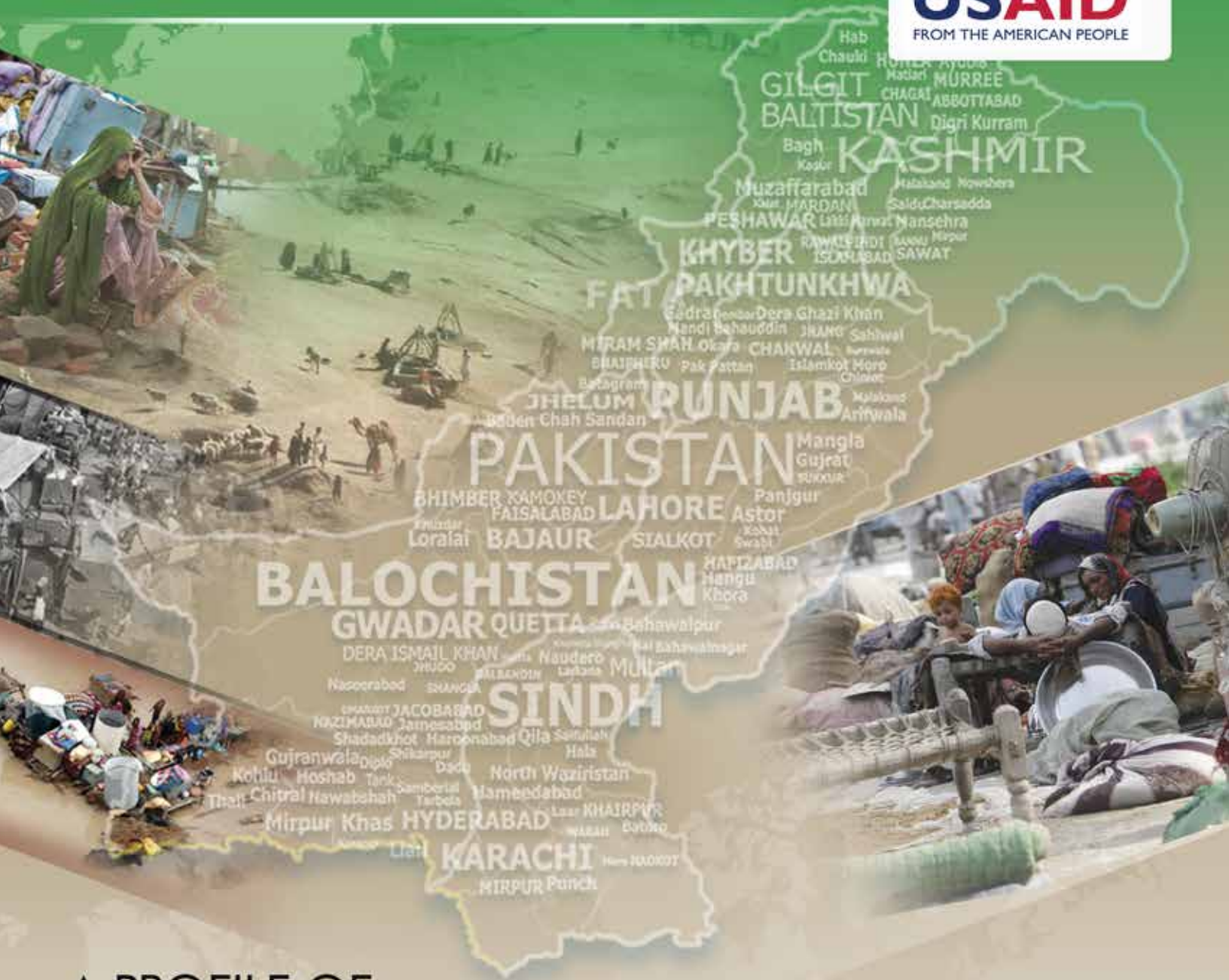


PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



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A PROFILE OF DISTRICT SUKKUR



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Landsowne Bridge, Sukkur

“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 Sukkur

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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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:

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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 SUKKUR

AT A GLANCE

Population 1998 **901,473 Persons**



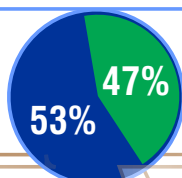
Population Density (Est 2014)
272 per Sq. Km

2.88%

Average Annual Growth Rate (1981 - 98)



Male
761,557



Female
669,951



Urban Population
124,739 (11 %)

Rural Population
988,455 (89%)

Estimated

Population 2014
1,431,508
Persons

Area

5,255 Sq. Kms



Housing

Total Housing Units (1998)

138,553



Pacca Housing Units **53,926 (38.92 %)**

Housing Units having Electricity **101,853 (73.51 %)**

Housing Units having Piped Water **52,190 (37.67 %)**

Housing Units using Gas for Cooking **41,230 (29.76 %)**



Average Household Size
6.5

Estimated Household
223,610



Sex Ratio **114**
Males per 100 females

51%

Urban Population
728,233



Administrative Units

Taluka	5
Union Councils	46
Mouzas	271

49%

Rural Population
703,251



Health & Education



Number of Public Health Facilities **72**

Total Fertility Rate (TFR) **4.70**

Contraceptive Prevalence Rate (CPR) **24.50%**

Number of Public Educational Facilities **3,096**



Male
71%



Female
41%

Literacy Rate

2012-13
(10+)

57%



Infant Mortality Rate
81/1,000 Live Births

Under 5 Mortality Rate
101/1,000 Live Births

Maternal Mortality Ratio
314/100,000 Live Births

Electoral Representation

Male **296,277**

Female **236,274**

National Assembly Seat: 2 **NA-198, NA-199**

Provincial Assembly Seat: 5 **PS-1, PS-2, PS-3, PS-4**



Registered Voters
532,551



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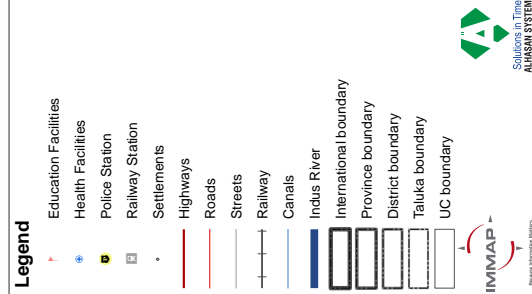
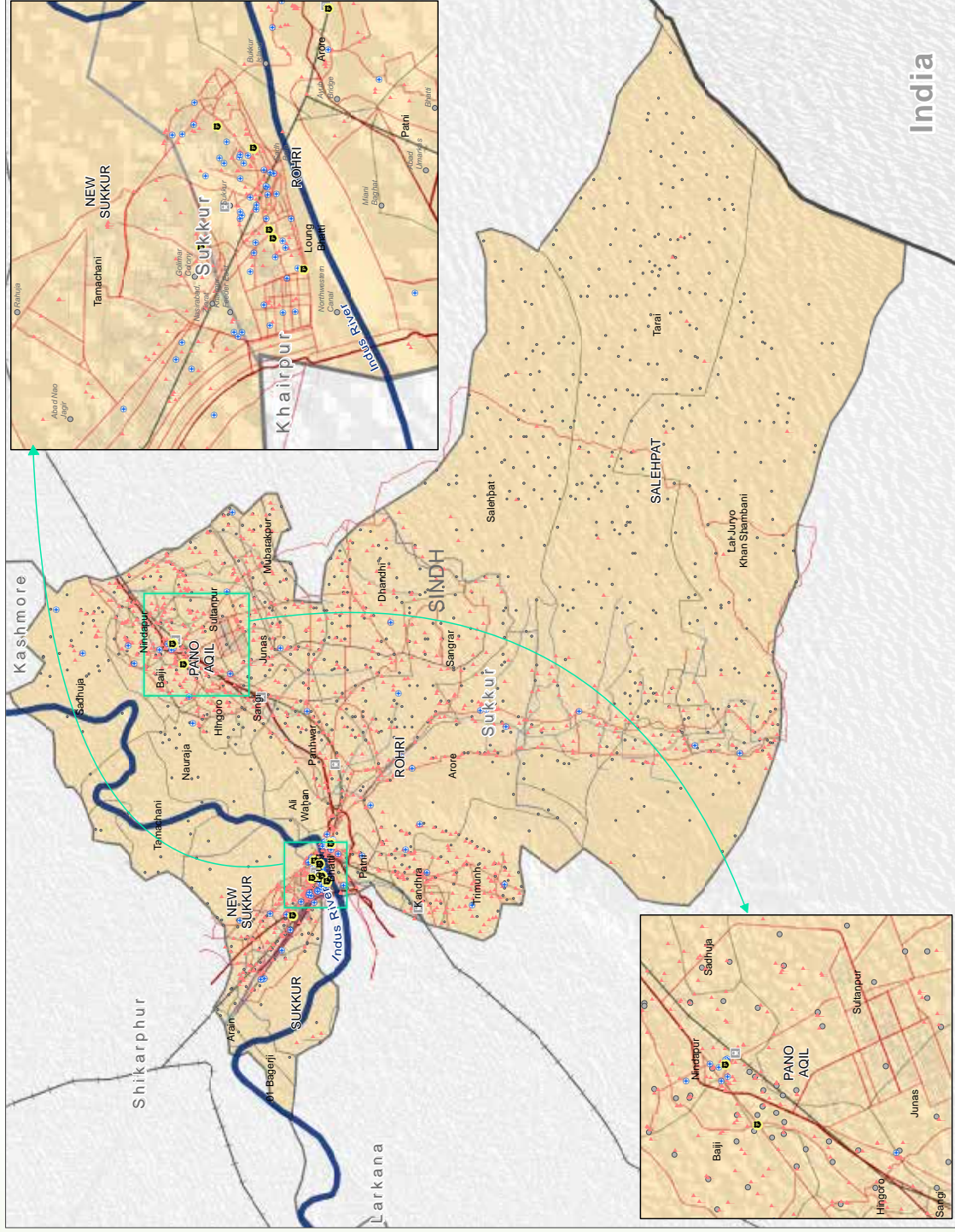
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Sindh - Sukkur Reference Map

September, 2014



Map Doc Name: IMMAP_PAK_Sukkur Reference Map_v02_120914

Creation Date: September 12, 2014

Projection/Datum: WGS84

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

Map data source(s):

Alhassan Systems Private Limited: Admin boundaries,

Health Facilities, Education Facilities, Roads, Railway,

Police Stations, Railway Stations, Post office,

National Geospatial Agency (NGA): Settlements

Sindh Irrigation and Drainage Authority (SIDA): Rivers,

Canals

Comments:

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

Alhassan 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 Management 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 Sukkur has been an important administrative unit that played an important role in the economy, trade and history of upper Sindh. Historically, Alexander invaded India in 326 BCE and the ruins of Greek invasion can still be seen in this district. The Arab invasion, led by Muhammad Bin Qasim, in 711 A.D, made Sindh part of the Umayyad Caliphate. Later on, this region was ruled by different dynasties, including the Soomras (1024-1351, the Arghuns (1520-1650), the Kalhoras (1657-1783) and the Talpurs (1783-1843). When Britain invaded the subcontinent, General Charles Napier, a commander in the British Army, defeated the Talpur dynasty and conquered Sindh in 1843¹.

There are different historical sources pertaining to the origin of name “Sukkur”. Some historians believe that Mohammad Bin Qasim, after passing through a thick forest, reached this hilly plain and uttered the word “*Shukr*” meaning thanks in Arabic, which was in time transformed into Sukkur. Some are of the view that the word has been taken from “*Sukh*”, meaning happiness. It is further argued that there was cultivation of sugarcane surrounding the place and it was therefore named “*Shakker*”, meaning sugar. Some are of the opinion that it is the degenerated form of Bakhar and B was changed into S. Another historian states that the old town of Sukkur was said to have been founded about 375 A.D by a Hindu Brahmin named Verbhram (Birmanji) and was named after him. In 492 A.D, its name was changed to “*Shukar*” to perpetuate the memory of Birmanji’s death, which took place on a Friday, “*Shukar*” in Sanskrit. The name was gradually corrupted to Sukkur². Hence, there are many historical references about the name Sukkur and the authenticity of any of these is still unclear.

The British contributed a lot towards the development of Sukkur. General Charles Napier was appointed as the first Governor General of Sindh. The province was divided into different administrative units and assigned to *Zamindars* (landlords) to collect taxes for the British government. The British government developed these areas as urban centers. Consequently, People migrated from other districts and provinces as well and started to reside here. The British named these small developed areas as “Talukas”. They built a network of roads, schools, dispensaries and many other civic amenities throughout the province. District Sukkur that was previously part of Shikarpur district was constituted in 1901. Sukkur saw a significant socio-economic uplift after 1932, when the British government built Sukkur Barrage, on Indus River.

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

² <http://www.rohri.net/sukkur.htm> (accessed on 02/04/2013)

1.1.2. Geography

District Sukkur lies in 68° 35" 30' to 69° 48" 0' east longitudes and 27° 04" 0' to 28° 02" 15' north latitudes. This district is bounded by district Ghotki and India on the east, district Kashmore on the north, district Shikarpur on the north-west, and district Khairpur on the west and south. Indus River flows on the north-western side of this district. Sukkur is the narrowest part of the Indus River course.

The land cover structure of this district comprises of the irrigated croplands on the western and northern side and barren areas in the east. On the western and northern side of the district, due to Indus River, the plane lands are fertile and are ideal for cultivation. But on the eastern side, large tracks of barren lands are prevalent, particularly in the union councils of Tarai and Lal Juryo Khan Shambani. On the southern part of this district, both vegetation and barren lands can be seen.

The climate of this district is hot during summer while dry and cold in winter. During January, the temperature ranges from 7 °C to 22 °C. The summer temperature averages 35 °C though it often reaches up to 52°C. Generally, the summer season commences in March - April and ends before October. The average rainfall of the district is 88 mm, per annum (with monthly ranges from 0.59 mm to 25.62 mm).

1.1.3. Culture (Ethnicity, Religion and Politics)

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

People of this district are pre-dominantly Sindhi speaking but Urdu, Punjabi, Pashto, and Balochi are also spoken in the district. A significant *Muhajir* (migrants) community is residing in this district, particularly in the city of Sukkur. This community is mainly associated with business and trade in this district. Islam is the major religion of this district as 96.13% of the population is Muslim followed by Hindus (2.38%) and Christians (0.51%). Major clans of this district are Syed, Arain Mahar, Soomro, Memon, Mughal, Ansari and Phulpoto.

Sukkur district is home to many political parties, however, Pakistan People's party (PPP) and the Muttahida Qoumi Movement (MQM) are more popular. The Mahar group is a potential threat to the PPP and its vote bank. Since 1985, these two parties have had almost an even share of the four provincial assembly seats in the district. However, in the general elections of 2008, PPP won all the national and provincial assembly seats.

1.1.4. Administrative Division

District Sukkur has its district headquarters at Sukkur city. This district has five talukas, named: Sukkur, Rohri, Pano Aqil, Salehpat and New Sukkur. It has 46 union councils and 271 mouzas

(revenue village). Out of these mouzas, 245 are rural, 10 are urban, 7 are partly urban, 8 are forests and one is an un-populated mouza.

Table 1.1-1: Administrative Division of District Sukkur

Sukkur	Kanungo Circles/ Supervisory Tapas	Patwar Circles/ Tapas	Number of Mouzas					
			Total	Rural	Urban	Partly urban	Forest	Un- populated
Sukkur District	9	44	271	245	10	7	8	1
Sukkur Taluka	1	3	3	2	1	-	-	-
Rohri Taluka	2	12	67	58	5	3	1	-
Pano Aqil Taluka	2	16	97	88	2	2	5	-
Salehpat Taluka	2	9	87	86	-	-	-	1
New Sukkur Taluka	2	4	17	11	2	2	2	-

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

1.1.5. Road Network Infrastructure

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

Sukkur district covers an area of 5,255 sq. kms yet it has only 267 kilometers of good quality roads, which are inadequate for the area and its population³. A National Highway (Indus Highway, N55) connects Sukkur with other major cities of the province. The district headquarter of Sukkur is linked with its taluka headquarters of Rohri, Pani Aqil and Salehpat through metaled roads.

Other important road links in Sukkur district are given as under:

- Road from Sukkur to Southern Punjab (Rahimyar Khan, Multan) via Pano Aqil and Ghotki
- Road from Sukkur to Balochistan via Shikarpur and Jacobabad
- Road from Sukkur to Khairpur via National Highway (N5), Therhi
- Road from Sukkur to Larkana via Madeji, Naudero
- Road from Sukkur to Hyderabad, Karachi via N5

1.1.6. Irrigation

The areas of the district that are adjacent to the river and canal are irrigated and mainly consists of the croplands. The north western parts of the district are irrigated through Indus River. Nara canal emanates from the Sukkur Barage and irrigates the southern parts of the

³ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp.262

district. However, the rest of the district, especially the union councils of Lal Juryo, Tarai, and Salehpat, on the eastern border, due to non-availability of water are barren.

As the table 1.1.2 shows, majority of the mouzas are irrigated through canals. Out of the 252 rural mouzas, 180 (71%) are irrigated with the help of canals, 36 (14%) are irrigated with river and 83 (33%) are irrigated through tube wells.

Table 1.1-2: Mouzas Reporting Sources of Irrigation

ADMINISTRATIVE UNIT		RURAL POPULATED MOUZAS	NUMBERS OF MOUZAS REPORTING SOURCE OF IRRIGATION						
			CANAL	RIVER	TUBEWELL / WELL	RAVINE	SPRING/ STREAM/ KAREZ	ARID (BARANI)	FLOODING/ TORRENT
Sukkur District	#	252	180	36	83	-	-	30	1
	%	100	71	14	33			12	
Sukkur Taluka	#	2	2	-	-	-	-	-	-
	%	100	100						
Rohri Taluka	#	61	56	4	19	-	-	-	1
	%	100	92	7	31				2
Pano Aqil Taluka	#	90	63	23	42	-	-	-	-
	%	100	70	26	47				
Salehpat Taluka	#	86	51	-	13	-	-	30	-
	%	100	59		15			35	
New Sukkur Taluka	#	13	8	9	9	-	-	-	-
	%	100	62	69	69				

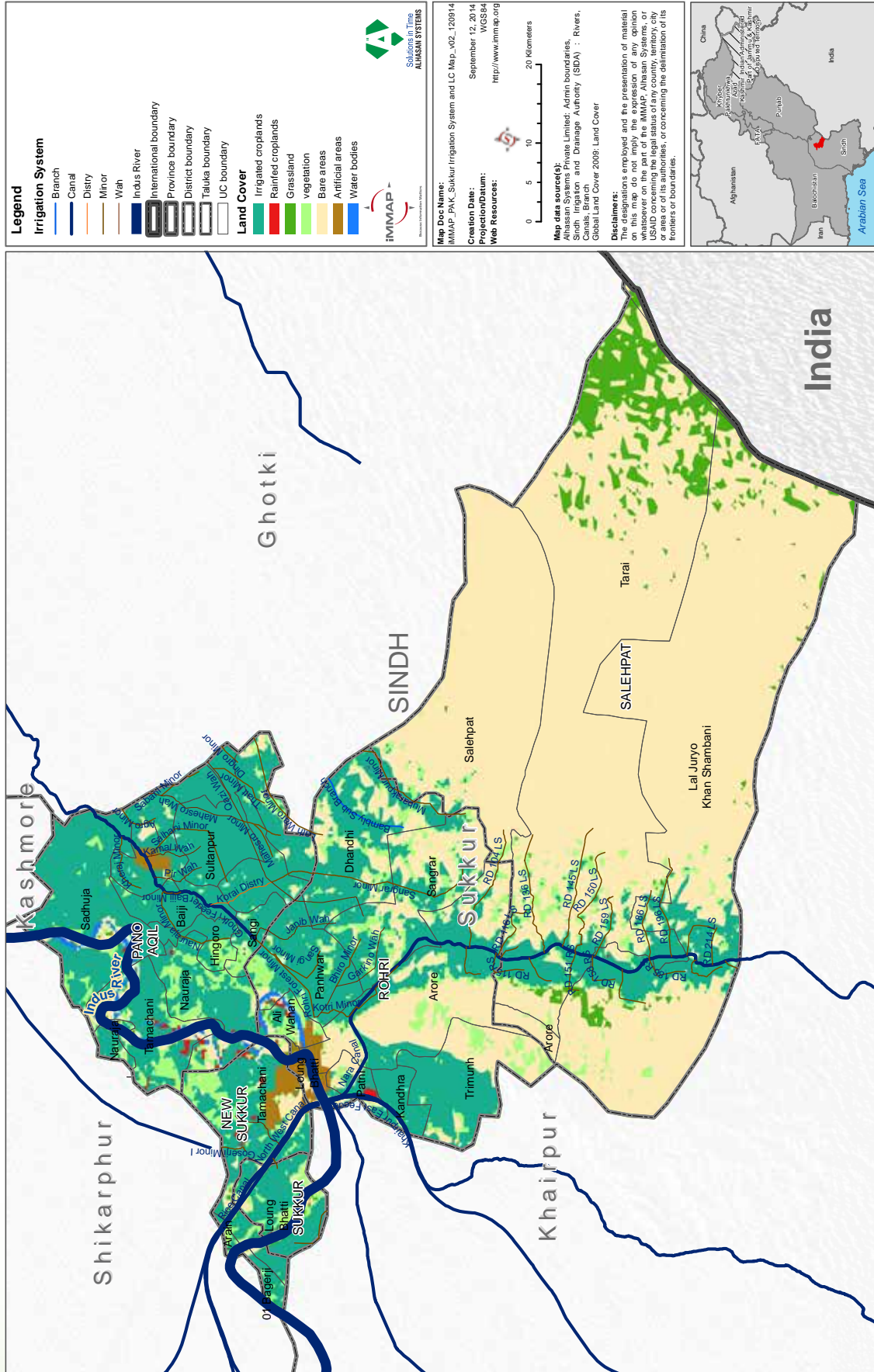
Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

In the year 2008-09, 91% of the net sown area was irrigated and from this irrigated area 78% was irrigated through canals and tube wells. From 2008-09 to 2009-10, there is almost 2% increase in canal-irrigated area as overall net sown area also decreased during this reporting period. The table below gives information regarding irrigation in the district.

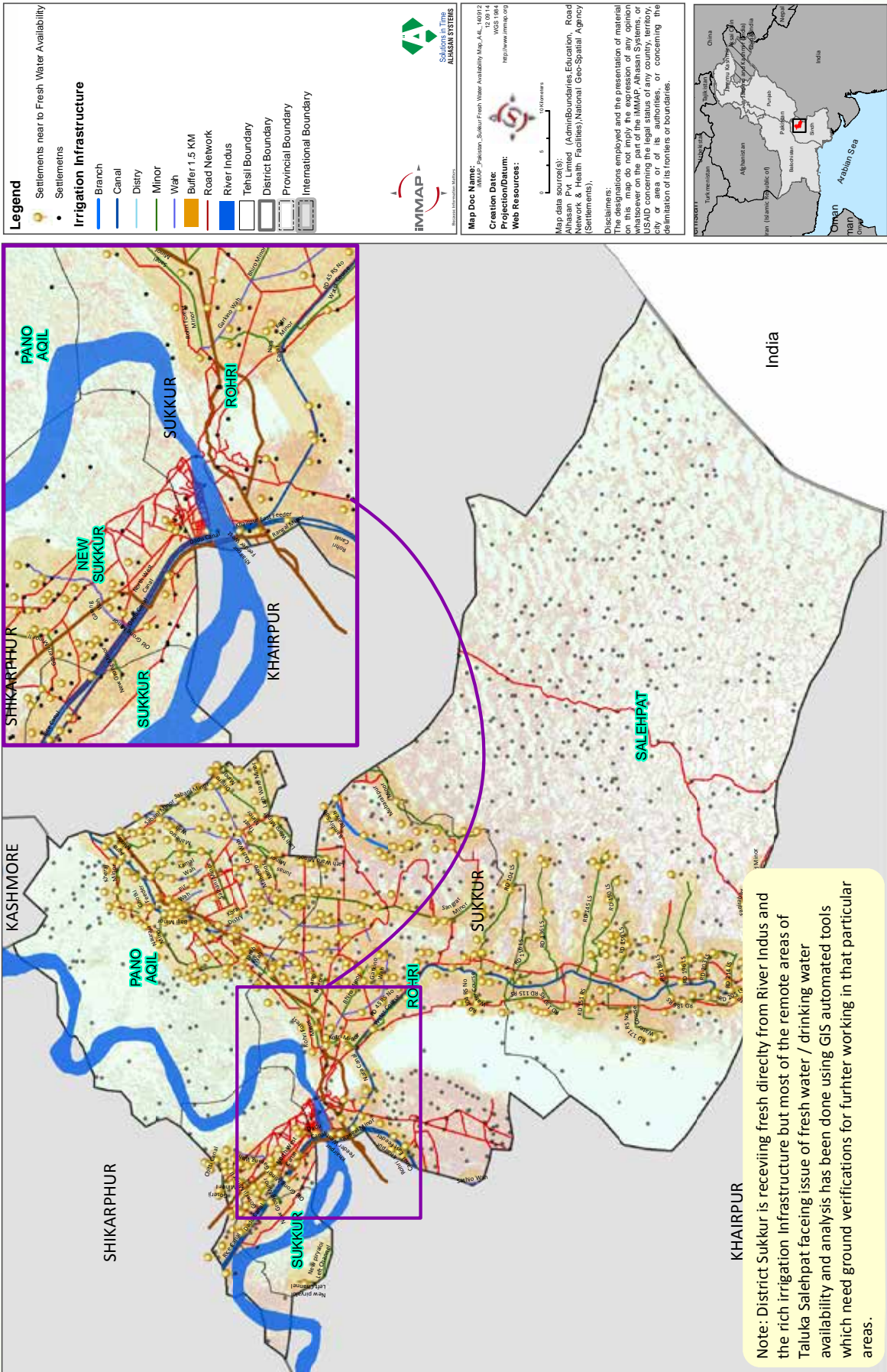
Table 1.1-3: Irrigation by Type

Irrigation Type	2008-09	2009-10
Canal	60,015	58,960
Tube well	16,551	16,429
Total Irrigated Area	76,566	75,389
Un-Irrigated	7,135	5,046
Total Sown Area	83,701	80,435

Source: Table 4.36 Sindh Development Statistics 2011



6



Note: District Sukkur is receiving fresh directly from River Indus and the rich irrigation Infrastructure but most of the remote areas of Taluka Salehpatt facing issue of fresh water / drinking water availability and analysis has been done using GIS automated tools which need ground verifications for further working in that particular areas.

1.1.7. Solid Waste Management

The North Sindh Urban Services Corporation Limited (NSUSC) was established in 2010 by the government of Sindh in collaboration with the Asian Development Bank (ADB) to manage the sanitation, water supply, sewerage and solid waste in the urban cities of northern Sindh that include: Sukkur, Shikarpur, Khairpur, Larkana, Ghotki and Kashmore. Since the inception of this Corporation, the solid waste management facilities, in the city of Sukkur, have been improved considerably⁴. Though the residents of Sukkur and Rohri city have benefitted from these facilities, solid waste management facilities are negligible in other talukas and rural areas of the district.

⁴ North Sindh Urban Services Corporation (NSUSC),
(<http://www.nsusc.org.pk/frmReport.aspx?FTI=17&PageTitle=Solid%20Waste>) accessed on 03/04/2013

1.2. Demography

1.2.1. Population Characteristics

In Pakistan, male population is more than the female population and is among those four countries where life expectancy for female, at birth, is less than that of males⁵. Sex ratio in district Sukkur is 114 male per 100 females, which is more than the ratio at the National level that is 106⁶. Though there could be other possible reasons for such a difference in male to female ratio, one probable reason of this ratio could be underreporting of females, due to cultural reasons, during national surveys. Besides, a very high maternal mortality rate⁷ and poor health care at the district and provincial level⁸ are likely to be instrumental for this difference. District Sukkur, unlike majority of the other districts in Sindh, have mix characteristics as 49 percent of the population resides in rural area as compared to the 51 percent that resides in the urban areas.

Table 1.2-1: Estimated Population of District for 2010

AGE GROUP (IN YEARS)	TOTAL			RURAL			URBAN		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
ALL AGES	1,431,508	761,557	669,951	703,275	372,244	331,031	728,233	389,313	338,920
00 -- 04	227,196	115,905	111,292	124,583	63,354	61,229	102,613	52,550	50,063
05 -- 09	228,289	120,270	108,019	121,501	65,036	56,465	106,788	55,234	51,554
10 -- 14	174,881	96,149	78,732	82,182	46,570	35,612	92,699	49,580	43,120
15 -- 19	149,419	77,951	71,469	69,100	36,646	32,454	80,319	41,304	39,015
20 -- 24	133,403	68,093	65,310	62,190	30,692	31,498	71,214	37,401	33,813
25 -- 29	114,231	62,407	51,824	52,266	27,169	25,098	61,965	35,239	26,726
30 -- 34	91,620	52,534	39,086	40,253	22,104	18,150	51,367	30,431	20,936
35 -- 39	67,795	37,871	29,925	29,937	15,988	13,950	37,858	21,883	15,975
40 -- 44	62,535	31,873	30,662	29,135	14,345	14,790	33,400	17,527	15,873
45 -- 49	49,398	26,177	23,221	24,327	12,615	11,712	25,071	13,562	11,509
50 -- 54	42,157	22,611	19,546	20,960	11,324	9,635	21,197	11,287	9,911
55 -- 59	27,624	15,620	12,004	13,414	7,586	5,828	14,210	8,034	6,176
60 -- 64	25,802	13,904	11,898	13,616	7,626	5,990	12,186	6,278	5,908
65 -- 69	13,502	7,441	6,061	6,778	3,886	2,892	6,724	3,555	3,169
70 -- 74	11,908	6,534	5,374	6,472	3,664	2,808	5,435	2,870	2,566
75 & ABOVE	11,747	6,217	5,530	6,560	3,639	2,922	5,186	2,578	2,608

Source: Estimated for 2010 population on the basis of table 4, Census 1998

⁵ A profile for District Badin: 2009, South-Asia Partnership Pakistan <http://www.sappk.org/district-profiles-with-focus-on-livelihood-related-issues-0> retrieved on 05-03-2012

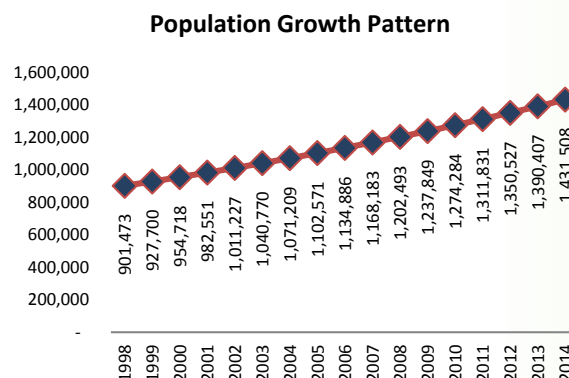
⁶ Labour Force Survey 2010-11: *Pakistan Bureau of Statistics*

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

⁸ Mean distance from hospital/dispensary is 12 km for Sindh: Pakistan Mouza Statistics, Table 15

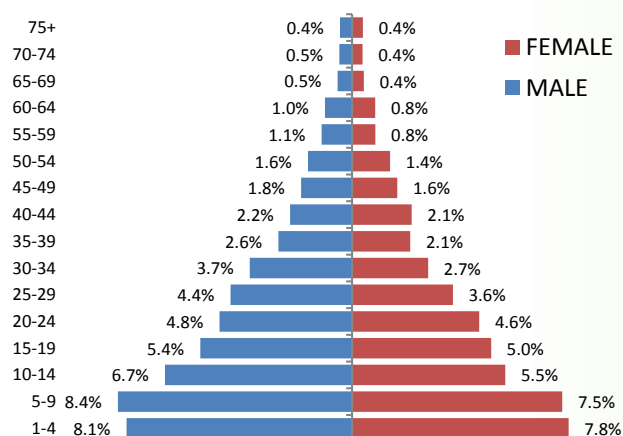
1.2.2. Population Growth Pattern

In 1998, the total population of the district was 901,473⁹. Population of District Sukkur has an estimated¹⁰ growth rate of 2.80% per annum, which means that the population will double itself in 25 years¹¹ from 1998. 44.04 percent of the population is below 15 years of age and 2.6 percent is 65 years or above. The estimated population for 2014 is 1,431,508, showing a 59% increase in 12 years from 1998.



1.2.3. Population Distribution by Age and Gender

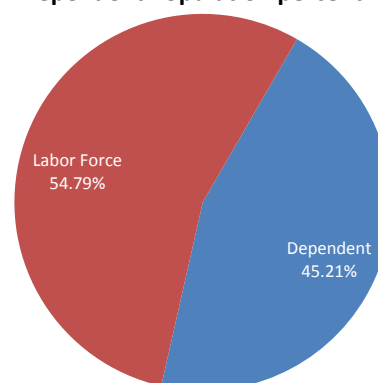
Out of the total population, 52 percent are males and 48 percent are females. Largest cohort of the population is 5-9 years, which decreases with 5 years interval. Total population in this cohort is 228,289. In all the age groups, male population outnumbers female population in the district.



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 Sukkur district is 45.21 percent of the total population and the working population is 54.79 percent, which shows that dependency ratio¹² in the district is 87 percent.

Dependent Population percent



⁹ Sindh Development Statistics 2008

¹⁰ Estimated using 2010 population estimates from Gridded Population of World (GPW) 3 data set

¹¹ Rule of 70 <http://controlgrowth.org/double.htm> retrieved on 05-03-2012

¹² Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

Table 1.2-2: Population Details by Taluka

Taluka	Area	Population	Male	Female	Pop Density	Sex Ratio	Average HH Size	Estimated HH
New Sukkur	218	46,008	24,476	21,532	211	114	7.5	6,134
Sukkur	97	486,591	258,865	227,726	5,004	114	7.5	64,879
Pano Aqil	907	417,332	222,019	195,313	460	114	6	69,555
Rohri	1,057	356,140	189,465	166,675	337	114	6.2	57,442
Salehpat	2,976	125,437	66,732	58,705	42	114	4.9	25,599
Total	5,255	1,431,508	761,557	669,951	272	114	6.5	223,610

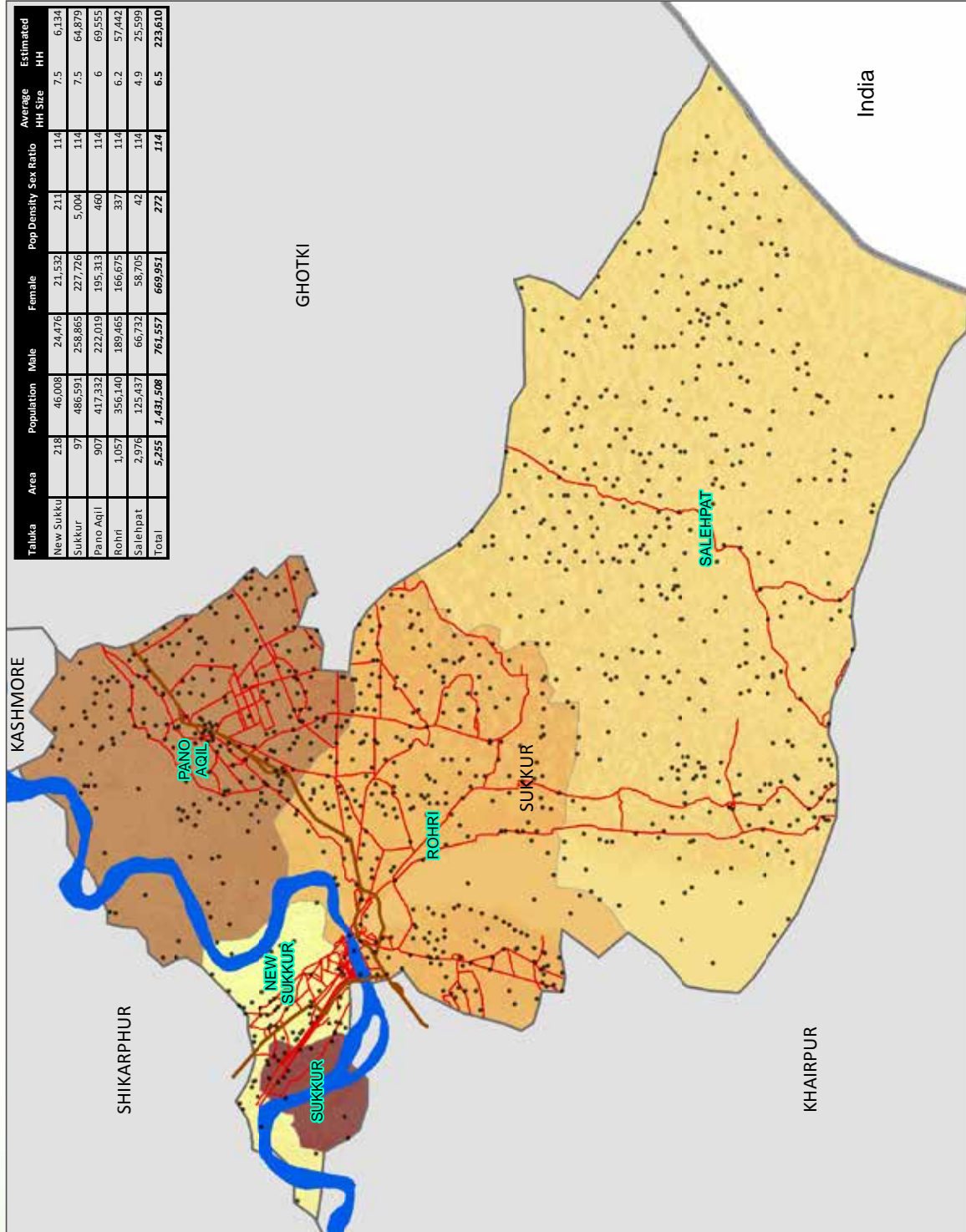
Source: Estimated using Table 1 of Census 1998

Table 1.2-3: UC Population

Tehsil	Union Council	2014 Population	Tehsil	Union Council	2014 Population
New Sukkur	Araeen	4,413	Pano Aqil Total	Mehran	39,946
	Bachal Shah	7,302		Mubarak Pur	37,877
	Bagarji	3,596		Nauraja	39,112
	Gulshan Iqbal	5,440		Ninda Pur	34,723
	Nawn Goth	3,668		Pano Aqil	30,094
	New Pind	4,363		Sadhuja	32,618
	Rahooja	7,382		Sangi	32,435
	Samsal Industries	5,253		Sultan Pur	43,823
	Tamachani	4,591			
	New Sukkur Total	46,008			
Old Sukkur	Adam Shah	50,862	Rohri Total	Ali Wahan	34,077
	Gareeb Abad	48,979		Arur	21,681
	Jaie Shah	51,976		Bedal Bex	30,167
	Kumar Barra	42,027		Dandi	29,689
	Mir Masoom Shah	41,365		Kandhra	30,476
	Old Sukkur	55,053		Long Bhati	41,372
	Pak Colony	46,767		Panhwar	37,501
	Pir Ellai Bakhsh	39,456		Patni	34,632
	Shamas Abad	43,534		Rohri	30,449
	Sheed Ganj	33,414		Sangrar	29,049
Pano Aqil	Sheikh Shaeen	33,158		Trimoooh	37,048
	Old Sukkur Total	486,591			
	Baaji Sharif	33,627	Saleh Pat Total	Lal Jurio	38,728
	Dadlo	37,500		Saleh Pat	42,340
	Hingoro	25,658		Tarai	44,369
	Jonas	29,921			
			Grand Total		1,431,508

Sindh-Sukkur Population Density Map

Date (September 2014)



Taluka	Area	Population	Male	Female	Pop Density	Sex Ratio	Average HH Size	Estimated HH
New Sukkur	218	46,008	24,476	21,532	211	114	7.5	6,134
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Legend

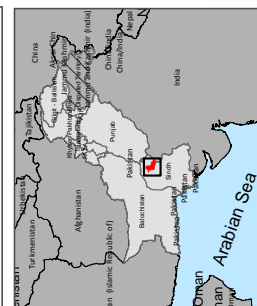
- Settlements
 - High
 - Low
- Road Network
- River Indus
- Tehsil Boundary
- District Boundary
- Provincial Boundary
- International Boundary



Map Doc Name: iMAP_Pakistan_Sukkur Population Density Map_Alt_140012
 Creation Date: 12/09/14
 Projection/Datum: WGS 1984
 Web Resources: <http://www.imap.org>

Map data sources:
 Alhasan P.W. Limited (AdminBoundaries, Education, Road Network & Health Facilities), National Geo-Spatial Agency (Settlements).

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 iMAP Alhasan Systems, or USAID concerning the legal status of any country, territory, or settlement, or concerning the delimitation of its frontiers or boundaries.



1.3. Livelihood

1.3.1. Main Sources of Livelihood/ Income

Since district Sukkur is a partly urban district, where 51% of the population resides in urban areas, sources of livelihood are diversified for the resident population. While agriculture is the main source of employment for the rural population, in the urban areas of the district, people are engaged in various other economic activities like trade, services, personal business, and government and private jobs. Sukkur city is the main trading center of this district.

The following table shows the number of rural mouzas reporting sources of employment in district Sukkur. Majority of the male population is associated with agriculture (in 62% of rural mouzas). While in the category of some; trade, personal business, overseas employment and industry are frequent in the male population.

Agriculture sector is the dominant employer for the population of this district. The Agriculture Census 2000 classifies rural households under three broad categories: agricultural households that operate land as owner-cultivators or tenants; livestock owners; and non-agricultural households. In district Sukkur, the share of non-agricultural households, in all the rural households, is 47.7% percent, while agricultural households and livestock owners constitute 25.5% percent and 26.8% percent respectively¹³.

Given the cultural trait of Sindh and rural areas, where women actively work side by side with the men, the female participation in economic activity is reasonable in this district, as 101 mouzas (41%) have reported that women are also engaged in agriculture. In the category of some, personal business and casual labor are the main sources of livelihood for the female population.

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

GENDER	QUANTIFICATION	SERVICE	AGRICULTURE	TRADE	INDUSTRY	PERSONAL BUSINESS	OVERSEAS EMPLOYEMENT	LABOUR
MALE	MOSTLY	15	152	1	-	1	-	22
	SOME	160	63	42	14	130	11	192
	NONE	77	37	209	238	121	241	38
FEMALE	MOSTLY	1	101	-	-	2	-	52
	SOME	56	68	2	2	59	5	157
	NONE	195	83	250	250	191	247	43

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

¹³ Arif, et al (2010), "The 2010 Flood and Poverty in Pakistan: A Preliminary District-level Analysis", Pakistan Institute of Development Economics Islamabad, Background Paper for Conference on the "The Environments of the Poor", 24-26 Nov. 2010, New Delhi

- None: less than or equal to 1 percent

1.3.2. Agriculture

Agriculture sector plays a significant role in the overall economic performance of Pakistan. Currently, this sector provides employment opportunities to 45% of the labor force in Pakistan. This sector provides sources of livelihood to 60% of the population in the rural areas. Agriculture contributes 21% to the Gross Domestic Product (GDP) of Pakistan¹⁴.

Sukkur contributes significantly in agriculture sector of Sindh because its climate is suitable for production of various crops including the Kharif crops of cotton, rice, jowar and sugarcane and the Rabi crops of wheat, gram and oil seeds. In addition to these, date orchards are abundant in this district. Due to its soil and topography, Sukkur is an ideal place for date cultivation. Sukkur has the largest dates and dry dates market of Sindh. Important date varieties include Aseel, Fasli, Bhedir, Karbalian, Kupro and Mithri. The name of the dates' market is Agha Qadir Dad Agriculture Market, situated at the left bank of Indus River. Dates and dry dates are exported to India, Australia and America with a total export value of rupees two billions annually¹⁵.

Total reported area of the district is 480,000 hectares, out of which 153,000 hectares (31%) are cultivated. Within the cultivated area, 87,000 hectares are net sown¹⁶ whereas 66,000 hectares are currently fallow lands¹⁷. The remaining 69% of the total reported area is un-cultivated; out of which 266,000 hectares are not available for cultivation and 26,000 hectares are culturable waste¹⁸.

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

Sukkur		Area
Reported Area		480
Cultivated Area	Total	153
	Net Sown	87
	Current Fallow	66
Un-cultivated Area	Total	327
	Culturable Waste ¹⁹	26
	Forest	35
	Not available for Cultivation	266

Source: Sindh Development Statistics (2008)

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

¹⁴ Economic Survey of Pakistan (2011-12), Ministry of Finance, Government of Pakistan

¹⁵ Small & Medium Enterprise development Authority (SMEDA), "A Brief Profile of Sukkur", (http://www.smeda.org/index.php?option=com_content&view=article&id=78&Itemid=180) accessed on 03/04/2013

¹⁶ **Net Area Sown** means the area which has been sown at least once in a year. It will include areas under crops, fruits, vegetables etc.

¹⁷ **Current Fallow** means the part of the cultivated area which has not been used for cropping during the year under reference but for which the total vacant period does not exceed three crop seasons.

¹⁸ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS)

¹⁹ **Culturable waste** means cultivable land not actually cultivated. It includes all grazing and other land, not included under forest. Sindh Development Statistics 2008, pp 81.

Table 1.3.3: Food and Cash Crops Cultivated in District Sukkur

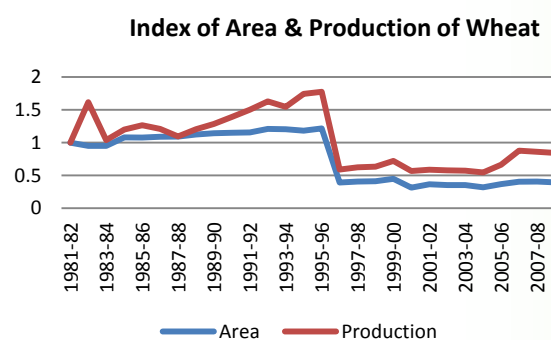
Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2008-09 (000 Tonnes/bales)	Area Sown in 2010-11 (Acres) FAO
Food	Wheat	43.6	158.3	-
	Rice	14.4	32.4	14,888
Cash	Sugarcane	2.2	108.6	5,622
	Cotton	30.2	142.8	83,500

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

The area sown and production trends of different food and cash crops, over the last 28 years, are given as follows:

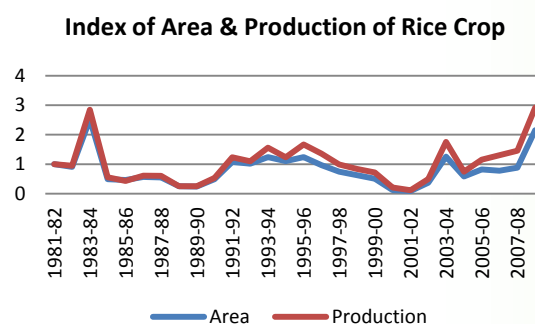
- **Wheat**

Wheat crop, over the time, has shown mixed response, both in area as well as production. As the corresponding graph shows, from 1981-82 till 1995-96, the production has shown more increase as compared to the area. In 1995-96, both area and production decreased drastically due to the secession of district Ghotki from district Sukkur. After that, the increase in production has been more rapid whereas area remained the same showing high productivity of wheat crop.



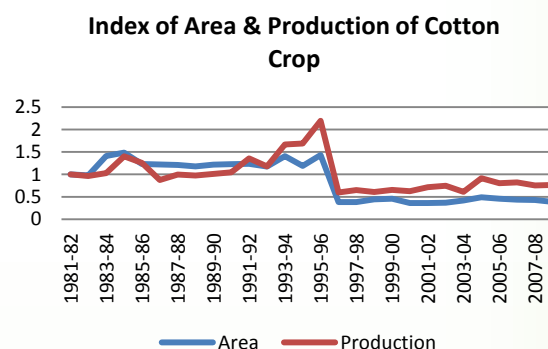
- **Rice**

Over the years, the trends, in area sown and production of rice crop, have been mixed. In 1981-82, both area and production increased followed by a decline of the same magnitude in 1985-86. After that, both area and production kept on increasing till 1995-96 but started decreasing again reaching its lowest level. But from 2003-04 onward, the area and production have increased rapidly.



- **Cotton**

The production and area of cotton crop showed increasing trends till 1995-96 but decreased drastically due to the secession of district Ghotki. From 1997-98 onwards, the area and production have remained consistent. However, the increase in production has been more rapid as compared to area, showing productivity of cotton crop in this district.



1.3.3. Industry

There are two industrial estates in Sukkur i.e. Sindh Industrial Trading Estate (SITE) and Small Industries Estate (SIE). The former was established in 1963 over an area of about 1060 Acres. Various industries including ghee, oil, biscuits, soap, beverages, flour, straw paper board, poultry farm, dates, sulphuric acid, ice and cold storage are established in it.

The Small Industries Estate (SIE) Sukkur was set up over an area of 110 acres. The Estate is being managed by the Sindh Small Industries Corporation. The Estate comprises of industrial units like cotton seed crushing units, RCC pipes, paints and varnishes, biscuits, flour, rice husking, printing press, ceramic wares and light engineering. Fifty-five units are currently working in the SIE and 41 are sick/ closed²⁰.

1.3.4. Livestock

Livestock sector maintains a unique position within the agriculture sector of Pakistan. It contributes 51% to the value addition in agriculture sector of Pakistan. It also contributes 9% to the GDP of Pakistan²¹. Besides, this sector provides foreign earnings, dairy products' needs, food security and daily cash income to the people of Pakistan. It helps to reduce the income inequalities, especially in case of emergencies (floods, crop failure). Hence this sector is considered as most secure source of livelihood for small farmers and landless poor. The share of Sindh province in livestock population of Pakistan is 20%. The livestock population of district Sukkur is given in the following table:

Table 1.3.4: Livestock in District Sukkur

Livestock	Population
Cattle	211,623
Buffalo	196,505
Sheep	47,472
Goat	249,589
Camel	8,266
Horse	794
Mule	1,192
Ass	10,324
Domestic Poultry	435,034

Source: Livestock Census (2006)

²⁰ Small & Medium Enterprise development Authority (SMEDA), "A Brief Profile of Sukkur", (http://www.smeda.org/index.php?option=com_content&view=article&id=78&Itemid=180) accessed on 03/04/2013

²¹ Economic Survey of Pakistan (2011-12), Ministry of Finance, Government of Pakistan

1.4. Food Security

Food security can be broadly divided into four components²²:

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

1.4.1. Availability

Wheat along with other crops like cotton, rice and sugarcane is produced in most of the rural mouzas of district Sukkur. Besides, vegetables and fruits are also produced in the district. As the following table shows, wheat and rice are cropped in 90% and 42% of the mouzas respectively. Wheat is dominant among food crops cultivated in this district. The table below also shows the cultivation of cash crops in the district i.e. cotton and sugarcane that are cropped in 61% and 28% of the mouzas respectively. The overall crop based food production is extremely deficit in Sukkur district.

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
Sukkur District	246	115	167	77	2	8	29	32
Sukkur Taluka	2	-	-	2	-	-	-	1
Rohri Taluka	61	42	54	20	2	4	21	22
Pano Aqil Taluka	88	52	69	31	-	1	1	6
Salehpat Taluka	83	13	44	24	-	-	7	3
New Sukkur Taluka	12	8	-	-	-	3	-	-

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 producing sufficient food for its food requirements. In addition to cereals, animal based food (meat, milk, milk products) availability is also important for total food availability, which is surplus in the district. Combining both, the overall crop based and animal based food production, district Sukkur is extremely deficit in food production²³. But the trade and economic activities of this district ensure the availability of food through imports from neighboring districts.

²² Define by Food & Agriculture Organization

²³ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

1.4.2. Access

Per capita availability of food items alone is not a reliable indicator of food security. If the available food is socio-economically not accessible to the masses, it cannot make a society food secure. The income level of the households reflects access to food, capacity of consumption and even food poverty. Average monthly income of a household (HH) in this district is between Rs.15, 000/- and Rs.20, 000/- which is considered as low²⁴.

Child dependency (ratio between children and household members in economically active age group) is one of the limiting factors in meeting the daily needs of households and is an important indicator to measure access to food. The increased dependency ratio enhances the spending of the household on child care and food, which results in per capita reduction of socio-economic access to food. Child dependency ratio is reasonable in this district. The share of household expenditures on food is 61.8% of the total income in Sindh. So the inadequate level of income, high food expenditures, and high inflation (particularly food inflation) hinders access to food²⁵.

The table below shows physical access to food in district Sukkur by providing distances of different mouzas from the wholesale markets. Average distance from the fruit and vegetable markets of a mouza is 32 kilometres whereas the distance from the grain market is 24 kilometres. Such long distances impede access to food.

Table 1.4-2: Distance of Mouzas from Wholesale Markets

Type of facility		Rural Populated Mouzas	Overall Mean Distance (KM)	Mouzas by Distance (in Kilometres) by Facility				
				Less Than 1	1 - 10	11 – 25	26 – 50	51 & Above
Livestock Market	Number	252	24	2	83	78	64	25
	Percent	100		1	33	31	25	10
Grains Market	Number	252	24	4	81	75	68	24
	Percent	100		2	32	30	27	10
Fruit Market	Number	252	32	-	78	63	59	52
	Percent	100			31	25	23	21
Vegetable Market	Number	252	32	-	79	63	54	56
	Percent	100			31	25	21	22
Govt. Procurement Centre	Number	252	21	17	97	85	30	23
	Percent	100		7	38	34	12	9

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

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

²⁵ Ibid

1.4.3. Utilization

In addition to food availability and access, proper assimilation of food in the body is essential. Food utilization and stability depicts this absorption of food and its sustainability. Improved sanitation facility, clean drinking water, health infrastructure and individual health status along with female literacy play vital role in food absorption. According to Food Security Analysis (FSA) 2009, access to improved drinking water is reasonable in this district²⁶.

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

Sukkur	Water Delivery System				
	Tap Water	Hand Pump	Motor Pump	Dug Well	Other
Total	26	56	17	0	2
Urban	53	11	34	0	2
Rural	2	94	2	0	1

Source: PSLM 2012-13

Sanitation conditions in district Sukkur are relatively poor where only 61% of the households use flush toilets and 35% of the households have non-flush toilets. The sanitation facilities are comparatively worse in rural areas of the district and the female literacy rate is 37% 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
93	34	61	7	60	35	0	7	4

Source: PSLM 2012-13

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

²⁶ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

1.5. Health and Immunization

1.5.1. Health Facilities

The total number of health facilities in district Sukkur is 72²⁷. There is only one tehsil headquarter hospital with a capacity of 330 beds. These health facilities are sufficient for only 28.6% of the estimated 2010 population of the district²⁸. Table 1.5.1 shows the details of these health facilities.

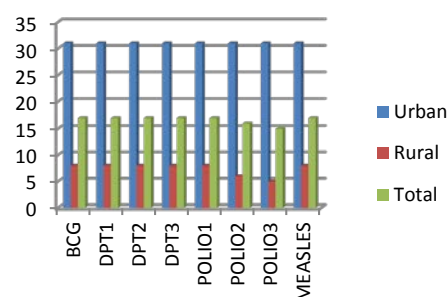
Table 1.5-1: Number of Health Facilities by Type

Type	Number	Bed Strength
Teaching Hospitals	1	330
District headquarter hospital	0	0
Tehsil headquarter hospitals	2	36
Rural health centres	3	34
Basic Health units	26	52
Govt. Rural Dispensaries	37	-
MCH centres	3	-
Sub health centres	0	-
Grand Total	72	452

Source: TRF Pakistan

1.5.2. Immunization

Immunization coverage estimates are used to monitor immunization services, and to guide disease eradication and elimination efforts. This indicator is the measure of the percentage of children of age 12-23 months, who have received all the doses of BCG vaccine, three doses of polio & pentavalent vaccines and one dose of measles vaccine in a given year. In district Sukkur, around 55% pregnant women have received tetanus toxoid injections. In urban areas this percentage is 76% and in rural areas it is 40%²⁹. Record based³⁰ immunization data of district Sukkur shows that 15% (Male 14%: Female 17%) of the children aged 12-23 months have received full immunization. In the urban areas this percentage is 31 percent (Male 32%: Female 30%) and in the rural areas it is 5% (Male 3%: Female 9%). The corresponding graph shows the percentage of children of 12-23 months that have been immunized by the type of Antigen based on records³¹.



²⁷ Health Facility Assessment 2011 (HFA) by Technical Resource Facility (TRF)
<http://115.186.137.115/reports/hfa/sindh/HFA-Sukkur.pdf>

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

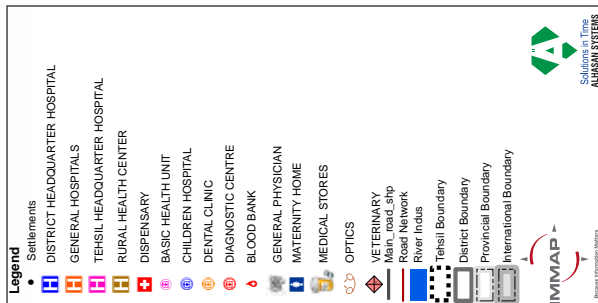
²⁹ Table 3.11, Pakistan Social and Living Standards Measurement Survey (PSLM)2010-2011

³⁰ Table 3.4 (b) Based on record: Children who reported having received full immunization who also have an immunization card, expressed as a percentage of all children aged 12-23 months. Also immunizations to be classed as fully immunized a child must have received: 'BCG', 'DPT1', 'DPT2', 'DPT3', 'Polio1', 'Polio2'

³¹ Table 3.5: Pakistan Social and Living Standards Measurement Survey (PSLM)2010-2011

Sindh-Sukkur Health Facilities Map

Date (September 2014)

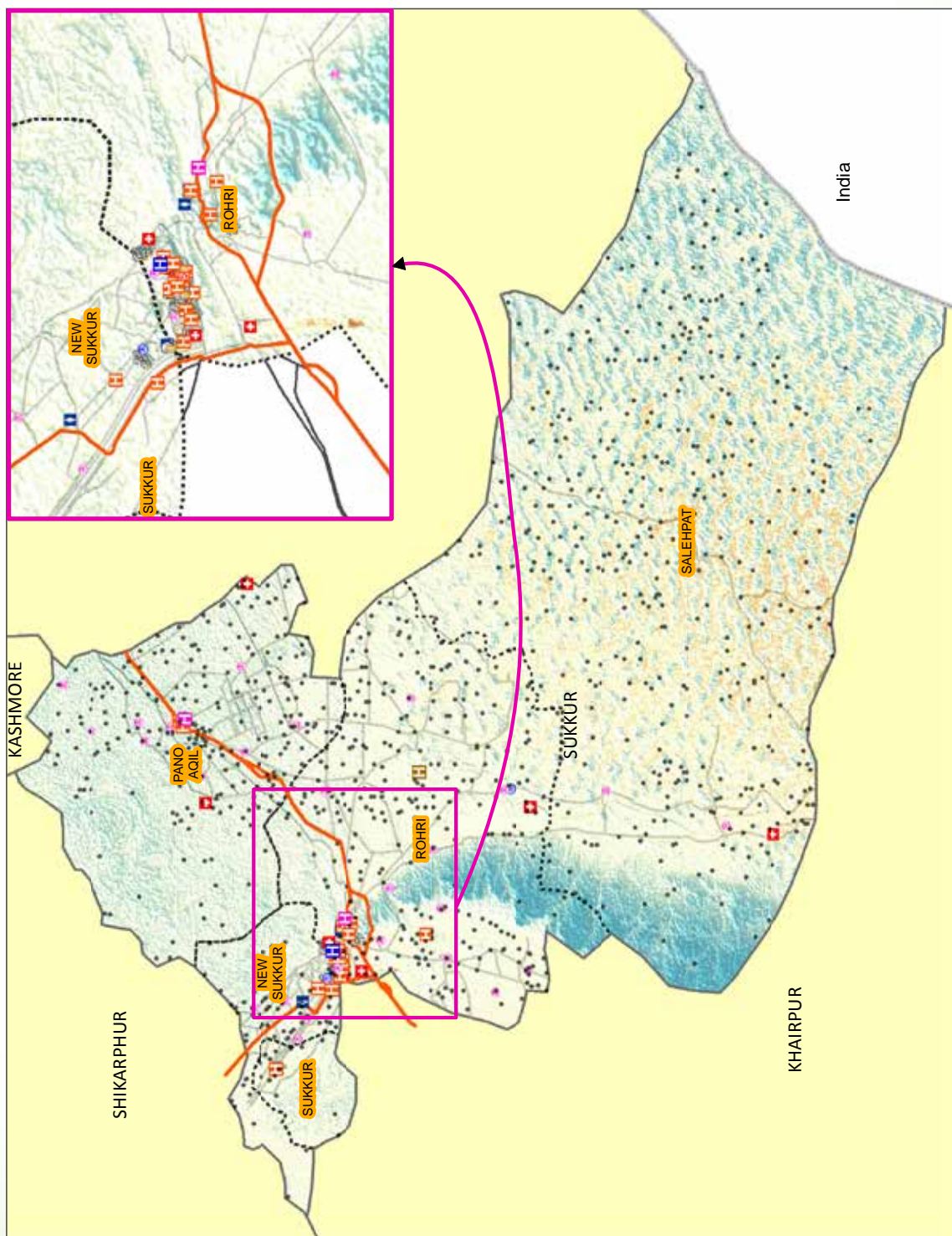


Map Doc Name: ISMAP_Pakistan_Sukkur_Health Facilities Map_Atlas_140913
Creation Date: 13/09/14
Projection/Datum: WGS 1984
Web Resources: <http://www.aimsas.org>

0 5 10 Kilometers

Map data source(s): AdminBoundaries, Education Facilities
 Atlascan Pvt Limited

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1.6. Education

1.6.1. Highlights

Literacy Rate (10 years and above)	56%
Adult Literacy Rate (15 years and above)	54%
GPI Primary	0.67
GPI Middle	1.24
GPI Secondary	0.46
GPI Higher Secondary	0.86
Population that has ever attended School	58%
Male	77%
Female	37%
Population that has completed primary level or higher	51%
Male	69%
Female	31%
Student Teacher Ratio	30
Primary	34
Middle	24
Secondary	22
Higher Secondary	34

Source: Reform Support Unit Sindh 2010-11 and Pakistan Social and Living Standard Measurement Survey 2010-11

1.6.2. District School Enrolment Ratio

The education status is quite poor in district Sukkur. The overall literacy rate (for the population of 10 years and above) is 56%; for male it is 74% and for female it is 37%. For the urban rural comparison, urban literacy rate is higher than the rural, which is 68% (Male: 81% and Female: 54%); whereas the rural literacy rate is 46% (Male: 68% and Female: 21%). Adult literacy rate (for the population of 15 years and above) is 54%. Gross Enrollment Rate³² (GER) at the primary level in Sukkur is 82% (Male: 91%, Female: 73%), in urban community it is 97% (Male: 103%, Female: 90%) and in rural community it is 73% (Male: 84%, Female: 60%). Net Enrollment rate³³ (NER) at the primary level in district Sukkur is 56% (Male: 62%, Female: 50%), in urban community it is 61% (Male: 65%, Female: 58%) and in rural community it is 53% (Male: 60%, Female: 40%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural, Urban and Gender at different levels.

³² Total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year.

³³ Enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population.

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

Urban/ Rural/ District	Gender	Gross Enrolment Rates			Net Enrolment Rates		
		Primary Group (5-9)	Middle Group (10-12)	Matric Group (13-14)	Primary Group (5-9)	Middle Group (10-12)	Matric Group (13-14)
Urban	Male	103%	66%	73%	65%	32%	19%
	Female	90%	50%	48%	58%	23%	13%
	Total	97%	57%	60%	61%	27%	16%
Rural	Male	84%	57%	73%	60%	28%	24%
	Female	60%	14%	8%	44%	8%	0%
	Total	73%	37%	45%	53%	18%	14%
Total	Male	91%	61%	73%	62%	30%	22%
	Female	73%	31%	30%	50%	15%	7%
	Total	82%	46%	52%	56%	22%	15%

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

1.6.3. Gender and Level Wise Details

The total enrollment of students in the government schools of district Sukkur is 156,560 (Male: 93,458 and Female: 63,102). Out of a total of 5,186 teachers, 3,796 are male and 1,390 are female teachers. This illustrates that one teacher is teaching averagely 30 students. The total boys' schools of District Sukkur are 430 and the total female schools are 263. Besides, there are 680 mixed gender schools. Thus, the total number of schools is 1,373 and averagely every school has an enrolment of 114 students and a teaching staff of around 4³⁴.

Primary

The total number of primary level schools, that are reported, is 1,227 and the total enrollment at the primary level is 107,557 (Male: 64,404 and Female: 43,158). Total number of teachers, at the primary level, is 3,187, out of which 2,411 are male and 776 are female teachers. Thus, on an average, each primary school has an enrolment of 88 students with a teaching staff of 3. However, the student class ratio is 36 and each school has averagely around 2 class rooms.

Middle

There are a total of 74 middle schools reported. Total enrollment, at the middle level, is 11,053 (Boys: 4,931 and Girls: 6,122). The total number of teachers at the middle level is 456, out of which 274 are male teachers and 182 are female teachers. Thus, on an average, each middle school has an enrolment of 149 students with a teaching staff of 6. However, the student class ratio is 31 and each school has averagely around 4 class rooms.

Matric

There are a total of 63 secondary schools. Total enrollment at the secondary level is 25,514 (Boys: 17,429 and Girls: 8,085). The total number of teachers at the secondary level is 1,172, out of which male teachers are 918 and female teachers are 254. Thus, on an average, each secondary school has an enrolment of 405 students with a teaching staff of 19. However, the student class ratio is 37 and each school has averagely around 10 class rooms.

³⁴ Statistical Education Bulletin, Reform Support Unit, Sindh Government.

Higher Secondary

There are a total of 9 higher secondary schools in the district. Total enrollment at the higher secondary level is 12,436 (Boys: 6,694 and Girls: 5,742). The total number of teachers at the higher secondary level is 371, out of which male teachers are 193 and female teachers are 178. Thus, on an average, each higher secondary school has an enrolment of 1,382 students with a teaching staff of 41. However, the student class ratio is 53 and each school has averagely around 26 class rooms.

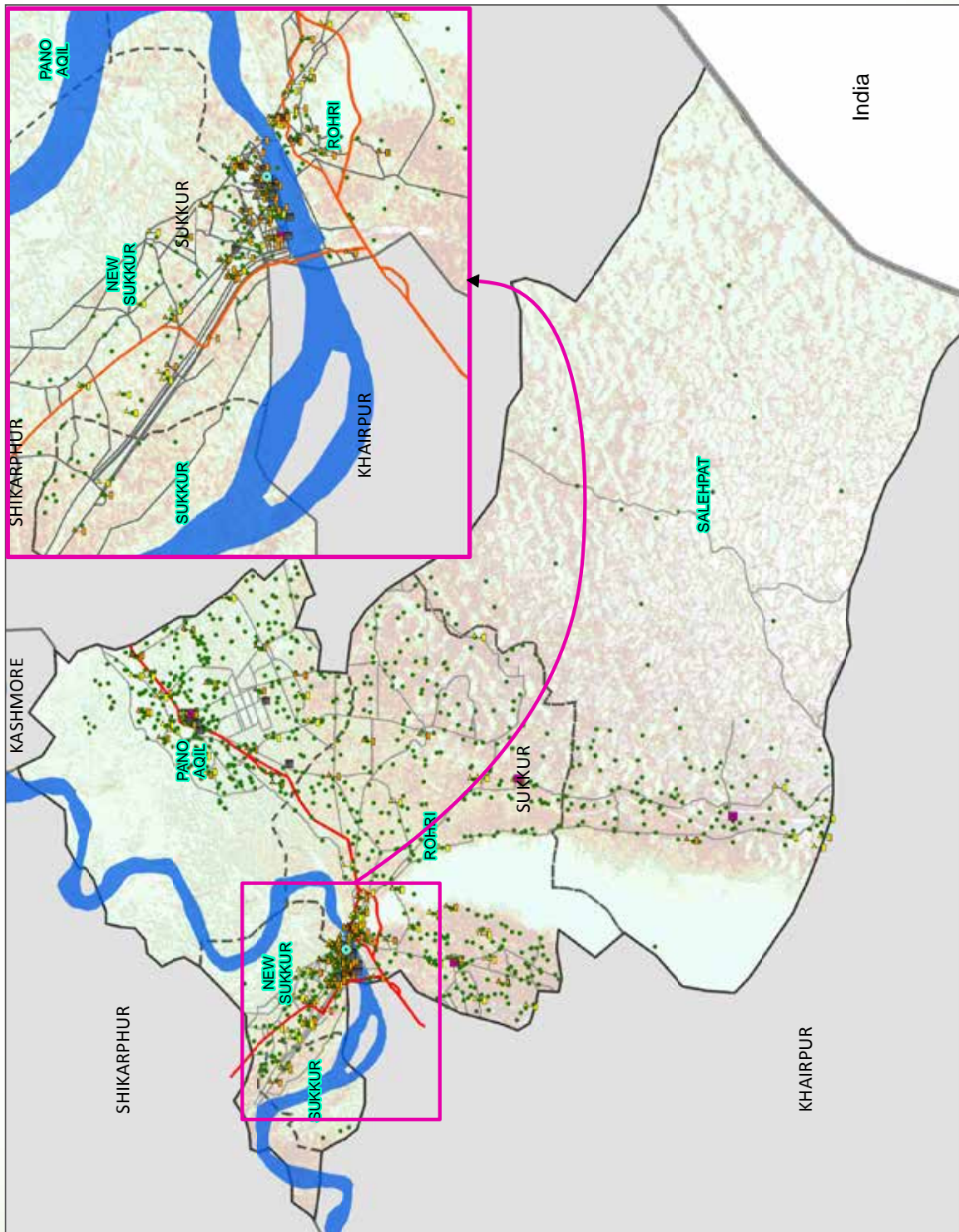
Table 1.6-2: Enrolment and Educational Facilities by level and Gender³⁵

Level	Enrolment			School Facilities				Teachers		
	Boys	Girls	Total	Boys	Girls	Mixed	Total	Male	Female	Total
Primary	64,404	43,153	107,557	380	221	626	1,227	2,411	776	3,187
Middle	4,931	6,122	11,053	19	23	32	74	274	182	456
Secondary	17,429	8,085	25,514	28	15	20	63	918	254	1,172
Higher Secondary	6,694	5,742	12,436	3	4	2	9	193	178	371
Total	93,458	63,102	156,560	430	263	680	1,373	3,796	1,390	5,186

³⁵ Sindh School List 2010-11, Statistical Education Bulletin, Reform Support Unit, Sindh Government.

Sindh-Sukkur Education Facilities Map

Date (September 2014)



Legend

Sukkur Education Facilities

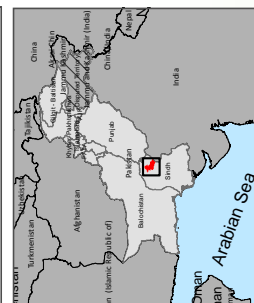
- PRIMARY
- HIGHER SECONDARY
- MIDDLE
- HIGH SCHOOL
- COLLEGE
- COACHING CENTRE
- COMPUTER CENTRE
- Road Network
- Link Roads
- River Indus
- Tehsil Boundary
- District Boundary
- Provincial Boundary
- International Boundary



Map Doc Name: MMAP Pakistan, Sukkur Education Facilities Map, AHSAN, 140913
 Creation Date: 15/09/14
 Projection/Datum: WGS 1984
 Web Resources: <http://www.immap.org>

Map data sources (s):
 Ahsan Pvt. Limited (AdminBoundaries, Education, Road Network & Health Facilities) National Geo-Spatial Agency (Settlements).

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2. Disaster History and Its Impact

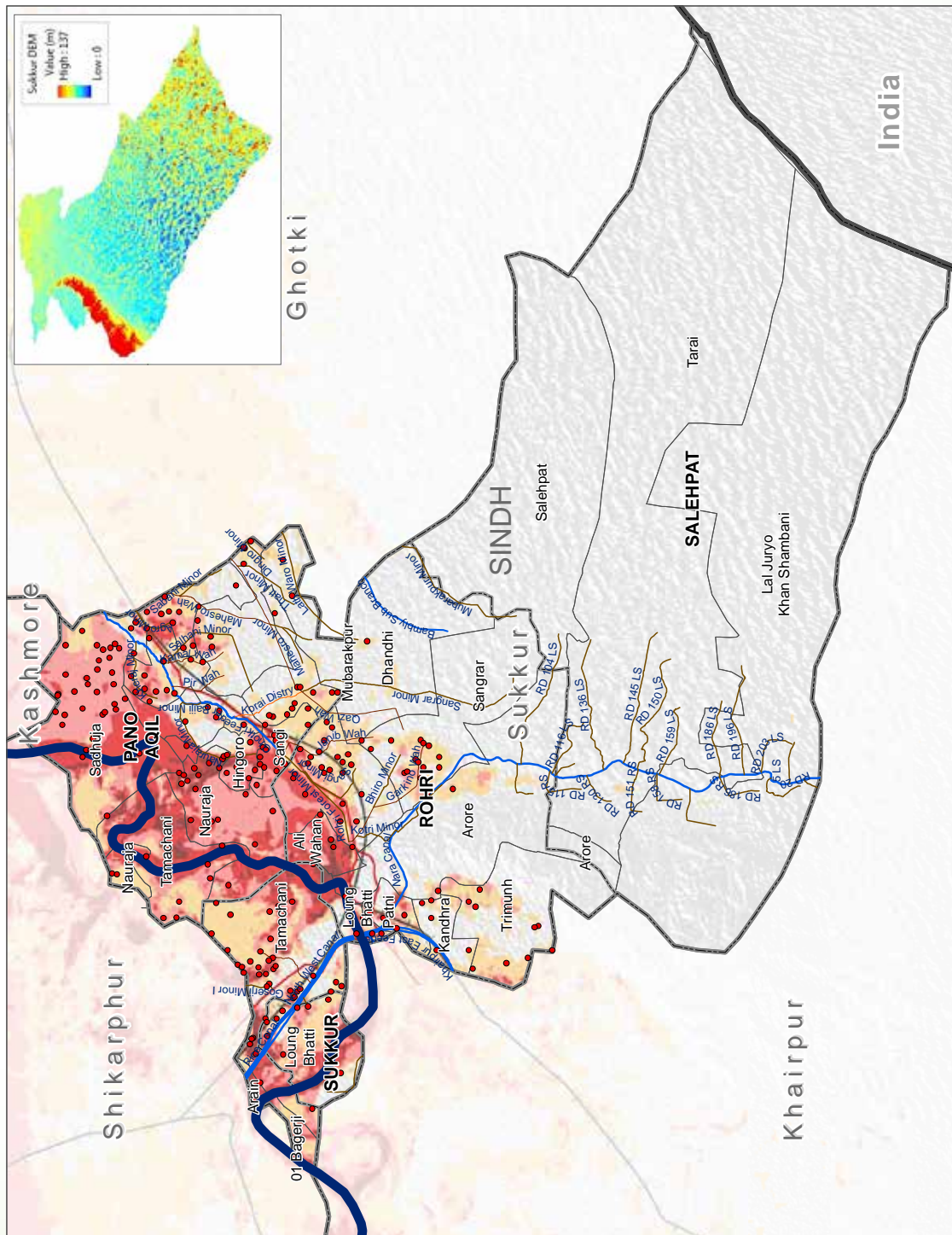
2.1. Disaster in District

2.1.1. Disaster History

District Sukkur is one of the oldest districts of Sindh. It was hit by 2010, 2011 and 2012 rains/floods. Though, comparatively speaking, floods 2010 were most severe among all, the severity of all disasters was moderate in each year. River Indus, after receiving water from 5 of its tributary rivers, causes floods in the northern and southern parts of Sindh province. The upper region of Sindh Province comprises of the districts of Jacobabad, Shikarpur, Kashmore, Larkana and Kamber Shahdadkot on the right bank of River Indus and Ghotki, Sukkur, Khairpur, Naushahro feroze and Sukkur on the left bank of River Indus. These districts, on the right and left banks of River Indus, are prone to severe threat when River Indus is in high flood. The districts in the lower Sindh are prone to riverine flooding and include: Dadu, Jamshoro and Thatta on the right bank of River Indus and Tando Muhammad Khan, Matiari and Hyderabad on the left bank. The length of River Indus along the province is 750 kms long.

Areas affected, in district Sukkur, in 2011 Floods: Baiji, Hingoro, Junas, Mubarakpur, Nauraja, Nindapur, Sadhuja, Sangi, Sultanpur, Tamachani, Ali Waha, Arore, Dhandhi, Loung Bhatti, Panhwar, Patni, Lal Juryo Khan Shambani, Salehpat, Tarai, 01 Bagerji, Arain, Loung Bhatti and Tamachani.

Sindh - Sukkur Risk Analysis Map September, 2014



Legend

- Settlements at risk
- International boundary
- Province boundary
- District boundary
- Taluka boundary
- UC boundary

Irrigation System

- Railway
- Canal
- Branch
- Drain
- Minor
- Wah
- India River

Flood Risk Analysis

- Very High Risk
- High Risk
- Medium Risk
- Low Risk

Map Doc Name: IMMAP_PAK_Sukkur Risk Analysis Map_v02_120914

Creation Date: September 12, 2014

Projection: WGS84

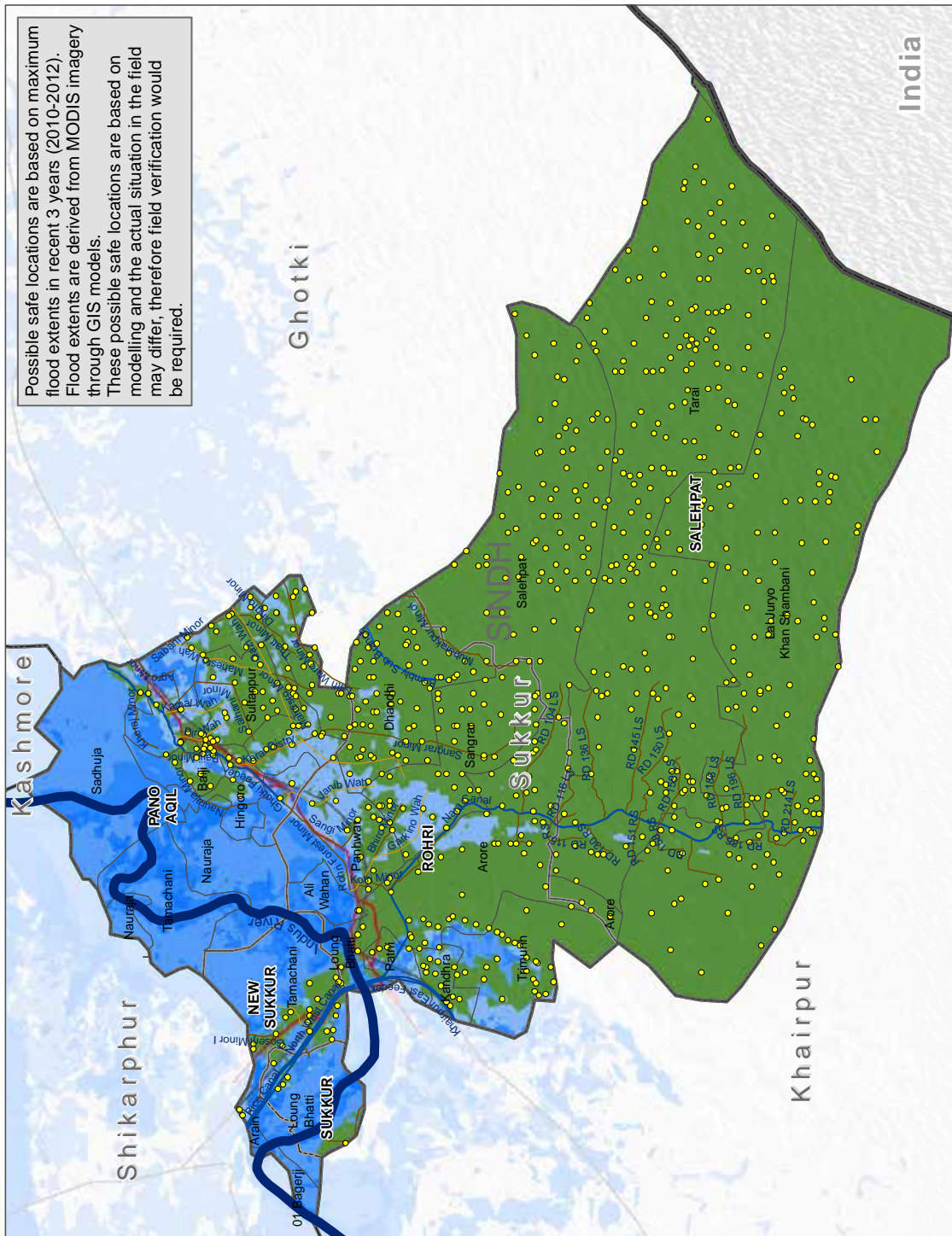
Web Resources: <http://www.immap.org>

Map data source(s): Ahasan Systems Private Limited; Admin boundaries, Roads; National Geospatial Agency; Settlements; WFP; Railway; Sindh Irrigation and Drainage Authority (SIDA); Rivers, Canals; MODIS; Maximum Flood Extent; ASTER G-DEM; Digital Elevation Model

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Sindh - Sukkur Possible Safe Locations Map

September, 2014



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

Legend

- Possible Safe Settlements
- Roads
- Railway
- Irrigation System
- Branch
- Canal
- Dairy
- Minor
- Wah
- Indus River
- Possible Safe locations
- Maximum Flood Risk (2010-12)
- International boundary
- Province boundary
- District boundary
- Taluka boundary
- UC boundary

IMMAP - **Sukkur District** **AHASSAN SYSTEMS**

Map Doc Name: IMMAP_PAK_Sukkur Safe Location Map_v01_120914
Creation Date: September 12, 2014
Projection/Datum: WGS84
Web Resources: <http://www.immap.org>

Map data source(s): Roads, Ahassan Systems Private Limited; Admin boundaries, Ahassan Systems Private Limited; Geospatial Agency Settlements, VEPS; Irrigation and Drainage Authority (SIDA); Rivers, Sindh Irrigation System; MODIS: Maximum Flood Extent; MODIS: Digital Elevation Model

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2.1.2. Impact of Disaster on Demography

As mentioned above, district Sukkur was hit by rains/floods in 2010, 2011 and 2012. However, the severity of these floods was moderate in Sukkur as compared to other districts. The district has been categorized as low risk districts by PDMA Sindh³⁶. In 2010, a total 130 villages were affected. A population of 247,913 persons was affected and there were 16 casualties. In total, 2,957 houses were damaged of which 650 were in pakka area and 2,307 were in katcha area³⁷.

Government statistics had not reported any demographic loss due floods 2011. Only the crop damage had been reported which is given in table 2.1.2. Floods 2012 has a moderate affect as a population of 2,590 was affected. Besides, 560 houses were partially damaged and 225 houses were fully destroyed. Total 130 villages were affected and 1,983 acres of crop area was inundated³⁸.

2.1.3. Impact of Disaster on Livelihood & Agriculture

Along with the demographic losses, due to floods/rains 2010, the loss to agriculture sector exacerbated the sources of livelihood for the people of this district. The following table shows the loss to agriculture sector of this district.

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

Major Crops	Area
Cotton	Area sown (Acre)
	83,500
	Area Damaged (Acre)
	25,885
	%
	31%
Rice	Area sown (Acre)
	14,888
	Area Damaged (Acre)
	298
	%
	2%
Sugarcane	Area sown (Acre)
	5,622
	Area Damaged (Acre)
	56
	%
	1%
Other	Area sown (Acre)
	1,329
	Area Damaged (Acre)
	564
	%
	42%
Total Area Sown	105,339
Total Area Damaged	26,803

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

As given in the table above, 31% of the cotton and 2% rice crops were damaged along with 1% of the other crops. No livestock loss was reported³⁹.

2.1.4. Analysis of Food Security Situation

Since district Sukkur is a semi urban district where majority of the population resides in urban areas (51%), the sources of livelihood are diversified ranging from business, trade, overseas

³⁶ Flood 2010, Disaster Management Apparatus in Sindh, PDMA Sindh

³⁷ Damages caused due to floods 2010, updated as of 11/02/2011, PDMA Sindh

³⁸ Losses and Damages Details³⁸ as of 23 January, 2013

³⁹ Flood Situation Update, 2011, Food & Agriculture Organization (FAO)

employment, government/private jobs, and services. The floods have affected rural population more severely as compared to the urban population. In rural areas, majority of the households are engaged in agriculture farming and livestock rearing activities and still others in non-agriculture activities/casual labour. Among these three types of the households, empirical studies have shown that poverty is relatively higher in the non-agriculture households, followed by livestock households and small farmers⁴⁰. It has been shown in the previous section that many individuals of this flood affected district lost their homes (2,957 houses were damaged in floods 2010) and their crops (26,803 Acres of crop area damaged in floods 2011). The deplorable social indicators i.e., large household size, poor literacy level, higher mortality rate, infrastructure with poor access to education and health facilities show the higher level of poverty and deprivation in this district with.

Through the destruction of roads, transport and market infrastructure, the floods had a significant negative impact on the 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 district⁴¹.

Since the severity of floods had been moderate in this district, the overall worsening impact on the food security situation has been neutralized because of the industrial and urban economic activities. Hence, the sources of livelihood revitalized over the last three years and the district may still be considered as food secure.

2.1.5. Impact of Disaster on Health

Severe floods can not only cause destruction to health care infrastructure but also affect health indicators of the affected population. Large parts of Sukkur district were inundated in 2010 and 2011 floods and was badly hit by heavy rains in 2012, which resulted in damage to the public health infrastructure in the district.

According to WHO, a number of health issues were reported after 2010 floods i.e. 1,207 Acute Watery Diarrhoea (AWT), 97 Birth defects, 1408 ARI, 1,391 Malaria, 1,571 skin diseases and 1,363 eye infections⁴².

The Sindh Rural Support Organization (SRSO) reported that in district Sukkur after floods 2010, the health and nutrition issues were at its peak and the reported cases of births in relief camps and the health and diet issues of the pregnant women were of great concerns. The increasing ratio of death cases due to hunger, diarrhoea, gastro and other diseases needed immediate attention of the authorities and relief workers. The hospitals were overcrowded and did not have the required capacity. Number of cases reported for severe dehydration, gastro and

⁴⁰ 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

⁴¹ Ibid

⁴² WHO daily Camp Report 25th Aug 2010

<http://www.pakreport.org/ushahidi/reports/view/1105>

malnutrition were in hundreds in a day in a district. Hospitals were ill equipped to accommodate the incoming patients and required more medicines, specialist doctors, support staff and emergency hospitals for the IDP packed districts including Sukkur, Larkana and Khairpur⁴³.

In 2012 heavy rains, the city of Sukkur and other major towns of the district were under water and all health facilities were inundated by rain water. Reported health issues were, safe drinking water, risk of water borne diseases, vector Born and other communicable diseases, high risk of malaria and dengue fever in the all rain affected areas. The pregnant women who were in their last trimester faced problems in Bemoc and Cemoc, as the HFs of the district were under water, and there was an urgent need of Mobile health camps, Static health centers and MCH facilities and dewatering of health facilities⁴⁴.

2.1.6. Impact of Disaster on Education

Due to the floods/rains of 2010, 307 school facilities were damaged, out of which 31 were fully destroyed and 39 were partially damaged. 237 schools were occupied by the IDPs. Also, heavy rains affected the school going children. Due to the damages to the schools, houses and roads; education of 24,560 students was affected (Girls: 10,561, Boys: 13,999). Teachers numbering 921 were also affected⁴⁵. No loss was reported to the school facilities due to floods 2011 and 2012.

⁴³ Sindh Rural Support Organization (SRSO), Daily Flood relief Report Sep 14, 2010

⁴⁴ WHO Pakistan- Emergency Health Response-Floods 2012, Situation Report#1

⁴⁵ Damage Need Assessment, Sindh-EMIS Reform c Unit, Department of Education and Literacy, Government of Sindh.

3. Hazard Vulnerability and Capacity Analysis

3.1. Hazard Vulnerability and Capacity Analysis

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

3.1.1. Hazard

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

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

Hazard	Frequency	Area affected/union councils	Severity/Force	Year ⁴⁷
Riverine floods	Monsoon	North western part especially Pano Aqil taluka	High	1973,1976,2010
Heavy Rains	Monsoon	Entire district	Medium	2003,2011,2012
Epidemics	Seasonal	Entire district	Low	Every year
Droughts	Rare	Eastern part of district	Low	1999-2002
Earthquakes	Rare	Entire district	Low	---
Transport accidents	Frequent	Entire district	Low	Every year

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

⁴⁷ Flood Contingency Plan, Sindh, 2012, pp. 5 & 6

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 hazard⁴⁸”

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 Sukkur is vulnerable to riverine floods. River Indus runs through the district. Besides, there are canals on both sides of the river emerging from Sukkur Barrage. In 2010 river Indus run over 130 villages/settlements ⁴⁹ of the district. A total of 247,913 persons were affected in this flood. District Sukkur is also affected by heavy rains of 2011 and 2012.	According to 1998 census, total population of the district Sukkur was 901,473 ⁵⁰ while the estimated population for the year 2014 is 1,431,508. The district has an estimated ⁵¹ growth rate of 2.80% per annum, which means that the population will double itself in 25 years ⁵² from 1998. Such rapid growth in population gives birth to many socio-economic problems and	Most of the vulnerable communities' and NGO's members do not participate in disaster risk reduction trainings in free and usually ask for the traveling allowances.

⁴⁸ Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

⁴⁹ Contingency Plan, Sindh, 2012, pp.11, (under 3.2.3 heading)

⁵⁰ Sindh Development Statistics, 2008

⁵¹ Estimated using 2010 population estimates from Gridded Population of World (GPW) 3 data set

⁵² Rule of 70 <http://controlgrowth.org/double.htm> retrieved on 05-03-2012

Physical/material	Social/organizational	Attitudinal/motivational
	makes the area vulnerable to different natural and made-made hazards.(Floods, rains etc.)	
Climate change is said to be responsible for these heavy rains because usually Sindh province receives very little rains. Environmental scientists agree that they cannot explain the floods in Sindh as the area that received the rain is normally very dry.	The rural population of the district Sukkur is 49 per cent as compared to the 51 per cent that resides in the urban areas. Most people in rural areas lack job opportunities, health and educational facilities which escalate the risk against different hazards. [Floods, rains etc.]	There is lack of training, appropriate skills and awareness on disaster risk management, both at the community and the public servants' level. Skills to handle emergencies are very weak and need to be strengthened.
Disasters are rooted in development failures e.g. unsafe buildings that could not withstand floods, heavy rains, earthquakes and results in disasters. In Sukkur district, 36.43 per cent people use wood/bamboo material for roof construction. This percentage is higher in rural areas (64.35 per cent) as compared to (7.91 per cent) ⁵³ urban areas.	Dependent population (the population that is less than 15 years and more than 65 years of age including widows and divorced women) in the case of Sukkur district is 47 per cent of the total population and the working population is 53 per cent, which shows that dependency ratio ⁵⁴ in the district is 87 per cent, which is very high and as such makes the population highly vulnerable.	One of the main factors in people's vulnerability is that most people are not aware of their disaster risks. Lack of awareness further escalates their risks eg, after heavy rains when people didn't find fresh water for drinking , they started drinking contaminated water without boiling which exposed them to many water borne diseases.
The climate of the district is hot and dry, with summer temperature mounting to as high as 50 degrees Celsius (122 F) ⁵⁵ . Very high temperature not only affects vegetation but also creates problem for the individuals like heat stroke, skin burn etc. Children, women, old and disabled people are vulnerable to severe hot climate.	The overall illiteracy rate (for the population of 10 years and above) is 43%; for male it is 29 and for female it is 59 %. For the urban rural comparison, rural illiteracy rate is higher than the urban. Illiterate people cannot be easily mobilized and made aware of the different disasters' risks.	People living in low lying areas mostly do not cooperate in evacuation process. When they are warned in advance of the coming floods they rarely act upon the warning and do not leave their houses.
The district is vulnerable to droughts because its eastern side is barren and desert. Moreover, the average rainfall in the district is poor (99.4 mm, 2007) ⁵⁶ which increases, threat of the droughts in	Non-structural mitigation measures which include trainings, workshops, seminars, land use planning and building codes etc. are not properly implemented in the district which makes the people vulnerable to different hazards e.g, floods,	Sense of dependency prevails in most of the people of the affected areas. In most cases people didn't bother to raise boundary walls of their houses because they wanted the NGOs to do it for them, free of cost.

⁸ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

⁵⁴ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

⁵⁵ Local Labour Market Study, District Sukkur, by NRSP- Institute of Rural Management & International Labour Organization, (2012), <http://www.irm.edu.pk/wp-content/uploads/2012/05/Labour-Market-Study-District-Sukkur.pdf> , accessed on 3-16-2013

⁵⁶ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp.16

Physical/material	Social/organizational	Attitudinal/motivational
the district. Sindh has recently experience droughts in 2002 ⁵⁷ .	earthquakes etc.	
In whole district, piped water is available to only 32 per cent of the housing units. In rural areas piped water is available to only 14 per cent of the households while 81 per cent ⁵⁸ of rural households have motor pumps inside the housing units. By drinking unsafe and contaminated water people gets vulnerable to hepatitis and other water born disease.	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.	
According to an initial assessment by district education department about 369 schools are fully affected; among which 249 due to IDPs, 73 due to floods and 38 schools due to rains ⁵⁹ (2010 flood). 5 schools were damaged due to heavy rains of Sep 2011.	There is lack of Community Based Disaster Risk Reduction (CBDRM) projects in the vulnerable areas of the district. Focus of the different organizations working in the area is only towards relief side.	
Overall sanitation conditions in district Sukkur are relatively poor. On the basis of type of toilets, 27% of the households in district Sukkur use non-flush toilets while 6% of the population has no toilets ⁶⁰ . The sanitation facilities are comparatively worse in rural areas of the district.	There are no Disaster Management Committees (DMCs) and Emergency Response Committees (ERTs) in the vulnerable communities of the district. DMCs and ERTs have representations from vulnerable communities' which includes ex-counsellor, religious leaders, union council sectary, youth, farmer's representation etc. DMC and ERT members are trained (on DRR and first aid etc.) and are first responder to any emergency situation.	

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

⁵⁷ Disaster Management Plan, Sindh, (2008), pp.34

⁵⁸ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

⁵⁹ Flood report on educational sector of Sindh province, 2010-11, Reform Support Unit, Department of Education & Literacy, Government Of Sindh, pp. 63

⁶⁰ Pakistan Social and Living Standard Measurement Survey 2012-13

community, society or organization that can be used to achieve agreed goals constitute its capacity to cope with hazards⁶¹.

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
District Sukkur contributes significantly in agriculture sector of Sindh because its climate is suitable for production of various food items e.g. maize, rice, sugarcane, cotton, wheat etc. Wheat and rice are cropped in 91% and 42% of the <i>mouzas</i> respectively while cotton and sugarcane are cropped in 58% and 28% of the <i>mouzas</i> ⁶² . Total reported area of the district is 480,000 hectares, out of which 153,000 hectares (31.87%) are cultivated ⁶³ .	The overall literacy rate ⁶⁴ (for the population of 10 years and above) is 57%; for males it is 71 and for females it is 41%. For the urban rural comparison, urban literacy rate is higher than the rural. Literate people can easily be mobilized and made aware of the different disaster risks.	District Disaster Management Authority (DDMA) and very few NGOs are delivering disaster risk reduction trainings. However, these trainings are not up the mark and lack technical experts and facilities.
According to health facility assessment of district Sukkur total health facilities in the district are 72. There are three hospitals, three Rural health centres (RHCs), twenty six Basic Health Units (BHUs), three MCHs	District Disaster Management Authority (DDMA) of Sukkur has been established in the DCO's office on a temporary basis. DDMA formulates disaster plan for the district and assigns roles and responsibilities to the local district	Some people in the affected communities are found very cooperative and friendly. They encourage and Welcome the humanitarian organizations with open heart and also cooperate in the damage need assessment.

⁶¹ Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

⁶² Mouzas Development Statistics of Sindh, 2008, Agriculture Census Organization

⁶³ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp. 80

⁶⁴ Pakistan Social and Living Standard Measurement Survey 2010-11, pp. 139

Physical/material	Social/organizational	Attitudinal/motivational
and thirty seven General Dispensaries (GD). These health facilities provide health services both in rural and urban areas of the district, not only as a routine but also in extreme circumstances.	departments. DDMA carry out emergency response and relief activities in the affected areas.	
The total number of schools in the district is 1,274. Out of which 1,129 are primary schools, 52 are elementary, 23 are middle schools, 61 are secondary, and 9 are higher secondary schools ⁶⁵ . These school buildings are also used as shelter and evacuation centres in emergency.	After the 2010, 2011 and 2012 floods, different NGOs /INGOs have focused their attentions on shelter, wash, and livelihood activities. These organizations include International Rescue Committee (IRC) and Concern Worldwide, Goal Ireland and Oxfam GB etc ⁶⁶ . They provide funds and relief stuff to the affected people, to enable them to stand on their own.	Sometimes local vulnerable communities, before rainy season, take mitigation measures by strengthening their roof tops and boundary walls etc.
The irrigation system of the district is partly controlled by the Sukkur Barrage but mainly by the Guddu Barrage. District Sukkur has an efficient canal irrigation system which helps in agriculture productivity. Out of a total of 271 mouzas, 180 are irrigated by canal irrigation system while 83 <i>mousaz</i> are irrigated by tube wells ⁶⁷ .	Community Organizations (COs) are formed by NGOs in the affected areas to encourage the local representation. Active people from the community are part of these organizations which facilitate the humanitarian organization work at grass root level.	
Road network is considered as a vehicle for economic development. The district is well-connected with other districts through good quality roads. The district headquarters at Sukkur is connected with other <i>talukas</i> . Total good quality roads length is 267 kilometres (2007-08) in this district ⁶⁸ . These roads can be used as evacuation point in flood disaster. Good roads are also	Law Enforcement Agencies are important stakeholders in relief activities. <i>Jawans</i> (Soldiers) of Pakistan Army assist the affected communities directly and help them in evacuation, by providing transport facilities. Army doctors provide medicines and other health facilities to the affected people especially to the children and women. District Sukkur has the biggest Army cantonment, of the	

⁶⁵ SINDH Education Management Information System (SEMIS), District Education Profile, Sukkur ,2012-13

⁶⁶ Pakistan Centre for Development Communication (PCDC),
<https://sites.google.com/site/thecivilsocietyforumofpakistan/list-of-organizations-working-for-flood-relief-in-sukkur>, accessed on 03-08-2013

⁶⁷ Mouzas Development Statistics of Sindh,2008, Agriculture Census Organization

⁶⁸ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp. 262

Physical/material	Social/organizational	Attitudinal/motivational
helpful in carrying out relief activities.	country which is located at <i>Pano Akil taluka</i> .	
In Sukkur district, forest area is spread over 34,382.76 hectares ⁶⁹ . The increased protection of forests could lead to a decrease in the severity of floods/rains.	Union council sectaries are very helpful in risk assessment process. Because they keep all records of the union council and even provide maps of the relevant union council.	
District Sukkur is a big market of Dates. Different varieties of Dates are available here. Famous Date market of the district is Agha Qadir Dad which is situated at the left Bank of River Indus. Dates of this area is exported to India, Australia and America which generate income for the farmers and enhance their financial capacity.	Community organizations are formed by NGOs in the affected areas to encourage the local representation. Active people from the community are part of these organizations which facilitate the humanitarian organization work at the grass root level.	

⁶⁹ Sindh Development Statistics, (2008), Lahore University of Management Sciences (LUMS), pp. 148

4. Sectoral DRR Mitigation Measures

4.1.1. Education

- The NGOs should work on awareness building programs for encouraging enrolment in higher secondary 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.
- Government should provide adequate funding to Sindh Irrigation Department to strengthen the weak or already breached LBOD which enable it to withstand with rains.
- 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.
- NGOs should initiate the Disaster Education Programmes for the local communities, to increase their knowledge of prevailing natural hazards, and especially to increase their capacity to understand extreme events and preventive measures to be taken before, during and after disaster.
- 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 Sukkur 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.
- Electrical supply mains, wires, etc should be strictly overhead.
- Electrical installations, transformers, etc, should be strictly placed at safe levels.

4.1.3. Health

- NGOs should encourage the community participation in the awareness sessions, programs and trainings, related to water treatment practices and hygiene practices which will capacitate the vulnerable communities of the area against the communicable diseases.
- Health department should take care of establishment of health facilities focused on certain population. All the health related issues should be dealt by them. But the responsibilities have to be identified.
- Health facilities should be located on higher grounds along or near good roads and adequate means of transportation readily accessible to the community.
- A logistic system should be put in place for determining the requirement of medicine, maintaining an inventory, storing and stocking, issuing and controlling the use of medicine, stockpile of emergency medicine and supplies, special arrangement with vendors and suppliers for emergency purchases in time of disaster.
- Advocacy seminars should be organized at district level for the training of medical staff to implement National Health Programs.
- DDMA should assign the responsibilities of health department to ensure the availability of medical and paramedical personal in hospital, BHU's, MCHC, and RHC's. Moreover, mobile health teams should be mobilized so that the health facilitators can visit the local areas to provide basic health care especially for the vulnerable group such as people with disabilities, elderly persons, children, females and those who hesitate to go to the hospitals because of cultural constraint and long distance.
- Nutrition Stabilization centres for the pregnant and lactating women suffering from acute malnutrition should be established in each small and big hospital.

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.
- 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.
- In post disaster phase NGOs should introduce micro-financing schemes for the affected people with flexible repayments schedules so that they can stand on their own.
- 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.
- Government and NGOs should promote effective insurance and credit schemes to compensate for crop damage and losses to livelihoods due to natural hazards in the district.

- Government and NGOs should ensure sustainable livelihoods in areas of recurrent climate risks (i.e. flood prone areas) by promoting supplementary income generation from off-farm and non-farm activities.

4.1.5. Agriculture

- Flood control and salinity control projects can be conceived to make more land available for cultivation
- Government should promote effective programs of contingency crop planning to deal with year to year climate variations.
- 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.

4.1.6. 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.

4.1.7. 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, malaria 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.
- DDMA should ensure long term viability of sanitation facilities by arranging funds.
- Government should keep in view the need of children, women and disable people while planning, designing, implementing, monitoring and management of sanitation service provision.

- NGOs in district Sukkur 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 Sukkur to avoid deterioration of aquatic environment.
- Access to water should be improved by installing additional water points.

4.1.8. 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. Moreover Tribal heads can facilitate the Government and NGOs in implementation of DRM projects.
- 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

Sr	Dept.	In Charge	Designation	Contact
1	Administration	Shazad Tahir	DC	071-9310600
		Shazad Fazal Abbasi	ADC-1	071-9310746
		Muhammad Ayub Chahar	ADC-2	071-9310608
2	Police	Tanveer Hussain Tunio	SSP	071-9310560-1
3	Agriculture	Vacant	Director Agriculture	071-9310881
4	Health	Irfan Ullah Qureshi	DHO	071-9310121
5	Education	Zeb Mangi	Director- Education	071-9310113
6	Works and services	Prem Chand	Superintendent Engineer	071-9310104
7	Social welfare	Naseer Shah	DO	071-9310489

Source: DC office Sukkur

5.1.2. Emergency Response

S.No	Name or Organizations	Office Contact
1	Edhi Ambulance	115
2	Fire Brigade	071-5630335, 9310310
3	Electricity Complaint	118
4	Police Emergency	15
5	Telephone (Complaint)	1218
6	Telephone Enquiry	1217
7	Sui Gas Help line	1199
8	PIA Flight enquiry	114
9	TCS Courier	071-5618142

5.1.3. List of NGOs Working in District Sukkur

Name	Contact
Management and Governance Network Society	071-5633832
Association for Academic Quality	042-35166406/071-5624403
Benazir Income Support Programme	051-9246302/051-9246303/071-9310033
Catholic Relief Services	051-2656181/071-5630601
Eco-Conservation Initiatives	051-4446362
Goth Seengar Foundation	071-5630589
Health and Nutrition Development Society	021-34532804
Human Development Society	071-5633080/0300-3147080
Indus Resource Centre	021-35822239/071-5615188
Insaf Social Welfare Association	071-5633574/5691484
Institute of Rural Management	051-2822752/0333-7057897
John Social Welfare Organization Pakistan	071-5691100/071-5690258
Kainaat Development Association	0722-572186/0333-7344282
Management and Governance Network Society	071-5633832/0300-3181146
Marie Stopes Society	021-35389125-8/071-5614430

Name	Contact
Marvi Rural Development Organization	071-5804711
Organization for integrated Development	0331-3179287
Participatory Efforts for Health Environment	022-2652517/071-5633636
Sahil Pakistan	051- 2260636/071-5633615
Sangtani Women Rural Development Organization	0604-688997/0333-8827744
Sindh Rural Support Organization	071-5633516/071-5633657/071-5631625
Strugglien's Pakistan Social Welfare Organization	0715-633478
Sukkur Blood and Drugs Donating Society	071-5615922/071-5615375
Unilever Pakistan Limited	021-3566-0062
World Vision International	051-2287126-32/071-5804576
World Wide Fund for Nature - Pakistan	042-111993725/071-5633236

Source: www.himpakistan.pk

5.2. Health Facilities

List of health facilities in district Sukkur

Taluka	Union Council	Health Facility Name	HF_TYPE
New Sukkur	Tamachani	BHU,KANDO	BASIC HEALTH UNIT
New Sukkur	Tamachani	BHU,SOOMAR GOTH	BASIC HEALTH UNIT
New Sukkur	Tamachani	Dispensary, NASEERABAD	DISPENSARY
New Sukkur	Tamachani	Dispensary, JAFFARABAD	DISPENSARY
Rohri	Loung Bhatti	Taluka Hospital, Rohri	HOSPITAL
Rohri	Loung Bhatti	Anwar Piracha Govt. Hospital	HOSPITAL
Rohri	Kandhra	RHC, Kandhra	Rural Health Centre
Rohri	Sanghar	RHC, Trighati	Rural Health Centre
Rohri	Patni	BHU Patni	BASIC HEALTH UNIT
Rohri	Panwaha	BHU Panwaha	BASIC HEALTH UNIT
Rohri	Dhandhi	BHU Dhandhi	BASIC HEALTH UNIT
Rohri	Arore	BHU,THARIRI	BASIC HEALTH UNIT
Rohri	Arore	BHU,QASIMPUR	BASIC HEALTH UNIT
Rohri	Arore	BHU, DODANKO	BASIC HEALTH UNIT
Rohri	Arore	BHU,SALEH	BASIC HEALTH UNIT
Rohri	Dhandhi	BHU,ABAD	BASIC HEALTH UNIT
Rohri	Loung Bhatti	BHU,Loung Bhatti	BASIC HEALTH UNIT
Rohri	Trimunh	BHU Kandri	BASIC HEALTH UNIT
Rohri	Arore	Dispensary, Riazabad	DISPENSARY
Rohri	Loung Bhatti	Dispensary, Loung Bhatti	DISPENSARY
Pano Aqil	Nindapur	Taluka Hospital,Pano Akil	Hospital
Pano Aqil	Songi	BHU Songi	BASIC HEALTH UNIT
Pano Aqil	Sangi	BHU Sangi	BASIC HEALTH UNIT
Pano Aqil	Sadhooja	BHU Sadhooja	BASIC HEALTH UNIT
Pano Aqil	Nouraja	BHU Nouraja	BASIC HEALTH UNIT
Pano Aqil	Nindapur	BHU Nindapur	BASIC HEALTH UNIT
Pano Aqil	Mubarakpur	BHU Mubarakpur	BASIC HEALTH UNIT
Pano Aqil	Hingoro	BHU Hingoro	BASIC HEALTH UNIT
Pano Aqil	Dadlo	BHU Dadloi	BASIC HEALTH UNIT
Pano Aqil	Dadlo	BHU Dadlo	BASIC HEALTH UNIT
Pano Aqil	Baiji Shreef	BHU Baiji Shreef	BASIC HEALTH UNIT
Pano Aqil	Sultanpur	BHU Sultanpur	BASIC HEALTH UNIT

Taluka	Union Council	Health Facility Name	HF_TYPE
Pano Aqil	Sultanpur	Dispensary, Arian	DISPENSARY
Salehpat	Tari	BHU Tari	BASIC HEALTH UNIT
Salehpat	Salehpat	BHU Salehpat	BASIC HEALTH UNIT
Salehpat	Salehpat	Dispensary Salehpat	DISPENSARY