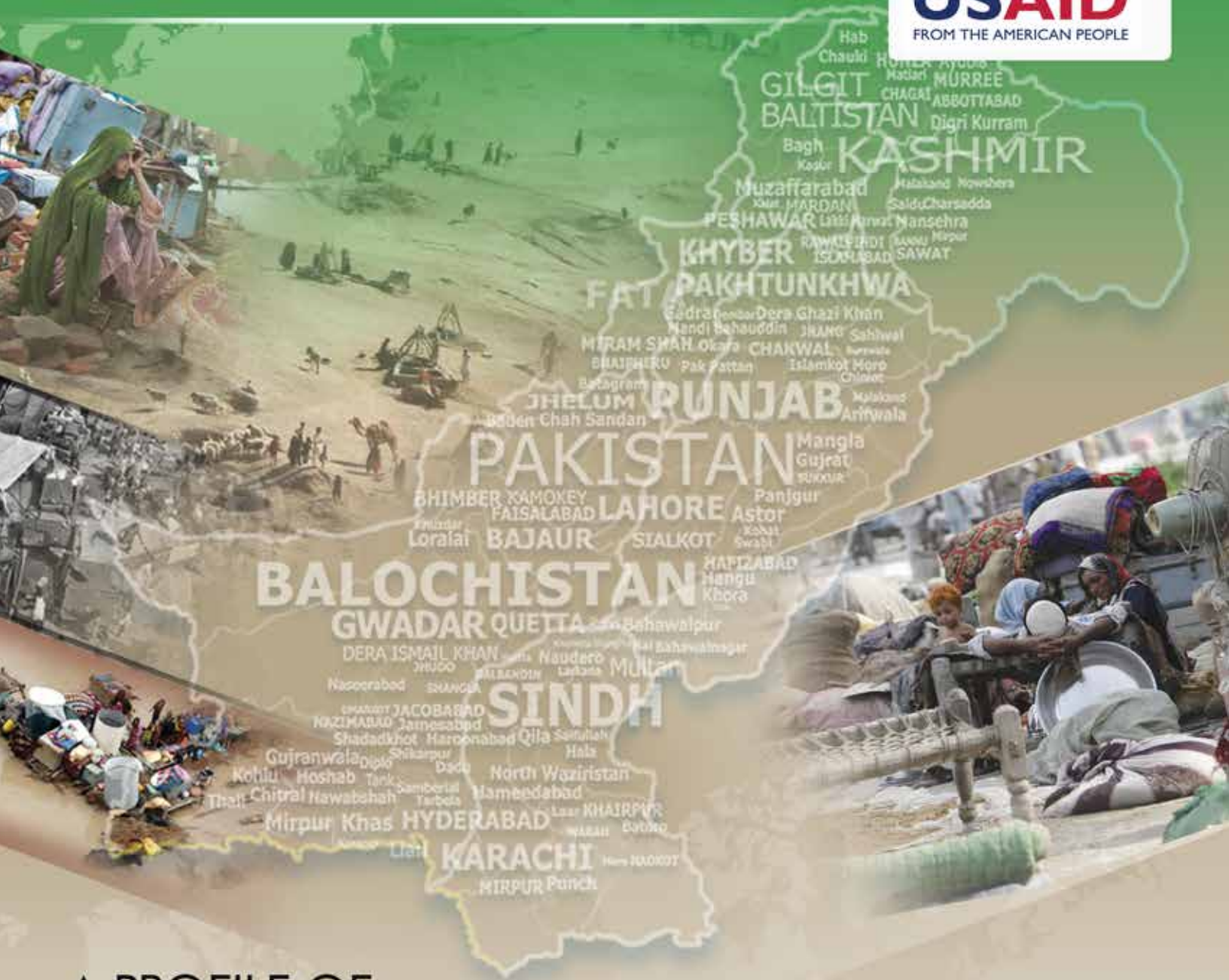


PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



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A PROFILE OF DISTRICT THATTA



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Shahjahan Mosque Thatta Sindh

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

Kasey Channell,

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

PAKISTAN EMERGENCY SITUATIONAL ANALYSIS

District Thatta

September 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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The terms used and the maps presented in this profile do not imply the expression of any opinion whatsoever on the part of iMMAP and USAID concerning the legal status and the area of any administrative unit or its authorities.

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.dearsir.pk.

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 Shafique, Muhammad Javed Iqbal, Muneeb Muzamil, Mahwish Muzamil, Tariq Sardar, Wajid Ali, and last but not the least Nouman Ali, our amazingly skilled graphic designer.



Mehdi Bokhari
PESA Project Director

Foreword

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

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

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

Having stated the above, it is very candidly admitted that these profiles are by no means exhaustive and in fact require a lot more input to qualify these as good enough documents for disaster preparedness. However, these are live documents and would be improved upon as and when required. There appears to be an element of repetition, which is owed to the fact that while these documents depict the district profiles in normal circumstances, the same then provide a detail account of the impact of the 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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DISTRICT THATTA

AT A GLANCE

Population 1998 1,113,194 Persons



Population Density (Est 2014)
92 per Sq. Km

2.26%

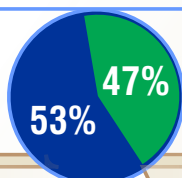
Urban Population
124,739 (11 %)

Rural Population
988,455 (89%)

Average Annual Growth Rate (1981 - 98)



Male
843,827



Female
750,060



Average Household Size
5.6

Estimated Household
284,623



Sex Ratio **113**
Males per 100 females

Urban Population
178,603



11%

89%

Rural Population
1,415,284



Administrative Units

Taluka	9
Union Councils	55
Mouzas	655

Infant Mortality Rate

81/1,000 Live Births

Under 5 Mortality Rate

101/1,000 Live Births

Maternal Mortality Ratio

314/100,000 Live Births



Health & Education



Health Facilities

85



Educational Facilities

3,217



Male
48%



Female
23%

Literacy Rate
2012-13
(10+)

36%



Electoral Representation

Male

359,523

Female

304,020

National Assembly Seat: 2

(NA-237, NA-238)

Provincial Assembly Seat: 5

(PS-84, PS-85, PS-86, PS-87, PS-88)



Registered Voters
663,543



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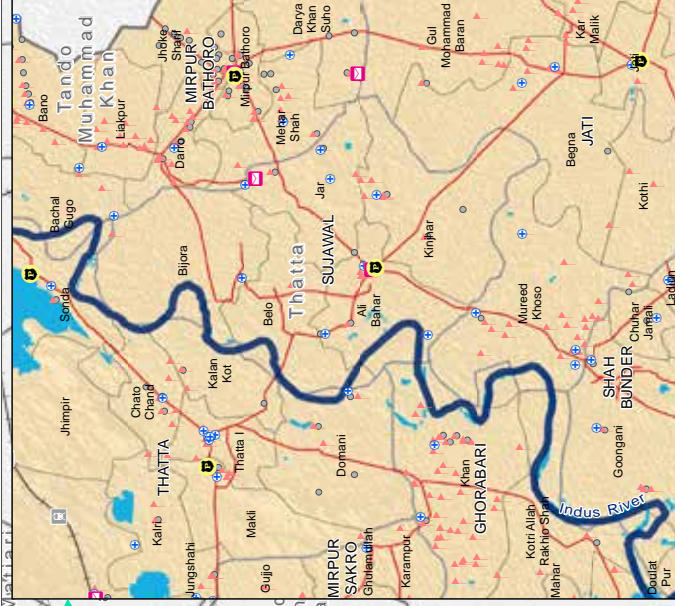
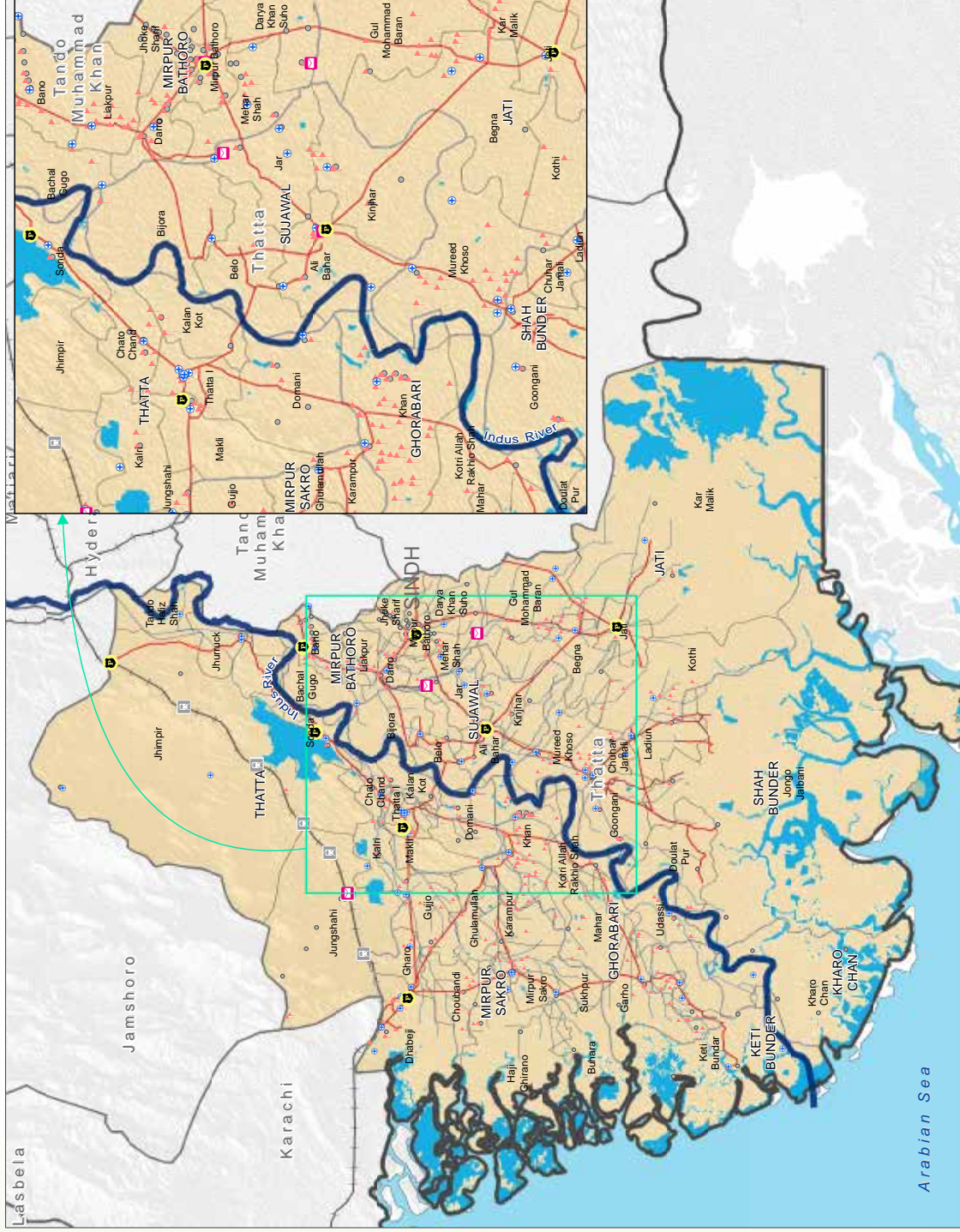
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Sindh - Thatta Reference Map

September, 2014



Legend

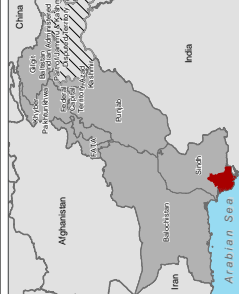
- Police Station
- Post Office
- Railway Station
- Health Facilities
- Education Facilities
- Settlements
- Canals
- Indus River
- Lake/Permanent Water bodies
- Roads
- Railway
- International boundary
- Province boundary
- District boundary
- Taluka boundary
- UC boundary

IMMAP

SAHARAS & TIME

Map Doc Name: IMMAP_PAK_Thatta Reference Map_v02_040914
Creation Date: September 04, 2014
Projection/Datum: WGS84
Web Resources: <http://www.immap.org>

Map data source(s): Ahasan Systems Private Limited: Admin boundaries, Health Facilities, Education Facilities, Roads, Railway, Police Stations, Railway Stations, Post office, Settlements
Other data sources: Sindh Irrigation and Drainage Authority (SIDA): Rivers, Canals
Disclaimer: The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the IMMAP, Ahasan Systems, or USAID concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.



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 Thatta is in one of the oldest regions of Indus civilization. It has a rich history as it has been the capital of three dynasties (Summa, Arghuns, Tarkhans) and was later on ruled by the Mughals. This region was an important administrative office for many rulers in the ancient Indus civilization. Due to the shifting nature of the Indus River, it is difficult to report the exact location of ancient Thatta, but the name indicates its strong relation to the Indus. The word Thatta is derived from *thatti*, *thatt* or *thatto*, a Sindhi word for a small settlement on riverbanks¹.

History shows that Thatta was ruled by Jam Nizamud-Din or Jam Ninda, a decendent of Summa Dynasty², till 1461. The rise of Thatta, as an important commercial and cultural center, was directly related to his patronage and policies. The Summa civilization contributed significantly to the prevailing architectural style that can be classified as Sindhi culture. Later on, the Mughals captured this region and ruled it till 1736. The Islamic architect during the Mughal rule can still be witnessed in the district. Mughal Emperor Shah Jehan built a historic mosque in Thatta which has been carefully restored to its original condition. From 1736 till 1843, Thatta was ruled by Kalhora dynasty³ that shifted their headquarters to Hyderabad. Hence the importance of Thatta, as a cultural and economic hub, started declining⁴.

In 1843, British annexed Sindh and built a communication network throughout the province. They built roads, schools, dispensaries and many other civic amenities. This improvement in infrastructure helped Thatta to regain its economic strength. Since the independence of Pakistan, district Thatta has been neglected by the local and higher authorities, which has increased poverty⁵ in this district.

1.1.2 Geography

District Thatta lies in 67° 20' 48" to 68° 44' 52' east longitudes to 23° 48' 44" to 25° 26' 35' north latitudes. This district is bounded by district Badin and Tando Muhammad

¹ <http://www.districtthatta.gos.pk/About.htm> (accessed on 11/2/2013)

² Samma Dynasty were the descendants of Lord Karishna, who ruled Sindh and some parts of Punjab and Balochistan, with their headquarters at Thatta, from 8th century A.D till the middle of 15th century A.D

³ Kalhora Dynasty are the decendents of Abbasid, who arrived at in during the invasion of Nadir Shah in subcontinent

⁴ <http://www.districtthatta.gos.pk/About.htm> (accessed on 11/2/2013)

⁵ Further discussion and references of poverty are given in the Livelihood section on the next pages

Khan on the east; district Jamshoro on the north, district Hyderabad on the northeast, district Karachi on the northwest and the Arabian Sea and Rann of Kach on the south.

Total area of the district is 17,355 kilometers which constitutes 12.3% of the total geographical area of Sindh. Indus River flows downstream from Hyderabad and passes through the middle of this district till it reaches the delta of the Arabian Sea in Keti Bunder taluka. Four talukas of district Thatta are on the right bank of Indus River and four lie on the left bank while one taluka is on both sides of the river.

Due to the long coastal line of 107 kilometers as well as shortage of river Indus water, the southwestern part of the district is saline and sea-affected. The southern portion, adjoining the Run of Kachh, on the border of India, is desert like sandy area. The northern part of this district consists of small hills and torrents that are extended till Kheerthar range of mountains.

The climate of the district is moderate. The sea breeze blows for eight months of the year, from March to October, making the weather comparatively cooler. January is the coldest month. The annual average rainfall of the district is about 200 mm. The mean maximum and minimum temperature recorded are about 40°C and 25°C respectively⁶.

1.1.3 Culture (Ethnicity, Religion and Politics)

District Thatta represents the traditional sindhi culture. Sindhi is the major language of the district, although Urdu is also spoken and understood. Besides, Seraiki and Balochi are also spoken in the city area. Islam is the major religion of this district representing 96.2% of the population followed by Hinduism (2.89%) and Christianity (0.18%). Caste system is very strong in this region. Majority of the population of Thatta district belongs to indigenous Sindhi clans. Jokhio, Paliyo, Sheerazi, Soomro, Sammo, Syed, Memon, Khoja and Mirbahar are the main tribes of Thatta district⁷.

This district has a rich heritage of ancient Sindhi and Arabian culture. Both can be seen in the architect and culture of this district. Thatta's Jamia Masjid known as Shah Jehan Masjid is a masterpiece. It was built on the orders of the Mughal Emperor, Shah Jehan, who gifted it to the people of Thatta. Its construction started in 1644 and was completed in 1647.

Makli hills, also known as Makli graveyard, are one of the largest necropolises in the world, with a diameter of approximately 8 kilometers. These hills are supposed to be the burial place of some 125,000 sufi saints. The graveyard is located on the outskirts of Thatta city⁸.

Whether it is Pakistan People's Party (PPP) or Pakistan Muslim League (PML-Q), Thatta has never been an easy prey to win for any political party⁹. There are two national assembly seats

⁶ Disaster Risk Management Plan District Thatta (2008), District Disaster Management Authority, Government of Sindh

⁷ *ibid*

⁸ <http://www.districtthatta.gos.pk/About.htm> (accessed on 12/02/2013)

⁹ <http://archives.dawn.com/weekly/herald/herald86.htm> (accessed on 12/02/2013)

and four provincial assembly seats in this district. In the last general elections of 2008, both these parties won equal number of seats of the national and provincial assemblies¹⁰.

1.1.4 Administrative Division

The city of Thatta is the district headquarters of the district with nine talukas and 55 union councils. There are 655 mouzas (revenue villages) in this district, out of which 511 are rural, 10 are urban, 24 are partly urban, 30 are forest mouzas and 80 mouzas are un-populated.

Table 1.1-1: Administrative Division of District Thatta

Thatta	Knungo Circles/ Supervisory Tapas	Patwar Circles/ Tapas	Number of Mouzas					
			Total	Rural	Urban	Partly urban	Forest	Un- populated
Thatta District	14	75	655	511	10	24	30	80
Thatta Taluka	2	10	62	50	7	2	3	-
Sujawal Taluka	1	10	73	56	2	2	10	3
Mirpur Bathoro Taluka	2	11	63	51	1	7	4	-
Jati Taluka	2	11	131	118	-	1	4	8
Shah Bundeer Taluka	2	8	92	73	-	4	2	13
Karochan Taluka	1	4	41	12	-	-	6	23
Mirpur Sakro Taluka	2	12	90	81	-	5	-	4
Keti Bunder Taluka	1	3	42	14	-	1	-	27
Ghorabari Taluka	1	6	61	56	-	2	1	2

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

1.1.5 Road Network Infrastructure

Thatta city is situated, 98 kilometers east of Karachi, on the national highway (N5). This highway passes through district Thatta for a length of 112 kilometers. Super Highway (M9), which connects Karachi and Hyderabad, also passes through this district for a length of 40 kilometers. District headquarters of Thatta is connected with other talukas through well-built roads. Although these roads are single but are of good quality.

1.1.6 Irrigation

District Thatta is irrigated, mainly, by Indus River and canals. The following table shows that, among the rural mouzas, 157 (29%) mouzas are irrigated from the river and 104 (19%) are irrigated through canals.

¹⁰ <http://www2.ecp.gov.pk/vsite/complete/Search.aspx?constituency=PA&constituencyid=PS-87> (accessed on 12/02/2013)

Table 1.1-2: Mouzas Reporting Sources of Irrigation

ADMINISTRATIVE UNIT		RURAL POPULATE D MOUZAS	NUMBERS OF MOUZAS REPORTING SOURCE OF IRRIGATION						
			CANAL	RIVER	TUBEWELL /WELL	RAVI NE	SPRING/S TREAM/K AREZ	ARID(BA RANI)	FLOODING/TO RRENT
Thatta District	535	484	104	157	1	-	7	3	1
	100	90	19	29			1	1	
Thatta Taluka	52	48	1	22	-	-	4	-	-
	100	92	2	42			8		
Sujawal Taluka	58	58	3	22	-	-	-	-	-
	100	100	5	38					
Mirpur Bathoro Taluka	58	55	4	20	-	-	-	-	-
	100	95	7	34					
Jati Taluka	119	84	1	33	-	-	1	-	1
	100	71	1	28			1		1
Shah Bundeer Taluka	77	72	10	20	-	-	-	-	-
	100	94	13	26					
Karochan Taluka	12	10	-	10	-	-	-	2	-
	100	83		83				17	
Mirpur Sakro Taluka	86	84	85	10	1	-	2	1	-
	100	98	99	12	1		2	1	
Keti Bunder Taluka	15	15	-	10	-	-	-	-	-
	100	100		67					
Ghorabari Taluka	58	58	-	10	-	-	-	-	-
	100	100		17					

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

In the year 2008-09, 82% of the total sown area was irrigated and from this irrigated area 100% area was irrigated through canals and tube wells. From 2008-09 to 2009-10, there is 21% decrease in total irrigated area with 22% decrease in canal irrigated area. The table below gives information regarding irrigation in the district.

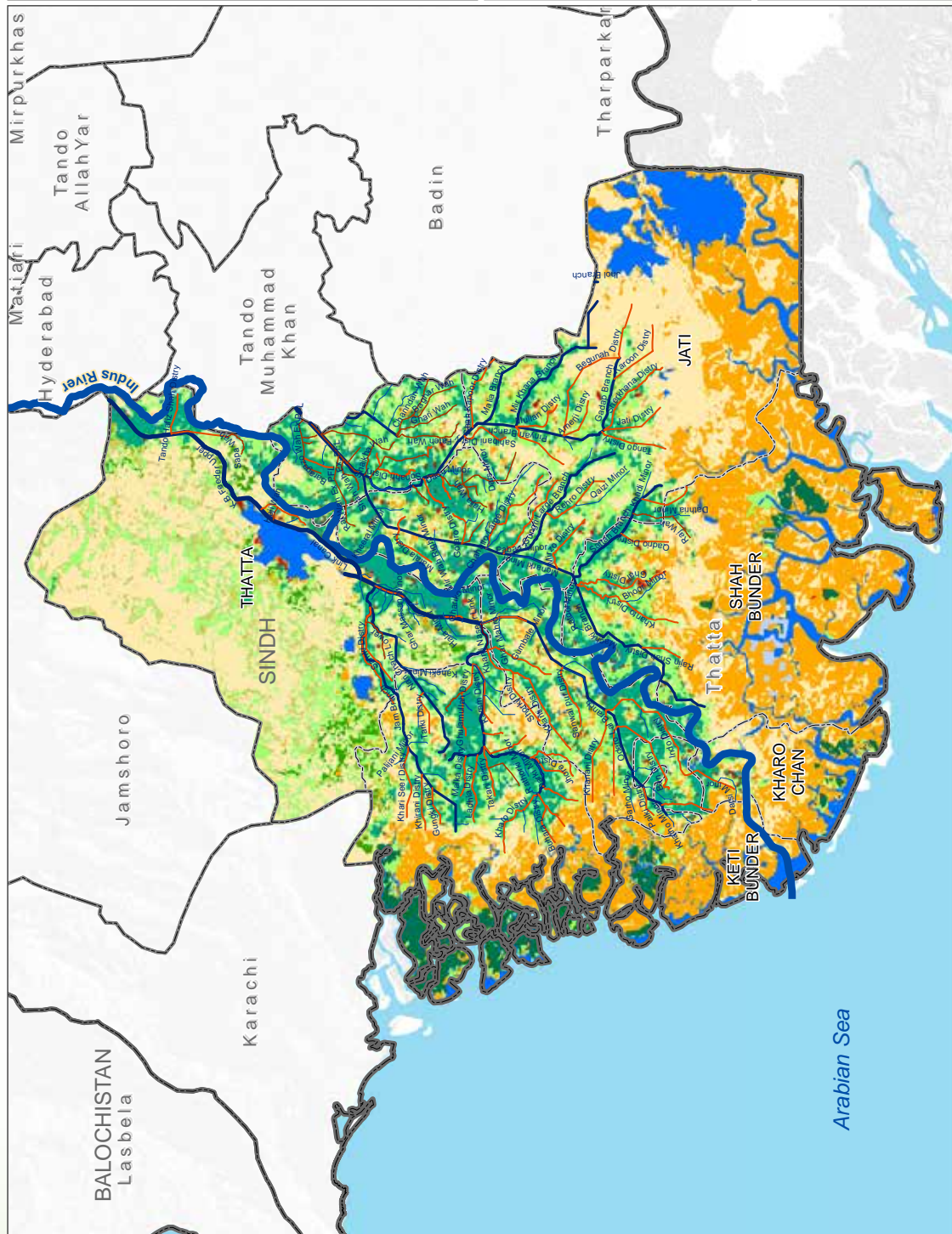
Table 1.1-3: Irrigation by Type

Irrigation Type	2008-09	2009-10
Canal	137,682	107,732
Tube well	7,521	7,472
Total Irrigated Area	145,203	114,884
Un-Irrigated	35,521	56,780
Total Sown Area	176,724	171,624

Source: Sindh Development stats 2011, table 4.36

Sindh - Thatta Irrigation System and Land Cover

August, 2014



Legend

Irrigation System

- Branch
- Canal
- Distrib
- Link
- Minor
- Wah

- International boundary
- Province boundary
- District boundary
- Taluka boundary

Land Cover

- Bare areas
- Closed broadleaved forest permanently flooded
- Closed to open grassland
- Closed to open vegetation regularly flooded
- Irrigated croplands
- Mosaic Croplands/Vegetation
- Mosaic Grassland Forest-Shrubland
- Rainfed croplands
- Sparse vegetation
- Water bodies



Map Doc Name: IMMAP_PAK_Thatta Irrigation System Map_v01_270814

Creation Date: Aug 27, 2014

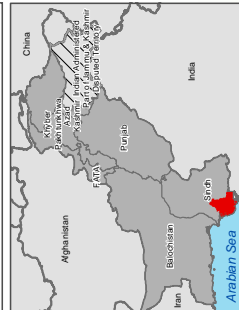
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Web Resources: <http://www.immap.org>

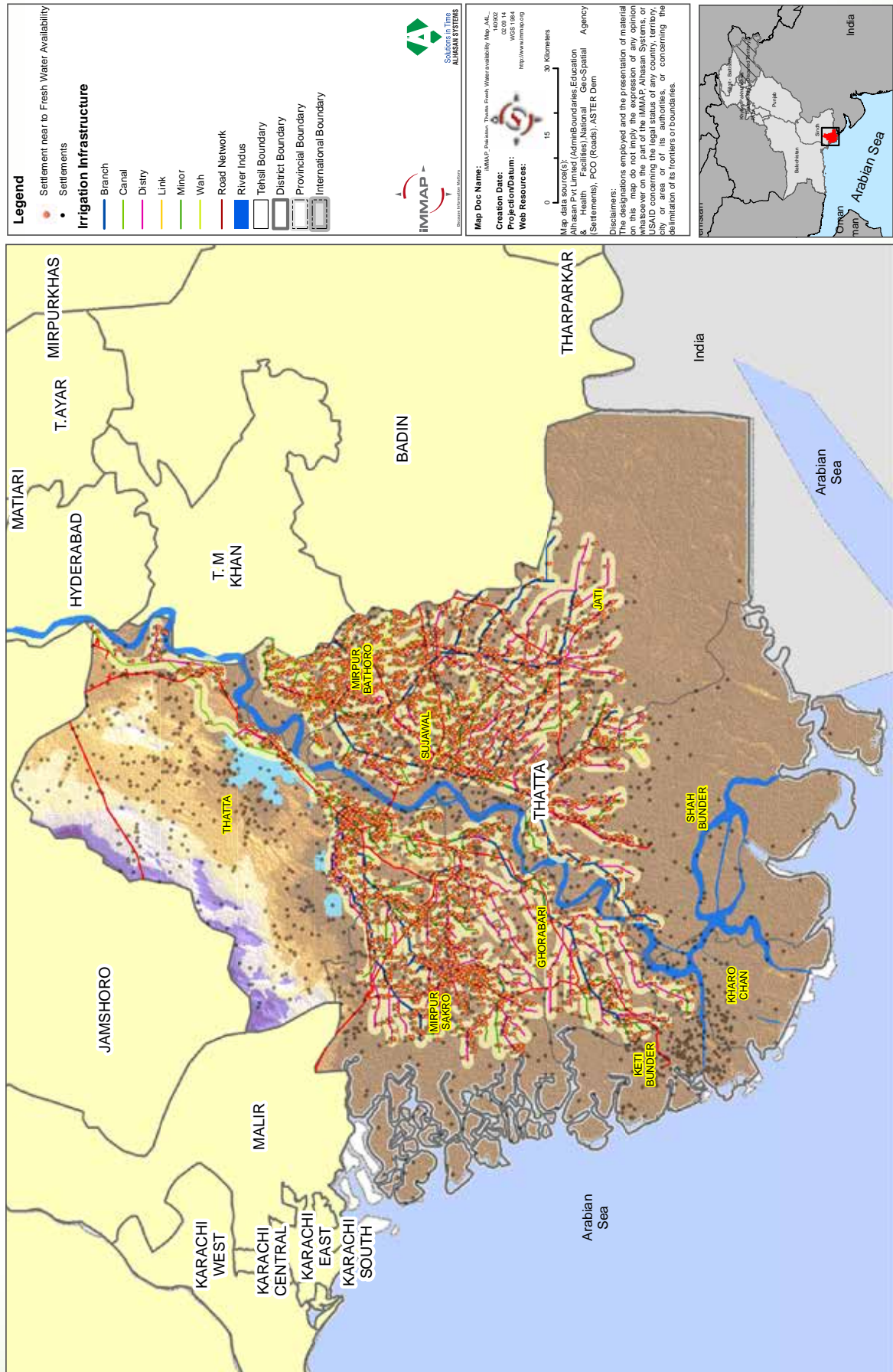
Scale: 0 10 20 40 Kilometers

Map data source(s): Private Limited: Admin boundaries, Irrigation System, River, Global Land Cover 2008, Land Cover

Disclaimer: The information employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the IMMAP Ahasan Systems, or USAID concerning the legal status of any country, territory, or other area, or concerning its boundaries, or concerning the delimitation of its frontiers or boundaries.



Sindh-Thatta Fresh Water Availability Map Date (September 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.”¹¹

Updated and proper data is not found on the current situation of Solid waste management system in district Thatta. Like some other major districts of Sindh, District Thatta also has no proper solid waste management system, while indiscriminate dumping and open burning of waste is a common practice. It is responsibility of the municipal authorities to collect and dispose of solid waste but they had failed to perform their job because of the lack of the required machinery, capacity, expertise and mismanagement.

However, Taluka Municipal Administration’s (TMA) and district-level annual plan, news and such other concerned projects reports can be useful for understanding the situation of solid waste management in the concerned district. Though the urban parts of the district have waste management facilities up to some extent as compare to rural parts are totally neglected in this regard.

According to the Multiple Indicators survey (MICS, Sindh 2003-04), in aspect of ‘Most Deprived Districts for Urban Water Supply and Sanitation Facilities’ District Thatta shows the results as 69% of access to improved water supply & sanitation.¹²

Official document (Financial record) of Govt. of Sindh Finance department forwarded for ‘Release of remaining 50% share (Years; 2004-05 & 2005-06) to TMA’s on account of Water supply, Sanitation and Solid waste management ‘shows allocation of Rs. 4,296,450 & 3,528,400 respectively for the district Thatta. It clearly depicts the fact that either the released funds/budget for such basic public facilities including solid waste management are not invested properly for the concerned operational & management tasks, or may be the poor solid waste management situation in the concerned district is only due to the poor check and balance at TMA’s level.¹³

According to the News report, the Asian Development Bank (ADB) raised funding of Karachi Mega City Development Project from \$400 million to \$800 million, besides supporting expansion of Karachi master plan to include Hyderabad, Thatta and other nearby towns in it. The delegation has expressed the views that the bank was interested in projects of transport, solid waste management, Katchi Abadies, training of employees, master plan and water board. While on the occasion, the City Nazim-Karachi disclosed that after the talks with ADB officials, it was decided to expand master plan of Karachi and make it a regional plan by adding Thatta, Hyderabad and other nearby towns.¹⁴

¹¹ Journal of Environmental and Occupational Science Environ Occup Sci 2012; 1(2):129-131

¹² FINDINGS OF SITUATION ANALYSIS Gender-WASH/Report

¹³ Govt.of Sindh: Finance department; Release of remaining 50% share to TMA’s on account of Water supply, Sanitation and Solid waste management, Years;(2004-05 & 2005-06)

¹⁴ News source; AAJ News Archive: <http://www.aaj.tv/2006/11/adb-doubles-funding-for-karachi-uplift-plan-hyderabad-thatta-included/> (Accessed on September 3, 2014)

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 females, at birth, is less than that of males¹⁵. Sex ratio in Thatta is 113 male per 100 females, which is more than the ratio at the National level that is 106¹⁶. Like majority of the other districts in Sindh, district Thatta is rural by its characteristics and 89 percent of the population resides in rural area as compared to the 11 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	1,593,887	843,827	750,060	1,415,284	750,705	664,580	178,603	93,122	85,481
00 -- 04	247,399	126,038	121,361	221,953	112,893	109,060	25,446	13,145	12,301
05 -- 09	267,957	144,018	123,939	240,649	129,549	111,100	27,308	14,468	12,839
10 -- 14	183,491	103,565	79,927	161,878	91,917	69,961	21,613	11,648	9,965
15 -- 19	151,198	77,374	73,824	132,383	68,180	64,203	18,815	9,194	9,622
20 -- 24	152,898	74,671	78,227	135,034	65,906	69,128	17,863	8,764	9,099
25 -- 29	132,492	70,493	61,999	117,591	62,729	54,861	14,901	7,763	7,138
30 -- 34	98,725	53,826	44,899	87,172	47,472	39,700	11,553	6,354	5,199
35 -- 39	74,880	39,750	35,130	66,133	35,085	31,047	8,747	4,665	4,082
40 -- 44	72,195	37,128	35,067	63,445	32,620	30,826	8,750	4,509	4,241
45 -- 49	55,686	30,383	25,303	49,050	26,715	22,335	6,636	3,668	2,968
50 -- 54	49,426	27,263	22,163	43,915	24,242	19,673	5,511	3,021	2,490
55 -- 59	29,722	16,978	12,743	26,218	15,057	11,161	3,504	1,921	1,582
60 -- 64	30,881	17,027	13,854	27,617	15,348	12,269	3,265	1,680	1,585
65 -- 69	15,373	8,728	6,645	13,598	7,803	5,795	1,775	925	850
70 -- 74	14,915	7,902	7,013	13,536	7,213	6,323	1,379	689	690
75 & ABOVE	16,649	8,683	7,967	15,113	7,975	7,138	1,536	707	829

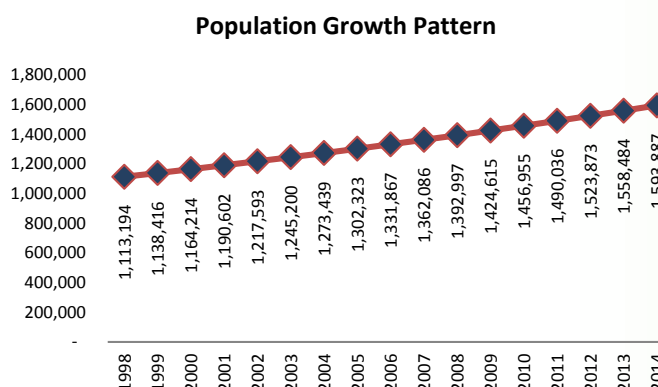
Source: Estimated for 2014 population on the basis of table 4, Census 1998

¹⁵ A profile for District Badin: 2009, South-Asia Partnership Pakistan

¹⁶ Labour Force Survey 2010-11: *Pakistan Bureau of Statistics*

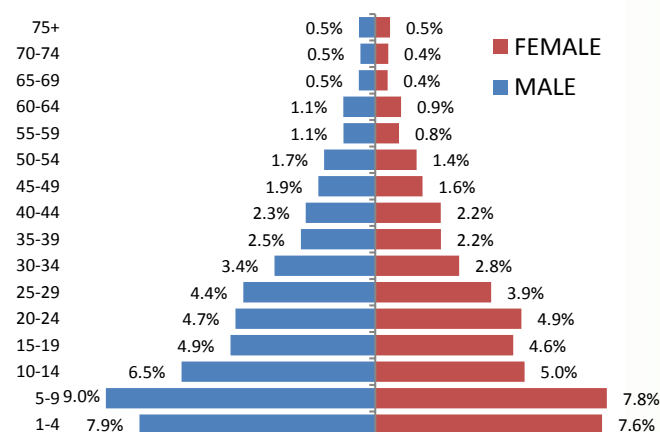
1.2.2 Population Growth Pattern

According to the 1998 census, population of the 9 talukas, that form this district, was 1,113,194. Population of district Thatta has an estimated growth rate of 2.26% per annum, which means that the populations will double itself in 40 years¹⁷ from 1998. 43.85 percent of the population is below 15 years of age and 2.94 percent is 65 years or above. The estimated population for 2014 is 1,593,887¹⁸, showing almost 43% increase in 16 years from 1998.



1.2.3 Population Distribution by Age and Gender

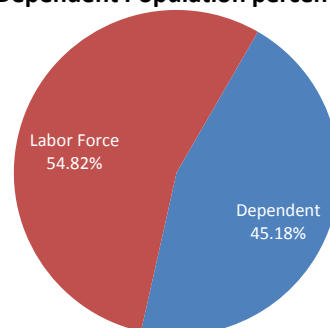
Out of the total population, 53 percent are males and 47 percent are females. The largest cohort of population is 5-9 years, which decreases with 5 years interval. Total population in this cohort is 267,957. Except the age groups 20-24, in all the rest of the age groups, male population out numbers female 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 Thatta District is 45.18 percent of the total population and the working population is 54.82 percent, which shows that dependency ratio¹⁹ in the district is 88 percent.

Dependent Population percent



¹⁷ Rule of 70 <http://controlgrowth.org/double.htm>

¹⁸ DP Thatta, April 2012. UNOCHA

Table 1.2-2: Population Details by Taluka

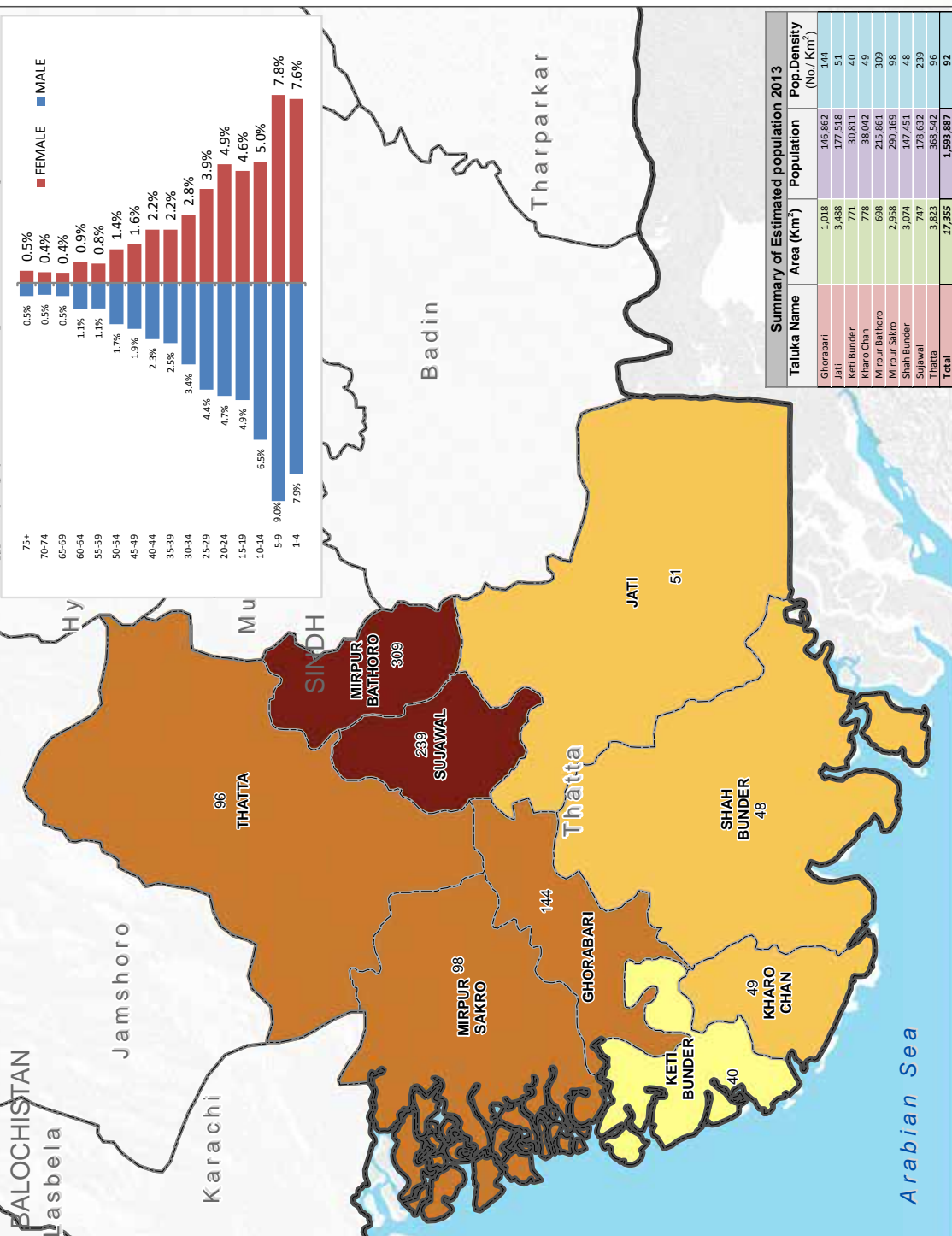
<i>Taluka</i>	<i>Area</i>	<i>Population</i>	<i>Male</i>	<i>Female</i>	<i>Pop Density</i>	<i>Sex Ratio</i>	<i>Average HH Size</i>	<i>Estimated</i>
Ghorabari	1,018	146,862	77,310	69,552	144	111	5.2	28,243
Jati	3,488	177,518	93,772	83,746	51	112	4.7	37,770
Keti bunder	771	30,811	16,248	14,563	40	112	4.9	6,288
Kharo chan	778	38,042	20,445	17,597	49	116	4.7	8,094
Mirpur bathoro	698	215,861	114,745	101,117	309	113	4.8	44,971
Mirpur sakro	2,958	290,169	153,722	136,447	98	113	5	58,034
Shah bunder	3,074	147,451	78,277	69,174	48	113	4.5	32,767
Sujawal	747	178,632	94,436	84,196	239	112	5.3	33,704
Thatta	3,823	368,542	194,911	173,631	96	112	5.6	65,811
Total	17355	1,593,887	843,827	750,060	92	113	5.6	284,623

Source: Estimated using Table 1 of Census 1998

¹⁹ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

Sindh - Thatta Population Density Map

September, 2014



1.3 Livelihood

1.3.1 Main Sources of Livelihood/Income

Agriculture and fisheries are the two major sources of employment for the people of district Thatta. In addition to that, there is a substantial number of landless people who own and manage livestock or are engaged in the non-farm sectors. According to a study conducted by Asian Development Bank, 79% of the population of district Thatta is poor. The incidence of poverty is negatively correlated with land ownership. Landowners are usually non-poor²⁰.

The following table shows the number of mouzas reporting sources of employment in district Thatta. Majority of the male population is associated with agriculture (in 59% of rural mouzas) followed by labor (in 20% of rural mouzas). While in the category of some, services sector, personal business and labor is frequent in male population.

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 as 208 (39%) mouzas have reported that women are also engaged in agriculture. In the category of some, 50% of the mouzas have reported women working as laborers.

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

GENDER	QUANTIFICATION	SERVICE	AGRICULTURE	TRADE	INDUSTRY	PERSONAL BUSINESS	OVERSEAS EMPLOYEMENT	LABOUR
MALE	MOSTLY	2	315	1	1	2	1	106
	SOME	325	179	80	28	269	14	373
	NONE	208	41	454	506	264	520	56
FEMALE	MOSTLY	0	208	1	0	7	0	185
	SOME	63	149	20	5	66	5	270
	NONE	472	178	514	530	462	530	80

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

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

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

²⁰ Pakistan: Sindh Coastal & Inland Community Development Project, (2005), Asian Development Bank, Project No. 37188, Technical Assistance Consultant Report, Vol-II

1.3.2 Agriculture

The land structure of district Thatta can be divided into four regions. The northwestern part that comprises of taluka Makli is hilly and barren with no irrigation and agriculture. The southwestern part, due to the long coastal line of 107 kilometers as well as shortage of river Indus water, is saline and sea-affected. This area is suitable for fish production and its export. While the southern portion, adjoining the Run of Kachh, on the border of India, is desert like sandy area, the northern part of this district consists of small hills and torrents that are extended till the Kheerthar range of mountains. The irrigated and productive area lies only in the middle of the district in Sajawal taluka. Though agricultural land is very limited, yet the available cultivable land is very productive in this region.

Wheat, rice and sugarcane are major crops of this district. Official statistics about these major crops have shown surprising results i.e., over the last twenty years, area and production of these crops have significantly increased²¹.

Area sown and production of food and cash crops in 2008-09 are reported in the Table 1.3.2.

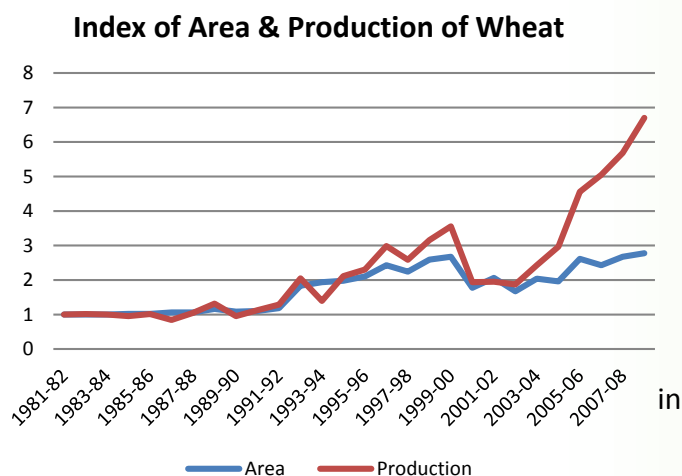
Table 1.3-2: Food and Cash Crops Cultivated in District Thatta

Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2008-09 (000 Tonnes)	Area Sown in 2010-11 (Acres) FAO
Food	Wheat	13.6	42.2	-
	Rice	78.5	203.1	169,511
Cash	Sugarcane	33.2	1629.9	32,508

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

• Wheat

Wheat crop, over the time, has shown substantial increase, both in area as well as production. As the corresponding graph shows, from 1981-82 onwards, both area and production are consistently increasing. There was a decline in both in the years 1999-00 but it regained the momentum and started increasing. Interestingly, increase in the production is far more than the increase the area which shows the high per acre yield of wheat.

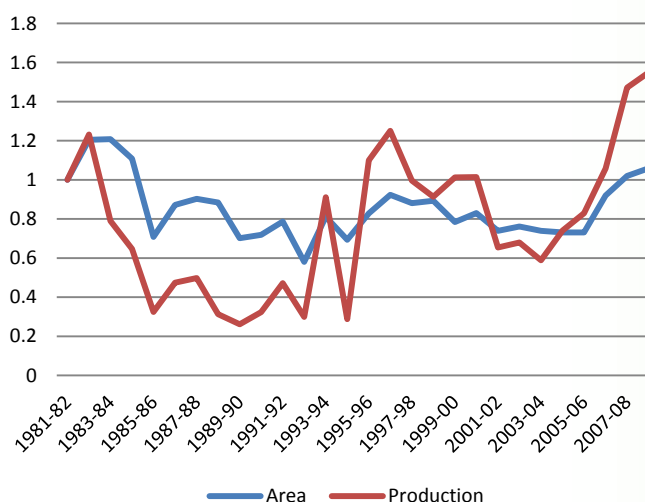


²¹ Crop Area and Production by Districts for 28 Years; 2008-09 , Pakistan Bureau of Statistics (PBS), Government of Pakistan

- **Rice**

Over the years, the trends, in area sown and production of rice crop, have been mixed. In 1981-82, both area and production decreased considerably and kept decreasing till 1993-94. In this period, decrease in production was more rapid than the decrease in the area, showing the declining productivity of rice crop. Yet, both area and production started increasing again in 1995-96 and, by the end of 2008-09, increase in production was more than the increase in area. As a whole, in the last twenty years, area has remained almost the same yet production has increased depicting an increase in rice crop's productivity.

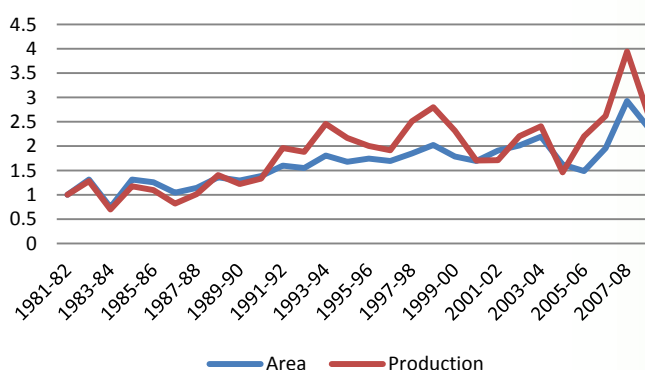
Index of Area & Production of Rice Crop



- **Sugarcane**

Sugarcane is the major cash crop of this district. The graph shows the increasing trends in both area and production over the last twenty years. The increase in production has been more than the increase in area which shows the increased productivity of this crop. However, the years 2007-09 have shown significant decrease in the production with a slight decrease in the area.

Index of Area & Production of Sugarcane Crop



1.3.3 Industry

There are about 30 industrial units established in the district. Apart from the sugar mills, all the larger industrial units are located in Dhabeji and Gharo mouzas adjacent to Karachi. Most of the labour force working in these units is non-local and generally belongs to Karachi. The industrial units of the district include sugar mills (5), textile mills (9), paper mills (2), flour mill (3) salt works, ice factory (2), etc. In addition, crushed stones from the Makli Hills and Kohistan are supplied to the Pakistan Steel Mill and the Thatta Cement Factory. There are also large coal deposits in Thatta Taluka. Recent addition to the industrial units is the car manufacturing plant near Budho Talpur, belonging to the Deewan Group, adjacent to the Deewan Sugar Mills²².

1.3.4 Livestock

Good breed of buffalo and cow are found in the district. Sheep, goat, camel, horse, ass and mule are also the main livestock of the district. The numbers of large animals exceeds the number of smaller animals showing people's preferences for keeping cattle rather than goats or sheep. Livestock in the district suffers in particular from shortage of high quality feed and fodder crops as a result of the overall shortage of water²³.

Table 1.3-3: Livestock in District Thatta

Livestock	Population
Cattle	339,105
Buffalo	314,253
Sheep	170,031
Goat	240,920
Camel	11,081
Horse	424
Mule	183
Ass	23,748
Domestic Poultry	510,114

Source: Livestock Census (2006)

²² Socio-Economic Study & Proposal for Livelihood Improvement: Badin & Thatta Districts, Sindh Pakistan, (2005), Agriculture & Rural Development Sector Unit, South Asia Region, World Bank

²³ *ibid*

1.4 Food Security

Food security can be broadly divided into four components²⁴:

- **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 the other crops like maize, tobacco and sugarcane, is produced in most of the rural mouzas of district Thatta. Besides, vegetables and fruits are also produced in the district. As the below table shows, wheat and rice are cropped in 51% and 74% of the mouzas respectively and the overall crop based food production is sufficient in Thatta district²⁵.

Table 1.4-1: Number of Mouza Reporting Major Crops

ADMINISTRATIVE UNIT	NUMBERS OF MOUZAS REPORTING MAJOR CROPS							
	WHEAT	RICE	COTTON	SUGARCANE	MAIZE	PULSES	ORCHARDS	VEGETABLES
Thatta District	338	491	23	459	188	75	53	311
Thatta Taluka	44	41	12	36	20	5	18	33
Sujawal Taluka	40	57	2	57	30	4	-	43
Mirpur Bathoro Taluka	33	53	-	52	25	14	-	18
Jati Taluka	38	117	2	118	27	25	-	36
Shah Bundeer Taluka	21	67	3	55	13	6	2	29
Karochan Taluka	10	7	-	4	8	1	3	10
Mirpur Sakro Taluka	82	84	2	79	6	-	-	82
Keti Bunder Taluka	14	12	-	11	11	4	7	10
Ghorabari Taluka	56	53	2	4	48	16	23	50

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 facing a deficit. In addition to cereals, animal based food (meat, milk, milk products) availability is also important for total food availability, in which the district has sufficient availability. Combining both the crop based and animal based food production, district Thatta is self-sufficient in food production²⁶.

²⁴ Define by Food & Agriculture Organization

²⁵ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

²⁶ 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 low²⁷.

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 high dependency ratio increases 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 very high in this district. The share of household expenditures on food is 61.8% of the total income in Sindh. So the low level of income, high food expenditures, high child dependency and high inflation (particularly food inflation) hinders access to food²⁸.

The table below shows physical access to food in district Thatta by providing distances of mouzas from the wholesale markets. Average distance from the fruit and vegetable market of a mouza is 49 and 48 kilometers respectively whereas the distance from the grain market is 18 kilometers. 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	535	19	9	180	241	84	21
	Percent	100		2	34	45	16	4
Grains Market	Number	535	18	12	194	238	72	19
	Percent	100		2	36	44	13	4
Fruit Market	Number	535	49	6	113	166	71	179
	Percent	100		1	21	31	13	33
Vegetable Market	Number	535	48	5	116	168	66	180
	Percent	100		1	22	31	12	34
Govt. Procurement Centre	Number	535	38	5	65	127	191	147
	Percent	100		1	12	24	36	27

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

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

²⁷ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

²⁸ Ibid

literacy play vital role in food absorption. According to Food Security Analysis (FSA) 2009, access to improved drinking water is low in this district²⁹.

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

Thatta	Water Delivery System				
	Tap Water	Hand Pump	Motor Pump	Dug Well	Other
Total	16	24	12	7	42
Urban	63	12	5	1	19
Rural	8	26	13	8	45

Source: PSLM 2012-13

Sanitation conditions in district Thatta are not satisfactory either where only 20% of the households use flush toilets and 38% of the households have no toilet facility. The sanitation facility is comparatively worse in rural areas of the district and the female literacy rate is 19% 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
79	6	16	19	67	60	2	27	24

Source: PSLM 2012-13

In a nutshell, this district has sufficient availability of food but poor socio-economic access; and a 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 Thatta is a food insecure district of Pakistan.

²⁹ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

1.5 Health and Immunization

1.5.1 Health Facilities

According to Health Facility Assessment, District Thatta 2012, total health facilities in district Thatta are 85. There 04 taluka hospitals in Thatta. These health facilities are sufficient for only 27% of the estimated 2014 population of the district. Table 1.5.1 shows the details of health facilities in this district.

Table 1.5-1: Number of Health Facilities by Type

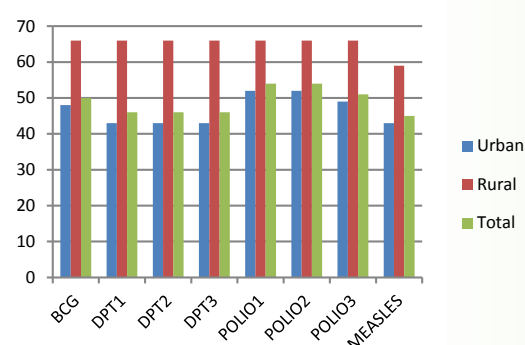
Type	Number	Bed Strength
Teaching Hospitals	0	0
District headquarter hospital	1	192
Tehsil headquarter hospitals	4	140
Rural health centres	8	64
Basic Health units	49	98
Govt. Rural Dispensaries	23	-
MCH centres	-	-
Sub health centres	-	-
Grand Total	85	494

Source: Health Facility Assessment, District Thatta 2012

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 Thatta, around 46% pregnant women have received tetanus toxoid injections. In urban areas this percentage is 79% and in rural areas it is 41%³⁰. Record based³¹ immunization data of district Thatta shows that 44% (Male 44%: Female 43%) of the children aged 12-23 months have received full immunization. In the urban areas this coverage is 59 percent (Male 56%: Female 62%) and in the rural areas it is 41% (Male 42%: Female 40%). The corresponding graph shows the percentage of children of 12-23 months that have been immunized by the type of Antigen based on records³².



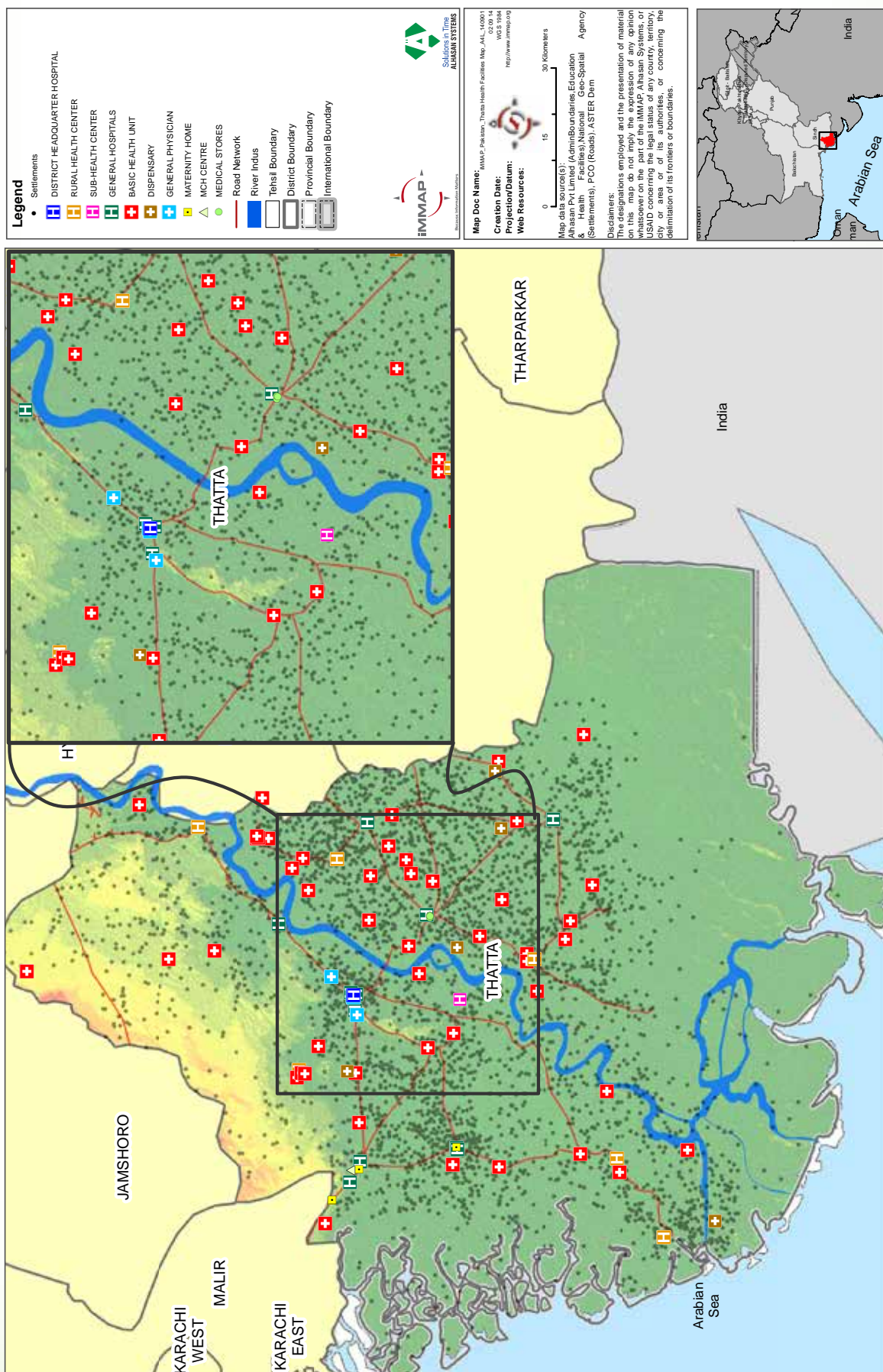
³⁰ Table 3.11, Pakistan Social and Living Standards Measurement Survey (PSLM)2012-2013

³¹ 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'

³² Table 3.5: Pakistan Social and Living Standards Measurement Survey (PSLM)2012-13

Sindh-Thatta Health Facilities Map

Date (September 2014)



1.6 Education

1.6.1 Highlights

Literacy Rate (10 years and above)	36%
Adult Literacy Rate (15 years and above)	36%
GPI Primary	0.73
GPI Middle	1.55
GPI Secondary	0.61
GPI Higher Secondary Secondary	0.27
Population that has ever attended School	37%
Male	49%
Female	23%
Population that has completed primary level or higher	28%
Male	38%
Female	17%
Student Teacher Ratio	30
Primary	32
Middle	21
Secondary	19
Higher Secondary	35

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

1.6.2 District School Enrolment Ratio

The education status is quite poor in district Thatta. The overall literacy rate (for the population of 10 years and above) is 36%; for male it is 48% and for female it is 23%. For the urban rural comparison, urban literacy rate is higher than the rural, which is 60% (male: 72 % and female: 45%). In the rural areas literacy rate is 32 % (male: 44% and female: 19%). Adult literacy rate (for the population of 15 years and above) is 36 %. Gross Enrollment Rate³³ (GER) at the primary level in Thatta is 57% (Male: 65%, Female: 46%), in urban community it is 87% (Male: 89%, Female: 85%) and in rural community it is 53% (Male: 63%, Female: 38%). Net Enrollment rate³⁴ (NER) at the primary level in district Thatta is 32% (Male: 35%, Female: 27%), in urban community it is 52% (Male: 49%, Female: 55%) and in rural community it is 29% (Male: 34%, Female: 21%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural, Urban and Gender at different levels.

³³ 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.

³⁴ 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	89%	44%	75%	49%	20%	14%
	Female	85%	49%	49%	55%	19%	14%
	Total	87%	46%	60%	52%	19%	14%
Rural	Male	63%	21%	26%	34%	4%	2%
	Female	38%	14%	12%	21%	4%	2%
	Total	53%	18%	20%	29%	4%	2%
Total	Male	65%	24%	31%	35%	6%	3%
	Female	46%	18%	18%	27%	6%	4%
	Total	57%	21%	25%	32%	6%	3%

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

1.6.3 Gender and Level Wise Details

The total enrollment of students in government schools of district Thatta is 165,889 (Male: 97,126 and Female: 68,763). Out of a total of 5,527 teachers, 4,547 are male and 980 are female teachers. This illustrates that one teacher is teaching averagely 30 students. The total boys' schools of District Thatta are 1,314, and the total female schools are 433. Besides, there are 1,470 mixed gender schools. Thus, the total number of schools is 3,217 and averagely every school has an enrolment of 52 students and a teaching staff of around 2³⁵.

Primary

Total numbers of primary level schools, that are reported, is 3,050. The total enrollment at the primary level is 140,548 (Male: 81,111 and Female: 59,437). Total number of teachers, at the primary level, is 4,404, out of which 3,706 are male and 698 are female teachers. Thus, on an average, each primary school has an enrolment of 46 students with a teaching staff of 1. However, the student class ratio is 33 and each school has averagely around 1 class rooms.

Middle

There are a total of 59 middle schools reported. The total enrollment, at the middle, level is 4,833 (Boys: 1,899 and Girls: 2,934). The total number of teachers at the middle level is 228, out of which 153 are male teachers and 75 are female teachers. Thus, on an average, each middle school has an enrolment of 51 students with a teaching staff of 2. However, the student class ratio is 19 and each school has averagely around 3 class rooms.

Matric

There are a total of 59 secondary schools. The total enrollment at the secondary level is 12,319 (Boys: 7,663 and Girls: 4,656). The total number of teachers at the secondary level is 663, out of which male teachers are 479 and female teachers are 184. Thus, on an average, each secondary

³⁵ District Education Profile Thatta, 2012-13

school has an enrolment of 209 students with a teaching staff of 11. However, the student class ratio is 36 and each school has averagely around 6 class rooms.

Higher Secondary

There are a total of 13 higher secondary schools in the district. The total enrollment, at the higher secondary level, is 8,189 (Boys: 6473 and Girls: 1,716). The total number of teachers at the higher secondary level is 232, out of which 209 are male teachers and 23 are female teachers. Thus, on an average, each higher secondary school has an enrolment of 630 students with a teaching staff of 18. However, the student class ratio is 77 and each school has averagely around 8 class rooms.

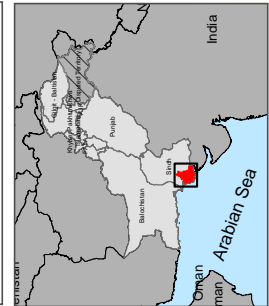
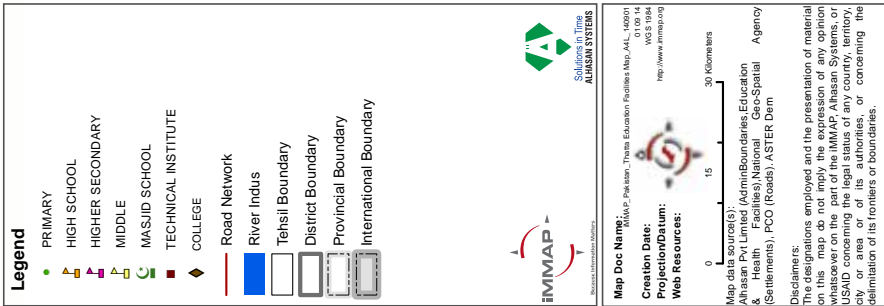
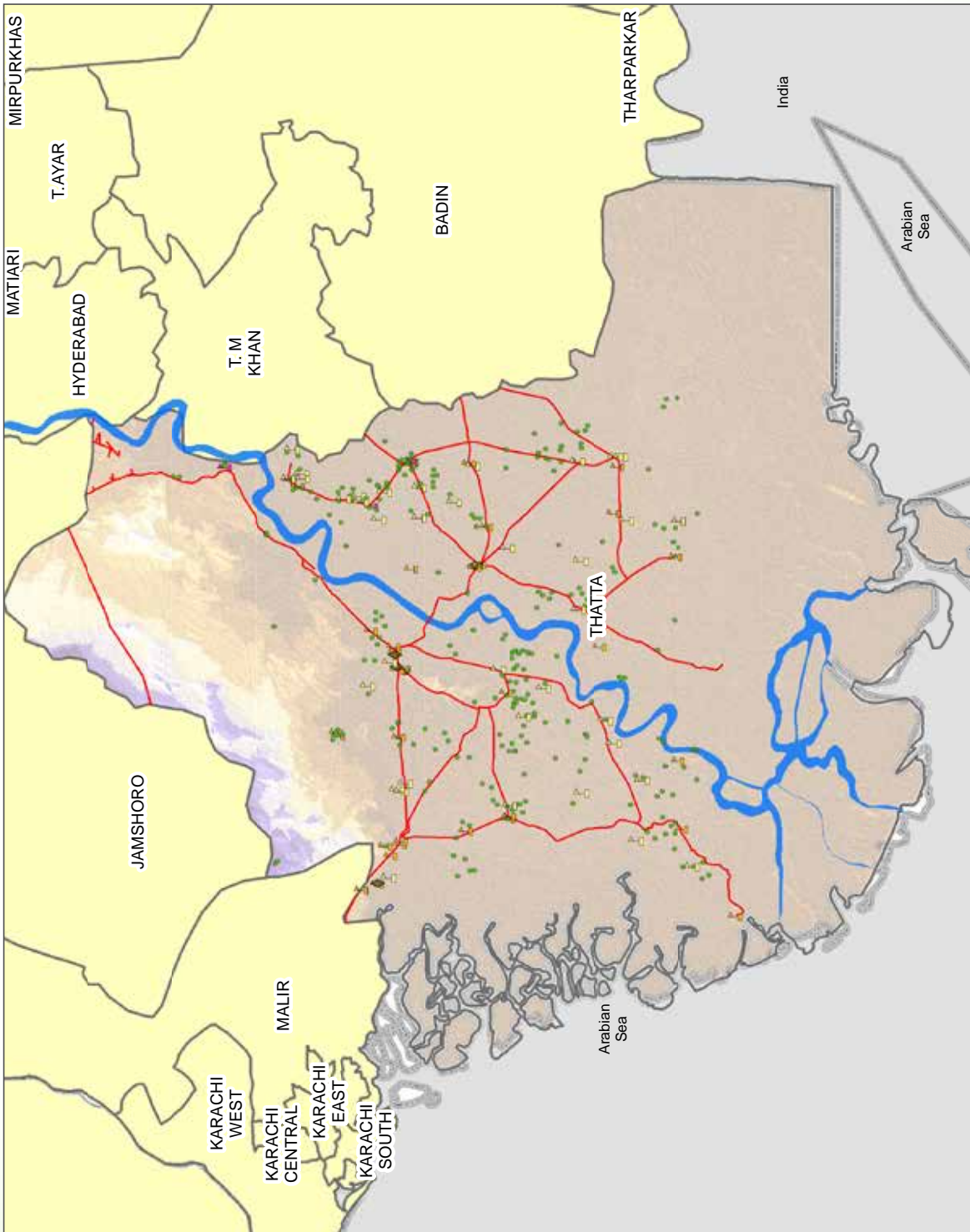
Table 1.6-2: Enrolment and Educational Facilities by level and Gender³⁶

Level	Enrolment			School Facilities				Teachers		
	Boys	Girls	Total	Boys	Girls	Mixed	Total	Male	Female	Total
Primary	81,111	59,437	140,548	1,244	385	1,421	3,050	3,706	698	4,404
Middle	1,899	2,934	4,833	34	30	31	95	153	75	228
Secondary	7,643	4,676	12,319	31	16	12	59	479	184	663
Higher Secondary	6,473	1,716	8,189	5	2	6	13	209	23	232
Total	97,126	68,763	165,889	1,314	433	1,470	3,217	4,547	980	5,527

³⁶ District Education Profile Thatta, 2012-13

Sindh-Thatta Education Facilities Map

Date (September 2014)



2 Disaster History and Its Impact

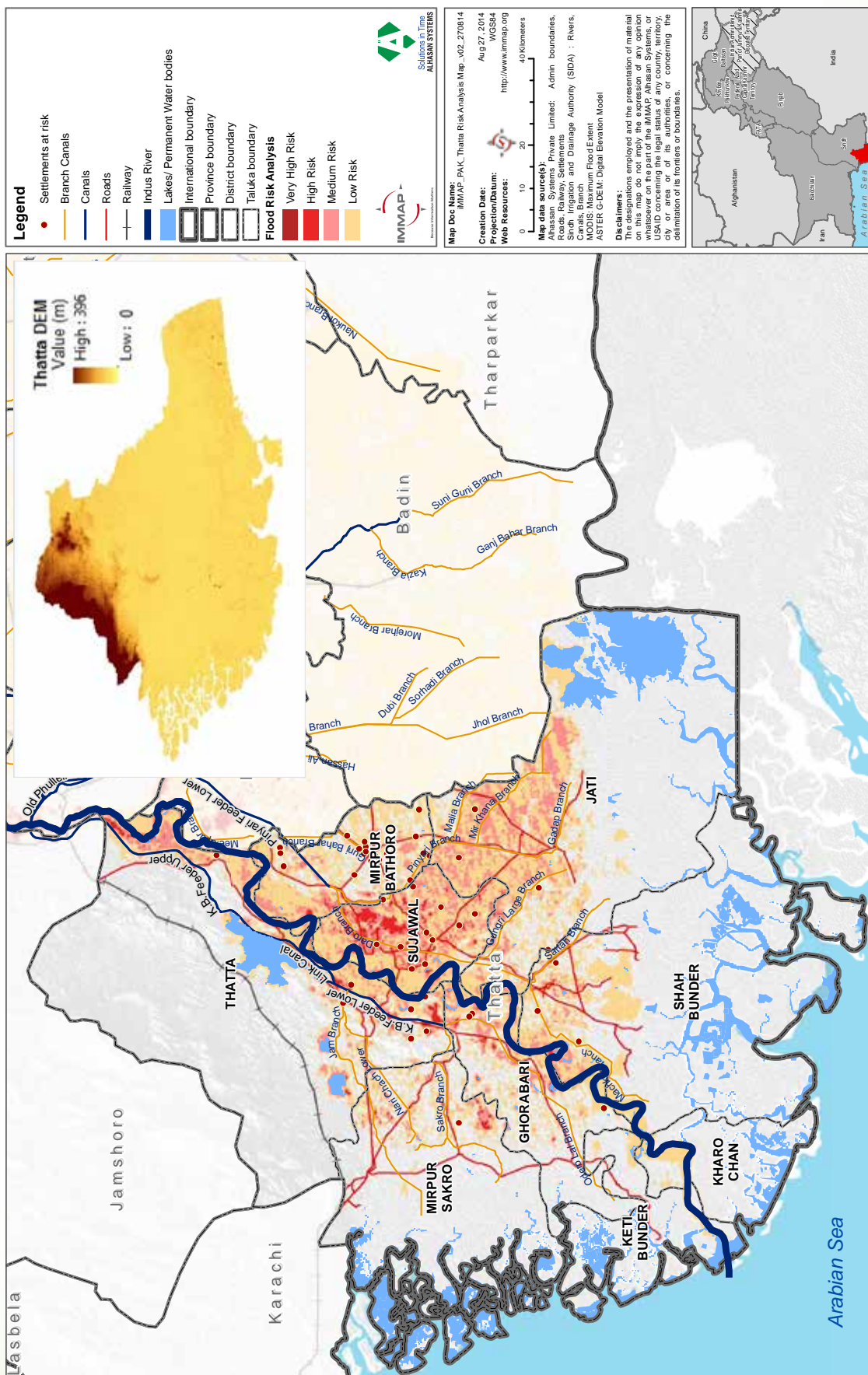
2.1 Disaster in District

2.1.1 Disaster History

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 Shahdadkot on the right bank of River Indus and Ghotki, Sukkur, Khairpur, Naushahroferoze and Shaheed Benazirabad 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 that are prone to riverine flooding 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. Thatta District is one of the oldest districts of Sindh. It was hit by 2010, 2011 and 2012 rains/ riverine floods. The relative severity of floods was ranked as medium in district Thatta³⁷.

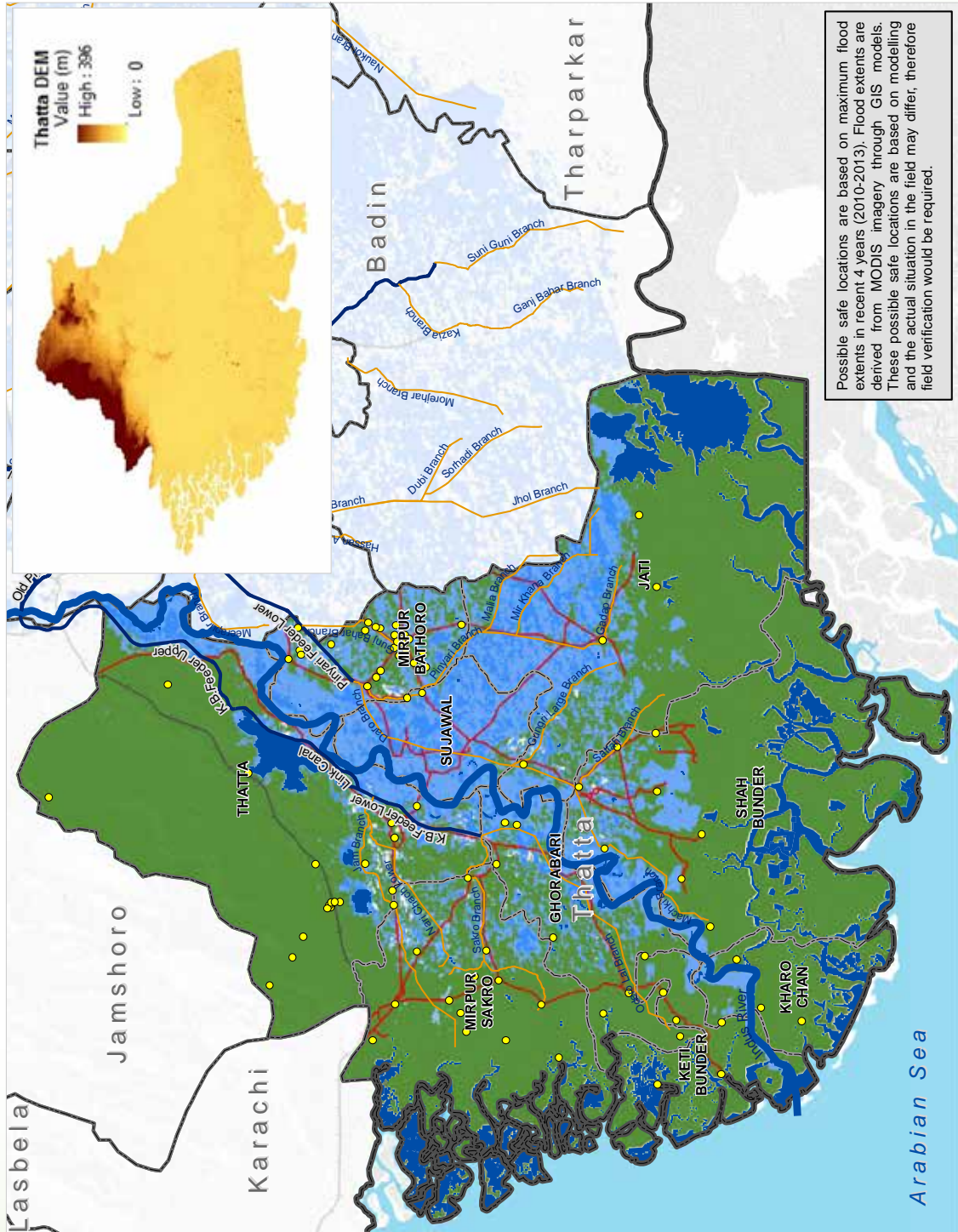
Vulnerable points of the district are Gul Muhammad Baran, Kar Malik, Jhoke Sharif, Mehar Shah, Darya Khan suho, Mirpur bathoro Darro Banno, Laik Pur and Bachal Gugo.

³⁷ Flood Facts, Disaster Management Apparatus, 2010



Sindh - Thatta Possible Safe Locations Map

August, 2014



2.1.2 Demography

As mentioned above, district Thatta was hit by floods in 2010 and 2011. The extent of damage in 2010 was far more than that of the 2011 floods. In 2010 floods³⁸, 977 villages/settlements of 55 union councils in 9 talukas were affected. A population of 895,400 persons was affected and there were 7 casualties and 24 injuries. In total, 107,981 houses were damaged. Table 2.2.1 shows the losses' and damages' summary.

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

Attribute	Figures 2010	Figure 2011	Source
Total Households 2010		285,678	Estimated
Affected Households	175,569	34,904	Contingency Plan 2012
Total UCs		55	
UC Affected	55	23	UN-OCHA
Total Villages		7200	
Villages/Settlements Affected	977	901	Contingency Plan 2012
Total Houses Affected	107,981	15,693	Contingency Plan 2012
Katcha	77,396	n/a	PDMA Sindh
Pakka	30,585	n/a	
Partially Damaged		15,693	
Destroyed		0	
Total Population		1,456,955	Estimated
Affected Population	895,400	178,011	
Deaths	7	23	
Injuries	0	15	
Total Area		1,778,043	UN-OCHA
Total Affected Area	874030	198,111	PDMA Sindh, UN_OCHA, FAO
Crop Area Affected	177,800	108,303	

2.1.3 Impact of Disaster on Livelihood & Agriculture

As mentioned earlier, district Thatta has been consecutively hit by floods in 2010 and 2011. A separate analysis of these floods is given as under:

³⁸ Monsoon Contingency Plan Sindh, 2012

Impact of Floods 2010:

The floods of 2010 had a devastating effect on this district as all the 55 union councils, of the 9 talukas, were affected. Most of the sources of livelihood were destroyed for the population, particularly for those whose livelihood was dependent on agriculture and the related industries. As mentioned in the section 2.1.2, there has been a huge loss to demographic indicators. Moreover, 68,200 hectares of rice crop was damaged which caused a yield loss of 2,788 kg/ha. Sugarcane crop was also severely damaged as 29,400 hectares of crop was lost which caused a yield loss of 51.3 tons/ha³⁹. Besides, cotton crop and fodder were also adversely affected.

Impact of Floods 2011:

Sources of livelihood were severely affected due floods 2011 as the damages to demographic indicators, agriculture and livestock were enormous.

Table 2.1-2: Crop Loss and Area Damaged Due to Floods 2011

Major Crops		Area
Cotton	Area sown (Acre)	24,075
	Area Damaged (Acre)	20,223
	%	84%
Rice	Area sown (Acre)	169,511
	Area Damaged (Acre)	110,182
	%	65%
Sugarcane	Area sown (Acre)	32,508
	Area Damaged (Acre)	8,452
	%	26%
Other	Area sown (Acre)	33,247
	Area Damaged (Acre)	26,032
	%	78%
Total Area Sown		259,341
Total Area Damaged		164,889

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

The above table shows the damage of crops due to floods 2011. 84% of the cotton crop was damaged along with 65% of the rice crop, 26% sugarcane and 78% of other crops. 65 livestock heads died due to the floods⁴⁰.

³⁹ Pakistan: Floods/Rains 2010, Rapid Crop damage Assessment, Pakistan Space & Upper Atmosphere Research Commission (SUPARCO)

⁴⁰ Flood Situation Update, 2011, Food & Agriculture Organization (FAO)

Impact of 2012 Floods:

No crop damage has been reported due to floods 2012.

2.1.4 Analysis of Food Security Situation

As established previously, district Thatta is a food insecure district of Pakistan. Floods of 2011 and 2012 worsened the existing situation of the population. Thus, the indicators of food security, i.e. availability, access, utilization and stability showed dismal situation in this district.

District Thatta is an agro-based district with majority of the households engaged in agriculture farming, livestock rearing and non-agriculture activities/casual labour. Among these three types of the households, empirical studies have shown that poverty has been relatively higher in the non-agriculture households, followed by livestock households and small farmers⁴¹. As stated in the previous section, many families of this flood affected district lost their homes (15,693 houses were damaged), their crops (108,303 crop area affected) and heads of livestock (65 livestock died). Due to the lack of industrial base, the sources of income of households, situated in this severely affected district, are less diversified. All the social indicators including large household size, poor literacy level, higher mortality rate and inadequate infrastructure with poor access to education and health facilities show a 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 of food in the district⁴².

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

2.1.5 Health

In 2010 floods, 32 BHUs, 13 Dispensaries, 4 RHCs and 2 SHCs were damaged. During 2011 floods, out of the 47 BHUs, 13 BHUs were reportedly damaged. Out of the 8 RHCs 2 were reported damaged⁴³. In response to the floods, Aga Khan Health Service Pakistan (AKHSP) provided health services in RHC Ketu Bundar. Merlin covered 11 UCs and provided health facilities to the needy. GRC also provided health facilities. Besides, ACF provided nutritional

⁴¹ 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

⁴² Ibid

⁴³ WHO, G. N. (8th to 12th September, 2011). Health Initial Rapid Assessment, 22 flood affected districts in Sindh. Islamabad

facilities in 8 UCs. In 16 UCs of the district, HANDS provided Antenatal, Post Natal, and routine health services.

2.1.6 Education

Due to the 2010 floods, 696 schools (Boys: 406, Girls: 66, Mixed: 224) were affected⁴⁴. During 2011's heavy rains 172(Boys': 138, Girls': 34) schools were affected, of which 44 (Boys': 32, Girls': 12) were completely destroyed and 128 (Boys': 106, Girls': 22) were partially damaged. In response to the damage in 2011, Education Cluster planned to provide transitional school structures for the 44 destroyed schools. A refurbishment of 128 partially damaged schools was also planned along with the training of 344 teachers in psycho-social support and joyful learning and training of 430 school management committees. Unfortunately there was no response from the humanitarian community to carry out the planned activities⁴⁵.

⁴⁴ Flood Report, 2010-11, RSU, Sindh

⁴⁵ District Profile Thatta April 2012, UNOCHA

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”⁴⁶

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^{47, 48}

Hazard	Frequency	Area affected/union councils	Severity /Force	Year
Cyclones	Seasonal	Specially coastal area and usually entire district	High	1964, 1993, 1999, 2003, 2004, 2007, 2010
Floods	Seasonal	Entire district	High	1840, 1856, 1874, 1942, 1946, 1948, 1956, 1973, 1974, 1976, 1978, 1978, 1988, 1989 1992,1994, 1995,1996, 1999, 2003, 2006 2007,2010 and 2011
Monsoon rains	Seasonal	Entire district	Medium	Every year
Tsunami	Rare	Coastal area	High	1945, 2005

⁴⁶ “Urban Governance and Community Resilience Guides”, (2010), Asian Disaster Preparedness Center

⁴⁷ DRMP Thatta,2008[Feb,2013]

⁴⁸ Contingency plan Thatta,2012[Feb,2013]

Hazard	Frequency	Area affected/union councils	Severity /Force	Year
Sea intrusion	Often	-do-	Medium	1992 onward
Earthquake	Rare	Entire district	Low	2001,2013

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 hazard⁴⁹”

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 Thatta is vulnerable to number of natural hazards like riverine and rain floods, cyclones and droughts. River Indus divides Thatta into two parts i.e. East and West. Four tehsils of Thatta district are on the right bank, four are on left bank while one tehsil Khario	Poor people can't afford investment in disaster risk reduction. Thatta District has been declared as one of the poorest district of Pakistan; especially its coastal areas are extremely poverty stricken. "The poverty figures in Badin and Thatta district are higher perhaps as high as	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 purpose which is mostly low lying areas. That's the reason that settlements of low lying areas receive heavy

⁴⁹ Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

Physical/material	Social/organizational	Attitudinal/motivational
Chhan is on both sides of river Indus. River Indus, after receiving water from 5 of its tributary rivers, causes floods. Flood 2010, 2011 and 2012 is the recent instance.	70 percent" [Asian Development Bank] ⁵⁰ .	damage than rest of other areas.
Geographically, Thatta is divided into three parts. The south western part is saline and sea-affected due to long coastline of about 107 kilometres as well as shortage of river Indus water, while the southern portion adjoining "Great Run of Kachh" on the border of India is desert like sandy area. The northern part of this district is paramount and known as "Kohistan" connected with Kheerthar range of mountains.	District Thatta is rural by its characteristics like majority of the other districts in Sindh. 89 percent of the population resides in rural area as compared to the 11percent that resides in the urban areas. Most people in rural areas lack job opportunities, health and educational facilities which escalates their risk against different hazards. [flood, droughts etc.]	Lack of knowledge of general public and local officials about severity of hazards that may affect them, associated risks, damage, and precautions to be taken, is perhaps one of the most significant hindrances in present day efforts to mitigate the potentially disastrous effects of most hazards.
The Coastal tehsils of District Thatta being in close proximity to the Arabian Sea are endangered with growing seawater intrusion owing to the reduced fresh water flows/availability. Vast land has merged in sea. Ketu Bunder and Kharo Chhan Tehsils of the district are the worst affected of the land degradation as a result of sea water intrusion.	In 1998, population of district Thatta was 1,113,194 with an estimated growth rate of 2.26% per annum while the estimated population for year 2014 is 1,593,887persons. Population gives birth to many socio-economic problems and makes the area vulnerable to different natural and made-made hazards.	Whenever early warning is issued to the people against any hazard, the people refused to evacuate their area. Same event occurred in Flood 2011. The Pakistan Metrological Department PMD's director, Azmat Hayat Khan, claimed that "Although they had issued an early flood warning, the people of Sindh had refused to move" ⁵¹ .
Floods/Heavy Rains in the Sindh province is because of the climate change. Environmental scientists agree that this has happened because of climate change. "We cannot explain the floods in Sindh as the area that received the rain is normally very dry. The amount of rain it received is usually the amount it gets in five years." ⁵² [Vice President Dr Qamaruz Zaman Chaudhry, World Meteorological Organisation (Asia)]	Dependent population [the population that is less than 15 years and more than 65 years of age] in the case of Thatta District is 46.79 percent of the total population and the working population is 53.21 percent, which shows that dependency ratio ⁵³ in the district is 88 percent.	In rural areas of the district women are marginalised in disaster risk reduction process because of social, economic, biological and physical differences. Disaster impacts on women and men differently, even within the same household. Women have less social, economic and political power and are not represented as well in formal leadership structures.
Agriculture is largely underdeveloped in district Thatta.	The education status is quite poor in Thatta. The overall illiteracy rate for	Most of the people including male, female and even children are fond

⁵⁰ DRM Plan Thatta ,2008 [Feb,2013]

⁵¹ The PMD's director, Azmat Hayat Khan, claimed that although they had issued an early flood warning, the people of Sindh had refused to move.[Feb,2013]

⁵² *ibid*

⁵³ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years[Feb,2013]

Physical/material	Social/organizational	Attitudinal/motivational
Due to the flood irrigation system, acute water shortage and inadequate system of drainage, the cultivable land has degraded to a varying degree causing a threat to food security and incomes and, employment of the farming community, particularly of small landowners and <i>haris</i> . [peasant]	year 2012-13 (for the population of 10 years and above) 64%; for male it is 52 and for female it is 77%. For the urban rural comparison, rural illiteracy rate is higher than the urban. Literate people can easily be mobilized and aware of the different disaster risks.	of chewing <i>Paan</i> and <i>Gutka</i> which makes them vulnerable to different diseases like oral cancer.
Disasters are rooted in development failures e.g. unsafe buildings that could not withstand cyclones, tsunami and earthquakes results in disasters. Most settlements of the district are made up of sub-standard material even two-third ⁵⁴ of the housing units of the district are constructed with wood and bamboo.	Plenty of information is available with various agencies especially on status of cyclones and floods affected communities and persons. Several NGOs have started working on Community-Based Disaster Risk Management in several villages and UCs. However, information on hazard risk, specific to vulnerable areas and at various levels (tehsils, union council & village) is still limited.	Cultural constraints on female mobility which hinder self-rescue, for example, women may not leave the home without male permission.
Coastal tehsils of the district Thatta lack forests of mangroves and coconut which resist strong winds and also prevent soil degradation. There is mounting evidence that over exploitation and loss of mangrove cover has made the coastal communities of the district vulnerable to cyclones. Indus delta areas of Badin and Thatta have seen two major cyclones in quick succession in 1999 and 2001.	According to Census 1998, the economically active population was 25 percent. A high unemployment rate of 18% percent was recorded. Two third of the total employed persons was engaged in primary occupation namely agriculture, forestry, fishing and hunting ⁵⁵ .	
Being in the tail and having large (Kohistan) area, the district has gone through painful sufferings of drought due to meagre rainfalls (below 100 mm) and shortage of water. The southern portion adjoining the Run of Kachh on the border of India is also desert like sandy area.	Though awareness sessions and trainings, for educating the local vulnerable communities, are amongst one of the policies of the District Disaster Management Authority (DDMA), the same have not been implemented up till now.	
Mechanism of early warning system is not up to the mark in Pakistan. Pakistan Meteorological Department (PMD) Director-General Arif Mehmood said that	Lack of coordination amongst all stakeholders is a major hindrance in implementation and progress of the Disaster Risk Reduction process.	

⁵⁴ DRM Plan Thatta ,2008 [Feb,2013]

⁵⁵ Baseline survey of coastal areas of Badin and Thatta districts , vol 1, March,2012 (Feb,2013)

Physical/material	Social/organizational	Attitudinal/motivational
The meteorological department needs at least six to seven radars. "Unfortunately the only radar we have monitors threats along the coastal belt," ⁵⁶		
Piped water is available to only 16% percent of housing units. Drinking water is purchased at a high cost by most coastal communities and lack of access to drinking water is one of the principal reasons that households out-migrated. About 26 percent of rural households have hand pumps inside the housing units, while 7percent of housing units use wells ⁵⁷ .	Community-based disaster drills are an important aspect of emergency management yet so very neglected by the district authorities. These drills provide a chance to practice the full spectrum of disaster response.	
Livelihood of the coastal communities is vulnerable against hazards like sea intrusion, cyclones, droughts and floods. According to recent surveys by Sindh Board of Revenue, the degraded lands shot up to 2.2 million acres in 159 <i>dehs</i> ⁵⁸ [little bigger than a village]reducing crop production in the two coastal districts [Thatta and Badin]. Droughts and disasters have a devastating impact on fishing, livestock and other coastal livelihoods.	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.	

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 hazards⁵⁹.

⁵⁶ <http://tribune.com.pk/story/288333/early-warning-systems-as-the-disasters-come-how-can-the-govt-get-people-to-move/> [Feb,2013]

⁵⁷ Pakistan Social And Living Standard Measurement Survey (PSLM) 2012-13

⁵⁸ Baseline survey of coastal areas of Badin and Thatta districts , vol 1, March,2012 (Feb,2013)

⁵⁹ Participant's Course workbook (ADPC)

Physical/Material Capacity

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

Social /Organizational Capacity

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

Attitudinal/Motivational Capacity

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

Capacity Matrix

Physical/material	Social/organizational	Attitudinal/motivational
In the year 2002-2003, Sindh Forest Department [SFD] allocated Rs74.26 Million for replanting and expansion of the forests especially in the coastal areas. Number of schemes were included in the Annual Development Programme ADP 2002-2003 e.g. "Replanting/Regeneration of 8,000 ha of Indus Delta Mangroves in Shah Bunder, Keti Bunder & Karachi areas". (2000-2001 to 2004-2005), "Reforestation of harvested areas in irrigated plantations over 2500 ha in Hyderabad & Thatta." ⁶⁰	The District Disaster Management Authority Thatta is the focal organization and authority in the conduct and implementation of activities and actions on Disaster Risk Management in Thatta district. In the event of a disaster, the DDMA carry out emergency response and relief activities in the affected areas. DDMA formulates DRM Plan of the district and conduct education, training and public awareness programmes for local officials, stakeholders and communities.	Non- governmental organizations are following the policy of DDMA which is, to educate and aware maximum number of people on disaster risk reduction and management. They organize workshops and seminars to communicate their message to mass population and aware them of their potential hazards. Unfortunately these workshops don't encourage grass root representation because these seminars are organised in seven star hotels e.g. Serena and Marriot.
Health facilities of District Thatta includes five hospitals, eight Rural health centres (RHCs), two Mother Child Care Centre (MCHC), forty seven Basic Health Units (BHUs), and twenty four General Dispensaries (GD) and four Sub-Health Centres (SHC) ⁶¹ . These health facilities provide health services both in rural and	Disaster Risk Management Plan of the district Thatta is produced by Government of Sindh in Nov, 2008 which contains complete information of the District, its Disaster History, Hazards and Emergency Response Structure. This document is very helpful for relief agencies and other stakeholders who want to work on	In the flood 2010 and 2011, the volunteers assisted the government, NGOs and other welfare activities and presented their services wherever needed.

⁶⁰ <http://www.sindhforests.gov.pk/resources.html> [Development Programme] (Feb,2013)

⁶¹ World Health Organization (WHO) 2010 [Feb,2013]

Physical/material	Social/organizational	Attitudinal/motivational
urban areas of the district not only in routine but also in extreme circumstances.	DRM/DRR in district Thatta. http://www.ndma.gov.pk/Documents/DRM_Plan/THATTA%20pLAN.pdf	
The total number of schools in the district is 3,217. Out of which 3,050 are primary schools, 82 are middle schools, 13 are elementary, 59 are secondary schools and 13 are higher secondary schools ⁶² . These school buildings are also used as shelter and evacuation centres in emergency.	After 2010, 2011 and 2012 flood events, different NGOs /INGOs have focused their attentions on shelter, wash, and livelihood activities (Plan Intel, WFP and WHO). Most of the NGOs have focused their attention to relief activities instead of initiating Disaster Risk Reduction projects in the district. [List of INGOs and local NGOs is given below in the fourth chapter named, "Support and Coordination Services" of district profile Thatta]	At the grass root level, trainings are conducted by different organizations like NRSP, Right to Play etc. in the disaster prone areas to increase the capacity of the people by educating them on different hazards and their measures. Some implementing partners are also replicating these trainings. In most of the cases, follow up of these trainings is not carried out.
Thatta is a coastal district some kilometres away from Karachi. A fishery industry is well established which provide fish to different parts of the Province. Fish industry is a source of revenue collection which enhances socio-economic conditions and standard of life of the people by reducing their vulnerability. However, drought and destruction of breeding grounds and estuaries has caused significant reduction in fishing.	The overall literacy rate (for the population of 10 years and above) 36%; for male it is 48 and for female it is 23%. For the urban rural comparison, urban literacy rate is higher than the rural. Literate people can easily be mobilized and aware of the different disaster risks.	
In the coastal areas, fishermen community have boats which can be used in case of flood situation. Furthermore, WHO has also provided number of boats to District Coordination Officer DCO. Boats of the Fishery department and Army can also be utilized in search and rescue operation.	In order to reduce poverty and enhance the capacity of the people, the Government of Sindh with the support from Asian Development Bank has initiated a project named Sindh Coastal Community Development Project (SCCDP) in the disaster prone areas of district Thatta and Badin. ⁶³	
The northern part of this district consists of small hills that are extended till Kheerthar range of mountains. This heightened area of the district is used as evacuation point during flood disaster. Most people take shelter in this	Pak Army provides help in the emergency situation and assists the people in evacuation, to move them for safer places. Army also provides boats, helicopters and other equipment in time of need. Lady doctors assist the female	

⁶² District Education Profile Thatta, 2012-13, (Reform Support Unit)

⁶³ Baseline survey of coastal areas of Badin and Thatta districts, vol 1, March, 2012 (Feb, 2013)

Physical/material	Social/organizational	Attitudinal/motivational
elevated area.	patients in the flood/rain hit and affected areas.	
District headquarters of Thatta is connected with other <i>talukas</i> through well connected roads. Although these roads are single but can be considered as good quality roads. Most Roads of the district are built on medium height which be used as evacuation point in flood disaster. Good roads are also helpful in carrying out relief activities.	Donors like USAID, the Asian Development Bank (ADB) and the World Bank have long-term assistance programs in the coastal districts of Badin and Thatta. The ADB has on-going projects (Sindh Rural Development Program and the Sindh Devolved Social Services Program) which provide overall budgetary support for investment in the social sector. The World Bank has undertaken several initiatives in the province such as the On-Farm Water Management Project and USAID is implementing several projects in the education sector ⁶⁴ .	

⁶⁴ Socioeconomic Study and Proposal for Livelihood Improvements: Badin and Thatta Districts, Sindh, Pakistan (Feb,2013)

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.
- Identification of flood escape channels to desert areas/off channel storages that would provide major reduction in flood peak discharge in Indus River System. Also identify possible sites for underground reservoirs, retarding basins, etc.;
- 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 Thatta 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.
- Water Conservation projects should be initiated by the government for mitigating the future threats about freshwater shortages and increased demand.
- Keenjhar Lake commonly called Kalri Lake is situated in Thatta District. It is at a distance of 122 km from Karachi and 18 km from the town of Thatta. It is the second largest fresh water lake in Pakistan. It is an important source that provides drinking water to Thatta

District and Karachi city. The projects like LBOD and RBOD should be commissioned completely to avoid polluting Keenjhar Lake because by commissioning these drains, all the polluted waste will go to the sea and Keenjhar Lake will be saved.

- PDMA Sindh and NGOs working in Sindh should jointly planned a Comprehensive Cyclone Preparedness Programme (CPP) to train the volunteer force in early warning system and evacuation from the coastal areas.
- Cyclone resistant shelters should be constructed in the coastal regions. The shelters should be built on elevated platforms.
- Government and Non-Government Organizations should expand afforestation programs near the coastal regions to create a green belt that would help reduce the impact of tsunami and delay its arrival time. Moreover it would also help limit the seawater intrusion.

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.
- Stabilization centers for the people suffering from acute malnutrition should be established in each small and big hospital.
- 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.
- NGO's should organize the awareness sessions by incorporating active youth for mobilization of vulnerable communities and should promote some business through awareness building livelihood projects.
- 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

- Stockpiling of essential food items should be encouraged among the community through awareness programs.
- 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 Thatta 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 Thatta 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.) to 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	Location	Telephone Numbers	
					Office	Mobile
1	Administration	Agha Shah Nawaz	DCO	Thatta	0298-920061	
		Abid Kareem	ADC-1	Thatta	0298-920063	
		Imran Saleem	ADC-2	Thatta	0298-920061	
	Irrigation	M. Alam Rahupoto	XEN MP	Mirpur Sakro Thatta	022-9210343	022-9210335
3	Police	Abdul Waqar Malhan	District Police Officer (DPO)	Thatta	0298-920133	
		Mr. Ashraf Nonari	DSP	Taluka Bathoro	0298-779496	
		Mr.Noor Deen Barohi	SHO	Thatta	0298- 920112	
		Mr. Gul Munir kazi	SHO	Jati	0298-777084	
		Ghullam Hussain Soomro	SHO	Bathoro	0298-779070	
		Rab Nawaz Pathan	SHO	Daro	0298-776036	
4	HESCO	Mr Ghulam Mustafa Mughal,	XEN (HESCO)	Thatta	0298-920130	-
5	Account	Mr. Ghulam Hussain Waggan	(District account officer)	Thatta	0298-920158	-
6	Agriculture	Mr.Vikio Chawan	EDO (Agriculture)	Thatta	0298-920150	-
7	Revenue	Anwer Ali	EDO (Revenue)	Thatta	0298-920063	
8	Health	Dr. Agha Ifthikhar Ahmed	EDO - Health	Thatta	0298-920154/920194	-
9	Education	Ghulam Asgher Memon	EDO Education	Thatta	0298-920141	-
10	Information Technology (IT)	Mr.Ali Ahmed Baloch	EDO - IT	Thatta	0298-920080	-
11	Finance & Planning	Mr.Ahmed Ali Shah Jeelani	EDO - Finance & Planning	Thatta	0298-920048	-
12	Work & Services	Mr.Shafique-ur-Rehman Khumbati	EDO - Works & Services	Thatta	0298-920067	-

Source: DC Office Thatta

5.1.2 Emergency Contact List

S.No	Name or Organizations	Office Contact
1	Flight Enquiry	114
2	Natural Gas Complaints	1199

S.No	Name or Organizations	Office Contact
3	Police Emergency	15
4	Railway Enquiry	022-9200673/74
5	GPO	0298-923012
6	Telephone (Complaint)	1218
7	Telephone Enquiry	1217
8	Sui Gas	0298-920024
9	Tcs Couriers	0298-550693
10	Edhi Ambulance	0298-550301

<http://www.districtthatta.gos.pk/Emergency%20Numbers.htm>

5.1.3 List of NGOs Working in District⁶⁵

Name	Contact
Sindh Sujag Social Welfare Association	0298-610271
Strengthening Participatory Awareness for Community Empowerment	0333-2925440
Rehabilitation of Indus Sustainability of Rural Empowerment	0298-611293
Sindh Radiant Organization	0298-770255
World Health Organization (WHO)	051-9255184
International Organization for Migration (IOM)	051 28 31 061
United Nations High Commissioner for Refugees (UNHCR)	051-2829502-6
United Nations Fund for Population Activities (UNFPA)	051-835572/051-8355600
Action Contre la Faim (ACF)	051 2250212
Handicap International	0303-5341306
Medical Emergency Relief International (Merlin)	051-8438440
International Medical Corps (IMC)	091-5851984-6
PAIMAN Alumni Trust	051-2506265
Oxfam GB	051-2653341-42
Participatory Development Initiatives	021-35842762
Muslim Aid	051-210 2249
Takhleeq Foundation	0213-4130313
Action for Humanitarian Development	0321-3741728
Behar Al Sindh Foundation	022-2653439
Church World Service – Pakistan / Afghanistan	021-34390541-44
Sustainable Environment and Development Foundation	0334-3490352
Serve Foundation Pakistan	0333-2753432
Humanitarian Assistance and Development Foundation	0333-2699409
Islamic Relief	051-2114212
National Rural Support Programme (NRSP)	051-2822319
Badin Rural Development Society (BRDS)	0297-861146
National Commission for Human Development (NCHD)	051-9216200
Sindh Agricultural and Forestry Workers Coordinating Organization (SAFWCO)	022- 265 09 96
Laar Humanitarian and Development Programme (LHDP)	0297-727110
International Relief Development (IRD)	051-8357818-9
WorldWild Fund for Nature - Pakistan (WWF)	042-111 993 725
Society for Conservation and Protection of Environment (SCOPE)	021-34551228
Health and Nutrition Development Society (HANDS)	021-3453-2804
Helping Hands Sindh	0604-689600
Karachi Relief Trust	0302-5415941
Pakistan Red Crescent Society (PRCS)	051-9250404-5
Strengthening Participatory Organization (SPO)	051-2104677
Concern Worldwide	051-2609161-91

⁶⁵ Source: www.himpakistan.pk

Name	Contact
Society for Human Rights and Prisoner's Aid (SHARP)	051-221-1621
United Nations Development Programme (UNDP)	051-8355600
Sukaar Foundation	023-2261913
Participatory Village Development Programme (PVDP)	0233513297

5.2 Health Facilities

List of health facilities

Taluka	Union Council	Hf Type
Thatta	Bachal Guggoo	Basic Health Unit
Thatta	Chatto Chand	Basic Health Unit
Thatta	Doomni	Basic Health Unit
Thatta	Jhumpir	Basic Health Unit
Thatta	Jherruck	Basic Health Unit
Thatta	Kalri	Basic Health Unit
Thatta	Sando	Basic Health Unit
Thatta	Sujawal	Basic Health Unit
Thatta	Tando Hafiz Shah	Basic Health Unit
Thatta	Begna	Dispensary
Thatta	Chalto Chand	Dispensary
Thatta	Doomni	Dispensary
Thatta	Jhumpir	Dispensary
Thatta	Jung Shahi	Dispensary
Thatta	Ongar	Dispensary
Thatta	Sonda	Dispensary
Thatta	Thatta-I	Dispensary
Thatta	Thatta	Hospital
Thatta	Jherrcuk	MCH/CHC
Thatta	Jung Shahi	MCH/CHC
Thatta	Thatta-II	MCH/CHC
Thatta	Jherrcuk	Rural Health Centre
Thatta	Jung Shahi	Rural Health Centre
Thatta	Makli	SHC
Mirpur Bathoro	Banoo	Basic Health Unit
Mirpur Bathoro	Daroo	Basic Health Unit
Mirpur Bathoro	Darya khan soha	Basic Health Unit
Mirpur Bathoro	Jhoke Sharif	Basic Health Unit
Mirpur Bathoro	Laik pur	Basic Health Unit
Mirpur Bathoro	Mahar Shah	Basic Health Unit
Mirpur Bathoro	Mirpur Sakro	Basic Health Unit
Mirpur Bathoro	Banoo	Dispensary
Mirpur Bathoro	Mirpur Bathoro	Hospital
Mirpur Bathoro	Darro	MCH/CHC
Mirpur Bathoro	Darro	Rural Health Centre
Mirpur Bathoro	Mirpur Bathoro	THQ
Jati	Begna	Basic Health Unit
Jati	Begna Mori	Basic Health Unit
Jati	Kar Malik	Basic Health Unit
Jati	Kathi	Basic Health Unit
Jati	Mureed Khoso	Basic Health Unit
Jati	Murid Khoso	Basic Health Unit

Taluka	Union Council	Hf Type
Jati	Begna Mori	Dispensary
Jati	Kar Malik	Dispensary
Jati	Kathi	Dispensary
Jati	Mirpur Bathoro	Dispensary
Jati	Mughalbeer	Dispensary
Jati	Murid Khoso	Dispensary
Jati	Jati	THQ
Jati	Mughalbeer	THQ
Sujawal	Beloo	Basic Health Unit
Sujawal	Bijhoro	Basic Health Unit
Sujawal	Bujorg	Basic Health Unit
Sujawal	Jaar	Basic Health Unit
Sujawal	Keenjhar	Basic Health Unit
Sujawal	Jaar	Dispensary
Sujawal	Jing Sheli	Dispensary
Sujawal	Sujawal	THQ
Ghorabari	Gharo	Basic Health Unit
Ghorabari	Udasi	Basic Health Unit
Ghorabari	Khanpur	Rural Health Centre
Ghorabari	Udasi	Dispensary
Ghorabari	Mahar	Dispensary
Ghorabari	Kotri Allah Rakhio Shah	Dispensary
Ghorabari	Khanpur	Dispensary
Sakro	Bohuro	Basic Health Unit
Sakro	Choband	Basic Health Unit
Sakro	Dhabegi	Basic Health Unit
Sakro	Gharo	Basic Health Unit
Sakro	Guffo	Basic Health Unit
Sakro	Haji Gidono	Basic Health Unit
Sakro	Gharo	MCH/CHC
Sakro	Gharo	Rural Health Centre
Shah Bunder	Danlat pur	Basic Health Unit
Shah Bunder	Goongari	Basic Health Unit
Shah Bunder	Jungo Jalbani	Basic Health Unit
Shah Bunder	Goongari	Dispensary
Shah Bunder	Chuhar Jamali	Rural Health Centre
Shah Bunder	Ladyoon	Basic Health Unit
Mirpur Sakro	Ghullamullah	Basic Health Unit
Mirpur Sakro	Sukanpur	Basic Health Unit
Keti Bandar	Keti Bandar	Rural Health Centre
Kharo Chan	Kharo Chan	Basic Health Unit