%	68%	68%	25%	18%
Rural	Male	79%	55%	52%	57%	26%	11%
	Female	44%	14%	12%	33%	5%	4%
	Total	64%	36%	35%	47%	16%	8%
Total	Male	83%	56%	55%	59%	26%	12%
	Female	50%	18%	21%	38%	8%	7%
	Total	69%	39%	41%	50%	17%	10%

Source: Pakistan Social and Living Standard Measurement Survey 2010-11

1.6.3 Gender and Level Wise Details

The total enrollment in District Ghotki is 184,927 (Male: 126,739 and Female: 58,188). Out of a total of 4,811 teachers, 4,154 are male and 657 are female teachers. This illustrates that 2 teachers are teaching averagely 39 students. The total boys' schools of District Ghotki are 730, and the total female schools are 258. Besides, there are 1,010 mixed gender schools. Thus, the total number of schools is 1,998 and averagely every school has an enrolment of 93 students and a teaching staff of around 2⁴³.

Primary

The total number of primary level schools, that are reported, is 1,854. The total enrolment at the primary level is 142,617. (97,446 are boys and 45,171 are girls). Total number of teachers at the primary level is 3,704, out of which 3,194 are male and 510 are female teachers. Thus, on an average, each primary school has an enrolment of 77 students with a teaching staff of 2. However, the student class ratio is 37 and each school has averagely around 2 classrooms.

Middle

There are a total of 104 middle schools reported. The total enrolment, at the middle level, is 11,044 of which 5,850 are boys' enrolment, whereas, the girls' enrolment is 5,194. The total teachers at the middle level are 313, out of which 258 are male teachers, while, 55 are female teachers. Thus, on an average, each middle school has an enrolment of 106 students with a teaching staff of 3. However, the student class ratio is 42 and each school has averagely around 3 classrooms.

Matric

There are a total of 33 secondary schools in the district. The total enrolment at the secondary level is 21,029, of which 16,667 are boys' enrolment whereas 4,362 are girls' enrolment. The total number of teachers at the secondary level is 579, out of which male teachers are 544 and female teachers are 35. Thus, on an average, each secondary school has an enrolment of 637

⁴³ Statistical Education Bulletin, Reform Support Unit, Sindh Government.

students with a teaching staff of 18. However, the student class ratio is 45 and each school has averagely around 14 classrooms.

Higher Secondary

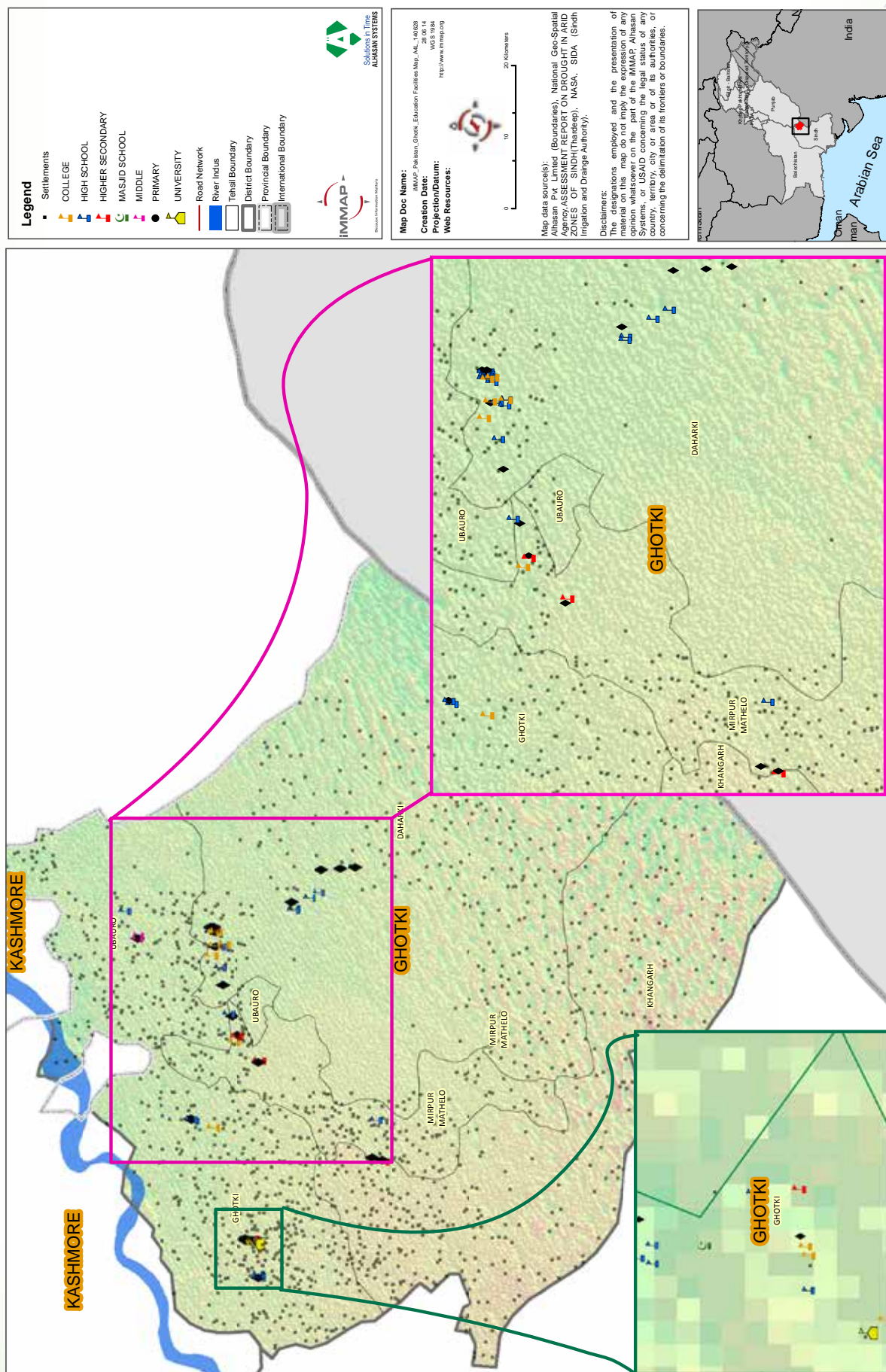
There are a total of 7 higher secondary schools. The total enrolment at the higher secondary level is 10,237, out of which 6,776 are boys' enrollment and 3,461 are girls' total enrolment. The total number of teachers, at the higher secondary level, is 215, out of which 158 are male teachers and 57 female teachers. Thus, on an average, each higher secondary school has an enrolment of 1,462 students with a teaching staff of 31. However, the student class ratio is 61 and each school has averagely around 24 classrooms.

Table 1.6-2: Enrolment and Educational Facilities by Level and Gender⁴⁴

Level	Enrolment			School Facilities				Teachers		
	Boys	Girls	Total	Boys	Girls	Mixed	Total	Male	Female	Total
Primary	97,446	45,171	142,617	685	226	943	1,854	3,194	510	3,704
Middle	5,850	5,194	11,044	27	27	50	104	258	55	313
Secondary	16,667	4,362	21,029	18	3	12	33	544	35	579
Higher Secondary	6,776	3,461	10,237	0	2	5	7	158	57	215
Total	126,739	58,188	184,927	730	258	1,010	1,998	4,154	657	4,811

⁴⁴ Sindh School List 2010-11, Statistical Education Bulletin, Reform Support Unit, Sindh Government.

Sindh-Ghotki Education Facilities Map
Date (June 2014)



2 Disaster History and Its Impact

2.1 Disaster in District

2.1.1 Disaster History

Ghotki district has a history of disasters. It was consecutively hit by heavy floods in 2010, 2011 and again in 2012. The relative severity of floods was ranked as medium in district Ghotki⁴⁵. River Indus, after receiving water from 5 of its tributary rivers, causes floods in the northern and southern parts of Sindh province. The upper region of Sindh Province comprises of the districts of Jacobabad, Shikarpur, Kashmore, Larkana and Kamber Shahdadkot on the right bank of River Indus and Ghotki, Sukkur, Khairpur, Naushahro feroze and Shaheed Benazirabad on the left bank. These districts, on the right and left banks of River Indus, are prone to severe threat when River Indus is in high flood.

Heavy rains are also a major cause of flooding in the district. Vulnerable UCs of the district are: Qadirpur, Muhammad Khan, Ghoto, Bago Daho, Langho, Wasti Jiwan Shah Ranwati, Chandia, Khambhra, Kamu Shaheed, Jhangal Malik at Reti, Dad Leghari, Berula⁴⁶. Vulnerable points of the district are: L.M Band Old, Mile 0/0 to 3/1 Mirpur Division, Qadir pur Loop Bund, Mile 5/0 to 7/2 Mirpur Division, Gamero Band, Mile 12/0 to 13/0 Ghotki Division.

Along with the aforementioned floods; Epidemics, casualties due to accidents and environmental degradation occur on yearly basis.

Current Scenario⁴⁷

Due to the latest changes in the course of river Indus, many of the villages are at risk of being eliminated. According to the local population, the Indus River has a history of changing its course every 25-30 years. According to the latest updates by Rural Development Policy Institute (RDPI), three settlements, namely: Habib Chachar, and Qaiser Chachar in UC Qadir Pur and Janan Chachar in UC Hussain Beli have been destroyed and a population of 1,900 people is affected. Four settlements, including: Mehar Chachar, Bahawal Chachar and Razi Sabzoi in UC Hussain Beli and Jan Muhammad Bahadu rani in UC Qadir Pur are partially inundated and some 2,300 people are at risk of being affected by the river water.

Besides, four other settlements, namely: Chhuto Chachar, Saifal Chachar, and Raban Shah in Hussain Beli and Saindad Chachar in UC Qadir Pur are reported to have been put on high alert. These four settlements have a combined population of 950 people. The changing course of the

⁴⁵ Flood Facts, Disaster Management Apparatus, 2010

⁴⁶ Sindh Contingency Plan 2012.

⁴⁷ Indus Changing Course: Disaster Watch News Service, Rural Development Policy Institute, 05 June, 2013

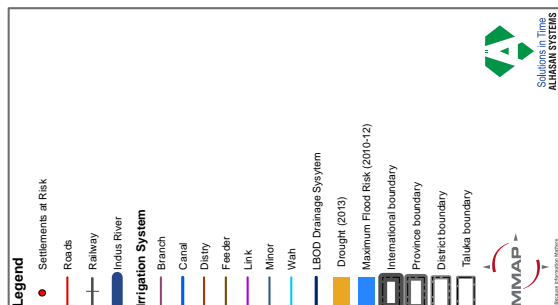
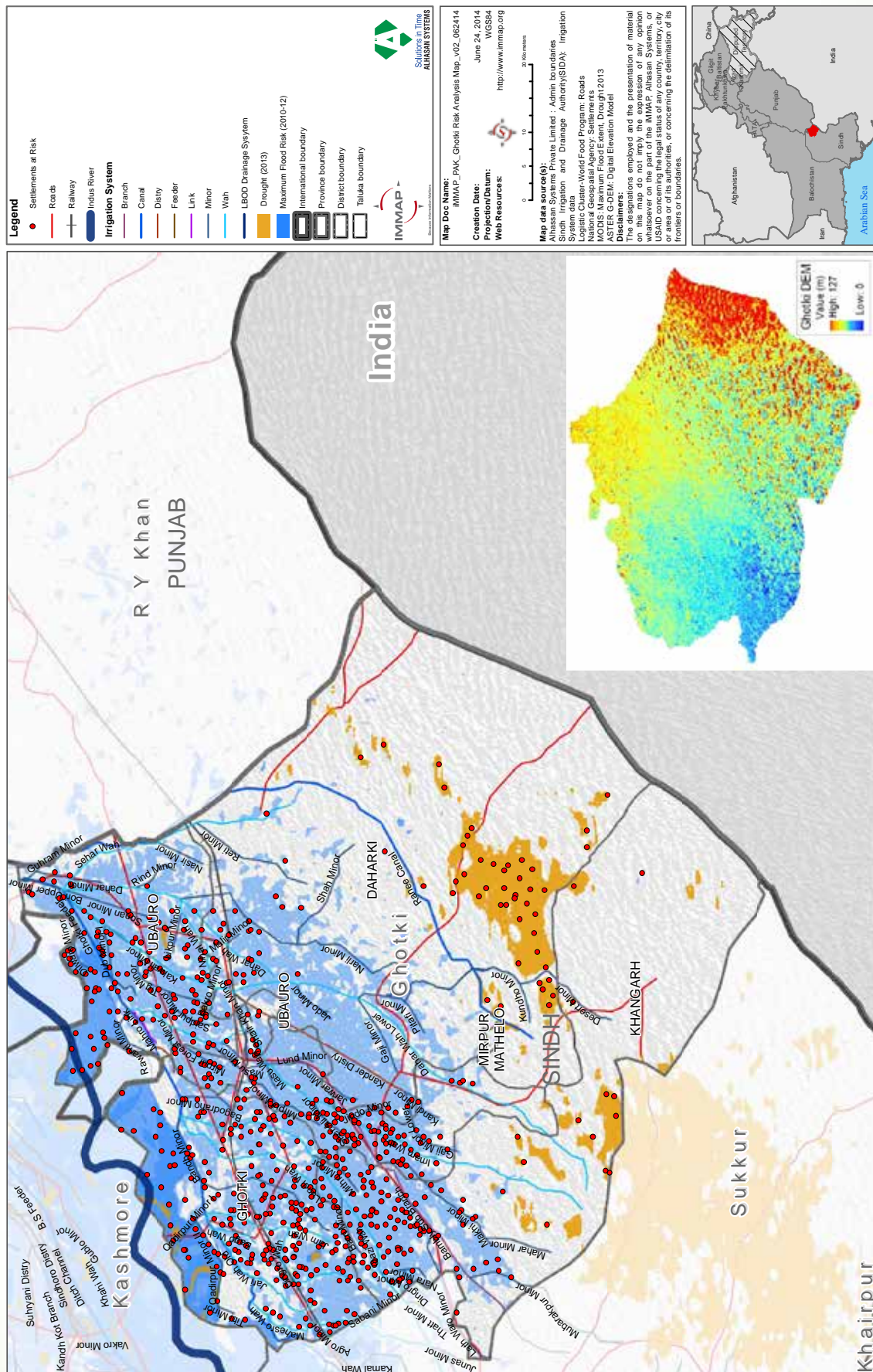
river water has, so far, inundated 450 acres of agricultural land and damaged around a dozen of housing structures.

Based on the consultative meetings of RDPI and its constant feedback, Commissioner Sukkur Division accompanied by the Director Sindh Irrigation and Drainage Authority (SIDA) along with officials of local administration visited the affected area. RDPI and its partner CSOs briefed the officials about the situation. Commissioner Sukkur Division is reported to have given necessary instructions to the local administration.



Ghotki - Risk Analysis Map

June, 2014



Map Doc Name: IMMAP_PAK_Ghotki Risk Analysis Map_v02_062414

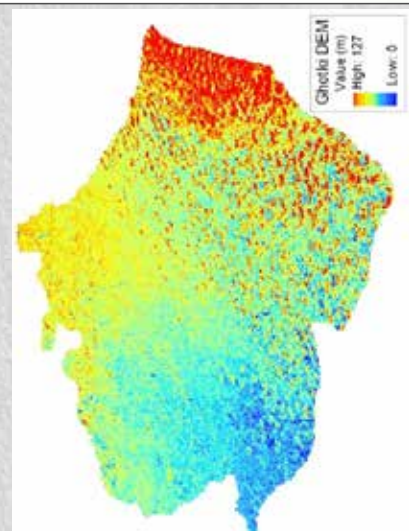
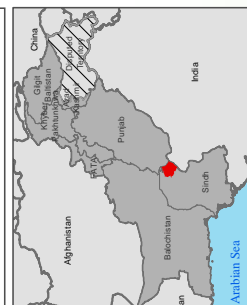
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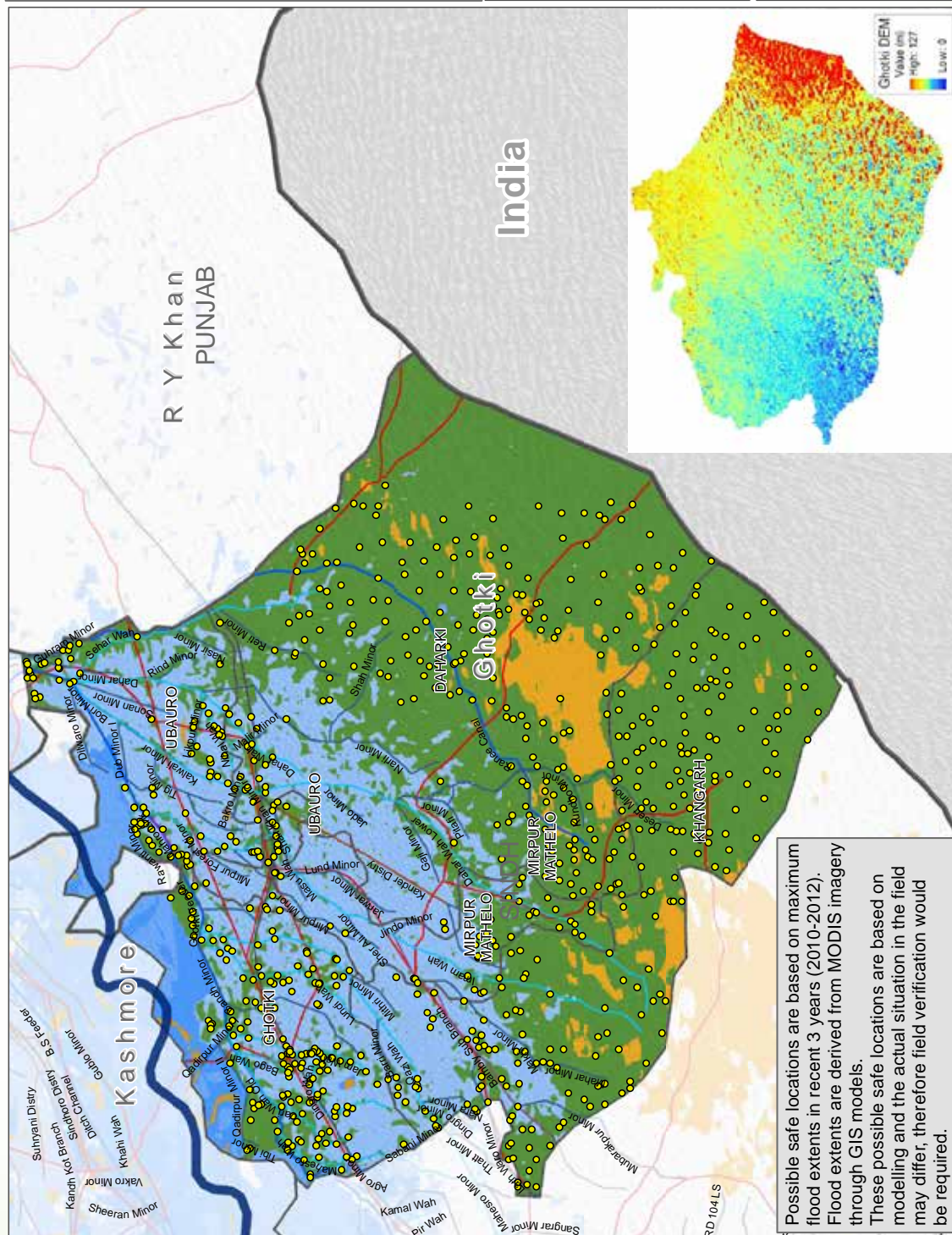
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Sindh : Irrigation and Drainage Authority (SIDA) : Irrigation
Logistic Cluster-World Food Program: Roads
National Geospatial Agency: Settlements
MCDIS: Maximum Flood Extent, Drought 2013
USGS: DEM, Digital Elevation Model

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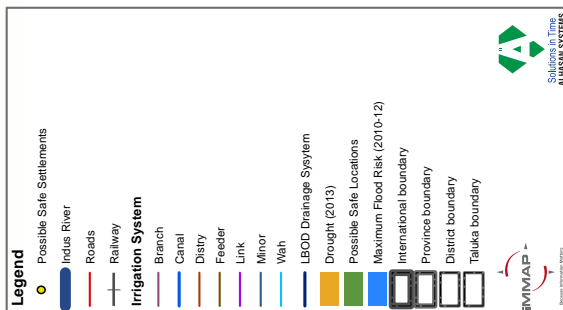


Ghotki - Possible Safe Locations Map

June, 2014



Possible safe locations are based on maximum flood extents in recent 3 years (2010-2012). Flood extents are derived from MODIS imagery through GIS models. These possible safe locations are based on modelling and the actual situation in the field may differ, therefore field verification would be required.



Map Doc Name: IMMAP_PAK_Ghotki SL Map_v02_062614
Creation Date: June 26, 2014
Projection/Date: WGS84
Web Resources: <http://www.immap.org>
Map data source(s): Possible Safe Locations Limited : Admin boundaries
 Sindh Irrigation and Drainage Authority (SIDA) : Irrigation System data
 Logistic Cluster-World Food Program: Roads
 National Geospatial Agency: Settlements
 MODIS 30m Resolution Flood Extents 2013
 ASTER G-DEM: Digital Elevation Model
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2.1.2 Impact of Disaster on Demography

In 2010 floods, 172,067 persons in 380 villages/settlements of 12 union councils were affected and there were 5 casualties and 662 injuries. In 2011 floods,⁴⁸ 1,361 villages/settlements of 40 union councils in 5 talukas were affected. A population of 290,000 persons was affected and there were 11 casualties and 65 injuries. Table 2.2.1 shows the losses and damages summary.

Table 2.1.1: Summary of Losses and Damages in Floods/Rains 2010, 2011

Attribute	Figure 2011	Figure 2010	Source
Total Households 2010		242,190	Estimated
Affected Households	48,333	28,678	
Total UCs		42	PDMA
UC Affected	40	12	OCHA
Total Revenue Villages		349	PDMA
Villages/Settlements Affected	1,361	380	PDMA/OCHA
Total Houses Affected	31,630	45,000	PDMA
Partially Damaged	23,891	n/a	
Destroyed	7,739	n/a	PDMA
Kacha	n/a	10,600	
Pakka	n/a	34,400	
Total Population		1,321,386	Estimated
Affected Population	290,000	172,067	PDMA/NDMA
Death	11	5	NDMA/PDMA
Injuries	19	662	
Total Area		1,589,525	PCO
Total Affected Area	258,661	85,004	NDMA/OCHA
Crop Area Affected	68,679	n/a	

2012 floods, in the district:

As of 1st October 2012, 3,268 villages/settlements of 40 union councils were affected and a population of 342,300 persons was affected. During initial assessments, 50,200 houses were reportedly damaged, out of which 11,245 were partially damaged and 38,955 were destroyed⁴⁹.

2.1.3 Impact of Disaster on Livelihood & Agriculture

As mentioned above, District Ghotki was hit by floods in 2010, 2011 and 2012. A separate analysis of these floods are given as under:

Impact of Floods 2010:

Out of a population of 1.3 million people in the district, 172,067 people were affected. Furthermore, the district hosted around 25,000 people from other district, including Kashmore, Jacobabad and Shikarpur. According to the PDMA sources, the scale of the disaster, compared

⁴⁸ Summary of Losses and Damages as of 17/02/2012, PDMA Sindh

⁴⁹ Summary of Losses and Damages as of 1st October 2012, PDMA Sindh

to other districts, was medium in this district. According to the district authorities, out of 40 union councils, 12 were affected. However, according to the PDMA figures, 23 union councils were affected in the district. 15,000 families needed shelters with winterization kits. 45,000 houses were destroyed. 90,000 bedding and mats were needed and 9,000 tool kits were required.

Most affected part of the district was *Katcha* area where people were in great need of agriculture assistance. Agriculture cluster of humanitarian partners reported that 35,714 households are in need of assistance with agriculture rehabilitation. Animal vaccination was also needed⁵⁰.

Impact of Floods 2011:

The floods of 2011 had a devastating effect on this district as 40 union councils in 5 talukas were affected. Out of the total population of 1,321,386; 22% of the population i.e. 290,000 persons was affected. Within the affected population, 51% were male and 49% were females. 1,361 villages were affected where 31,630 houses were damaged⁵¹. A total of 266,567 acres of area was sown out of which 68,679 acres (26%) were damaged. 131 animals were lost or died⁵²

Along with the demographic losses, due to floods/rains 2011, the loss to agriculture sector exacerbated the sources of livelihood for the people of this district. The following table shows the loss to agriculture sector of this district.

Table 2.1-1: Crop Loss and Area Damaged Due to Floods 2011

Major Crops		Area
Cotton	Area sown (Acre)	225,973
	Area Damaged (Acre)	67792
	%	30%
Rice	Area sown (Acre)	23,754
	Area Damaged (Acre)	475
	%	2%
Sugarcane	Area sown (Acre)	15,721
	Area Damaged (Acre)	157
	%	1%
Other	Area sown (Acre)	1,119
	Area Damaged (Acre)	255
	%	23%
Total Area Sown		266,567
Total Area Damaged		68,679

Source: Flood Situation Update, 2011, Food & Agriculture Organization (FAO)

As given in the table above, 30% of the cotton, 2% rice, 1% sugarcane and 23% of other crops were damaged.

⁵⁰ Flood Impact Profile: Ghotki (2010), UNOCHA

⁵¹ Summary of Losses/Damages due to Floods 2011, PDMA, Government of Sindh

⁵² FAO as of 29th September 2011

2.1.4 Analysis of Food Security Situation

District Ghotki is agro-based and majority of the households are engaged in agriculture farming and livestock rearing activities, and there are still others who are engaged in non-agriculture activities/casual labour. Among these three types of households, empirical studies have shown that poverty is relatively higher in the non-agriculture households, followed by livestock households and small farmers⁵³. It has been shown in the previous section that many individuals of this flood affected district lost their homes (31,630 houses damaged in 2011, 45,000 houses damaged in 2010, 50,200 houses damaged in 2012) and their crops (68,679 acres of crop area affected in 2011, 41,603 acres crop area affected in 2012). Although some of the mega industries are established in this district, table 1.3.1 reveals that the share of industrial labor is not substantial in this district. Hence, the sources of income of households, situated in this district, are less diversified, with their heavy dependence on agriculture, livestock and casual labour. This further exacerbated the food security situation.

Through the destruction of roads, transport and market infrastructure, the floods had a significant negative impact on commodity market. As a result, the functioning capacity of the markets (transporters, processors, wholesalers and retailers) decreased with upward movement of transaction costs and shortage of food commodities. This phenomenon hindered the socio-economic access to food in the district⁵⁴.

The losses to crops and livestock along with the poor functioning capacity of the markets reduced the expected income of the population of this district. Thus the floods and rains affected people of the district Ghotki had to face a number of key challenges to recover their livelihood, agriculture and livestock; directly affecting the food security situation.

2.1.5 Impact of Disaster on Health

Severe floods can not only cause destruction to health care infrastructure but also affect health indicators of the affected population.

During 2011 floods, out of 34 BHUs, 7 BHUs were reportedly damaged. Out of the 3 RHCs, 1 was reported damaged⁵⁵. According to the floods 2012 initial rapid assessment, no damage was reported to any health facility. However, Women, children and elderly people needed immediate health support. Poor hygiene, sanitation and unsafe water were also contributing to the poor health status of rain hit communities. Pregnant and lactating women needed special attention and nutrition.

⁵³ Arif, et al (2010), *"The 2010 Flood and Poverty in Pakistan: A Preliminary District-level Analysis"*, Pakistan Institute of Development Economics Islamabad, Background Paper for Conference on the "The Environments of the Poor", 24-26 Nov. 2010, New Delhi

⁵⁴ *Ibid*

⁵⁵ WHO-Health Initial Rapid Assessment Report 8th-12th Sep, 2011

2.1.6 Impact of Disaster on Education

Due to the floods/rains of 2010, 338 education facilities were damaged, out of which 25 were fully destroyed and 255 were partially damaged, and 58 schools were occupied by the IDPs. Also, heavy rains affected the school going children. Due to the damages to the schools, houses and roads; education of 27,040 students was affected (Girls: 11,627 girls, Boys: 15,413). Teachers numbering 1,014 were also affected. Due to the floods/rains of 2011, 41 school facilities were damaged, out of which 6 were fully destroyed and 35 were partially damaged. Due to the damages to schools, houses and roads, education of 3,280 students were affected (Girls: 1,410 girls, Boys: 1,870). Teachers numbering 109 were also affected⁵⁶. No loss was reported to the school facilities due to floods 2012.

⁵⁶ Damage Need Assessment, Sindh-EMIS Reform c Unit, Department of Education and Literacy, Government of Sindh.

3 Hazard Vulnerability and Capacity Analysis

3.1 Hazard Vulnerability and Capacity Analysis

Prior to analyzing existing hazards; vulnerability to hazards and capacity to cope with the same of the district and its population needs to be understood. An explanation of the terms used is given under each heading, as follows:

3.1.1 Hazard

A hazard is a situation which triggers disaster. But it can be also defined as:

“A potentially damaging physical event, phenomenon or human activity that may cause the Loss of life or injury, property damage, social and economic disruption or environmental degradation”⁵⁷

A hazard is a situation that has the potential to harm the health and safety of people or to damage plant and equipment. Hazards can be divided into two categories.

Natural Hazard

Natural hazards are natural processes or phenomena within the earth system that may constitute a damaging event. For example typhoons, tsunamis, earthquake and volcanic eruption cyclones, earthquakes, floods, landslides, storms are natural hazards.

Man-made Hazard

Any industrial, nuclear, or transportation accident, explosion, power failure, resource shortage, or other condition, resulting from man-made causes, which threaten or cause damage to property, human suffering, hardship or loss of life constitute ‘Man-made Hazard.

Hazard matrix of District

Hazard	Frequency	Area affected/union councils	Severity/Force	Year
Riverine floods	Monsoon	Entire district excluding Southern side(which is white Desert)	High	2010,2011 2012
Heavy rains	Monsoon	Whole district	High	2010,2011 2012
Epidemics	Seasonal	Entire district	Low	Every year
Droughts	Rare	Southern part of the district	Low	2002
Earthquake	Rare	Whole district	Low	----

⁵⁷ “Urban Governance and Community Resilience Guides”, (2010), Asian Disaster Preparedness Center

Hazard	Frequency	Area affected/union councils	Severity/Force	Year
Transport accidents	Often	Entire district	Low	Every year

3.1.2 Vulnerability

Vulnerability is a situation which is:

“The attributes and circumstances of a community or system that makes it sensitive, vulnerable or susceptible to the damaging effects of a hazard⁵⁸”

Vulnerability precedes disasters, contribute to their severity, hinder and obstruct the disaster response. It is divided into three parts:

Physical/Material Vulnerability

Weakness of the built environment and lack of access to physical and material resources i.e. living in hazard prone areas or in unsafe buildings, lack of savings, insurance and assets constitutes physical/material vulnerability.

Social/Organizational Vulnerability

Social/Organizational Vulnerability refers to inequality in social systems that discriminate against and marginalize certain groups of people from accessing resources and services. People who have been marginalized in social, economic or political terms are vulnerable to disasters. Weakness in social and organizational areas may also cause disasters e.g. deep division can lead to conflict and war. Conflict over resources due to poverty can also lead to violence.

Attitudinal/Motivational Vulnerability

Existence of fatalistic myths and religious beliefs influence people's vulnerability to disaster risks. If people believe that disasters are 'acts of God' and if they have low confidence in their ability to affect change or have 'lost heart' and feel defeated by events they cannot control, these people are often harder hit by disasters.

⁵⁸ Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

Vulnerability Matrix

Physical/material	Social/organizational	Attitudinal/motivational
The district is prone to natural hazards like floods, rains and droughts. River Indus flows adjacent to the district in the north, flowing from north-east to south-west making the district vulnerable to floods. District Ghotki is hit by flood/rains 2010, 2011, 2012 and 2013. In 2010 rains/floods ⁵⁹ , a population of 250,000 persons was affected. Out of 40 union councils 12 were affected in all the 5 <i>talukas</i> of the district.	According to 1998 census, total population of the district Ghotki was 900,712 ⁶⁰ . The district has an estimated growth rate of 3.26% per annum, which means that population will double itself in 21.47 years ⁶¹ from 1998. Such rapid growth in population gives birth to many socio-economic problems and makes the area vulnerable to different natural and made-made hazards	Lack of knowledge, on the part of the general public and local officials about severity of hazards - that may affect them, associated risks, damage, and precautions to be taken, is perhaps one of the most significant hindrance in present day efforts to mitigate the potentially disastrous effects of most hazards.
Droughts in district Ghotki are rare but not as frequent as floods. Southern part of the district is exposed to droughts because it is mostly desert area named <i>Achhro (white) Thar</i> . Droughts affect labour market negatively (daily wages goes very low) and decrease livelihood opportunities which increase poverty graph and make the people vulnerable against different hazards (floods, heavy rains, droughts).	Like majority of the other districts in Sindh, district Ghotki is rural by its characteristics. 84 per cent of the population resides in rural areas as compared to the 16 per cent that resides in the urban areas. Most people in the rural areas lack job opportunities, health and educational facilities which escalate the risk against different hazards. [Flash floods, rains etc.]	Advocacy seminars and awareness campaigns regarding disaster risk reduction are insufficient.
Disasters are rooted in development failures e.g. unsafe buildings that could not withstand heavy rains, floods, earthquakes and results in disasters. In Ghotki district, 41.99 per cent ⁶² people use wood/bamboo material for roof construction while 38.58 per cent ⁶³ people use mud for wall construction. These percentages are higher in rural areas as compared to urban.	Dependent population (the population that is less than 15 years and more than 65 years of age including widows and divorced women) in the case of Ghotki district is 49.41 per cent of the total population and the working population is 50.59 per cent, which shows that dependency ratio ⁶⁴ in the district is 98 per cent, which is very high and as such makes the population highly vulnerable.	Most people believe disasters, as an Act of Nature which cannot be prevented.
The climate of the district is hot and dry, with summer temperature mounting to as high as 50 degrees	The status of education is quite poor in Ghotki district. The overall illiteracy rate for 2012-13 (for the	Reactive approach prevails in the district i.e., the government and all other stakeholders come into action

⁵⁹ Pakistan Floods 2010, Ghotki District Profile (Jan, 2011)

⁶⁰ http://www.pdma.pk/dn/Portals/0/Popu_Ghotki.pdf

⁶¹ Rule of 70 <http://controlgrowth.org/double.htm>

⁶² Pakistan Social and Living Standards Measurement Survey (PSLM), 2010-11, pp. 379

⁶³ *Ibid*, pp. 392

⁶⁴ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

Physical/material	Social/organizational	Attitudinal/motivational
Celsius. Very high temperature not only affects vegetation but also creates problem for the individuals like heat stroke, skin burn and sometimes death of a person. Children, women, old and disabled people are vulnerable to severe hot climate.	population of 10 years and above) is 55%; for males it is 33 and for females it is 79 %. For the urban rural comparison, rural illiteracy rate is higher than the urban. Illiterate people cannot be easily mobilized and made aware of the different disasters' risks.	when disaster occurs whereas the need is for proactive approach (disaster risk reduction) where actions are taken in advance of the disaster. Therefore, gravity of the situation demands for a paradigm shift from reactive approach to a proactive one.
Climate change is said to be responsible for these (2011, 2012, and 2013) heavy rains because usually Sindh province receives very little rains (on average 5 inches ⁶⁵ during monsoon). Environmental scientists agree that they cannot explain the floods in Sindh as the area that received the rain is normally very dry.	Immediate response by the Government, in terms of relief activities, in emergencies has always been elusive. It always responds in the end and mostly when the situations has somewhat improved.	Some influential people of the area always try to influence the social mobilizers and demand some financial compensation for allowing mobilization activities.
There are settlements in the district, which are situated in the low lying risk areas called <i>Katcha</i> . These are the areas, which are exposed to regular occurring of floods.	Lack of institutional capacity to deal with disasters and development in the district.	There is always little participation of vulnerable communities in flood mitigation and planning process.
Urban flood situation gets intense in rainy season because of the poor drainage system. The rainwater finds no exist and enters into the houses rendering them vulnerable to collapse.	Lack of coordination amongst all stakeholders is a major hindrance in implementation of the disaster risk management process.	
Disaster risk reduction mainstreaming is missing in almost every department's developmental projects.	Lack of job opportunities in the district is common and consequently youth tends to get involved in criminal activities.	
Early Warning systems, in Pakistan, lack the basic equipment, skills and resources ⁶⁶ . Similarly, early warning system for the floods in the district is not up to the mark. Monitoring stations from the agriculture department, in some instances, were unable to take the measure of water level and report them, timely.	There is a lack of Community Based Disaster Risk Reduction (CBDRM) projects in the vulnerable areas of the district. Focus of the different organizations working in the area is only towards relief side.	
The district lack funds and resources for risk reduction projects. The government	Risk assessment is the process of hazard identification, analysis and determination of appropriate ways	

⁶⁵ Disaster Risk Management Plan, Sindh province, (2008), PP. 34

⁶⁶ Government of Pakistan (2006), "National Plan: Strengthening National Capacities for Multi-hazard Early Warning & Response System (Phase-I)", Cabinet Division, pp.8

Physical/material	Social/organizational	Attitudinal/motivational
and the people both are in dire need of funds and resources like boats, life jackets, first aid kits, ropes, torches etc.	to control these hazards. At the district level, there is a deficiency in risk assessment of disaster prone areas. Vulnerability map (used to identify vulnerable locations) of the district is also not available.	

3.1.3 Capacity

Capacities are resources, means and strengths, which exist in households and communities and which enable them to cope with, withstand, prepare for, prevent, mitigate or quickly recover from a disaster. The combination of all the strengths attributes and resources available within a community, society or organization that can be used to achieve agreed goals constitute its capacity to cope with hazards⁶⁷.

Physical/Material Capacity

In most disasters, people suffer their greatest losses in the physical and material realm. Access to physical/material things or objects count as physical capacity. A few examples of physical and material resources are cash, food, land, properties and tools.

Social /Organizational Capacity

When everything physical is destroyed, people still has their skills, experiences and knowledge; they have family and social networks. They have leaders and systems for making decisions. They also have local, collective 'wisdom' reflected in their cultural practices that help them reduce or cope with disaster risks.

Attitudinal/Motivational Capacity

People also have positive attitudes and strong motivations such as the will to survive and willingness to help each other.

⁶⁷ Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

Capacity Matrix

Physical/material	Social/organizational	Attitudinal/motivational
Ghotki contributes significantly in agriculture sector of Sindh because its climate is suitable for production of various food items e.g., rice, sugarcane, cotton, wheat. The annual production of wheat and cotton, over the period 2008-09, was 363.2 (000 Tonnes) and 279.4 (000 Bales) respectively. Food self-sufficiency minimises threats of food security in pre and post disaster events.	District Disaster Management Authority (DDMA) of Ghotki district has been established in the DCO's office on a temporary basis. DDMA formulates disaster plan for the district and assigns roles and responsibilities to the local district departments. DDMA carries out emergency response and relief activities in the affected areas.	Advocacy seminars and trainings regarding disaster risk reduction (DRR) are very limited but have been initiated by different NGOs for the mobilization of vulnerable communities against hazards (floods, rainfalls etc.).
District Ghotki has number of small and big manufacturing units. Fauji fertilizer company, Mari Gas Company Ltd, Engro Chemicals, Liberty TNB Nau-Kot Power Plant and Tullow Developers of Pakistan Ltd Khenju are located in this district ⁶⁸ . These industries are the source of employment and are also useful in the economic uplift of the people.	Community based organizations (CBOs) and citizen community boards (CCBs) of the local vulnerable communities act as a bridge between community and aid agencies. Active people from the community are part of these organizations which facilitate the humanitarian organization work at the grass root level.	Indigenous knowledge of the local communities is a great asset not only for the vulnerable communities but also for the humanitarian organizations. Humanitarian Organizations do consider suggestions from local communities and incorporate those in their policies.
Road network is considered as a vehicle for economic development. The district is well-connected with other districts through good quality roads. Total good quality roads length is 394 kilometres in this district ⁶⁹ . These roads can be used as evacuation point in flood disaster. Good roads are also helpful in carrying out relief activities.	In district Ghotki, each <i>taluka</i> has Municipal Authorities (TMAs), which are responsible for the solid waste management, drainage and sanitation and water supply facilities. In each <i>taluka</i> , certain schemes of water supply and drainage schemes have been introduced by the government.	Volunteers and philanthropists from all over the districts provide all kind of services whether in-kind or financial.
District Ghotki has well established and efficient canal irrigation system from <i>Guddu</i> Barrage. Ghotki feeder canal and <i>Kandhar</i> canal are the main irrigation sources for this district which helps in agriculture productivity.	During emergency, Government departments help the disaster hit communities in evacuation and try to maintain law and order situation in the area.	Local people use their local approaches for disaster risk management. They have their own indigenous knowledge and concepts of risk management.
Ghotki district is rich in livestock i.e. cattle, buffalo, goat and sheep are found in every part of district Ghotki and there are many dairy farms in district Ghotki. Livestock also	Law Enforcement Agencies are important stakeholders in relief activities. <i>Jawans (Soldiers)</i> of Pakistan Army assist the affected communities directly and help them	In post flood activities, Psycho-Social problems of the people (especially children and women) were addressed by the psychologists, hired by different

⁶⁸ Tranche Condition D (i) (2nd ADF) by Sindh Developed Social Services Program (SDSSP), <http://www.fdsindh.gov.pk/sdssp/TMA%20-%20Ghotki%20-%20LSU%20Assessment%20Report.pdf>, pp. 16

⁶⁹ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp. 262

Physical/material	Social/organizational	Attitudinal/motivational
provides rich food such as meat, milk, eggs, and poultry meat.	in evacuation, by providing transport facilities. Army doctors provide medicines and other health facilities to the affected people especially to the children and women.	organizations. Religious scholars (<i>Ulemas</i>) also contribute their part by counselling flood affected people.
The total educational facilities in district Ghotki are 1,998. The district has 1,854 primary schools. There are 104 middle schools, 33 secondary and 7 high secondary schools. These school buildings are also used as shelter and evacuation centres in emergency.	After the 2010, 2011 and 2012 floods, different NGOs /INGOs have focused their attentions on shelter, wash, and livelihood activities. These organizations include World Food Organization (WFP), CARE, PLAN, OXFAM, INSAF, and NCHD ⁷⁰ . They provide funds and relief stuff to the affected people, to enable them to stand on their own.	
According to the Health Information Management System (EDO health, 2012), total health facilities in the district are 54. There are four hospitals, 3 Rural health centres (RHCs), 32 Basic health units (BHUs), 3 Mother and child health centres (MCHs) and 11 Dispensaries. These health facilities provide health services both in rural and urban areas of the district, not only as a routine but also in extreme circumstances.	The overall literacy rate for 2012-13 (for the population of 10 years and above) is 45%; for males it is 67 and for females it is 21 %. For the urban rural comparison, urban literacy rate is higher than the rural. Literate people can easily be mobilized and made aware of the different disaster risks.	

⁷⁰ UNOCHA, Pakistan Floods 2011, Ghotki District Profile, April 2012

4 Sectoral DRR Mitigation Measures

4.1.1 Education

- The NGOs should work on awareness building programs for encouraging enrolment in schools, by incorporating teachers, students and youth in their community based programs. Increased enrolment would lead to enhanced literacy and literate people can easily be mobilized and made aware of the different disaster risks.
- NGOs working in the education sector should organize community-based programs that provide girls with opportunities to develop their skills (i.e., livelihood skills), providing information to parents about their children's learning or about the benefits of education.
- Affected or damaged schools should be repaired and reconstructed on priority basis with DRR principles in view.
- Government should introduce disaster risk reduction courses for teachers' training and should add DRR in the curriculum to support large-scale awareness.
- Local Philanthropists should be encouraged to take initiative to raise an emergency fund for immediate repair of infrastructure, support to affected poor students and parents after any disaster.
- Government should introduce a 'School Safety policy' taking all locally relevant hazards into account and adopting DRR measure for the existing schools and construction of new schools.
- From pre-school to secondary school, Integrate DRR trainings into the formal and non-formal education curricula.
- NGOs and other organizations working in the education sector should organize workshops to provide teachers with training on disaster preparedness and early warning signs.
- Education department should produce support materials linked with disaster risk reduction for teaching and learning.
- The Government and NGOs should invest in DRR sector and should incorporate DRR measures in improving school buildings as these can be used as shelter and evacuation centres in case of emergency.
- Incorporate disaster risk reduction measures i.e, ensure their suitable location and construction while establishing new schools in order to avoid future hazard threats.
- Humanitarian organizations should take on board the District Education Department and should provide trainings and necessary skills to the education officials to enable them to prepare School Based Disaster Risk Management Plans (SBDRM-Plan) for each school in the district

4.1.2 Infrastructure

- Awareness programs should be organized by District Disaster Management Authority about the need of land use planning and building codes so that it can be followed by all the stakeholders, to avoid future threats.
- The Communication and Works department should utilize the available funds on the maintenance of roads and find alternative routes that can be used in case of emergency.
- Active people from the community can be used for disseminating early warning for the local endangered communities because people have lot of trust in informal and locally influential sources of information; e.g. a religious leaders, a teachers, an NGO worker or a local government official. But firstly these active people should also be trained on EWS.
- Organizations that are involved in construction of homes, health, education and other facilities should work with the government to establish and strictly enforce strict construction codes so that of future threats can be mitigated.
- DRR Planners, District and Provincial authorities should identify safe land and location for low-income citizens who are living near the flood prone areas.
- Awareness regarding investment in the DRR sector should be initiated in order to avoid future threats.

4.1.3 Health

- NGOs should encourage the community participation in the awareness sessions, programs and trainings, related to water treatment practices and hygiene practices, which will capacitate the vulnerable communities of the area against the communicable diseases.
- Health department should take care of establishment of health facilities focused on certain population. Department should take care of health related issues. But the responsibilities have to be identified.
- Advocacy seminars should be organized at district level for the training of medical staff to implement National Health Programs.
- DDMA should assign the responsibilities of health department to ensure the availability of medical and paramedical personal in hospital, BHU's, MCHC, and RHC's. Moreover, mobile health teams should be mobilized so that the health facilitators can visit the local areas to provide basic health care especially for the vulnerable group such as people with disabilities, elderly persons, children, females and those who hesitate to go to the hospitals because of cultural constraint and long distance.

4.1.4 Livelihood

- Fodder stocks should be maintained by the livestock department of the district to cope with emergencies.
- Livestock owners should be encouraged to insure their cattle heads.

- Capacity can be built through awareness programs on livelihood diversification.
- Flood control and salinity control projects can be conceived to make more land available for cultivation
- NGO's organize advocacy seminars, trainings and awareness sessions for improved agricultural practices by incorporating CBOs' chairmen and presidents as they have great influence over the community members.
- Irrigation department should carry out hydraulic studies so that flooding can be avoided and find out catchment areas and watercourses for surface run off.

4.1.5 Food

- Number of Food distribution point should be established in the emergency hit area and should be easily accessible to most of the needy population.
- For extremely vulnerable groups such as elderly persons, people with disabilities, female and children, separate desk and queues at food distribution point should be established so that they do not suffer difficulties in attaining food
- Civil administration should look after the availability of food.

4.1.6 Wash

- Innovative approaches are required to ensure the availability of low-cost, simple, and locally acceptable water and sanitation interventions. Integrating these approaches into existing social institutions such as schools, markets, and health facilities is required.
- Taluka Municipal workers should monitor the quality of water and should distribute chlorine tablets for water purification in order to avoid diseases like cholera and hepatitis etc.
- DRR measures should be incorporated in the construction of sewerage system in order to minimize the possibility of over flowing of sewage water in rainy days and to mitigate the hygiene issues.

4.1.7 Government and Humanitarian Sector

- District Disaster Management Authority should coordinate with the NGOs working in different sectors to address the problems of people. The NGOs working on different projects can be invited and can be asked for initiation of DRR projects in the vulnerable areas of the district.
- Coordination among key stakeholders should be strengthened for the implementation of disaster risk reduction measures and effective emergency response through assignment of responsibility to each stakeholder. Stakeholders must have joint meetings to address the issues faced by them.
- District Disaster Management Authority should appeals for assistance through media at the national and international level.

- NGOs should follow the bottom up approach for the initiation of any CBDRM project. The bottom-up approach implies that whole process should start at the community level. Community members should invite to participate in every step of the planning process. It will give a sense of ownership to the community who in turn constructively contribute to achieve project objectives.

5 Coordination and Support Services

5.1 Important Contacts

5.1.1 Departmental Focal Points

S#	Department	Office In charge	Designation	Location	Telephone Numbers	
					Office	Mobile
1	Administration	Ahmad Ali Qureshi	Deputy Commissioner	Ghotki	0723-652016	0300-3124897
		Rana Rauf	ADC-I	Ghotki	0723-661566	
		Mahtab Waseem Azhar	ADC-II	Ghotki	0723-652065	
		Fayaz Hussain Rahoojo	Assistant Commissioner	Ghotki	0723-681333	0333-5228513
		Muhammad Wasif Saeed	Assistant Commissioner	Ubauro	0723-688652	0300-5993007
		Zeeshan Shabir Rana	Assistant Commissioner	Mirpur Mathelo	0723-651652	0300-8525277
		Ghulam Shabir Rind	Assistant Commissioner	Khan Garh	0723-653222	0342-3067104
		Ghulam Yasin Panhwar	Mukhtiarkar	Mirpur Mathelo	0723-651652	0301-3456515
		Ghulam Shabir Kalhoro	Mukhtiarkar	Ubauro	0723-688411	0300-3949550
		Nazir Ahmed Mahar	Mukhtiarkar	Khan Garh	0723-653222	0300-9316601
		Mr. Qurban Indhar	Mukhtiarkar	Daharki		0300-2177191
		Zahid Mahar	Mukhtiarkar	Ghotki	0723-681039	
2	Police	Abdul Salam Sheikh	S.S.P	Ghotki	0723-651670	0302-2547778
3	Irrigation	Anwar Ali Shal	Director	Ghotki	0723-684568	0300-8310987
4	Health	Syed Sikandar Ali Shah	District Health Officer	Ghotki	0723-650001	0302-8233773
5	Education	Ghulam Ali Balo	District Education Officer	Ghotki	0723-651993	0300-3558117
7	Hesco	Manzoor Aman Sheikh	XEN	Ghotki	0723-681914	

Source: DC office Ghotki

5.1.2 Emergency Response

S.No	Name or Organizations	Office Contact
1	Edhi Ambulance	115
2	Electricity Complaint	118
3	Police Emergency	15
4	Telephone (Complaint)	1218
5	Telephone Enquiry	1217
6	Sui Gas Help line	1199
7	PIA Flight enquiry	114
8	TCS Courier	0723-682252
9	Railway complaint	0723-719536

5.1.3 Police Stations in Ghotki

Ghotki		
Taluka	Rank and Name	Office / Mobile Number
Ghotki	SP Abdul Saleem Sheikh	0723-681882
Khangarh	SHO Zulfiqar Ali Mehr	0723-653210
Daharki	SHO Khalid Hussaim Dari	0723-642193
Mirpur	DSP Mustaq Ahmad Qureshi	0723-651668
Mirpur	Qaimdin Smoro	0723-651688
Ubaro	DSP Yaar Muhammad Rind	0723-688347
Ubaro	Inspector Rana Asif Ali	0723-688450

5.2 List of NGOs Working in District Ghotki

Name	Contact
Gul Rural Development Organization Ghotki	0723-651022/0301-3258788
Jeejal Foundation Sindh	0723-684019/03018319019
Lanjari Development Foundation	0723-712252/0301-3838960
Village Development Organization	0723-682689
Shah Abdul Latif Development Organization	021-34680660/03023159251
Takhleeq Foundation	0213-4130313
Marvi Rural Development Organization	071-5804711
Rural Development Policy Institute	0300-5003704
Health and Nutrition Development Society	0092-21-34532804

Source: www.himpakistan.pk

5.3 Health Facilities

5.3.1 Public Hospitals in District Ghotki

S.No	Hospitals	Name of In charge M.S	Contact Number
1	DHQ Hospital Mirpur Mathelo	Dr. Shabeer Ahmed Awan	0333-7249914, 0723-661655
2	THQ Hospital Ghotki	Dr. Lachhman A Nankani	0300-8318206, 0723-682221
3	THQ Hospital Daharki	Dr. Allah Dino Daudpoto	0333-3194438, 0723-643019
4	THQ Hospital Ubauro	Dr. Ayaz Ali Jumani	0300-9319302, 0723-688528
5	Govt. SHBM Hospital Khanpur Mahar	Dr. Fayyaz Ali Rajput	0300-3199896, 0723-653520

5.3.2 List of Health Facilities

List of health facilities in district Ghotki are provided by WHO for 2010

Taluka	Union Council	Health Facility Name	HF_TYPE
Daharki	Dad Laghari No 12	BHU DAD LEGHARI	BASIC HEALTH UNIT
Daharki	Dad Laghari No 12	BHU AHMED ALI PITAFI	BASIC HEALTH UNIT
Daharki	Keenjhar No 13	BHU NOORABAD	BASIC HEALTH UNIT
Daharki	Keenjhar No 13	BHU NOOR ABAD	BASIC HEALTH UNIT
Daharki	Raharki No 09	BHU BAGO BHUTTO	BASIC HEALTH UNIT
Daharki	Saindino Malik No 10	BHU GHULAM HYDER LEGHARI	BASIC HEALTH UNIT
Daharki	Saindino Malik No 10	BHUNMUHAMMAD KHAN SHAR	BASIC HEALTH UNIT
Daharki	Yaroo Lund No 14	BHU SONO PITAFI	BASIC HEALTH UNIT
Daharki	Saindino Malik No 10	MCHC DAHARKI	MATERNAL & CHILD HEALTH CENTRE
Daharki	Keenjhar No 13	RHC JARWAR	RURAL HEALTH CENTRE
Daharki	Saindino Malik No 10	RHC DAHARKI	RURAL HEALTH CENTRE
Ghotki	Adalpur No 24	BHU TAJ MOHAMMAD RUK	BASIC HEALTH UNIT
Ghotki	Bagodeho No 29	BHU JAHAN PUR	BASIC HEALTH UNIT
Ghotki	Bagodeho No 29	BHU BAGO DAHO	BASIC HEALTH UNIT
Ghotki	Bagodeho No 29	BHU BAGO DAHO	BASIC HEALTH UNIT
Ghotki	Beriri No 27	BHU ALI MAHAR	BASIC HEALTH UNIT
Ghotki	Beriri No 27	BHU SANGHIRI	BASIC HEALTH UNIT
Ghotki	Ghotki	BHU HUSSAIN BELI	BASIC HEALTH UNIT
Ghotki	Kadirpur No 26	BHU QADIR PUR	BASIC HEALTH UNIT
Ghotki	Umer Daho No 28	BHU AYUB LAKHAN	BASIC HEALTH UNIT
Ghotki	Adalpur No 24	DISP SAJAWAL KHAN DHONDHO	DISPENSARY
Ghotki	Beriri No 27	DISP CHANGULANI	DISPENSARY
Ghotki	Ruk No 30	DISP MUHAMMAD PUR	DISPENSARY
Ghotki	Khohara No 31	TALUKA HOSPITAL, GHOTKI	HOSPITAL
Ghotki	Khohara No 31	RHC ADIL PUR	RURAL HEALTH CENTRE
Khangarh	Mithree No 33	BHU THIKRATHO	BASIC HEALTH UNIT
Khangarh	Mithree No 33	BHU LOHI	BASIC HEALTH UNIT
Khangarh	Mithree No 33	BHU CHEECHRO	BASIC HEALTH UNIT
Khangarh	Mithree No 33	BHU SALEH MAHAR	BASIC HEALTH UNIT
Khangarh	Khanpur Mahar No 32	DISP KHAN GARH	DISPENSARY
Khangarh	Mithree No 33	DISP MUBARAKPUR	DISPENSARY
Mirpur Mathelo	Dad Laghari No 12	BHU GHULAM HUSSAIN LAGHARI	BASIC HEALTH UNIT

Mirpur Mathelo	Dhangro No 17	BHU DARWAISH NAICH	BASIC HEALTH UNIT
Mirpur Mathelo	Garhi Chakar No 18	BHU GARHI CHAKER	BASIC HEALTH UNIT
Mirpur Mathelo	Mir Pur Mathelo-1 No 15	TALUKA HOSPITAL, MIRPUR MATHELO	HOSPITAL
Mirpur Mathelo	Sono Pitafi No 20	SHEIKH HAMDAN BIN, KHANPUR MAHAR	HOSPITAL
Mirpur Mathelo	Garhi Chakar No 18	MCHC GARI CHAKAR	MATERNAL & CHILD HEALTH CENTRE
Ubauro	Kamu Shaheed No 07	BHU KAMO SHAHEED	BASIC HEALTH UNIT
Ubauro	Kamu Shaheed No 07	BHU KAMU SHAHEED	BASIC HEALTH UNIT
Ubauro	Khambra No 05	BHU KHAMBHRA	BASIC HEALTH UNIT
Ubauro	Langho No 02	BHU JAM KHAN SAMEJO	BASIC HEALTH UNIT
Ubauro	Langho No 02	BHU DEH DIL WARO	BASIC HEALTH UNIT
Ubauro	Wasti Jiwan Shah No 03	BHU SOI SHAREEF	BASIC HEALTH UNIT
Ubauro	Wasti Jiwan Shah No 03	BHU RAWANTI	BASIC HEALTH UNIT
Ubauro	Jhangal Malik (at Reti) 06	DISP MARO WALA	DISPENSARY
Ubauro	Langho No 02	DISP LANGHO	DISPENSARY
Ubauro	Ranwati No 04	DISP CHAK SHAHBAZPUR	DISPENSARY
Ubauro	Ranwati No 04	DISP JUMO KHOSO	DISPENSARY
Ubauro	Ubauro No 01	TALUKA HOSPITAL, UBAURO	HOSPITAL
Ubauro	Jhangal Malik (at Reti) 06	RHC RETI	RURAL HEALTH CENTRE