

PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



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A PROFILE OF DISTRICT JAMSHORO



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University of Sindh, Jamshoro

“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)

PAKISTAN EMERGENCY SITUATIONAL ANALYSIS

District Hyderabad

August 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:

iMMAP Pakistan Services Desk

H.# 25, College Road, F-7/2, Islamabad, Pakistan

Tel: +92.51.835.0755

eMail: cop@immap.org

Credits

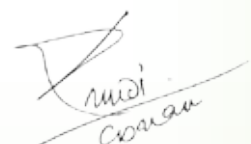
iMMAP has been providing Information Management [IM] and Disaster Risk Reduction [DRR] capacity building services in Pakistan since 2010. Based on our lessons learned, while interacting with thousands of humanitarian partners and government officials, both national and international; we believe that 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, Zeeshan Ahmad, Sarfaraz Meher Din, Muhammad Javed Iqbal, Muhammad Akhtar, Muneeb Muzamil, Mahwish Muzamil, Tariq Sardar, Muhammad Shafique, 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 emergency 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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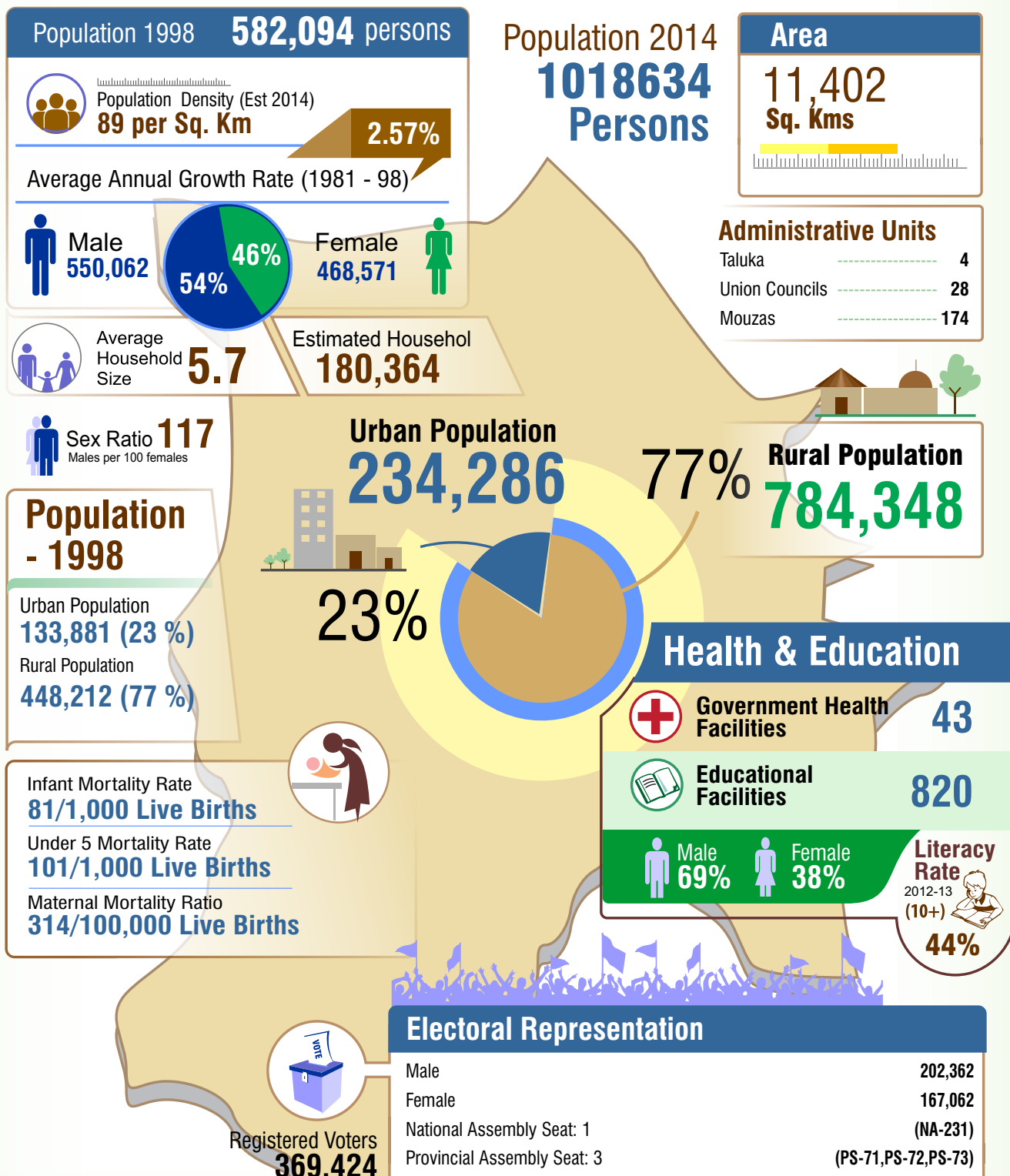
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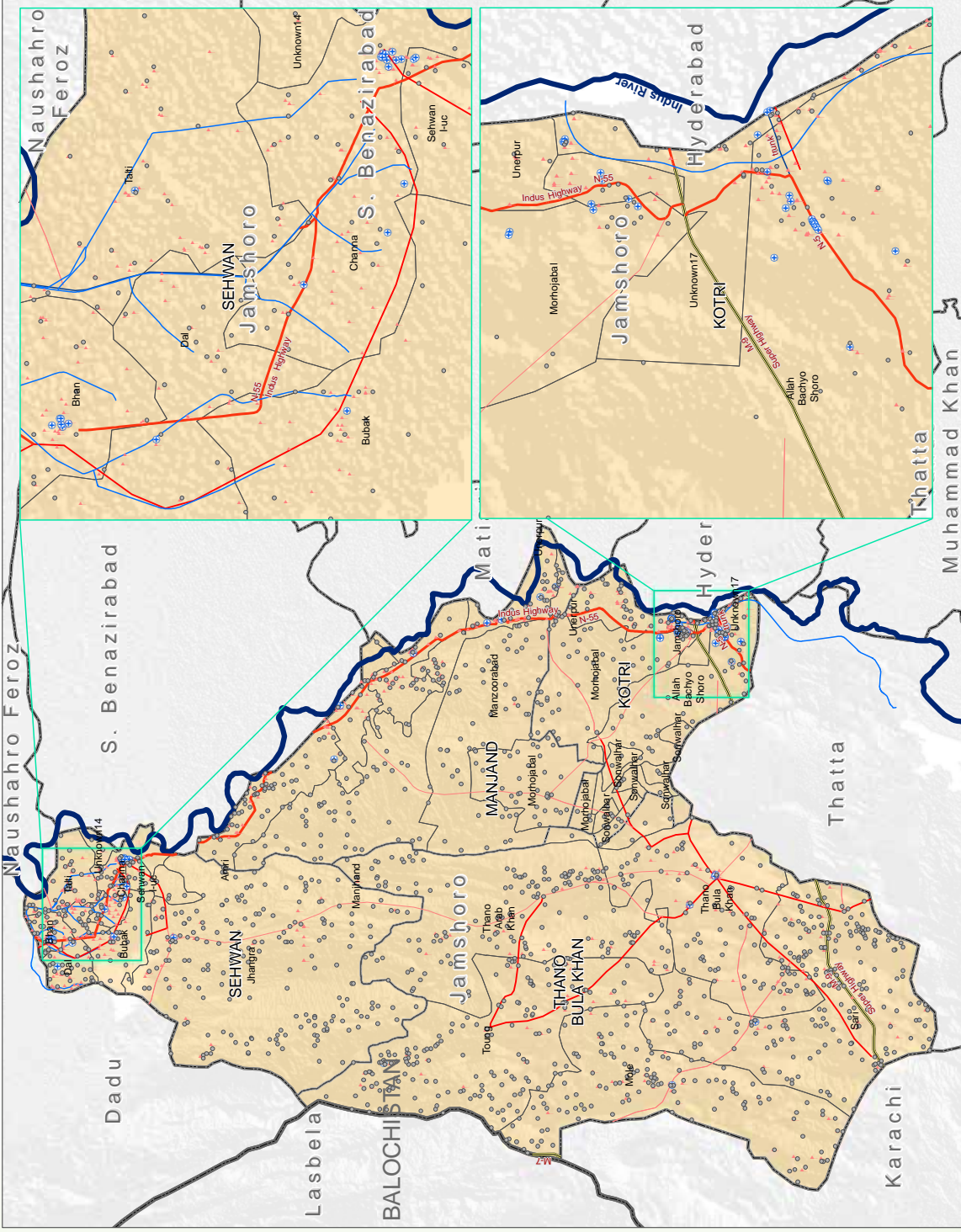
DISTRICT JAMSHORO

AT A GLANCE



Jamshoro - Reference Map

Aug, 2014



Legend

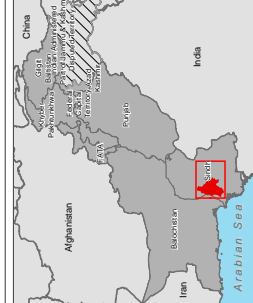
- Settlements
- Health Facilities
- Education Facilities
- Indus River
- Canals
- Road Network**
 - Motorway
 - Highway
 - Secondary
 - Tertiary
- Province boundary
- District boundary
- Taluka boundary
- UC boundary

IMMAP
IMMAP PAK - Jamshoro RefMap_v02_020814

Map Doc Name: IMMAP_PAK_Jamshoro RefMap_v02_020814
Creation Date: Aug 02, 2014
Projection/Datum: WGS84
Web Resources: <http://www.immap.org>

Map data source(s):
 Alhasan Systems Private Limited: Admin boundaries, Railway, Health Facilities, Education Facilities, Canals, National Geospatial Agency: Settlements
 Sindh Irrigation and Drainage Authority (SIDA): Rivers
 WFP: Roads

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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
TRF	Technical Resource Facility
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 Jamshoro is situated in the western part of the Sindh province. Jamshoro district was bifurcated in the month of December 2004 from district Dadu.

Historically, this region has been ruled by different dynasties, including the Soomras (1024-1351), the Summas (1335-1520), the Arghuns (1520-1650), the Kalhoras (1657-1783) and the Talpurs (1783-1843). In 1783 A.D, the Kalhoras were defeated by the Talpur dynasty and Sindh was divided, for administrative purposes, into seven parts, by the Talpur Mirs. When Britain invaded the subcontinent, General Charles Napier, a commander in the British Army, defeated the Talpur dynasty and conquered Sindh in 1843. He was appointed as the first Governor General of Sindh. The province was divided into different administrative parts and assigned to *Zamindars* (landlords) to collect taxes for the British government. Later on, the rulers developed these areas as urban centers. People migrated from other districts and provinces as well and started to reside here. The British Empire named these small developed areas as "Talukas". They built a network of roads, schools, dispensaries and many other civic amenities throughout the province¹.

After the independence of Pakistan, in 1947, district Jamshoro remained a part of district Dadu. This area continued to be neglected by the authorities but the gradual process of development has changed this district significantly. In 2004, Jamshoro was made a district after carving it out of district Dadu.

1.1.2 Geography

District Jamshoro lies in 67° 16" 20' to 68° 27" 37' east longitudes and 24° 58" 14' to 26° 36" 33' north latitudes. This district shares its boundaries on the north with Dadu district, on the east River Indus separates it from Shaheed Benazirabad, Matiari and Hyderabad districts, on the south lies Thatta district, south west Karachi district and on the west Kherthar Range make its boundary, which separates Sindh and Lasbela district of Baluchistan.

The lands of this district are mostly arid with some vegetation. Due to the hilly nature of the land, cultivation is scarce in this district. Irrigated croplands are on the border alongside the Indus River.

The climate of this district is pleasant. In summer, the northern part (Sehwan) is hotter than other parts of the district. The winters are dry and cold in this district.

¹ Hyderabad- An Economic Overview,(2005), Small and Medium Enterprise Development Authority (SMEDA), Hyderabad

1.1.3 Culture (Ethnicity, Religion and Politics)

Jamshoro 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.

People of this district are pre-dominantly Sindhi speaking but Urdu, Balochi and Brohi are also spoken in the district. Bhutto, Rind, Syed, Talpur, Chandio, Magsi, Soomro, Memon and Kalhoro are the major clans of this district. Islam is the religion of majority in this district followed by a minority of Hindu community.

The Town Sehwan is famous for the shrine of *Hazrat Makhdoom Usman Marvindi*, Popularly known as *Hazrat Lal Shahbaz Qalandar*. Thousands of people from all over the country come to visit (*ziarat*) and pay tribute to this great Saint during the annual URS on the 18th of Shaban, every year. Manchhur Lake is also one of the well-known places of Sehwan because it is the largest sweet water lake in the Asian continent. Taluka Manjhand is famous for the *Dargah of Hyder Shah Sanni* and the fort of Rani Kot, known as *Deewar-e-Sindh*².

This district is home to Mr. G.M Syed, a famous political leader, who pioneered the '*Jeay Sindh Movement*', a nationalist movement in Sindh. He is regarded as one of the founding fathers of modern Sindhi nationalism. He died on April 25, 1995. Currently, his grandson Syed Jalal Mehmood Shah is a prominent nationalist leader of this district. Pakistan People's Party (PPP) also has strong political base in this district. Talpur family represents PPP in this district. This district is represented by one national assembly and three provincial assembly seats. In the general elections of 2008, PPP won all the national and provincial assembly seats of the district³.

1.1.4 Administrative Division

District Jamshoro has its district headquarters at Jamshoro city. This district has four talukas, named: Sehwan, Kotri, Thano Bula Khan and manjhnd. It has 28 union councils and 174 mouzas (revenue village). Out of these mouzas, 139 are rural, 6 are urban, 11 are partly urban and 13 are un-populated mouzas.

Table 1.1-1: Administrative Division of District Jamshoro

Jamshoro	Kanungo Circles/ Supervisory Tapas	Patwar Circles/ Tapas	Number of Mouzas					
			Total	Rural	Urban	Partly urban	Forest	Un-populated
Jamshoro District	8	47	174	139	6	11	5	13
Sehwan Taluka	3	20	71	58	4	3	1	5
Kotri Taluka	2	7	26	22	2	1	1	-

² Report on Tranche Condition (2006), Taluka Administration, District Government Jamshoro, Sindh Devolved Social Services Program (SDSSP), Government of Sindh

³ Election Commission of Pakistan

(<http://ecp.gov.pk/electionresult/Search.aspx?constituency=NA&constituencyid=NA-231>) accessed on 09/05/2013

Jamshoro	Kanungo Circles/ Supervisory Tapas	Patwar Circles/ Tapas	Number of Mouzas					
			Total	Rural	Urban	Partly urban	Forest	Un-populated
Thano Bula Khan taluka	1	8	28	26	-	2	-	-
Manjhand Taluka	2	12	49	33	-	5	3	8

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 and 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.

Jamshoro district covers an area of 11,517 sq. km yet it has only 179 kilometers of good quality roads, which are inadequate for the area and its population⁴. A National Highway (Indus Highway, N55) and Express Way (M-9) connect Jamshoro with other major cities of the province. The district headquarter of Jamshoro is linked with its taluka headquarters of Thano Bula Khan, Manjhand and Sehwan through metalled roads.

1.1.6 Irrigation

Since the lands of this district lie at the bottom of Kheerther mountain range having high altitude as compared to Indus River, there is no canal system available in this district and only perennial water is available for cultivation. Besides, *katcha* area, alongside the Indus River, is irrigated with river water.

As the table 1.1.2 shows, majority of the mouzas are waterless (*barani*). Out of the 150 rural mouzas, 76 (51%) are arid, 59 (39%) are irrigated with the help of canals, and 36 (24%) are irrigated through tube wells.

Table 1.1-2: Mouzas 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
Jamshoro District	Number	150	59	34	36	4	4	76	4
	Percent	100	39	23	24	3	3	51	3
Sehwan Taluka	Number	61	41	7	16	-	3	15	1
	Percent	100	67	11	26		5	25	2
Kotri Taluka	Number	23	3	7	3	2	-	15	-
	Percent	100	13	30	13	9		65	
Thano Bula Khan Taluka	Number	28	3	1	15	1	1	26	-
	Percent	100	11	4	54	4	4	93	

⁴ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp.262

ADMINISTRATIVE UNIT		RURAL POPULATED MOUZAS	NUMBERS OF MOUZAS REPORTING SOURCE OF IRRIGATION						
			CANAL	RIVER	TUBEWELL/ WELL	RAVINE	SPRING/ STREAM/ KAREZ	ARID (BARANI)	FLOODING/ TORRENT
Manjhanda	Number	38	12	19	2	1	-	20	3
Taluka	Percent	100	32	50	5	3		53	8

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

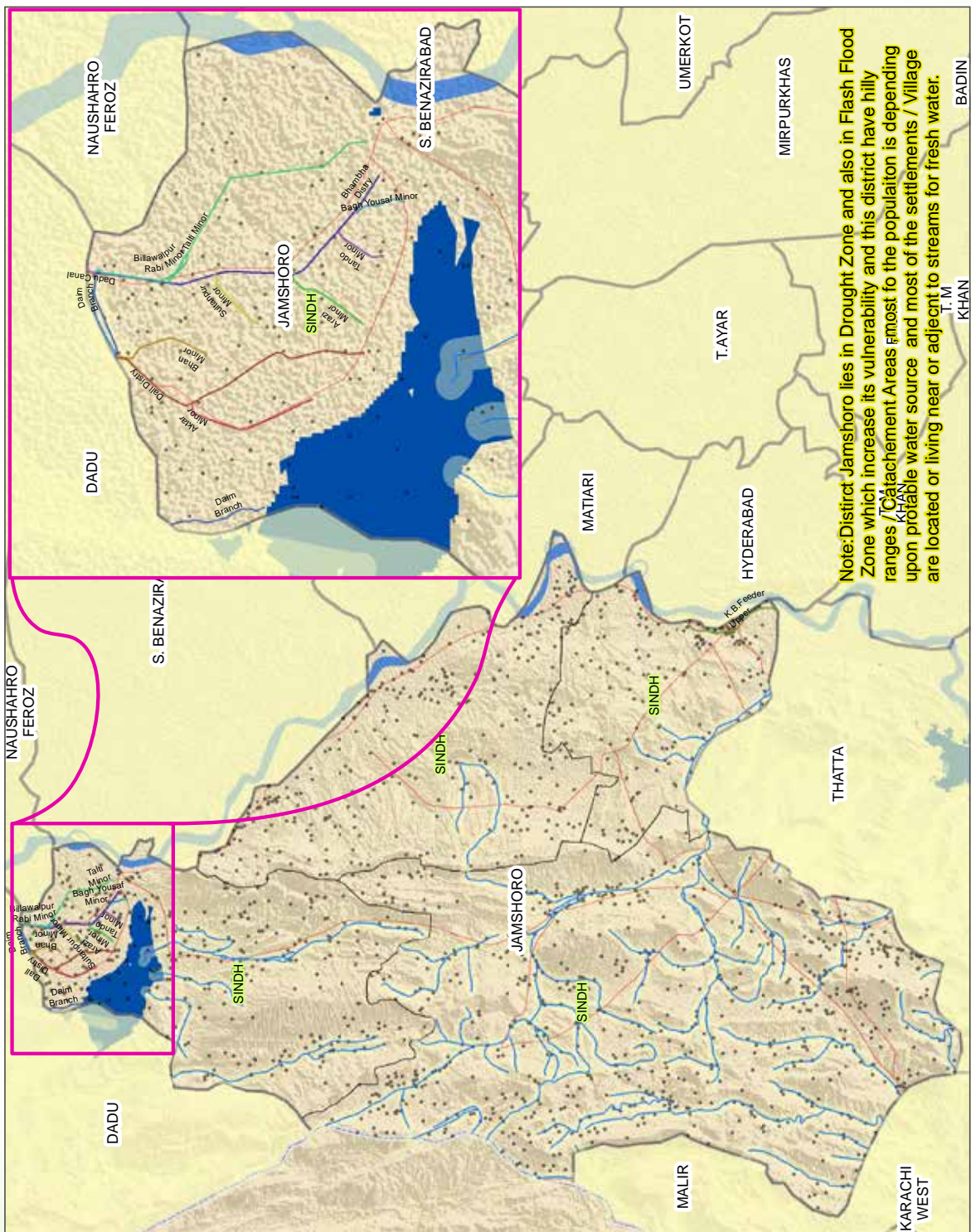
In the year 2008-09, 93% of the total sown area was irrigated and from this irrigated area 82% area was irrigated through canals and tube wells. From 2008-09 to 2009-10, there is 57% increase in canal irrigated area. The table below gives information regarding irrigation in the district.

Table 1.1-3: Irrigation by Type

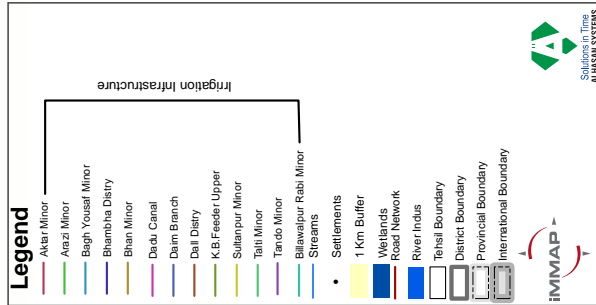
Irrigation Type	2008-09	2009-10
Canal	36,723	57,513
Tube well	12,519	12,437
Well	150	137
Total Irrigated Area	49,392	70,087
Un-Irrigated	15,531	5,063
Total Sown Area	64,923	75,150

Sindh-Jamshoro Irrigation Facilities Map

Date (July 2014)



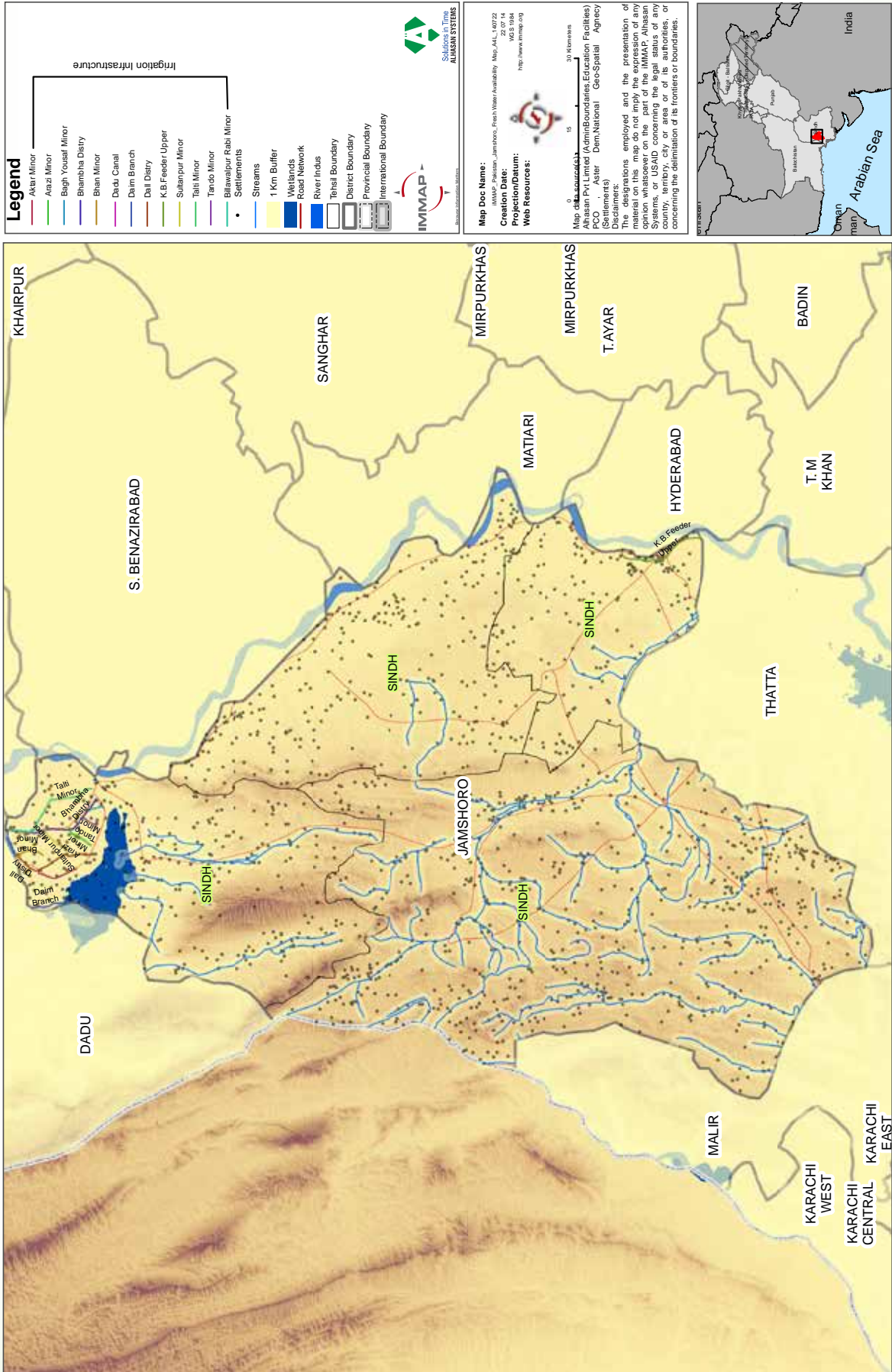
Note: District Jamshoro lies in Drought Zone and also in Flash Flood Zone which increase its vulnerability and this district have hilly ranges / Catchment Areas most of the population is depending upon portable water source and most of the settlements / Village are located or living near or adjacent to streams for fresh water.



Map Doc Name: KIMAP Pakistan Jamshoro Irrigation Facilities Map, A.L. 140722
Creation Date: 22 07 14
Projection/Datum: WGS 1984
Web Resources: <http://www.usaid.gov>
Map data source(s): Asian Frontier (Admin Boundaries, Education Facilities), PCO, Aster, Dem, National Geo-Spatial Agency (Settlements)
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Sindh-Jamshoro Fresh Water Availability Facilities Map Date (July 2014)



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.”⁵

Current Scenario of Solid Waste Management (SWM)

There is no proper updated data found on the current situation of Solid waste management system in the district Jamshoro. Likewise such other major districts of Sindh, District Jamshoro also has no proper solid waste management system right from collection to the disposal at landfill sites due to which, indiscriminate dumping and open burning of waste is a common practice.

Nevertheless, Taluka Municipal Administration’s (TMA) annual plan and such other concerned projects reports can be useful for understanding the situation. Though the urban parts of the district have waste management facilities, rural parts are neglected in this regard.

The Asian development report (2006-07) shows the Districts-wise development expenditure on urban water, sewerage and drainage (Govt.of Sindh/2006-07) for District Jamshoro as below then 5% i.e. 3-4% which is quite minimum as compared to the other major districts of districts. It clearly depicts the poor situation of sewerage & drainage (Sanitation) as well as solid waste management in the concerned district.⁶

Likewise solid waste management, Hospital waste management also shows poor scenario of waste management system in the District Jamshoro. According to collected data from hospitals, pressure on both hospitals i.e. Liaquat University Hospitals of Jamshoro and Hyderabad increasing tremendously and as such 15 % growth is observed in last 5 years in terms of OPD and hospitalization. This eventually means a direct increase of hospital waste in the concerned district. As far as concerned in aspect of Hospital waste management both hospitals serves about 12 nearby districts of interior Sindh and a catchment population of several millions as most prominent tertiary treatment. It was also found that the Hospital owns a high quality brand new incinerator which was installed in Jamshoro Hospital; some seven years ago have never operated since year 2009.⁷

⁵ Journal of Environmental and Occupational Science Environ Occup Sci 2012; 1(2):129-131

⁶ Draft final report vol.1 (July 2007); URBAN MUNICIPAL SERVICES: SINDH SECONDARY CITIES URBAN SECTOR ASSESSMENT (Prepared under ADB PPTA 4534 – Sindh Basic Urban Services Project)

⁷ Umeed Foundation; Hospital Waste Management, Project completion report (2008-09)

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 males⁸. Sex ratio in district Jamshoro is 117 male per 100 females, which is more than the ratio at the national level that is 106⁹. 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 rate¹⁰ and poor health care and non-availability of basic health facilities at the district level and provincial; level¹¹ are likely to be instrumental for this difference. District Jamshoro, like majority of the other districts in Sindh, is rural by its characteristics as 77 percent of the population resides in rural area as compared to the 23 percent that resides in the urban areas.

Table 1.2-1: Estimated Population of District for 2014

AGE GROUP (IN YEARS)	TOTAL			RURAL			URBAN		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
ALL AGES	1,018,634	546,988	471,646	788,292	426,163	362,129	230,342	120,825	109,517
00 -- 04	151,316	77,052	74,264	119,558	60,490	59,068	31,758	16,561	15,197
05 -- 09	159,123	85,410	73,713	125,198	67,453	57,745	33,924	17,956	15,968
10 -- 14	116,615	66,353	50,262	88,812	51,214	37,598	27,803	15,139	12,664
15 -- 19	101,870	53,335	48,535	76,210	40,693	35,517	25,659	12,642	13,018
20 -- 24	104,635	53,676	50,958	80,765	42,013	38,753	23,869	11,663	12,206
25 -- 29	84,799	46,167	38,632	66,144	36,486	29,658	18,654	9,681	8,974
30 -- 34	65,292	36,989	28,304	49,961	28,440	21,521	15,331	8,548	6,783
35 -- 39	48,554	26,725	21,829	37,209	20,543	16,666	11,345	6,183	5,162
40 -- 44	47,299	24,652	22,648	36,478	18,996	17,482	10,822	5,656	5,166
45 -- 49	36,821	20,117	16,703	28,256	15,442	12,815	8,564	4,676	3,888
50 -- 54	32,369	17,898	14,470	25,185	14,028	11,158	7,184	3,871	3,313
55 -- 59	20,075	11,513	8,562	15,373	8,893	6,480	4,702	2,620	2,082
60 -- 64	20,459	11,215	9,243	15,988	8,839	7,149	4,471	2,376	2,095
65 -- 69	10,083	5,598	4,485	7,887	4,427	3,460	2,196	1,171	1,025
70 -- 74	9,600	5,145	4,455	7,518	4,076	3,442	2,082	1,069	1,013
75 & ABOVE	9,724	5,143	4,581	7,749	4,130	3,619	1,976	1,013	962

Source: Estimated for 2014 population on the basis of table 4, Census 1998

⁸ A profile 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

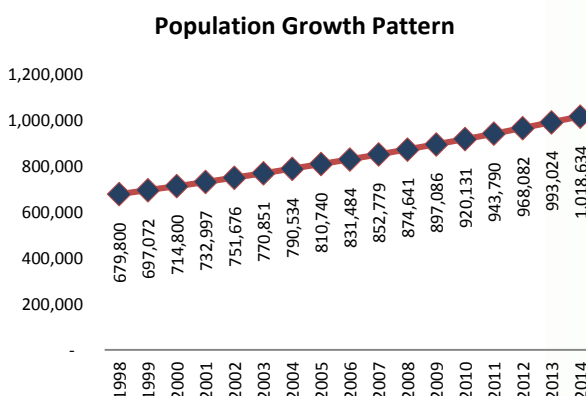
⁹ Labour Force Survey 2010-11: *Pakistan Bureau of Statistics*

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

¹¹ Mean distance from hospital/dispensary is 19 km for district: Pakistan Mouza Statistics, Table 15

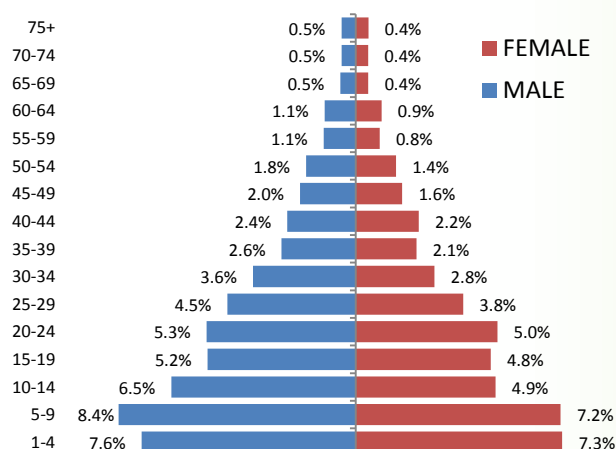
1.2.2 Population Growth Pattern

In 1998, the total population of talukas that currently form the district was 679,800. Population of district Jamshoro has an estimated growth rate of 2.57% per annum, which means that the population would double itself in 27.24 years¹² from 1998. 41.92 percent of the population is below 15 years of age and 2.89 percent is 65 years or above. The estimated population for 2014 is 1,018,634, showing a 50% increase in 16 years from 1998.



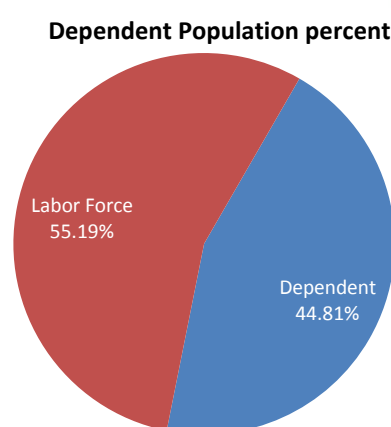
1.2.3 Population Distribution by Age and Gender

Out of the total population, 54 percent are males and 46 percent are females. Largest cohort of the population is 5-9 years, which decreases with 5 years interval. Total population in this cohort is 159,123. In all 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 Jamshoro district is 44.81 percent of the total population and the working population is 55.19 percent, which shows that dependency ratio¹³ in the district is 81 percent.



¹² Rule of 70 <http://controlgrowth.org/double.htm> retrieved on 05-03-2012

¹³ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

Table 1.2-2: Population Details by Taluka

Taluka	Area	Population	Male	Female	Pop Density	Sex Ratio	Average HH Size	Estimated HH
Kotri	1,290	350,894	189,483	161,411	272	117	6.1	57,524
Manjhand	2,304	162,696	87,856	74,840	71	117	6.1	26,671
Sehwan	2,371	242,017	130,689	111,328	102	117	5.2	46,542
Thano Bula Kha	5,437	263,027	142,035	120,992	48	117	5.3	49,628
Total	11,402	1,018,634	550,062	468,571	89	117	5.7	180,364

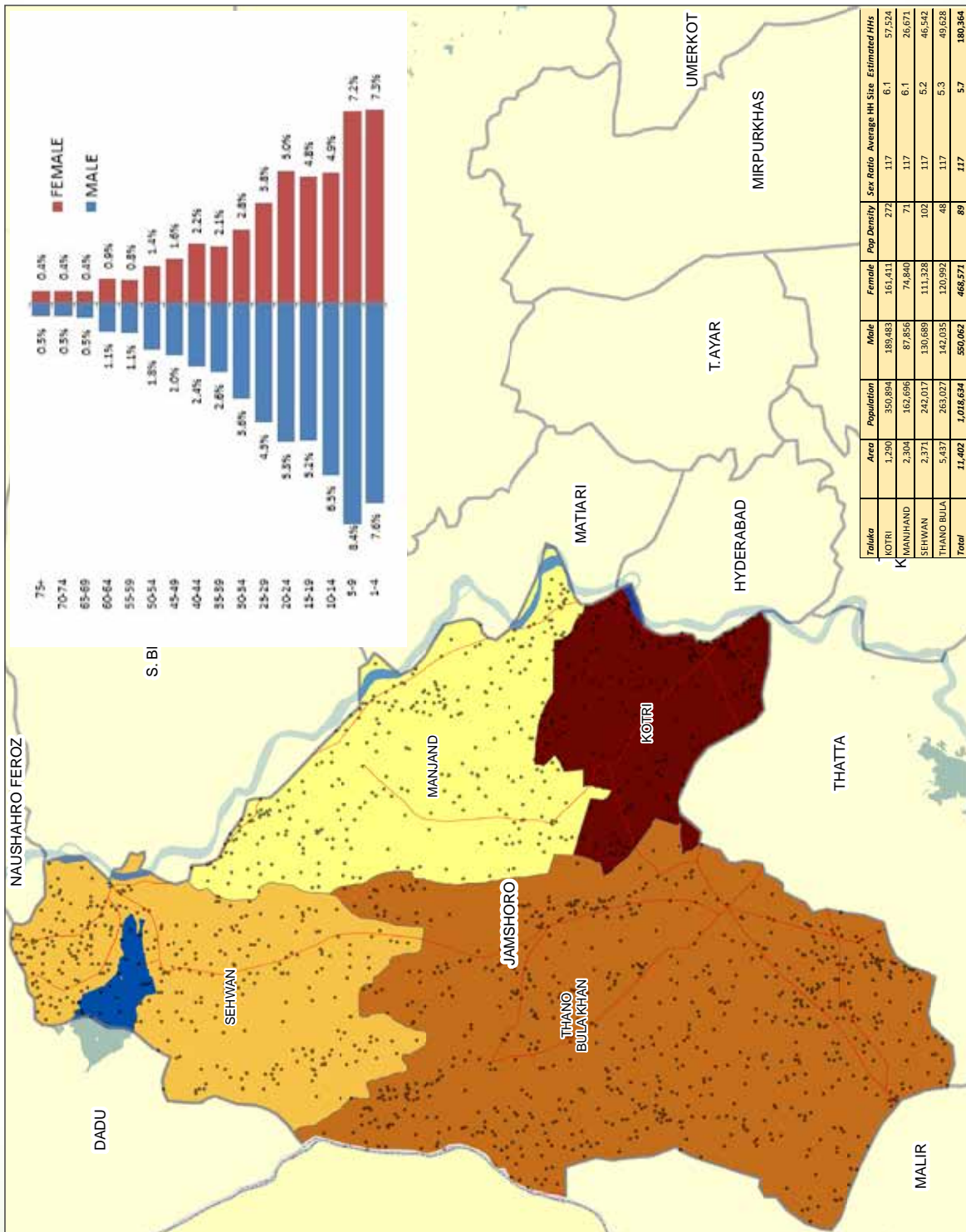
Source: Estimated using Table 1 of Census 1998

Table 1.2-3: Population by UCs

Taluka	UC Name	2,014	Taluka	UC Name	2,014
Kotri	U.C – 1 Kotri City	30,939		Bhan	36,042
	U.C – 2 Nangolane	36,989		Jhangara	34,868
	U.C - 3 Haji Manjho Shoro	32,945		Sehwan Total	242,017
	U.C Sonwalhar – 1	37,456	Thano Bula Khan	Thana Bula Khan	62,456
	U.C Sonwalhar – 2	37,456		Thana Arab Khan	39,873
	U.C Sonwalhar – 3	37,340		Tounge	69,865
	U.C Allah Bachayo Shoro	37,366		Sari	45,178
	U.C Jamshoro	37,425		Mole	45,655
	U.C Morho Jabal	31,566		Thano Bula Khan Total	263,027
	U.C Unarpur (Petaro)	31,412	Manjhand	Manjhand	32,786
	Kotri Total	350,894		Manzoor-A-Bad	38,954
Sehwan	Sehwan –I	26,533		Lakha	31,816
	Sehwan –II	26,442		Sann	29,405
	Channa	27,817		Amri	29,735
	Dall	30,704		Manjhand Total	162,696
	Bubak	27,429		Grand Total	1,018,634
	Talti	32,182			

Sindh-Jamshoro Population Density Map

Date (July 2014)



1.3 Livelihood

1.3.1 Main Sources of Livelihood/Income

While agriculture is the main source of employment for the rural population of the district, in the urban areas of the district, people are engaged in various economic activities like trade, services, personal business, and government and private jobs. Taluka headquarters are the main trading centers of this district.

The following table shows the number of rural mouzas reporting sources of employment in district Jamshoro. Majority of the male population is associated with agriculture (in 20% of rural mouzas). While in the category of some, services sector, personal business, agriculture and labor are frequent in male population. Since district Jamshoro is a rural district, where 77% of the population resides in rural areas, sources of livelihood are less diversified for the resident population.

Agriculture sector is the dominant employer for the population of this district. 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. In district Jamshoro, the share of non-agricultural households in the rural households is 37.1% percent, while agricultural households and livestock owners constitute 32.1% percent and 30.9% percent respectively¹⁴.

Given the cultural trait of Sindh and rural areas, where women actively work side by side with the men, the female participation in economic activity is reasonable in this district, as 25 mouzas (18%) have reported that women are also engaged in agriculture. In the category of some, services sector and casual labor are 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 EMPLOYMENT	LABOUR
MALE	MOSTLY	6	30	-	-	3	2	52
	SOME	72	97	19	11	53	11	92
	NONE	72	23	131	139	94	137	6
FEMALE	MOSTLY	-	25	-	2	10	-	55
	SOME	28	52	1	1	35	2	64
	NONE	122	73	149	147	105	148	31

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

¹⁴ 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

- None: less than or equal to 1 percent

1.3.2 Agriculture

Since the lands of this district are arid /barren mostly, agriculture production and productivity is not as efficient as in other districts of Sindh province. Nonetheless, given the water resources and climate, wheat, cotton, maize and vegetables are grown in this district. *Katcha* area alongside the Indus River is the main agriculture production area where vegetables are grown abundantly. Some of the areas in Sehwan taluka, where canal water arrives from Dadu canal, wheat, cotton and maize are produced. However, the productivity of agriculture is compromised due to the soil. In taluka Thanu Bula Khan, Onion is the main crop and approximate production of this crop is about 100,000 tons per year¹⁵.

Total reported area of the district in 2008-10 is 1,235,000 hectares, out of which 139,000 (11%) hectares are cultivated. Within the cultivated area, 75,000 hectares are net sown¹⁶ whereas 64,000 hectares are currently fallow lands¹⁷. The remaining 89% of the total reported area is un-cultivated; out of which 996,000 hectares are not available for cultivation and 98,000 hectares are culturable waste.

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

Jamshoro		Area
Reported Area		1,235
Cultivated Area	Total	139
	Net Sown	75
	Current Fallow	64
Un-cultivated Area	Total	1095
	Culturable Waste ¹⁸	98
	Forest	1
	Not available for Cultivation	996

Source: Table 4.13, Sindh Development Statistics 2011

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 Jamshoro

Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2008-09 (000 Tonnes/bales)	Area Sown in 2010-11 (Acres) FAO
Food	Wheat	30.3	98.9	-
	Maize	0.2	0.4	1,717
Cash	Sugarcane	0.7	30.6	0

¹⁵ Report on Tranche Condition (2006), Taluka Administration, District Government Jamshoro, Sindh Devolved Social Services Program (SDSSP), Government of Sindh

¹⁶ **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.

¹⁷ **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.

¹⁸ **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.

Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2008-09 (000 Tonnes/bales)	Area Sown in 2010-11 (Acres) FAO
	Cotton	17.5	75.2	45,454

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

1.3.3 Industry

Two out of four talukas have industrial estates in this district. The industrial state in Taluka Kotri, namely Kotri S.I.T.E, consists of of 160 factories. This industrial estate employs a large number of people from all over the country. Taluka Thano Bula Khan has an industrial state in Nooriabad along superhighway, which consists of 72 industrial units but where only 42 units are functional and providing employment to its inhabitants & outsiders. Mining is also a source of income for the inhabitants of this taluka¹⁹.

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 Pakistan²⁰. Besides, this sector provides foreign earnings, dairy products' needs, food security and daily cash income to the people of Pakistan. It helps to reduce the income inequalities, especially in the case of emergencies (floods, crop failure etc.). Hence this sector is considered as the 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 Jamshoro is given in the following table:

Table 1.3-4: Livestock in District Jamshoro

Livestock	Population
Cattle	163,732
Buffalo	118,740
Sheep	171,748
Goat	414,191
Camel	4,078
Horse	870
Mule	109
Ass	29,384
Domestic Poultry	281,818

Source: Livestock Census (2006)

¹⁹ Report on Tranche Condition (2006), Taluka Administration, District Government Jamshoro, Sindh Devolved Social Services Program (SDSSP), Government of Sindh

²⁰ Economic Survey of Pakistan (2011-12), Ministry of Finance, Government of Pakistan

1.4 Food Security

Food security can be broadly divided into four components²¹:

- **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 cotton, maize and pulses is produced in most of the rural mouzas of district Jamshoro. Besides, vegetables and fruits are also produced in the district. As the following table shows, wheat and rice are cropped in 58% and 2.8% of the mouzas respectively. The cultivation of food crop is less in this district. The table below also shows the cultivation of cash crops in the district. The overall crop based food production is extremely deficit in Jamshoro district²².

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
Jamshoro District	101	5	54	5	51	27	2
Sehwan Taluka	55	-	32	-	2	-	-
Kotri Taluka	14	2	10	5	18	1	1
Thano Bula Khan Taluka	6	-	-	-	24	-	1
Manjhand Taluka	26	3	12	-	7	26	-

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 is deficit in 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 Jamshoro is extremely deficit in food production²³. However, the trade and economic activities of this district ensure the availability of food through imports from neighboring districts.

²¹ Define by Food & Agriculture Organization

²² Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

²³ 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 low²⁴.

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 food²⁵.

The table below shows physical access to food in district Jamshoro by providing distances of different mouzas from the wholesale markets. Average distance from the fruit and vegetable markets of a mouza is 57 kilometres whereas the distance from the grain market is 51 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	150	50	8	28	32	30	52
	Percent	100		5	19	21	20	35
Grains Market	Number	150	51	10	36	25	23	56
	Percent	100		7	24	17	15	37
Fruit Market	Number	150	57	5	18	27	31	69
	Percent	100		3	12	18	21	46
Vegetable Market	Number	150	57	5	18	27	30	70
	Percent	100		3	12	18	20	47
Govt. Procurement Centre	Number	150	48	15	38	21	29	46
	Percent	100		10	25	14	19	31

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

²⁴ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

²⁵ 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 district²⁶.

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

Jamshoro	Water Delivery System				
	Tap Water	Hand Pump	Motor Pump	Dug Well	Other
Total	38	28	11	6	17
Urban	63	3	33	0	1
Rural	31	34	5	8	21

Source: PSLM 2012-13

Sanitation conditions in district Jamshoro are relatively poor where only 37% of the households use flush toilets and 44% of the households have non-flush toilets. The sanitation facility is comparatively worse in rural areas of the district and the female literacy rate is 38% 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
100	20	37	0	56	44	0	2	19

Source: PSLM 2012-13

In a nutshell, this district has sufficient in availability of food, poor socio-economic access; and relatively poor food utilization environment. Combining all the indicators of food security i.e. availability, access, utilization and stability; it can be ascertained that district Jamshoro is at the borderline of the food security.

²⁶ 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 public sector health facilities in district Jamshoro is 43²⁷. There is only one teaching hospital and four tehsil headquarter hospitals with a capacity of 90 beds. These health facilities are sufficient for only 21% of the estimated 2014 population of the district²⁸. Table 1.5.1 shows the details of these health facilities.

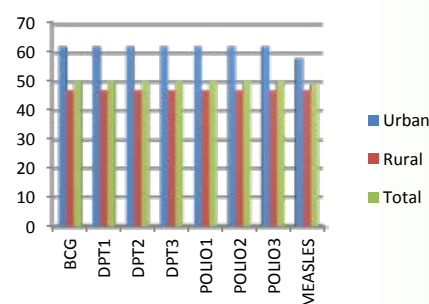
Table 1.5.1: Number of Public Sector Health Facilities by Type

Type	Number	Bed Strength
Teaching Hospitals	1	-
District headquarter hospital	0	0
Tehsil headquarter hospitals	4	90
Rural health centres	5	50
Basic Health units	16	34
Govt. Rural Dispensaries	14	-
MCH centres	1	-
Sub health centres	2	-
Grand Total	43	174

Health Facility Assessment, District Jamshoro 2012, Annex 1, Table 2.1

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 Jamshoro, around 56% of pregnant women have received tetanus toxoid injections. In urban areas, this percentage is 96% and in rural areas it is 43%²⁹. Record based³⁰ immunization data of district Jamshoro shows that 49% (Male 53%: Female 46%) of the children aged 12-23 months have received full immunization. In the urban areas this percentage is 59 percent (Male 56%: Female 58%) and in the rural areas it is 47% (Male 52%: Female 44%). The corresponding graph shows the percentage of children of 12-23 months that have been immunized by the type of Antigen based on records³¹.



²⁷ Health Facility Assessment 2012 (HFA) by Technical Resource Facility (TRF)

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

²⁸ WHO Standard is 2 health facilities and 25 beds per 10,000 people.

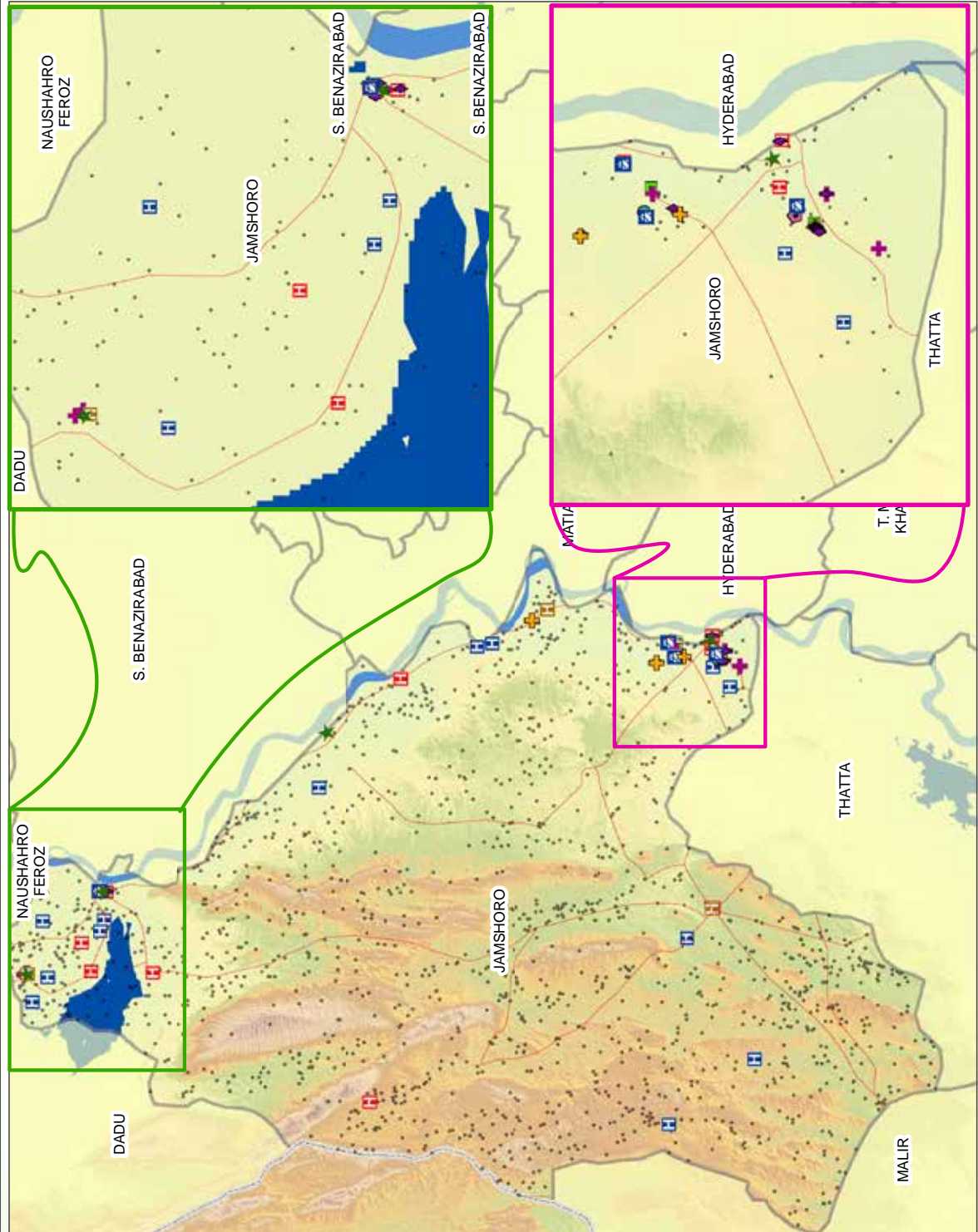
²⁹ PSLM 2012-13 Table 3.5

³⁰ Table 3.4 (b) Based on records: 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'

³¹ Table 3.5: Pakistan Social and Living Standards Measurement Survey (PSLM)2012-13

Sindh-Jamshoro Health Facilities Map

Date (July 2014)



Legend

- BASIC HEALTH UNIT
- GENERAL HOSPITALS
- RURAL HEALTH CENTER
- MATERNITY HOME
- FAMILY WELFARE CENTER
- DISPENSARY
- GENERAL PHYSICIAN
- DENTAL CLINIC
- SPECIALIST
- MEDICAL STORES
- TB
- VETERINARY
- Road Network
- River Indus
- Tehsil Boundary
- District Boundary
- Provincial Boundary
- International Boundary

Map Doc Name: iMAP_Pakistan_Jamshoro_Health_Facilities_Map_Atlas_140722
Creation Date: 22/07/14
Projection/Datum: UTM
Web Resources: <http://www.imap.org>

Map data sources: Ahasan Pvt. Limited (AdminBoundaries, Education Facilities), National Geo-Spatial Agency

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1.6 Education

1.6.1 Highlights

Literacy Rate (10 years and above)	44%
Adult Literacy Rate (15 years and above)	43%
GPI Primary	0.72
GPI Middle	0.69
GPI Secondary	0.62
GPI Higher Secondary	0.73
Population that has ever attended School	49%
Male	64%
Female	33%
Population that has completed primary level or higher	40%
Male	53%
Female	27%
Student Teacher Ratio	32
Primary	32
Middle	29
Secondary	30
Higher Secondary	38

Source: District Education Profile Hyderabad 2012-13, Pakistan Social and Living Standard Measurement Survey 2012-13

1.6.2 District School Enrolment Ratio

The education status is quite poor in district Jamshoro. The overall literacy rate (for the population of 10 years and above) is 44%; for male it is 59% and for female it is 28%. For the urban rural comparison, urban literacy rate is higher than the rural, which is 66% (male: 77% and female: 61%); whereas the rural literacy rate is 38% (male: 55% and female: 20%). Adult literacy rate (for the population of 15 years and above) is 43 %. Gross Enrollment Rate³² (GER) at the primary level in Jamshoro is 72% (Male: 83%, Female: 59%), in urban community it is 86% (Male: 92%, Female: 80%) and in rural community it is 68% (Male: 80%, Female: 52%). Net Enrollment rate³³ (NER) at the primary level in district Jamshoro is 45% (Male: 48%, Female: 43%), in urban community it is 57% (Male: 55%, Female: 60%) and in rural community it is 42% (Male: 46%, Female: 37%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural, Urban and Gender at different levels.

³² 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.

³³ 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	Matric	Primary	Middle	Matric
			Group (10-12)	Group (13-14)	Group (5-9)	Group (10-12)	Group (13-14)
Urban	Male	92%	64%	83%	55%	29%	11%
	Female	80%	66%	83%	60%	27%	20%
	Total	86%	65%	83%	57%	28%	15%
Rural	Male	80%	43%	47%	46%	17%	14%
	Female	52%	19%	14%	37%	12%	5%
	Total	68%	32%	32%	42%	15%	10%
Total	Male	83%	47%	53%	48%	19%	14%
	Female	59%	26%	25%	43%	14%	8%
	Total	72%	38%	40%	45%	17%	11%

Source: Pakistan Social and Living Standard Measurement Survey 2012-13

1.6.3 Gender and Level Wise Details

The total enrollment of students, in the government schools of district Jamshoro, is 86,643 (Male: 51,133 and Female: 35,510). Out of a total of 2,721 teachers, 2,009 are male and 712 are female teachers. This illustrates that one teacher is teaching averagely 32 students. The total boys' schools of District Jamshoro are 170, and the total female schools are 126. Besides, there are 524 mixed gender schools. Thus, the total number of schools is 820 and averagely every school has an enrolment of 106 students and a teaching staff of around 3³⁴.

Primary

The total number of primary level schools, that are reported, is 756 and the total enrollment at the primary level is 56,235 (Male: 32,773 and Female: 23,462). Total number of teachers, at the primary level, is 1,763, out of which 1,352 are male and 411 are female teachers. Thus, on an average, each primary school has an enrolment of 74 students with a teaching staff of 2. However, the student class ratio is 32 and each school has averagely around 2 class rooms.

Middle

There are a total of 20 middle schools reported. Total enrollment, at the middle level, is 3,827 (Boys: 2,267 and Girls: 1,560). The total number of teachers at the middle level is 132, out of which 99 are male teachers and 33 are female teachers. Thus, on an average, each middle school has an enrolment of 191 students with a teaching staff of 7. However, the student class ratio is 31 and each school has averagely around 6 class rooms.

Matric

There are a total of 36 secondary schools. Total enrollment at the secondary level is 19,022 (Boys: 11,736 and Girls: 7,286). The total number of teachers at the secondary level is 625, out of which male teachers are 440 and female teachers are 185. Thus, on an average, each

³⁴ District Education Profile Hyderabad 2012-13

secondary school has an enrolment of 528 students with a teaching staff of 17. However, the student class ratio is 39 and each school has averagely around 14 class rooms.

Higher Secondary

There are a total of 8 higher secondary schools in the district. Total enrollment at the higher secondary level is 7,559 (Boys: 4,357 and Girls: 3,202). The total number of teachers at the higher secondary level is 201, out of which male teachers are 118 and female teachers are 83. Thus, on an average, each higher secondary school has an enrolment of 945 students with a teaching staff of 25. However, the student class ratio is 64 and each school has averagely around 15 class rooms.

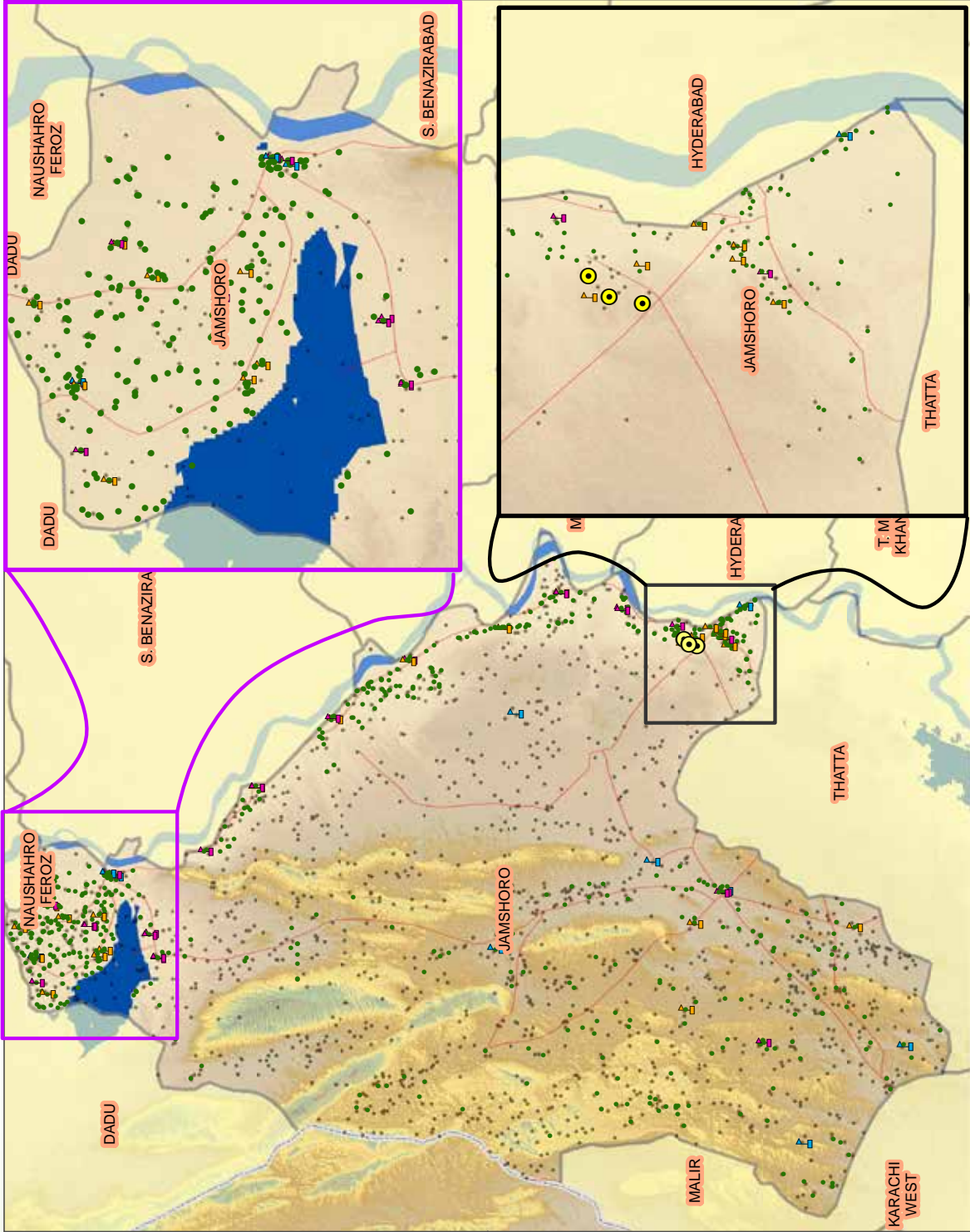
Table 1.6-2: Enrolment and Educational Facilities by level and Gender

Level	Enrolment			School Facilities				Teachers		
	Boys	Girls	Total	Boys	Girls	Mixed	Total	Male	Female	Total
Primary	32,773	23,462	56,235	151	110	495	756	1,352	411	1,763
Middle	2,267	1,560	3,827	5	5	10	20	99	33	132
Secondary	11,736	7,286	19,022	12	7	17	36	440	185	625
Higher Secondary	4,357	3,202	7,559	2	4	2	8	118	83	201
Total	51,133	35,510	86,643	170	126	524	820	2,009	712	2,721

Source: District Education Profile Jamshoro 2012-13

Sindh-Jamshoro Education Facilities Map

Date (July 2014)



Legend

- HIGH SCHOOL
- HIGHER SECONDARY
- MIDDLE
- PRIMARY
- UNIVERSITY
- Road Network
- River Indus
- Tehsil Boundary
- District Boundary
- Provincial Boundary
- International Boundary



Map Doc Name: iMAP_Philanthropy_Jamshoro_Education_Facilities_Map_A4L_140722
 Creation Date: 22/07/14
 Projection/Datum: WGS 1984
 Web Resources: <http://www.imap.org>

Map data source(s):
 Ahtsuan - Pvt Limited (AdminBoundaries Education Facilities), National Geo-Spatial Agency.

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2 Disaster History and Its Impact

2.1 Disaster in District

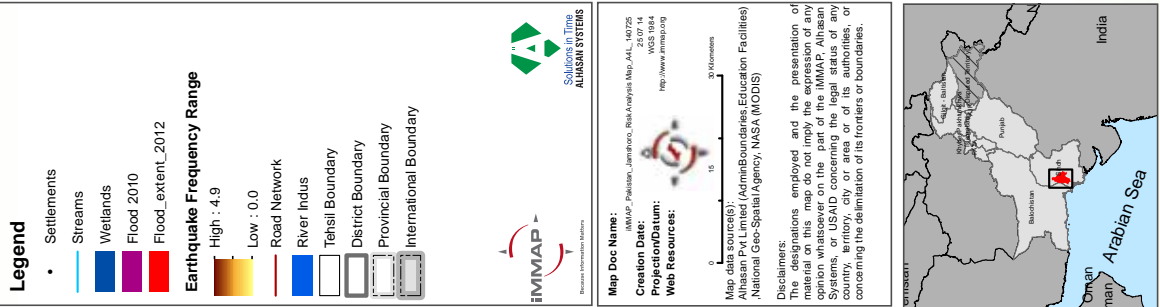
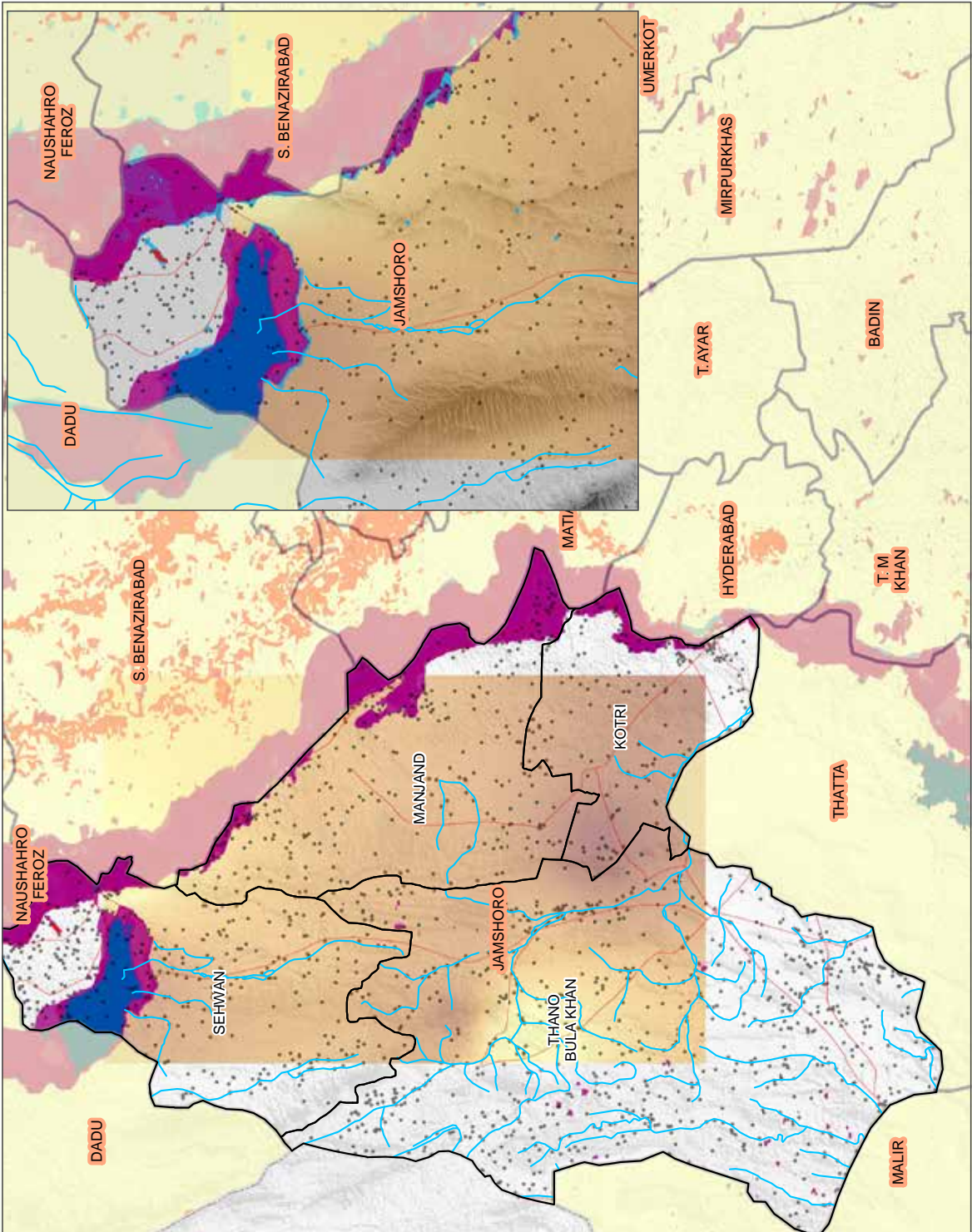
2.1.1 Disaster History

District Jamshoro is one of the oldest districts of Sindh. It was hit by 2010 and 2011 rains/floods. River Indus, after receiving water from five 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 Shahdadt on the right bank of River Indus and Ghotki, Sukkur, Khairpur, Naushahro Feroz and Jamshoro on the left bank of River Indus. These districts, on the right and left banks of River Indus, are prone to severe threat when River Indus is in high flood. The districts in the lower Sindh are prone to riverine flooding and include: Dadu, Jamshoro and Thatta on the right bank of River Indus and Tando Muhammad Khan, Matiari and Hyderabad on the left bank. The length of River Indus along the province is 750 kms long.

Areas affected in the aforementioned floods were: Allah Bachyo Shoro, Jamshoro, Morhojabal, Unerpur, Unknown¹⁷, Amri, Lakha, Manjhand, Manzoorabad, Sann, Unerpur, Bubak, Channa, Dal, Jhangra, Sehwan I, Talti and Unknown¹⁴.

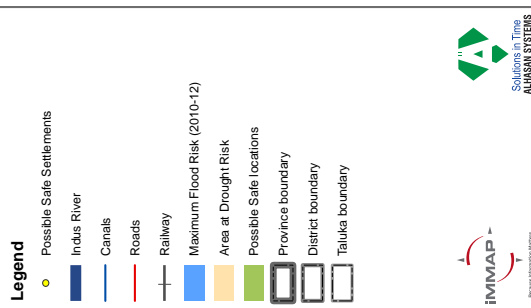
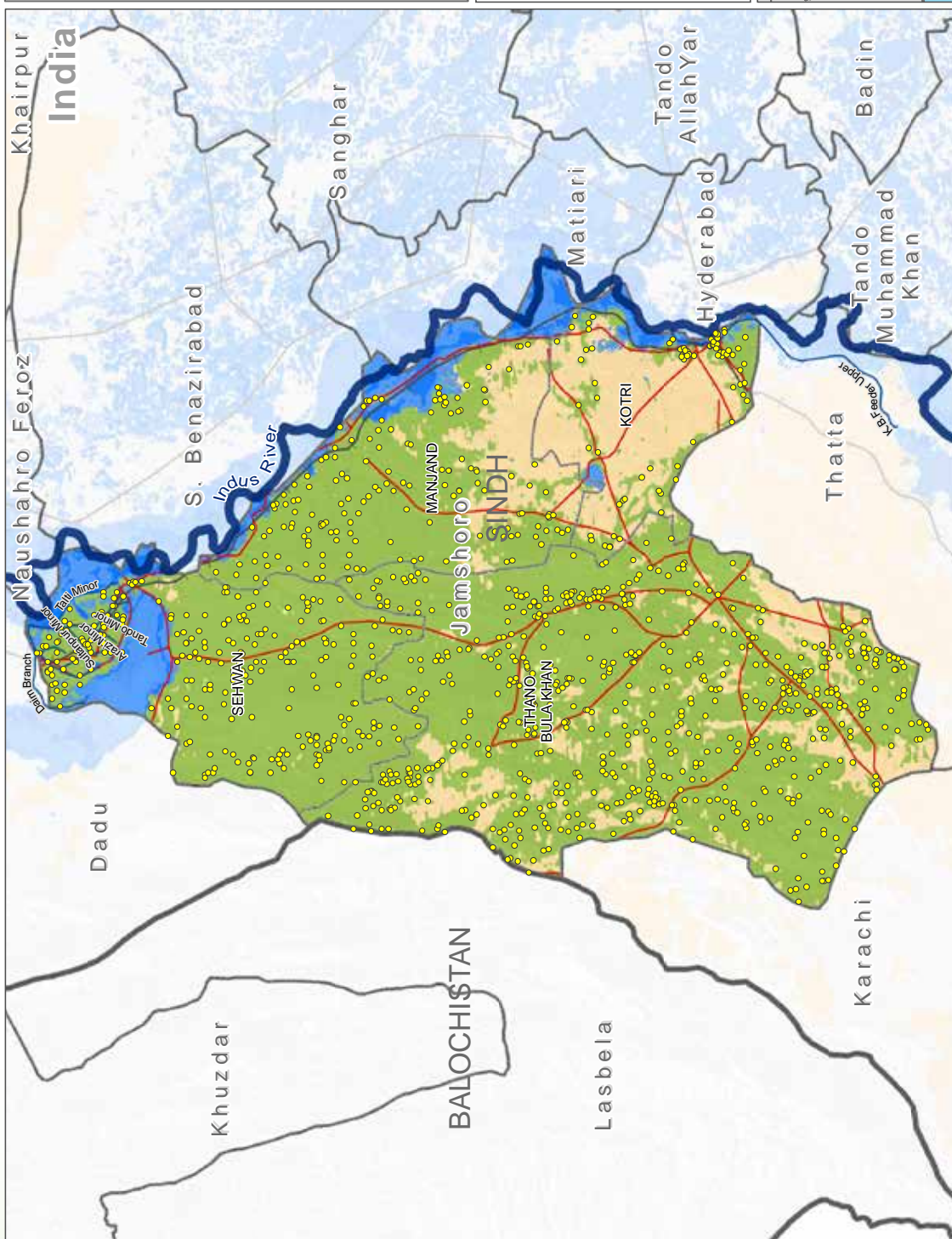
Sindh-Jamshoro Risk Analysis Map

Date (July 2014)



Jamshoro - Possible Safe Locations Map

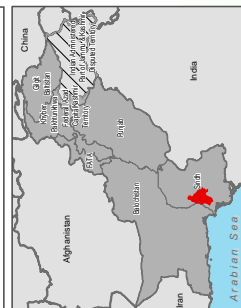
Aug, 2014



Map Doc Name: IMMAP_PAK_Jamshoro SL Map_v02_060214
Creation Date: Aug 13, 2014
Projection/Datum: WGS84
Web Resources: <http://www.immap.org>

Map data source(s):
 Alhassan Systems Private Limited; Admin boundaries, Canals
 National Institute of Disaster Management (NIDM); River
 Sindh Irrigation and Drainage Authority (SIDA); River
 MODIS Maximum Flood Extent
 WFP; Roads, Railway

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2.1.2 Impact of Disaster on Demography

As mentioned above, district Jamshoro was hit by floods in 2010; whereas it was again hit in 2011 by rains/floods. In 2010, 49% of the population was affected due to floods, in 16 union councils of all talukas of the district. After 2010 floods, the district falls under the category of low risk districts as declared by PDMA Sindh³⁵.

In rains/floods 2011, only 12% of the population was affected in 25 union councils. The extent of damage in 2010 floods and 2011 rains is given in the table below.

Table 2.1-1: Summary of Losses and Damages in Floods/Rains 2010/2011

Attribute	Figures 2010	Figure 2011	Source
Total Households 2010		138,985	Estimated
Affected Households	69,421	17,079	Estimated
Total UCs		28	UN-OCHA
UC Affected	25	16	
Total Villages		1050	Sindh Mouza Stats/UN-OCHA
Villages/Settlements Affected	553	614	PDMA Sindh
Total Houses Affected	84,088	43,950	
Total Population		805,396	Estimated
Affected Population	395,700	97,350	PDMA Sindh
Male	N/A	43,950	FAO
Female	N/A	53,400	
Deaths	0	16	PDMA Sindh
Injuries	8	11	
Total Area (acres)		2,817,491	PCO
Total Affected Area (acres)	222,147	30,093	FAO
Area Sown		56,322	
Crop Area Damaged	N/A	39,133	

Table 2.1-2: Summary of losses and damages by Taluka in 2011

Taluka	Area (Acres)	Affected Area	Affected Population	Affected Population	Estimated Households	Affected Households
Kotri Taluka	318,765	4305	298,721	22,000	48,971	3,607
Manjhand	569,330	15,000	245,496	38,800	40,245	6,361
Sehwan Taluka	585,886	10,388	134,967	35,000	25,955	6,731
Thano Bula Khan Taluka	1,343,510	400	126,213	1,550	23,814	292
Total	2,817,491	30,093	805,396	97,350	138,985	16,990

2.1.3 Impact of Disaster on Livelihood & Agriculture

Along with the demographic losses, due to floods/rains 2010 and 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.

³⁵ Flood 2010, Disaster Management Apparatus in Sindh

Table 2.1-3: Crop Loss and Area Damaged Due to Floods 2011

Major Crops		Area
Cotton	Area sown (Acre)	45,454
	Area Damaged (Acre)	31,818
	%	70%
Rice	Area sown (Acre)	0
	Area Damaged (Acre)	0
	%	0%
Sugarcane	Area sown (Acre)	1,717
	Area Damaged (Acre)	0
	%	0%
Other	Area sown (Acre)	9,150
	Area Damaged (Acre)	7,315
	%	80%
Total Area Sown		56,322
Total Area Damaged		39,133

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

As given in the table above, 70% of the cotton and 80% of other crops (fodder, vegetables) were damaged. Besides, 81 livestock heads died due to these floods³⁶.

2.1.4 Analysis of Food Security Situation

Since district Jamshoro is agro-based and majority of the households are engaged in agriculture farming and livestock rearing activities, and there are still others involved in non-agriculture activities/casual labour. Among these three types of the households, empirical studies have shown that poverty is relatively higher in the non-agriculture households, followed by livestock households and small farmers³⁷. It has been shown in the previous section that many individuals of this flood affected district lost their homes (128,038 houses were damaged), their crops (39,133 acres of crop area affected) and heads of livestock (81 livestock died). Due to the lack of strong industrial base, the sources of income of households, situated in this severely affected district, are less diversified, with their heavy dependence on agriculture, livestock and casual labour. The deplorable social indicators i.e., large household size, poor literacy level, higher mortality rate, infrastructure with poor access to education and health facilities show the higher level of poverty and deprivation in this district.

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 district³⁸.

³⁶ Flood Situation Update, 2011, Food & Agriculture Organization (FAO)

³⁷ 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

³⁸ Ibid

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 Jamshoro 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. Jamshoro district was declared as flood affected district in floods 2010 but no damages to health infrastructure were reported, whereas the district was badly hit by rains in 2011, which resulted in damage to the public health infrastructure.

Based on the rapid assessment 2011, conducted by the Provincial Health Department, in collaboration with National Health Emergency Preparedness & response Network (NHEPRN), Cabinet Division and WHO, 4 Basic Health Units and one Rural Health centre were reported damaged in the district. These affected health facilities in the district had stocks of medicines, equipment and other consumables sufficient only for one to two weeks³⁹.

2.1.6 Impact of Disaster on Education

Due to the floods/rains of 2010, 373 school facilities were damaged, out of which 172 were fully destroyed and 201 were partially damaged. 67 schools were rehabilitated soon after the floods. Also, heavy rains affected the school going children. Due to the damages to the schools, houses and roads; education of 29,840 students was affected (Girls: 12,831, Boys: 17,009). Teachers numbering 1,119 were also affected.

Due to the floods/rains of 2011, 85 school facilities were damaged, out of which 23 were fully destroyed and 47 were partially damaged. 15 schools were occupied by IDPs. Due to the damages to schools, houses and roads, education of 6,800 students was affected (Girls: 2,924, Boys: 3,876). Teachers numbering 227 were also affected⁴⁰.

³⁹ Health Initial Rapid Assessment Report (22 Flood Affected districts in Sindh) 8th Sep-12th Sep, 2011

⁴⁰ 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”⁴¹

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	high	2010, 2011
Flash floods	Monsoon	West part of district	Low	
Heavy rainfall	Monsoon	Entire district	Low	2011,2012, 2013, 2014
Epidemics	Seasonal	Entire district	Low	Every Year
Droughts	Rare	Entire district	high	1999-2002
Earthquakes	Rare	Entire district	Low	2013
Transport accidents/fire	Frequently	Entire district	Low	Through out

⁴¹ “Urban Governance and Community Resilience Guides”, (2010), Asian Disaster Preparedness Center

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 hazard⁴²”

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.

Vulnerability Matrix

Physical/material	Social/organizational	Attitudinal/motivational
District Jamshoro is disaster prone area and is vulnerable to earthquake, riverine and flash floods. River Indus is situated in the north east of the district which inundates the low lying risk areas during monsoon. In 2011 rains/floods, 614 villages/settlements ⁴³ of 28 union councils in all the 4 talukas were affected. Similarly, Kirthar mountain ranges are located in the west of district which causes flash	According to 1998 census, total population of the talukas that formed this district was 582,094 while the estimated population for the year 2014 is 1,018,634. The district has an estimated ⁴⁵ growth rate of 2.57% per annum, which means that the population will double itself in 27.24 years ⁴⁶ from 1998. Such rapid growth in population gives birth to many socio-economic problems and makes the area vulnerable to	There is a lack of training, appropriate skills and awareness on disaster risk management, both at the community and the public servants' level. Skills to handle emergencies are very weak and need to be strengthened.

⁴² Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

⁴³ Sindh Provincial Monsoon/Floods Contingency Plan, 2012, pp.11

Physical/material	Social/organizational	Attitudinal/motivational
floods in heavy rains. A geological tectonic line ⁴⁴ runs under Karachi through Khirthar mountains to north-west of Sindh and Thar desert, due to which Sindh has risk of a major earthquake in the future.	different natural and made-made hazards	
Disasters are rooted in development failures e.g. unsafe buildings that could not withstand floods, heavy rains, earthquakes and results in disasters. In Jamshoro district, 36.68 per cent people use wood/bamboo material for roof construction. This percentage is higher in rural areas (44.47 per cent) as compared to (6.89 per cent) ⁴⁷ in the urban areas.	Like majority of the other districts in Sindh, district Jamshoro is rural by its characteristics. 77 per cent of the population resides in rural areas as compared to the 23 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. [Floods, rains etc.]	Advocacy seminars and awareness campaigns regarding disaster risk reduction are insufficient.
In the whole district, piped water is available to only 38 per cent of the housing units. In rural areas pipe water is available to 31 per cent of the households while 28 per cent ⁴⁸ of rural households have hand pumps inside the housing units. By drinking unsafe and contaminated water people gets vulnerable to hepatitis and other water born disease.	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 Jamshoro district is 44.81 per cent of the total population and the working population is 55.19 per cent, which shows that dependency ratio ⁴⁹ in the district is 81 per cent, which is very high and as such makes the population highly vulnerable	Land use planning and wise management of land are rarely followed by the people of the district. People prefer to live near river side for agriculture purposes, which is mostly in low lying areas that receive the heaviest damage.
According to an initial assessment by the district education department about 446 schools are fully affected ⁵⁰ by the rains/flood 2010. Most of the affected schools are not rehabilitated up till now and are vulnerable to upcoming disasters.	The status of education is quite poor in district Jamshoro. The overall illiteracy rate (for the population of 10 years and above) is 56%; for male it is 41 and for female it is 72 % while Adult illiteracy rate (15 years and above) is 57 %. Illiterate people cannot be easily mobilized and made aware of the different disasters' risks.	Lack of implementation of all the policies and strategies regarding disaster risk reduction and disaster risk management.
Livelihoods of the people are not	There is lack of coordination	Reactive approach prevails in the

⁴⁵ Estimated using 2010 population estimates from Gridded Population of World (GPW) 3 data set

⁴⁶ Rule of 70 <http://controlgrowth.org/double.htm> retrieved on 05-03-2012

⁴⁴ *Ibid*, pp. 6

⁷ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

⁴⁸ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

⁴⁹ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

⁵⁰ Flood report on educational sector of Sindh province, 2010-11, Reform Support Unit, Department of Education & Literacy, Government Of Sindh, pp. 30

Physical/material	Social/organizational	Attitudinal/motivational
sustainable that is it can't cope with and recover from stress and shocks and when disaster strikes; these livelihoods collapse. As a result poor people get poorer and fall under the poverty line.	amongst different stakeholders on district level. Information sharing regarding disaster risks reduction is very weak which affect the disaster risk reduction process.	district i.e., the government and all other stakeholders come into action 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.
The <i>Taluka</i> Governments' lack resources like boats, life jackets, first aid kits, torches, ropes, tractors, and dewatering machines etc. Stagnant water results in spread of malaria etc. Tractors can be used to pick waste material and dump into far off places.	District Disaster Risk Management Plan (DDRMP) of Jamshoro is not produced officially up till now by the District Disaster Management Authority. This document is expected to present brief analysis of hazard, vulnerabilities and capacities of the district, disaster history and action plan to overcome and mitigate these risks.	
Sanitation conditions in district Jamshoro are relatively poor where only 37% of the households use flush toilets and 44% of the households have non-flush toilets ⁵¹ . The sanitation facilities are comparatively worse in rural areas of the district	Risk assessment is the process of hazard identification, analysis and determination of appropriate ways 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.	
Climate change is said to be responsible for these (2011-12) heavy rains because usually Sindh province receives very little rains. Environmental scientists agree that they cannot explain the floods in Sindh as the area that received the rain is normally very dry. District Jamshoro was hit by torrential rains in 2011.	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.	
Early Warning systems, in Pakistan, lack the basic equipment, skills and resources. Similarly, early warning system for the floods in the district	Poverty, disasters, and vulnerability are interlinked as it has been observed that, during disasters, the most affected population are the	

⁵¹ Pakistan Social and Living Standard Measurement Survey 2012-13

Physical/material	Social/organizational	Attitudinal/motivational
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.	poor of the community. The incidence of poverty has increased as floods/rains have reduced income level of the households by damaging their assets and sources of income and thus have aggravated the household poverty. In many households there is just one earning person with many dependents.	
Floods and heavy rainfalls have damaged and weakened, the protection Bund (linear levees along rivers and ring levees around cities), in the north east of the district Jamshoro. There is weak/no proper monitoring system for the maintenance of these vulnerable points of the protection Bunds.	There are no Disaster Management Committees (DMCs) and Emergency Response Committees (ERTs) in the vulnerable communities of the district. DMCs and ERTs are supposed to have representation from vulnerable communities' which includes ex- counsellor, religious leaders, union council sectary, youth, farmer's representation etc. DMC and ERT members are trained (on DRR and first aid etc.) and are first responder to any emergency situation.	
There are settlements in the district, which are situated in the low lying risk areas especially on north eastern side of the district. These are the areas which are exposed to regular occurring of floods.	Non-structural mitigation measures which include trainings, workshops, seminars, land use planning and building codes are not properly implemented by the concerned departments in the district which makes the people vulnerable to different hazards e.g., floods, earthquakes etc.	

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 hazards⁵².

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.

⁵² Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

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.

Capacity Matrix

Physical/material	Social/organizational	Attitudinal/motivational
Jamshoro contributes in agriculture sector of Sindh by producing various food items e.g., maize, cotton, vegetables, wheat etc. Wheat and maize are cropped in 58% and 29% of the <i>mouzas</i> respectively while cotton and vegetables are cropped in 31% and 30% of the <i>mouzas</i> ⁵³ . Total reported area of the district is 1,234,000 hectares, out of which 141,000 hectares are cultivated ⁵⁴ .	The overall literacy rate ⁵⁵ (for the population of 10 years and above) is 44%; for males it is 59 and for females it is 28% while Adult literacy rate ⁵⁶ (15 years and above) is 43 %. 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.	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.).
According to Health Facility Assessment, 2012 (HFA) by Technical Resource Facility (TRF), total health facilities ⁵⁷ in district Jamshoro are 43. There is one teaching and four tehsil headquarter hospitals, five Rural health centres (RHCs), sixteen Basic Health Units (BHUs), one mother child centre (MCH), two sub-health centres and fourteen General Dispensaries (GD). These health facilities provide health services both in rural and urban areas of the district, not only as a routine but also in extreme	District Disaster Management Authority (DDMA) of Jamshoro 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.	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.

⁵³ Mouzas Development Statistics of Sindh, 2008, Agriculture Census Organization

⁵⁴ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp. 80

⁵⁵ Pakistan Social and Living Standard Measurement Survey 2012-13,

⁵⁶ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13,

⁵⁷ Health Facility Assessment 2012 (HFA) by Technical Resource Facility (TRF), pp. 51

<http://115.186.137.115/reports/hfa/sindh/HFA-Jamshoro.pdf>, pp. 51, table 2.1, retrieved on 4/16/2013

Physical/material	Social/organizational	Attitudinal/motivational
circumstances.		
The total number of schools in the district is 820. Out of which 756 are primary schools, 20 are middle schools, 36 are secondary, and 8 are higher secondary schools ⁵⁸ . These school buildings are also used as shelter and evacuation centres in emergency.	After the 2010 and 2011 rains/floods, different NGOs /INGOs have focused their attentions on shelter, wash, and livelihood activities. These organizations include IOM, WFP, WHO, ACTED, HANDS, SPO and US AID Pakistan etc. ⁵⁹ They provide funds and relief stuff to the affected people, to enable them to stand on their own.	Female volunteers in the relief camps carried out commendable services and facilitated the rest of females under the supervision of humanitarian and government organizations. They showed good management skills and proved useful to their people.
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 179 kilometres (2007-08) in this district ⁶⁰ . These roads can be used as evacuation point in flood disaster. Good roads are also helpful in carrying out relief activities.	Community organizations are formed by NGOs in the affected areas to encourage the local representation. Active people from the community are part of these organizations which facilitate the humanitarian organization work at the grass root level.	The teachers, young educated students and youth assist the social workers working in their communities. They organize gatherings for mobilization sessions and act as a catalyst in the field.
District Jamshoro is rich in mineral resources ⁶¹ e.g., limestone, marble and coal etc. Marble and lime stone are used in buildings, cement factories and chemical industries while coal can be used for power generation etc.	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 evacuation, by providing transport facilities. Army doctors provide medicines and other health facilities to the affected people especially to the children and women.	
Industries play an important role in development of the country. Jamshoro has two industrial zones named Kotri and Nooriabad. These industrial zones have number of small industries which provide job opportunities to the people and helps in raising	Political parties are very strong in the district. The member of National and provincial assemblies (MNAs & MPAs) highlight and raise problems of the people on the assembly floors. PPP and PML (Q) are quite popular in the district.	

⁵⁸ SINDH Education Management Information System (SEMIS), District Education Profile, Jamshoro, 2012-2013, pp.1

⁵⁹ UNOCHA, Pakistan Floods 2011, Jamshoro District Profile, April 2012, www.pakresponse.info, accessed on 4/16/2013

⁶⁰ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp. 262

⁶¹ Mines and Mineral Development Department, Government of Sindh official web portal, <http://www.smd.gov.pk/Mineral.aspx>, retrieved on 4/17/2013

Physical/material	Social/organizational	Attitudinal/motivational
their standard of life.		
	Union council sectaries are very helpful in risk assessment process. Because they keep all records of the union council and even provide maps of the relevant union council.	

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.
- Brick lining projects should be initiated by the government for strengthening the canals.
- Radio can be a very important part of early warning system but care should be taken while transmitting early warnings. It should be in clear words and confirmed through reliable sources to avoid false reports and unnecessary panic.
- Media in district Jamshoro should expand its role as a watchdog in monitoring and handling of donations in the post disaster phase so that the funds are given to the affected people of the district rather than self interest groups.

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. All the health related issues should be dealt by them. But the responsibilities have to be identified.
- Health facilities should be located on higher grounds along or near good roads and adequate means of transportation readily accessible to the community.
- A logistic system should be put in place for determining the requirement of medicine, maintaining an inventory, storing and stocking, issuing and controlling the use of medicine, stockpile of emergency medicine and supplies, special arrangement with vendors and suppliers for emergency purchases in time of disaster.
- 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 should 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 water courses 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.
- 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.
- NGOs in district Jamshoro should install raised hand pumps to maintain adequate access to water supplies in the event of a flood.
- Waste Water treatment projects should be initiated in district Jamshoro to avoid deterioration of aquatic environment.

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.
- District Disaster Management Authority and NGOs should employ the requisite staff who have a combination of practical experience and up to date theoretical knowledge related to Disaster Management and Sustainable development (Disaster Managers, Rescue and Relief providers etc.), should stockpile equipment (Boats, Jackets, medicine, food etc.) and should build institutional capacity at the district level.

5 Coordination and Support Services

5.1 Important Contacts

5.1.1 Departmental Focal Points

S#	Department	Office In charge	Designation	Telephone Numbers	
				Office	Mobile
1	Administration	Sohail Adeel Bajan	DC	0223-870135	0300-8372922
		Mr. Habib Ahmed	ADC-I	022-3871942	0301-3998514
		Mr. Zulfiqar Ali	ADC-II	0223-871470	0300-3412531
		Mr. Mumtaz Ali Channa	AC	0223-871950	0300-3411494
		Mr. Naveed Rehman Larik	AC		0301-3526226
		Mr. Muhammad Mahboob	AC	0254-620401	0346-4537496
		Mr. Abdul Qadir Shar	AC		0300-2712294
		Mr. Khan Muhammad Bhatti	Mukhtiarkar		0300-3114436
		Mr. Bachal Mallah	Mukhtiarkar		0300-3722584
		Mr. Barkat Ali Kalhoro	Mukhtiarkar		0300-3195993
		Mr. Abdul Hameed Noriho	Mukhtiarkar		0336-3417601
2	Police	Mr. Khuram Waris	S.S.P		03332694066
		Mr. Wasi Hyder Shah	S.P (HQ) Jamshoro		0300-2694066
3	Agriculture	Mr. Imtiaz Ahmed	DD Agriculture	0223- 874085	
4	Wapda	MR. Tariq Bajari	XEN, Wapda	0223-870312	0347-3669719
5	Health	Dr Shoukat Hussain	District Health Officer	0223-878421	
6	Education	Mr. Ghulam Sarwar Mallah	District Education Officer		0344-8326098
7	Works & Services	Mr. Shoukat ali Memon	Superintendent Engineer	0223-871865	0300-9377982
		Mr. Fateh Muhammad	XEN Highway		0333-2710336
		Mr. Muhammad Hassan Baloch	XEN Building		0300-2609575
8	Accounts	Mr. Nasir Ahmed Wighio	District Account Officer	0223-871615	0300-3078804
9	Nadra	Mr. Aqif Palijo	District Manager Nadra	0223-874968	0300-3068973

Source: DC Office Jamshoro

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

5.1.3 List of NGOs Working in District Jamshoro

Name	Contact
Sindh Development Society	022-1656401,022-1616784
Sindh Desert Development Organization	0331-3885606
Society for Advancement of Rural Communities	0300-3522250
Rural Development Foundation Sindh	0300-3055698
Centre for Environment & Development	022- 3877245
Strengthening Participatory Organization (SPO)	051-2228681-4
Health and Nutrition Development Society (HANDS)	021-3453-2804
World Health Organization (WHO)	051-9255184-5
Society for Human Rights and Prisoner's Aid (SHARP)	051-2211621
Thardeep Rural Development Program (TRDP)	022-2112500
Agency for Technical Cooperation and Development (ACTED)	051-2653035
Care for Community Development Organization (CCDO)	03458800905
Indus Rural Development Organization (IRDO)	061-4503660
International Organization for Migration (IOM)	051 28 31 061
Sindh Relief Department (SRD)	021-99203686

5.2 Health Facilities

List of health facilities provided by WHO in district Jamshoro

Taluka	Union Council	Health Facility Name	HF TYPE
Kotri	Nango Line Kotri	THQ Kotri	HOSPITAL
Kotri	Sonwalhar II	BHU Khuda Ki B asti	BASIC HEALTH UNIT
Kotri	Sonwalhar II	BHU Khando	BASIC HEALTH UNIT
Kotri	Allah Bachayo Shoro	BHU Kero Khhao	BASIC HEALTH UNIT
Kotri	Jamshoro	L.S.B Disp. Jamshoro	DISPENSARY
Kotri	S.W II	Govt.Disp.Bihar Colony	DISPENSARY
Kotri	Petaro	Govt. Disp: Petaro Village	DISPENSARY
Kotri	Sonawalhar III	Govt. Disp. Sindh University	DISPENSARY
Kotri	Haji Manjho Shoro	G.D Chirischian Colony	DISPENSARY
Thano Bula Khan	Thano Bula Khan	THQ TBK	HOSPITAL
Thano Bula Khan	Thano Arab Khan	BHU Ahmed Khan	BASIC HEALTH UNIT
Thano Bula Khan	Thano Arab Khan	BHU Thano Arab Khan	BASIC HEALTH UNIT
Thano Bula Khan	Saree	BHU Saree	BASIC HEALTH UNIT
Thano Bula Khan	Mole	BHU Mole	BASIC HEALTH UNIT
Thano Bula Khan	Mole	BHU Mole	BASIC HEALTH UNIT
Thano Bula Khan	Tonge	BHU Karchat	BASIC HEALTH UNIT
Manjhband	Manjhband	THQ Manjhband	HOSPITAL
Manjhband	Manjhband	RHC Unerpur	Rural Health centre
Manjhband	Amri	BHU Amri	BASIC HEALTH UNIT
Manjhband	Amri	BHU Lakhi Ghulam Shah	BASIC HEALTH UNIT
Manjhband	Manzoorabad	BHU Khanote	BASIC HEALTH UNIT
Manjhband	Sann	BHU Goswari	BASIC HEALTH UNIT
Manjhband	Manjhband	Govt.Disp;Budhapur	DISPENSARY
Manjhband	Lakha	Govt. Disp; Qubi	DISPENSARY
Sehwan	Sehwan	THQ Sehwan	HOSPITAL

Taluka	Union Council	Health Facility Name	HF TYPE
Sehwan	Jhangara	RHC Jhangara	Rural Health centre
Sehwan	Bhan	RHC Bhan	Rural Health centre
Sehwan	Channa	RHC Arazi	Rural Health centre
Sehwan	Dal	BHU Wahur	BASIC HEALTH UNIT
Sehwan	Talti	BHU Talti	BASIC HEALTH UNIT
Sehwan	Dal	BHU Tajuji	BASIC HEALTH UNIT
Sehwan	Chana	Govt.Disp.Pakka Channa	DISPENSARY
Sehwan	Bubak	Govt.Disp.Bund Manchar	DISPENSARY
Sehwan	Bajara	Govt.Disp.Bajara	DISPENSARY
Sehwan	Jhangra	MCHC Sehwan	MCHC