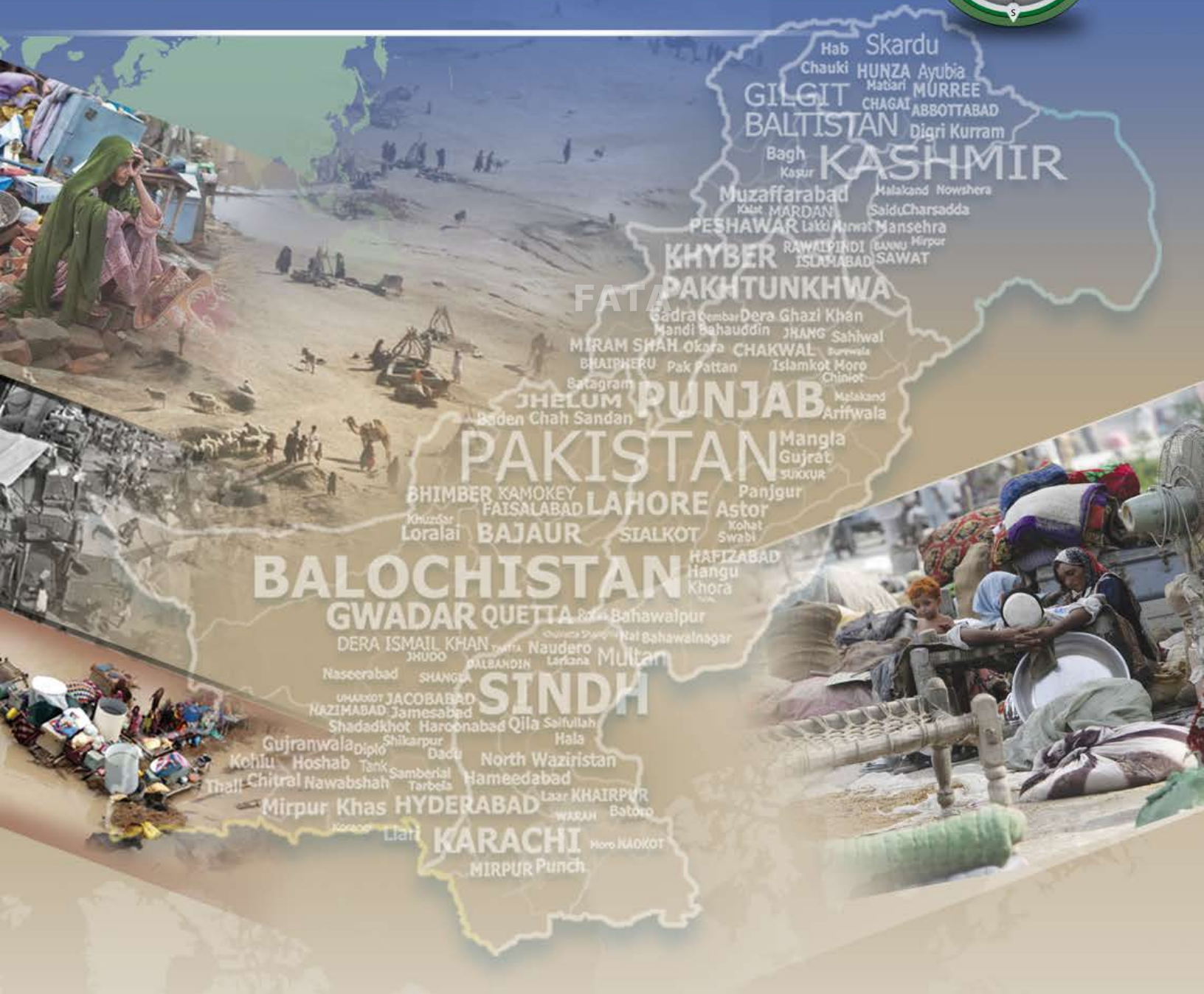


# PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



## DISTRICT BADIN



Solutions in Time

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“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.”

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 Badin

October 2012

“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*

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**Mehdi Bokhari**

Chief Executive Officer  
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## District Badin at Glance

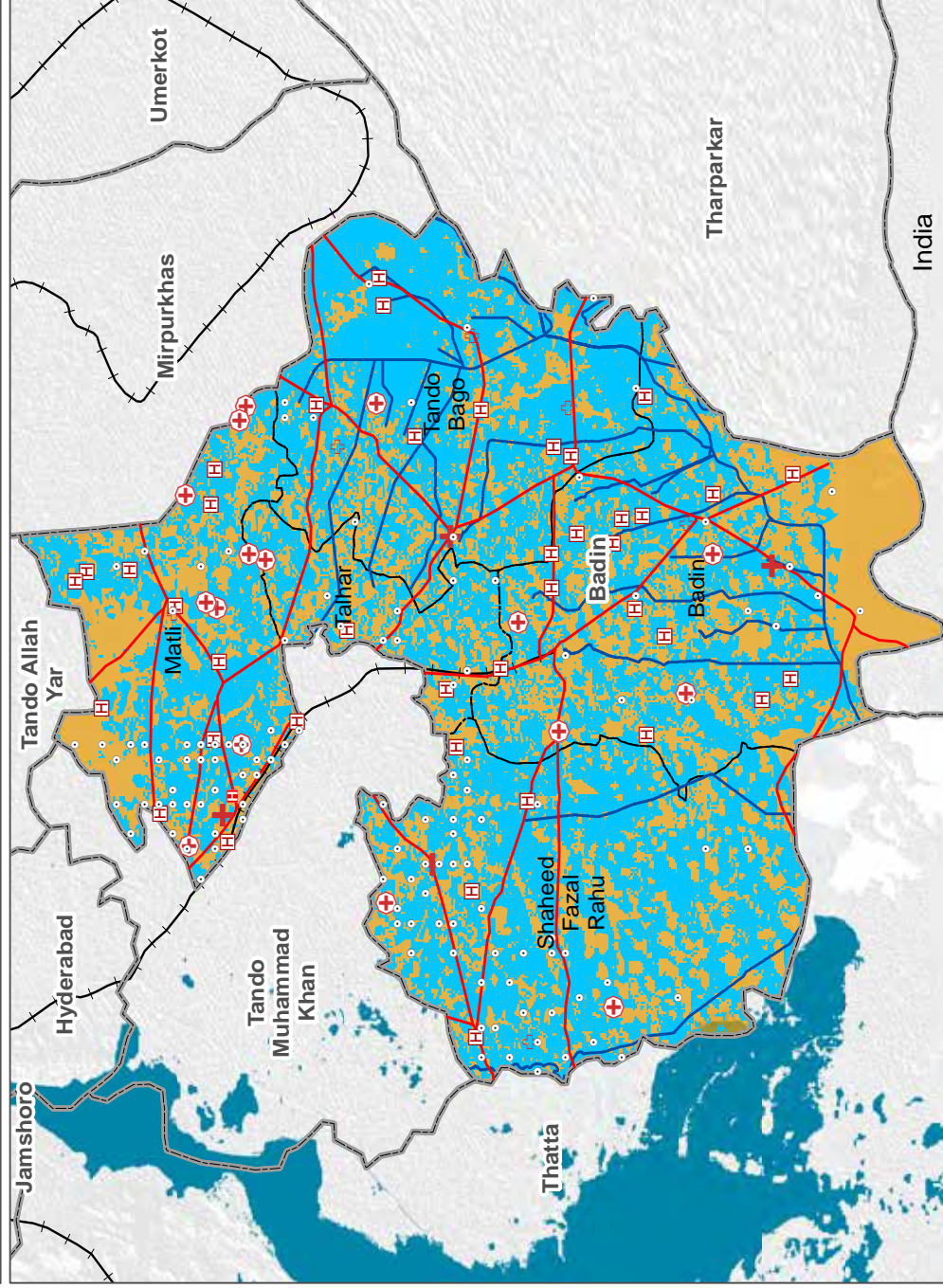
Area	6,726 <sup>1</sup> km <sup>2</sup>
Population - 1998	1,136,044 persons
Male	597,573 (52.60 %)
Female	538,471 (47.40 %)
Sex Ratio (males per 100 females)	111
Population Density	168.9 per Km <sup>2</sup>
Urban Population	186,488 (16.42 %)
Rural Population	949,556 (83.58 %)
Average Household Size	5.3
Literacy Ratio (10 +)	24.60%
Male	35.07%
Female	12.90%
Total Fertility Rate (TFR)	4.90%
Contraceptive Prevalence Rate (CPR)	15.10%
Population (60 and above)	5.10%
Population - 1981	776,614 persons
Average Annual Growth Rate (1981 - 98)	2.26%
Total Housing Units	211,354
Pakka Housing Units	34,201 (16.18 %)
Housing Units having Electricity	74,268 (35.14 %)
Housing Units having Piped Water	27,485 (13.00 %)
Housing Units using Gas for Cooking	7,184 (3.40 %)
Administrative Units	
Talukas <sup>2</sup>	5
Union Councils	46
Mauzas	511
Municipal Committee	2
Town Committees	8
Registered Voters (Gross) <sup>3</sup>	618,445
Male	331,654
Female	286,791

<sup>1</sup> Current area of Badin district after administrative changes is 6,527 km<sup>2</sup>

<sup>2</sup> Updates of National Rural Support Programme's (NRSP) Response to Floods as of 13 November, 2011

<sup>3</sup> Election Commission of Pakistan (<http://www.ecp.gov.pk/VoterStats/Sindh.aspx>)

Badin - Reference Map



**Legend**

- Settlements (NGA)
- Health Facilities (WHO)
  - Basic Health Unit
  - Dispensary
  - Hospital
  - Maternal & Child Health Centre
  - Rural Health Centre
- Roads (WFP)
- Railways (PCO)
- Left Bank Outfall Drainage (LBG)
- Flood Extent 2010 (UNOSAT)
- Flood Extent 2011 (UNOSAT)
- Tehsil boundary (PCO)
- Badin (PCO)
- District boundary (PCO)

Map Doc Name: IMMAP\_PAK\_Baluchistan\_Map\_Atlas\_01\_011912  
 Creation Date: June 13, 2012  
 Project Coordinator: WGS44  
 Web Resources: <http://www.immap.org>

Map data sources: Food Program (WFP), Roads, Railway Network, National Geospatial Agency-USA (NGA), Settlements, District boundaries, District boundaries, District boundaries, The Lewis and Beger Group (LBG), LBGs, Districts, Districts, World Health Organization (WHO), Health Facilities

**Disclaimer:**  
 The data presented in this map is for reference only. It is not intended to be used for any purpose other than the one for which it was collected. The data is not guaranteed to be accurate, complete, or up-to-date. The data is not intended to be used for any purpose other than the one for which it was collected. The data is not guaranteed to be accurate, complete, or up-to-date.

Scale: 0 5 10 20 Kilometers

# Acronyms

BHU	Basic Health Unit
CPR	Contraceptive Prevalence Rate
CFW	Cash For Work
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
LBOD	Left Bank Outfall Drain
LHDP	Laar Humanitarian & Development Programme
NADRA	National Database and Registration Authority
NDMA	National Disaster Management Authority
NDP	National Drainage Programme
NER	Net Enrolment Rate
NFIs	Non-Food Items
NGA	National Geospatial Agency USA
NGO	Non-Governmental Organization
NHA	National Highway Authority
NRSP	National Rural Support Programme
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
SDPI	Sustainable Development Policy Institute
SPO	Strengthening Participatory Organization
SUPARCO	Space and Upper Atmosphere Research Commission
TFR	Total Fertility Rate
TLC	Temporary Learning Centres
TSS	Transitional School Structure
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WFP	World Food Programme
WHO	World Health Organization

# 1 Background Information

## 1.1 Introduction

### 1.1.1 History

Badin is among one of the most important coastal districts of the Sindh Province. Though, a major district of Sind, its history, in particular, is related with the history of lower Sindh. This area was the centre of the ancient Indus Valley Civilization. According to Wikipedia, the free encyclopaedia, “some of the places in Sindh have been inhabited as early as the 3rd millennium BC. A large number of Indus valley sites have been found in Sindh. Sindh was ruled by local Hindu and Buddhist rulers until 712 CE, when it was invaded by the Arabs and incorporated into part of the Umayyad Caliphate.” The area remained under the rule of the caliphate until its control was taken over by the Ghaznavids, a Muslim dynasty of Turkic slave origin. In 1592, Sindh came under the direct rule of the Mughal Empire<sup>4</sup>. However, after the advent of the British in the subcontinent and as the Mughal Empire started to disintegrate, Sind was made part of British India's Bombay Presidency, in 1847. The Government of India Act 1935 made the Bombay Presidency into a regular province, and made Sind a separate province in 1936. Subsequently, as a result of the partition of subcontinent, Sind became part of Pakistan. Badin was announced as a district in 1975, by the then Prime Minister, Mr Zulfikar Ali Bhutto.

### 1.1.2 Geography

Badin district is situated between latitude 24° 13' to 25° 12' North and longitude 68° 21' to 69° 20' East. The district is bounded in the north by Hyderabad, in the east by Mirpurkhas and Tharparkar districts, in the south by the Arabian Sea and Rann<sup>6</sup> of Kutch, which also forms the international boundary with India, and in the west it borders Thatta and Hyderabad districts. The total area of the district is 6,527 square kilometres and the district consists of five talukas, namely, Badin, Matli, Tando Bago, Golarchi and Talhar. With the

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<sup>4</sup>[http://www.badin.gov.pk/index.php?option=com\\_content&view=article&id=1:about-badin&catid=1:a-badin&Itemid=7](http://www.badin.gov.pk/index.php?option=com_content&view=article&id=1:about-badin&catid=1:a-badin&Itemid=7)

<sup>5</sup> District Census Report of Badin: 1998

<sup>6</sup> Rann is derived from Sanskrit means desert. Rann of Kutch is large barren area of salt marshes and mud flats, mostly in western India in the state of Gujarāt but also extending into Pakistan. The area is largely treeless and arid, although it can flood during the monsoon season. Very few tourists visit the area, and there are few settlements. - Encarta 2009

introduction of the Devolution System<sup>7</sup>, the talukas have been sub-divided into 46 union councils, 109 tapas and 511 dehs<sup>8</sup>. Badin has a mild climate. Rainfall is highly erratic and unpredictable with an average rainfall of 258.8 mm<sup>9</sup>.

“... The district is part of the Lower Indus Plain formed by the alluvial deposits of the Indus River. Thus, its land is very uniform in character and it is not diversified by hills or rivers; in fact, there are no rivers or streams in the district. The climate of Badin is relatively mild. The sea breezes keep the summers relatively cool. During the monsoon period the sky is cloudy, but there is very little precipitation. The climate in summer is generally moist and humid. The cold weather in Badin starts from the beginning of November, where there is a sudden change in temperature. There are very few plants other than trees and grasses in the region.” (Human Development Foundation).

### 1.1.3 Culture (Ethnicity, Religion, Languages and politics):

The population of the district is mainly Muslim, constituting 79.43 per cent of the total population. Hindus form an important minority at 19.9 per cent in the district followed by Christians at 0.3 per cent. Important tribes include the Halaypotras and the Hingoras. However there are also Syed, Soomra, Talpur, Leghari, Bhurghri, Memon, Mandhra, Maheri, Ansari, Sama, Juneja, Sheedi and Mallah. New settlers come mainly from the Punjab and Baluchistan.

Sindhi is the primary language in the district, spoken by 89.8 per cent of the total population. The language is spoken predominantly in the rural areas at 92.2 per cent as compared to 77.7 per cent in the urban areas. The next widely spoken languages are Urdu with 1.2 per cent, Seraiki with 0.6 per cent and Balochi with 0.21 per cent.

Sind is the land of Shah Abdul Latif Bhithai and Sachal Sarmast, the two great Sufi poets. Sindis love music and dance and their music is deeply influenced by Sufism. In Badin district there are numerous shrines of the Sufis and saints, which are visited by hundreds of people daily, not only from parts of the district, but also from other parts of the country. The shrines include that of Saman Shah, one of the greatest saints of Sindh of the last century, as well as the shrines of 22 Pirs of Lowari Sharif, including famous poet of the Sindhi language, Khowaja Muhammad Zaman and others. Other famous saints who graced this part of Sindh and who have their last resting place in Badin are, Raj Shaheen, Ghulam Shah,

<sup>7</sup> Decentralization of administrative powers to local bodies.

<sup>8</sup> Deh/Mouza: is a territorial unit with a separate name area precisely measured into plots/khasras/survey numbers

Tapa: is territorial boundary in Sindh equivalent to what is called Patwar Circle (a revenue area pertaining to the lowest land administrator called Patwari) in Punjab

<sup>9</sup> <http://www.badin.gov.pk>

Ahmed Rajo, Sajan Sawai, MahWali, Shah Qadri, Miyoona Mooso, Shah Gariyo, Syed Tajuddin.

Pakistan People's Party (PPP) is the most potent political force in the district. Since 1970, candidates of PPP have been successful more or less in all the elections. In the 2008 elections, all the five provincial seats and the two national assembly seats were secured by the PPP candidates. In the last decade, the Mirza Family has demonstrated great influence and succeeded in the 2008 election with a large margin. Dr. Fehmida Mirza was elected as Speaker of the national assembly, whereas Dr. Zulfiqar Mirza became the Home Minister of Sindh Province. The total voters registered by Election Commission of Pakistan, in Badin, are 564,700.

#### 1.1.4 Administrative Division:

District Badin is divided into four talukas, namely: Badin, Tahlahr, Shaheed Fazal Rahu (Golarchi), Matli and tando Bago. There are 103 patwar circles and 497 Mouzas (Revenue Villages) in the district. Most of the mouzas are rural i.e. 466 while only 16 mouzas are declared urban. 14 mouzas are partly urban and only one mouza comprises of the forests.

Table 1.1.1: Administrative Division of District Badin

BADIN	KANUNGO CIRCLES/ SUPERVISORY TAPAS	PATWAR CIRCLES/ TAPAS	NUMBER OF MOUZAS					
			TOTAL	RURAL	URBAN	PARTLY URBAN	FOREST	UN- POPULATED
BADIN TALUKA	3	25	140	128	7	4	1	-
TALHAR TALUKA	2	10	54	50	4	-	-	-
SHAHEED FAZAL RAHU	3	22	95	87	3	5	-	-
MATLI TALUKA	3	27	98	95	2	4	-	-
TANDO BAGO TALUKA	3	29	110	106	-	1	-	-
<b>TOTAL</b>	<b>14</b>	<b>103</b>	<b>497</b>	<b>466</b>	<b>16</b>	<b>14</b>	<b>1</b>	<b>-</b>

Source: Mouza Statistics of Sindh: 2008, ACO, Government of Pakistan

#### 1.1.5 Road Network Infrastructure

There are 7 main road networks which connect Badin District to the rest of the country. The below table describes the main routes and Entry-Exit points of these routes from Badin District. These routes can be taken in to account in case of Emergency or disaster Situations. According to National Highway Authority, a total of 105 road schemes are present in Badin district with the longest being Sajawal-Badin road with a length of 77 km. The main points of the road are Badin, Golarchi, Khorwah Chowk and Sajawal. According to the same source the shortest road scheme in Badin is Manak Laghari with a length of 0.50 km. (See annexure 3)



Table 1.1.2: Road Network Infrastructure of District Badin

DISTRICT	ROUTE	VIA	TALUKA TEHSIL	/	ENTRY POINT	DISTANCE FROM BADIN
BADIN	THATTA HIGHWAY SAJAWAL	NATIONAL VIA	SAJAWAL BADIN ROAD	TALUKA GOLARCHI	GOLARCHI	100KM
BADIN	Thatta Highway Via Sajawal	National	Mirpur Bathoro- KarioGanwar-Golarchi- Badin Road	Taluka Golarchi	Khorwah (Settlements )	110km
BADIN	Tando Khan	Muhammad	Matli-Talhar-Badin Road	Matli	Matli	75km
BADIN	From Digri-Murpukhas		Dambalo-Tnado-Ghulam Ali-Matli-Talhar-Badin Road	Tando Bago	Dambalo	110km
BADIN	from Mirpurkahs	Jhuddo	Nabisar Road-Malkani Sharif	Tando Bago	Malikani Sharif	70km
BADIN	From Tando Allahyar		SheroShahani- TnadoGhulam Ali-Matli- Talhar-Badin Road	Matli	Tando Ghulam Ali	130km

Source: PDMA Sindh

Table 1.1.3: Entry-Exit points for District Badin

1	Kadhan	5	Khoski	9	Sangi Pharho	13	Ahmed Rajo
2	Seerani	6	Nindo Shahar	10	Dei	14	Khorwah
3	Bhugra Memon	7	Pangrio	11	Dumbalo	15	Tarai
4	Shadi Large	8	Malkani Sharif	12	Tando Ghulam Ali	16	Golarchi

Source: District Badin Contingency Plan 2012 for Cyclones, Rains and Flood

### 1.1.6 Irrigation

The major sources of irrigation in district Badin are Akram Wah, Phuleli and Guni Canals of Kotri Barrage and Nasir Canal of Sukkur Barrage. The district is at the extreme tail end of the irrigation system. The Left Bank Outfall Drain (LBOD) is composed of KPOD (Kadhan Patheji Outfall Drain), Spinal Drain, Cholri weir, Tidal link and other doro's dhands, canals. The drainage of effluent from Kotri command area is carried through 18 major drainage systems. These drainage systems are carrying drainage effluent into the sea, except for three drains which are discharging into the river Indus. One of these drainage systems, Kadhan Pateji Outfall Drain (KPOD), is connected to LBOD and Tidal Link for discharge into the sea. During the construction of the Tidal Link and the Cholri Weir, according to SIDA report<sup>10</sup> the local communities of Badin district opposed the project, terming it as dangerous. They were opposing the project on the basis of its unnatural design; which would choke the natural flow of drainage in the area. However, the implementing agencies did not think it necessary to take the view of the local community into account and carried out the project. The communities in Badin district reported that since their natural resource base has degraded, support is needed to increase their farm productivity. It was suggested

<sup>10</sup> Preparation Of Regional Plan For The Left Bank Indus, Delta And Coastal Zone, Final Report Phase Ii, March, 2012

that if they are given access to the drainage water through public lift pumps, they would be able to grow salt tolerant crops. The coastal villages, other than those living in the creek area, depend on the irrigation channels and minor canals for drinking water, which is also stored in the ponds for use when the supplies are low. As the carrying capacity of the irrigation system has been reduced due to poor maintenance, the availability of drinking water is constrained in the tail reaches.

### **1.1.7 Solid Waste Management**

Six agro-based industries and 23 sugar mills are contributing pollutants to surface drains as well as nearby depressions. Besides, in urban areas of the district, the supply of contaminated water, unsafe disposal of municipal waste and solid waste, unsafe disposal of infectious medical wastes and congested housing create environmental degradation. There are no water treatment plants installed at sugar industries. Flying ash emitted from the chimneys contain particle size ranging from 38 um to 1000 um<sup>24</sup> flying. The wastewater of all the sugar mills is dumped into Left Bank Outfall Drain (LBDO) through small drains and small irrigation channels at some places. The wastewater of 09 other Sugar Mills belonging to districts Nawab Shah, Sanghar, Mirpur Khas and Hyderabad is released into LBOD through small drains. The sewerage water of Badin main city is contaminating irrigation channels which is also the source of water supply for the entire population of district Badin and reaches up to coastal stretches. Four union councils i.e. Tarai, Garho, Khorwah, Ahmed Rajo and Bhugra Memon are directly affected<sup>11</sup>.

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<sup>11</sup> DDRMP District Badin; UNDP, NDMA and PDMA, July 30, 2008

## 1.2 Demography

### 1.2.1 Population Characteristics

Pakistan is among those four countries where life expectancy for female, at birth, is less than that of males, and as such the male population outnumbers the female population. Sex ratio in Badin is 113 males per 100 females, which is more than the ratio at the National level, which is 106:100. Badin has 53 per cent male population and 84 per cent of the total population resides in rural areas. Though, there could be other socio economic reasons for such a difference in male to female ratio, research<sup>12</sup> has shown that there are three major contributing factors for this higher male/female ratio. These factors can be seen in the given graph.

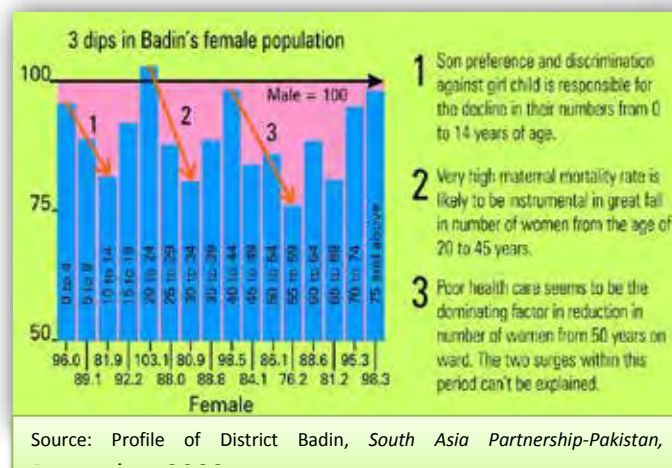


Table 1.2.1: Estimated Population of District Badin for 2010

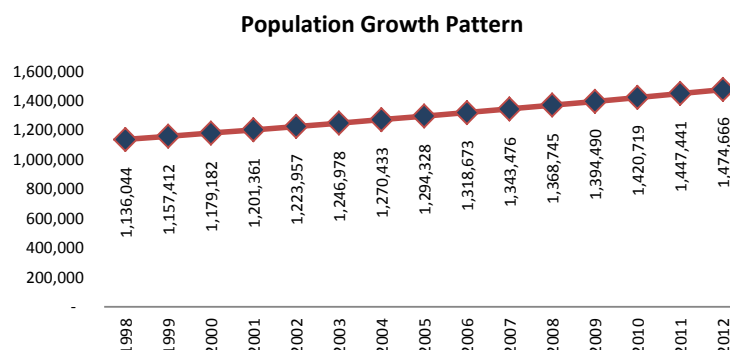
AGE GROUP (IN YEARS)	TOTAL BOTH SEXES	MALE	FEMALE	RURAL BOTH SEXES	MALE	FEMALE	URBAN BOTH SEXES	MALE	FEMALE
<b>ALL AGES</b>	1,420,719	747,316	673,403	1,187,500	623,456	564,044	233,219	123,859	109,360
<b>00 – 04</b>	228,864	116,745	112,120	193,944	99,148	94,797	34,920	17,597	17,323
<b>05 – 09</b>	241,495	127,727	113,768	204,297	108,291	96,006	37,199	19,437	17,762
<b>10 – 14</b>	169,068	92,957	76,111	140,296	77,604	62,692	28,772	15,353	13,419
<b>15 – 19</b>	132,179	68,781	63,398	108,503	56,501	52,002	23,676	12,279	11,397
<b>20 – 24</b>	132,233	65,118	67,115	110,743	54,198	56,545	21,490	10,920	10,570
<b>25 – 29</b>	112,230	59,689	52,541	93,560	49,207	44,353	18,670	10,482	8,188
<b>30 – 34</b>	85,866	47,458	38,408	70,374	38,407	31,967	15,492	9,052	6,441
<b>35 – 39</b>	60,582	32,089	28,493	49,552	25,950	23,602	11,030	6,139	4,891
<b>40 – 44</b>	64,501	32,495	32,006	53,366	26,560	26,806	11,135	5,935	5,200
<b>45 – 49</b>	50,140	27,231	22,908	41,687	22,541	19,146	8,453	4,691	3,762
<b>50 – 54</b>	45,006	24,179	20,827	37,725	20,184	17,541	7,281	3,994	3,287
<b>55 – 59</b>	26,394	14,977	11,417	22,193	12,546	9,647	4,201	2,431	1,770
<b>60 – 64</b>	28,163	14,933	13,230	24,039	12,743	11,295	4,124	2,190	1,935
<b>65 – 69</b>	13,460	7,427	6,033	11,415	6,367	5,049	2,045	1,060	984
<b>70 – 74</b>	13,992	7,166	6,826	11,896	6,177	5,719	2,096	989	1,107
<b>75 &amp; ABOVE</b>	16,545	8,343	8,203	13,910	7,035	6,876	2,635	1,308	1,327

Source: Population against different age groups estimated on the basis of Badin Census Report 1998

<sup>12</sup> Profile of District Badin: South Asia Partnership-Pakistan, December 2009

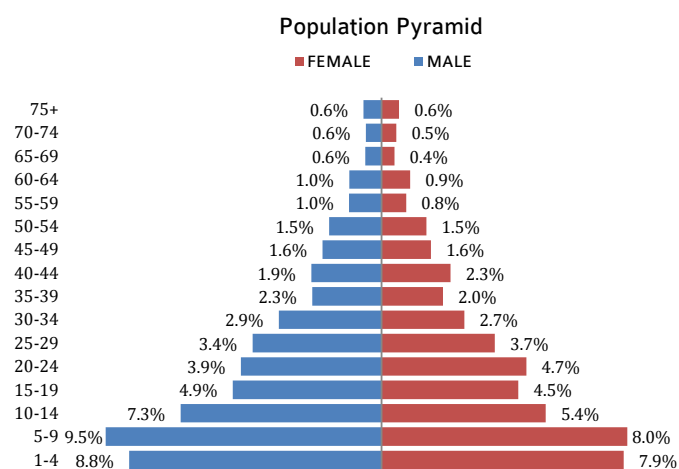
### 1.2.2 Population Growth Pattern

Population of District Badin is categorized by a high growth rate of 2.26% per annum, which simply means that the population will double itself in the next 31 years<sup>13</sup>. 45 % of the population is below 15 years and 3 percent is 65 years or above. The estimated population of 2010 is 1,420,719, which shows that population of the district increased by 29% in 12 years. (1998 to 2010)



### 1.2.3 Population Distribution by Age and Gender

Out of the total population, 53 percent are males and 47 percent are females. 45.01% of the population is below 15 years of age; whereas 51.90% is of the working age group i.e. 15-64. 65 years and above population is 3.10% of the total population. The maximum population lies in the cohort of 5-9 which is 17% of the total population. Though, in all age groups male population out numbers female population, exception can be seen in the age group of 20-24



<sup>13</sup> Rule of 70 <http://controlgrowth.org/double.htm>

### 1.2.4 Dependent Population

The economically dependent population comprises of the population that is less than 15 years and more than 65 years of age. In addition to these age groups, widowed, and/or divorced women are also considered part of the dependent population. Dependent population, in the case of Badin District, is 48.10 percent of the total population whereas the working population is 51.90 percent only. Which shows that dependency ratio<sup>14</sup> in the district is 93 percent.

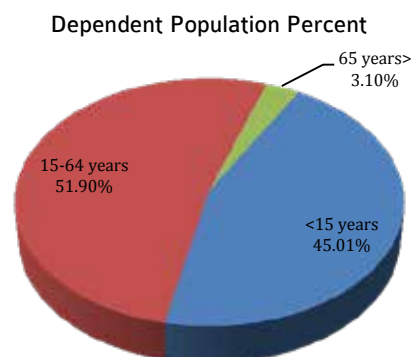


Table 1.2.2: Population Details by Taluka for 2010

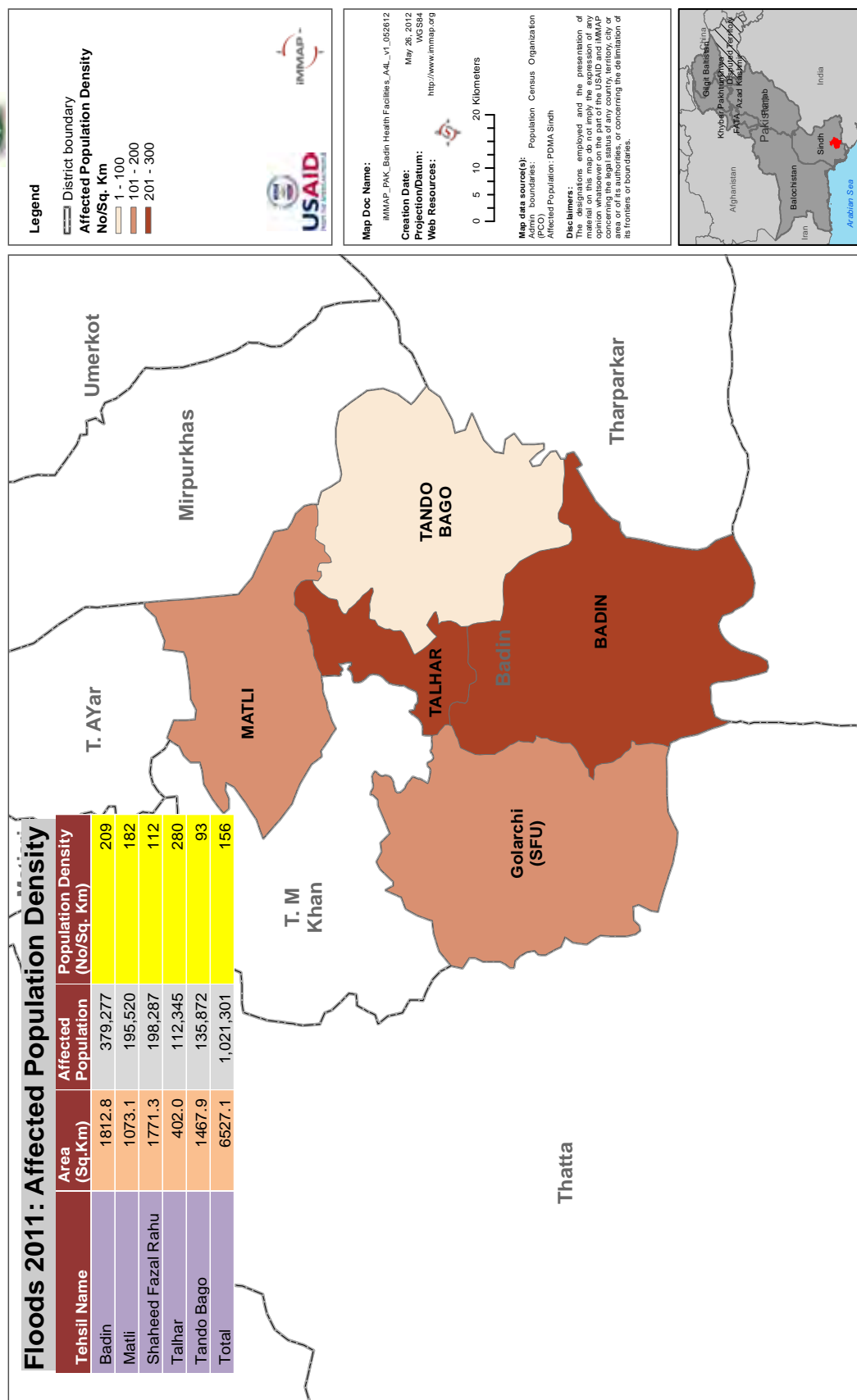
TEHSIL	AREA	POPULATION	MALE	FEMALE	POP DENSITY	SEX RATIO	AVERAGE HH SIZE	ESTIMATED <sup>15</sup> HOUSEHOLDS
BADIN	1812.8	353,734	186,068	167,666	195.13	111	5.2	68,026
MATLI	1073.1	351,496	184,891	166,605	327.55	111	5.6	62,767
SH. FAZAL RAHU	1771.3	264,642	139,205	125,437	149.41	111	5.5	48,117
TALHAR	402	136,456	71,778	64,678	339.44	111	5.3	25,746
TANDO BAGO	1467.9	314,391	165,374	149,017	214.18	111	5.2	60,460
<b>Total</b>	<b>6,527.1</b>	<b>1,420,719</b>	<b>747,316</b>	<b>673,403</b>	<b>204</b>	<b>111</b>	<b>5.36</b>	<b>309,040</b>

Source: Estimated on the basis of Table 1 District Census Report 1998 and data available in Updates of National Rural Support Programme's (NRSP) Response to Floods as of 13 November, 2011

<sup>14</sup> Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

<sup>15</sup> Population and Households are estimated for 2010

## Badin - Affected Population Density Map May 2012



## 1.4 Livelihood

### 1.4.1 Main Sources of Livelihood/Income

Badin district can be broadly divided into two distinct economic zones. One zone supports purely agricultural income and the other one has a mixed economy, having fisheries along with agriculture as its main stay. The upper part of the district, comprising of Taluka Tando Bago, Matli and Talhar, falls in the first zone whereas, Taluka Golarchi (Shaheed Fazil Rahoo) and Badin up to Taluka Diplo of district Tharparker constitutes the mixed economic zone. At present, sugarcane is the major cash crop in the district. However, after 2003 floods, due to shortage of water, the cultivation pattern changed and people have started growing sunflower as an alternate crop. The entire land is irrigated by water coming from Sukkur and Kotri barrages. The irrigation network mainly comprises Gooni, Phulali, Akram Wah and Nasir canals<sup>16</sup>.

Table 3.1 shows the number of Mouzas reporting different occupations.

Table 1.3.1: Number of Mouzas Reporting Sources of Employment

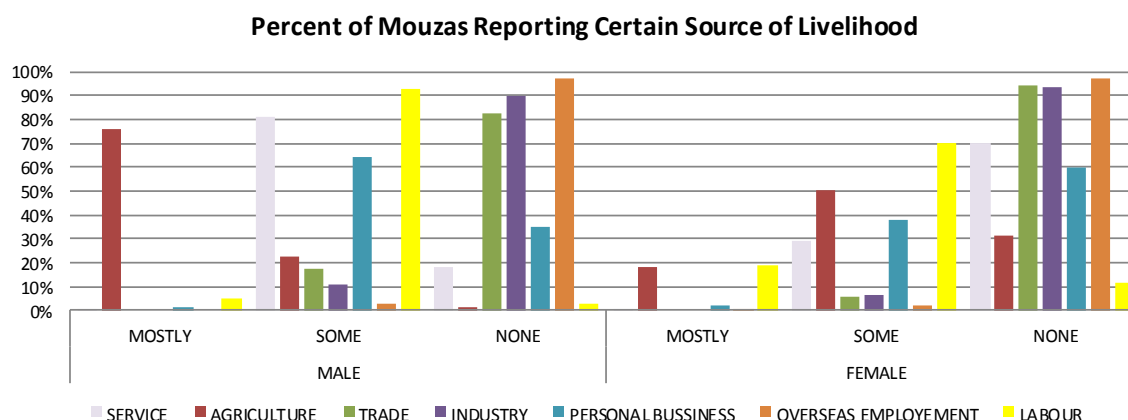
GENDER	QUANTIFICATION	SERVICE	AGRICULTURE	TRADE	INDUSTRY	PERSONAL BUSINESS	OVERSEAS EMPLOYEMENT	LABOUR
MALE	MOSTLY	4	366	-	-	5	—	22
	SOME	389	109	84	50	307	12	444
	NONE	87	5	396	430	168	468	14
FEMALE	MOSTLY	2	87	-	-	11	1	90
	SOME	140	242	28	31	183	11	336
	NONE	338	151	452	449	286	468	54

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

Table 1.3.1 shows that 76 per cent of the Mouzas reported agriculture production as the main occupation for most of their male population. The next major source of livelihood is labour where 93 per cent of the Mouzas reported that around 50 percent of their male work force

<sup>16</sup> DDRMP Revision July 30, 2008





depends on labour for their livelihood. Only three percent of the Mouzas reported a small number of their male workforce working as overseas employees. Most of the female population is engaged in labour activity as reported by 19 percent of the Mouzas.

### 1.4.2 Agriculture

Bulk of the population resides in rural areas of which 65 percent is engaged in farming and livestock rearing, and depends on these as their main sources of livelihood<sup>17</sup>. While the farming sector provides a major source of employment for the people in District Badin, land ownership is much skewed. There are either large cultivators/absentee landlords or very small cultivators (mainly small owners-cum tenants and sharecroppers) or labourers. For majority of the population most agriculturally related income comes from labour on other people's farms, which easily outweighs income from crop sales<sup>18</sup>. Main Crops are Sugar Cane, Rice, Wheat and sunflower.

Crops cultivated in Badin can be divided into two main categories:

- Food Crops
- Cash Crops

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

<sup>17</sup> Badin; Hazard, Livelihood and Vulnerability Baseline and Contingency Plan, 2009: Food and Agriculture Organization

<sup>18</sup> Socio-Economic Study and Proposal for Livelihood Improvements, 2005: Badin and Thatta Districts, Sindh, Pakistan: World Bank Pakistan

Table 1.3.2: Food and Cash Crops Cultivated In District Badin

Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2009 (000 Tonnes)	Area Sown in 2011 (000 Hectares) FAO
Food	Wheat	33.30	93.00	N/A
	Rice	80.50	270.70	87.360
	Maize	0.10	-	N/A
	Jowar	1.20	0.60	N/A
	Bajra	0.80	0.60	N/A
	Barley	1.20	0.70	N/A
Cash	Sugarcane	53.60	2,730.50	61.710
	Cotton	13.60	15.36	28.672
	Guar seed	98.00	63.00	N/A

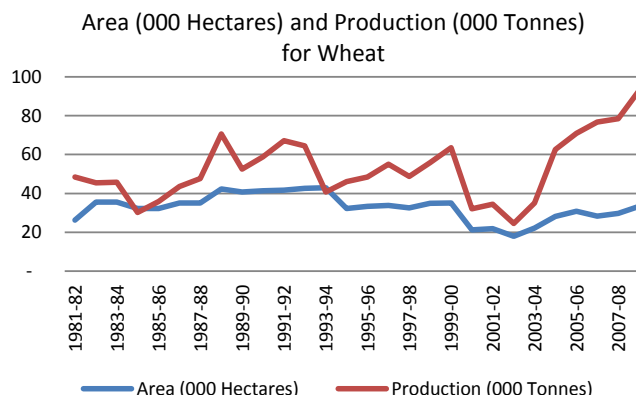
Source: Crop Area and Production by Districts for 28 Years; 2008-09 *Pakistan Bureau of Statistics (PBS)*

Over the last 28 years total area sown for food and cash crops has shown a drastic change. It is to be noted that the production of cotton is shown in tonnes instead of bales using a standard conversion factor<sup>19</sup> and the numbers reported are rounded off to nearest decimal places.

<sup>19</sup> 5.879 Bales = 1 MT

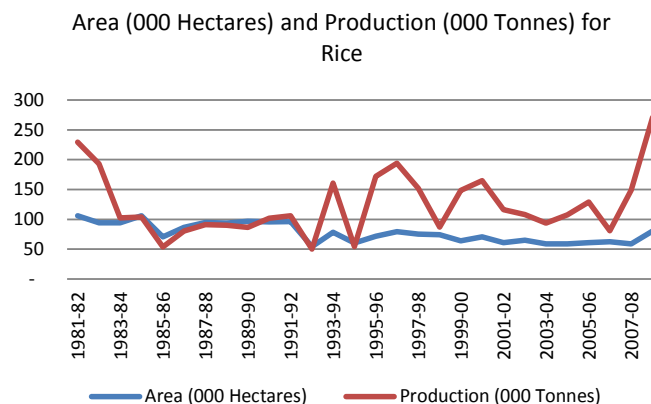
- Wheat

Area cultivated for wheat, in the last 28 years, in Badin fluctuates around 30,000 hectares. Maximum area cultivated in Badin was in the year 1993-94, which was 43,000 hectares and minimum was in 2002-03, which was only 18,000 hectares. Whereas production of wheat increased over the years, starting from 49,000 tonnes in 1982-83 the minimum production was recorded in the year 2002-03, which was 25,000 tonnes. The highest recorded production of wheat was in the year 2008-09, which was 93,000 tonnes.



- Rice

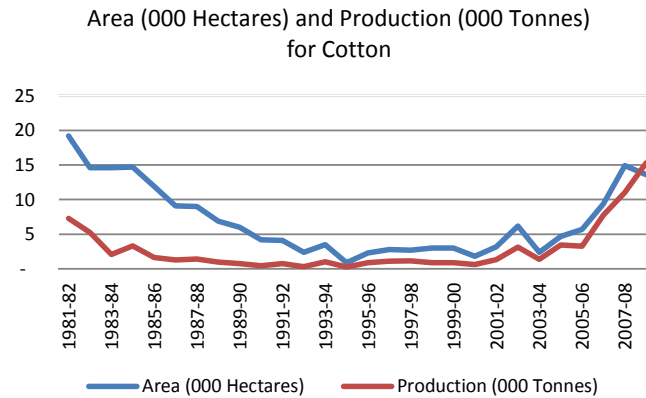
The figure shows area cultivated and production of rice. Over the years, there are no drastic changes in the area cultivated for rice but it has decreased gradually. Maximum area cultivated for rice in Badin was 106,000 hectares in the years 1982-83 and 1984-85. Then it continued to decrease and the minimum area cultivated was 59,000 hectares in 2002-03 and 2007-08. Afterwards it started increasing again. On the other side, production of rice shows drastic changes and it fluctuated a lot. The minimum recorded production was in the year 1993, which is 50,000 tonnes and it reached to its maximum in 2008-09, which was 271,000 tonnes.



- Cotton

In the initial years, both area and production for cotton decreased and in the year 1994-95, both area and production of cotton reached their lowest limits. Only 300 tonnes of cotton was produced in that year and area cultivated was 900 hectares. In the following years both, area cultivated

and production of cotton increased. The highest production in all the reported 28 years was recorded in 2008-09, which was 15,300 tonnes. Highest area covered was recorded in 2007-08, which was 15,000 hectares.



- Sugarcane

For area, sugarcane also shows more or less constant trend and stays around 50,000 hectares. But production of sugarcane has drastic changes. Up to the year 1986 it continues to decrease then onwards up to 1998-99 it continues increasing with fluctuations. In the year 1998-99 it reached to its maximum of 4,091,000 tonnes but then in later years it started decreasing again.

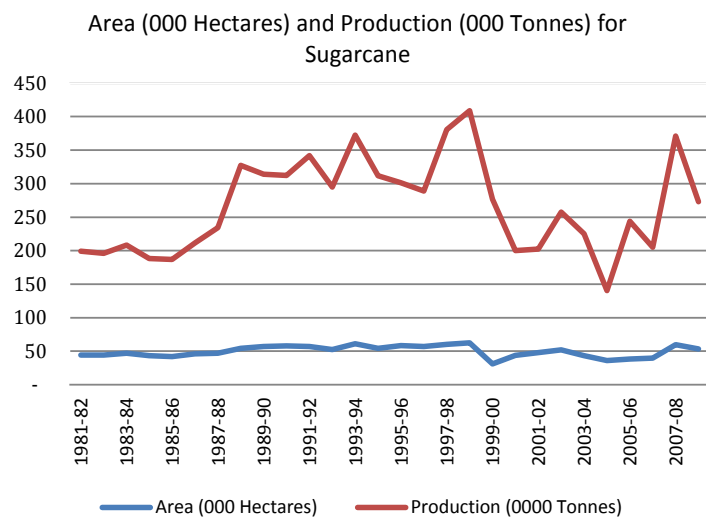


Table 1.3.3: Area of Major Crops Sown in District Badin in 2011

Major Crops	Area Sown (Acres)
Cotton	70,849
Rice	215,867
Sugarcane	152,485
Chilies	40,733
Other	20,072
Total	500,006

Source: FAO Sitrep 29

### 1.4.3 Industry

There are six Sugar Mills and 70 Rice Husking mills in the district. The industry provides employment to 6,000 people. The sugarcane prices are unstable in Badin and industrialists never miss an opportunity to deny farmers their due share. During crop season, the net take home decreases drastically when the crop is bumper and the industry is not scared of the supply.

### 1.4.4 Livestock

Total livestock population for 2010-11 in Badin was 1,710,160<sup>20</sup> heads. In Badin district, most farmers traditionally keep few heads of livestock, ranging from bullocks for ploughing, to cattle for milk and meat. There have been many traditional communities in the coastal areas exclusively dependent on livestock for their subsistence<sup>21</sup>. According to the World Bank (2005), 29 percent of the households keep 1-10 large animals while 3 percent own more than 11 cattle, which show a considerable degree of concentration of livestock ownership by the households. It is also assessed by World Bank that 68 percent of the coastal communities do not have any livestock. In two consecutive decades, the growth rate of Milch cattle and buffalos has decreased considerably from 22 percent and 80 percent in the period of 1986-96 to 8 percent and 40 percent during 1996-2006 respectively.

### 1.4.5 Fishing

Fishing communities inhabit the coastal area of UCs Bhugra Memon, Ahmed Rajo, Seerani, and Kadhan. Of these, at the high risk of cyclone are the first two UCs. Roughly 15,000 people (about 2,900 households) in these areas entirely depend on fishing as their main source of livelihood. The fishing communities are affected by cyclones as well as monsoon floods. They have limited resilience particularly to cyclones which completely destroy their houses, their

<sup>20</sup> Food and Agriculture Organization, November 2011

<sup>21</sup> Profile of District Badin: South Asia Partnership-Pakistan, December 2009

stocks of food and fodder and damage the fishing assets on which they make their living<sup>22</sup>. Out of a total fish production of 80,659 metric tons in Sindh province in 2002, 14,152 tons or 17.5 percent was produced in Badin district. Research Study on livelihoods in Badin, conducted by South Asia Partnership-Pakistan, states that out of the annual marine fish exports of 100-200 million USD, 10 percent originates from Badin<sup>23</sup>. Coastal fishery is the mainstay of livelihoods of the coastal communities. During the last three decades, fish productivity has dwindled due to sea intrusion, contamination of the wetlands with drainage effluents, overfishing, and use of illegal nets.

### 1.4.6 Oil Production

Badin is considered as an important district with a wealth of Oil and Gas reserves, which brings large revenue for the country. Badin district's crude oil production per day from four oilfields was recorded to be 20,043 barrels in 1995, 20,970 barrels in 1996, and 26,335 barrels per day in 1997. The "record" production of 30,000 barrels per day was obtained in 2001<sup>24</sup>.

"District Badin is one of the richest districts in producing Natural Resources but the poorest in terms of Human Development." Oil production in Badin is more than 30,000 barrels a day, which constitutes about 45 percent of total production of crude oil in Pakistan<sup>25</sup>. According to Union Texas, the company that runs the Badin Oil Field, in mid-1997 the company employed 601 Pakistanis. These Pakistanis held key positions including vice-presidents, division managers, senior managers, materials managers, geophysicists, accounting managers, project managers, petroleum engineers, safety engineers, geologists, Landmark system managers, and senior manager of loss management. On the Badin block, the company has constructed 445 km of roads, 36 bridges, and 851 culverts and has maintained communications, potable water, sewer, and power facilities. Below are the names of Oil field situated in Badin<sup>26</sup>,

- Laghari Oil Field
- Thora Oil Field (Dhsbi Oil Field)
- Khashkheli Oil Field
- Mazari Oil Field
- South Mazari
- Sono Ghotana Central Lashari

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<sup>22</sup> Badin; Hazard, Livelihood and Vulnerability Baseline and Contingency Plan, 2009: Food and Agriculture Organization

<sup>23</sup> Ibid

<sup>24</sup> Source: DDRMP Badin, UNDP 2008

<sup>25</sup> Profile of District Badin: South Asia Partnership-Pakistan, December 2009

<sup>26</sup> <http://www.friendsmania.net/forum/commercial-geography/25672.htm>

## 1.5 Food Security

Food security can be broadly divided into four components:

- *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.

### 1.5.1 Availability

Agricultural yield/production has already been covered in the previous section, where structure of agriculture output in Badin and its vulnerability against different disasters have been discussed in detail. Before the floods of 2010-11, district Badin was self-sufficient as far as food availability is concerned. According to the reports, district Badin was self-sufficient in crops and animal based food production. The surplus production of sugarcane and rice along with livestock production ensured food availability in this district<sup>27</sup>.

But this scenario changed after the floods of 2011 since 100% Cotton, 83% Rice and 43% Sugarcane were damaged. Also, 59% of the livestock was also lost or sold. This situation has made this district vulnerable to food insecurity because the availability of all food (cereals & meat) has been affected by the floods.

### 1.5.2 Access

It is evident from table 1.4.2 that average distance (AD) of any market (listed in the table) from *Mouzas* is more than 10Km. Although AD of markets from Mouzas in Badin is less than the AD of entire Sindh, this measurement along with less developed means of transportation depicts vulnerability and constraint for physical access to food. In 2011 flood emergency, 4,143 Km of road network (inclusive of main highways, provincial & districts roads and kucha pukka roads (unpaved roads) and 13 Km of railway network have been affected. After the floods, the community took more than three months for the markets to be partially functional and accessible. Collectively all these factors affected *availability* of food in 2011 emergency and increased food insecurity level in district Badin.

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<sup>27</sup> Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute, Islamabad



Table 1.4.1: Distance of Mouzas from Markets

TYPE FACILITY/TREND/NAME	OF	OVERALL DISTANCE (KM)	MOUZAS IN DISTANCE (IN KILOMETER) FROM THE FACILITY				
			LESS THAN 1	1 TO 10	11 TO 25	26 TO 50	51 AND ABOVE
LIVE STOCK MARKET	NUMBER	13	8	220	217	35	-
	PERCENT		2	46	45	7	-
GRAINS MARKET	NUMBER	15	11	221	182	55	11
	PERCENT		2	46	38	11	2
FRUITS MARKET	NUMBER	20	5	165	194	95	21
	PERCENT		1	34	40	20	4
VEGITABLE MARKET	NUMBER	18	6	173	200	97	4
	PERCENT		1	36	42	20	1
SEEDS SHOP	NUMBER	11	17	273	168	22	-
	PERCENT		4	57	35	5	-
FERTILIZERS SHOP	NUMBER	12	16	268	170	26	-
	PERCENT		3	56	35	5	-
PESTICIDES SHOP	NUMBER	12	15	269	171	25	-
	PERCENT		3	56	36	5	-
BAZAR	NUMBER	x	25	x	x	x	x
	PERCENT		5				

Source: Agriculture Cense Organization (ACO) 2008

Second important factor about markets is Stable commodity prices in emergencies. Price analysis of essential food commodities before and after flood in district Badin is presented in table 5.2. Because of inadequate Commodities supply, prices of food items increased many folds in district Badin. Changes in prices ranged from 7 percent to 40 percent for different commodities. This variability in prices has a negative relationship with purchasing power of the community and eventually increases food insecurity. So before any next flood emergency there is need for a plan which should insure proper food supply during and after emergency.

Table 1.4.2: Prices of Commodities across the Markets and the Change Compared To Pre-Flood Period

COMMODITY	BEFORE FLOOD	AFTER FLOOD	PERCENTAGE CHANGE
RICE (PER KG)	38.72	47.81	23
WHEAT (PER KG)	25.91	27.68	7
WHEAT FLOUR (PER KG)	30.32	33.3	10
POTATO (PER KG)	28.66	37.42	31
ONION (PER KG)	30.17	42.98	42
GRAMS(PER KG)	405.37	115.91	10
COOKING OIL (PER LTR)	153.87	170	10
FIREWOOD	171.29	192.14	12
AGRICULTURAL WAGES (MALE)	235.4	243.93	4
AGRICULTURAL WAGES (FEMALE)	77.57	78.33	1

Source: Multi-Cluster Need Assessment November 2011

As mentioned earlier, the major source of income in Badin is agriculture, where more than 50 percent of households are associated with this sector, in 366 Mouzas of district Badin. So major portion of aggregate income in Badin comes from agriculture but this sector is exposed to many hazards like droughts, floods and cyclones. Other reporting sources have been discussed in section 4. It is reported in PSLM 2011 that economic situation of 26.04 percent of households in Badin has become poorer compared to the year 2010.

Availability of credit facility is reported in 95 percent of Mouzas in Badin and specialized credit is the major share of this facility. See table 4.3 for details.

Table 1.4.3: Mouzas Reporting Credit Facility by Type of Institution And By Gender

		MOUZAS REPORTING CREDIT FACILITY								
GENDER		ZTBL	Co-op bank	Commercial bank	Micro finance bank	NGO	RSPs	Government	Arthi/com mission agent	Others
MALE	Number	450	9	352	3	59	3	60	261	126
	Percent	94	2	68	1	12	1	13	54	26
FEMALE	Number	407	3	293	2	39	3	62	92	153
	Percent	85	1	61		8	1	13	19	32

Source: Agriculture Cense Organization 2008

### 1.5.3 Utilization

Food availability and access to economic resources alone cannot ensure food security as proper food absorption or utilization is equally important. This food utilization process requires favourable milieu in terms of access to Proper health facilities, clean water and sanitation. Health facilities and residents of Badins' acces to these will be discussed in section 2.1. Relative to other districts, access to drinking water in district Badin is not satisfactory. As given in the following table, only 18 percent of the households are using Tap water, 56 percent are using Hand pumps and 17 percent are using other sources.

Table 1.4.4: Water Delivery system at Household level

Water Delivery system at Hh level (Percent )						
Tap WATER	HAND PUMP	MOTOR PUMP	DUG WELL	OTHER	YEAR	SOURCE
18	56	7	1	17	2010-2011	PSLM

Sanitation facilities at household level are reported in table 1.4.5

Table 1.4.5: Sanitation Facilities at Household level

TYPE	FUNCTIONAL	PARTIALLY DAMAGED	NON-FUNCTIONAL
Unprotected Source (Canals / Ponds/Rivers)	35	40	25
Protected Sources (Springs, Wells, Hand Pumps)	50	41	9
Piped Water	26	49	25
Tanker Water Source	38	-	63

Source: PSLM 2010-11

Sanitation facilities in urban areas of district Badin are far better than rural areas of the district, where 84 percent of urban households have reported Flush facility at their homes and only 9 percent of rural households have reported flush facility. 24 percent of rural households have no toilet facility of any kind. Situation gets worse when we see that more than 84 percent of population of Badin district is living in the rural areas.

Table 1.4.6: Percent Distributions of households with Sanitation Facility by type

FLUSH			NON FLUSH			NO TOILET		
Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
84	9	21	16	67	59	0	24	20

Source: PSLM 2010-11

Sanitation facility was not satisfactory even prior to the floods but after floods the situation has become worse. Damages to this facility are reported in table 4.8

Table 1.4.7: Percent Distribution of households by Status of Sanitation Facility

STATUS OF SANITATION FACILITY –PERCENT OF HOUSEHOLDS			
Type	FUNCTIONAL	PARTIALLY DAMAGED	NON-FUNCTIONAL
Improved Dry Pit Latrine	38	38	25
Poor Flush/Soaked Pit/Latrine	62	15	23
Septic Tank/Sewer	8	46	46

Source: PSLM 2010-11

## 1.6 Health

### 1.6.1 Details of Health Facilities

A survey was conducted by Helping Hands and SPO (Strengthening Participatory Organization) in April 2010 in the district of Badin that mainly focused on the Health Facilities in Badin and resources available in them. According to the survey report, there were 11 RHCs, 37 BHUs, 17 Dispensaries and 1 District Headquarters Hospital in district Badin. The Survey showed that average distance of vicinity from a health facility is 3.74 KM, whereas the maximum distance is 15 km. The average number of rooms in a BHU is 6.68 and for females the average number is 2.16. The Health Management Information System is available in 28 Health Units. However 2 Health Units have no HMIS record available. Out of the 31 BHUs surveyed, the following facilities are available in a number of BHUs

- Consultation rooms in 25 BHUs
- Consultation Room in Health Units for female Patients in 23 BHUs
- Check-up Rooms for Patients in 30 BHUs
- Screen Facility for Female Patients in 28 BHUs
- Waiting Room in 29 BHUs
- Latrines for Patients within BHU Compound in 27 BHUs
- Latrines for Male Patients in 26 BHUs
- Latrines for Female Patients in 27 BHUs
- Drinking Water in 22 BHUs
- Electricity Facility in Health Units in 26 BHUs

#### Immunization<sup>28</sup>

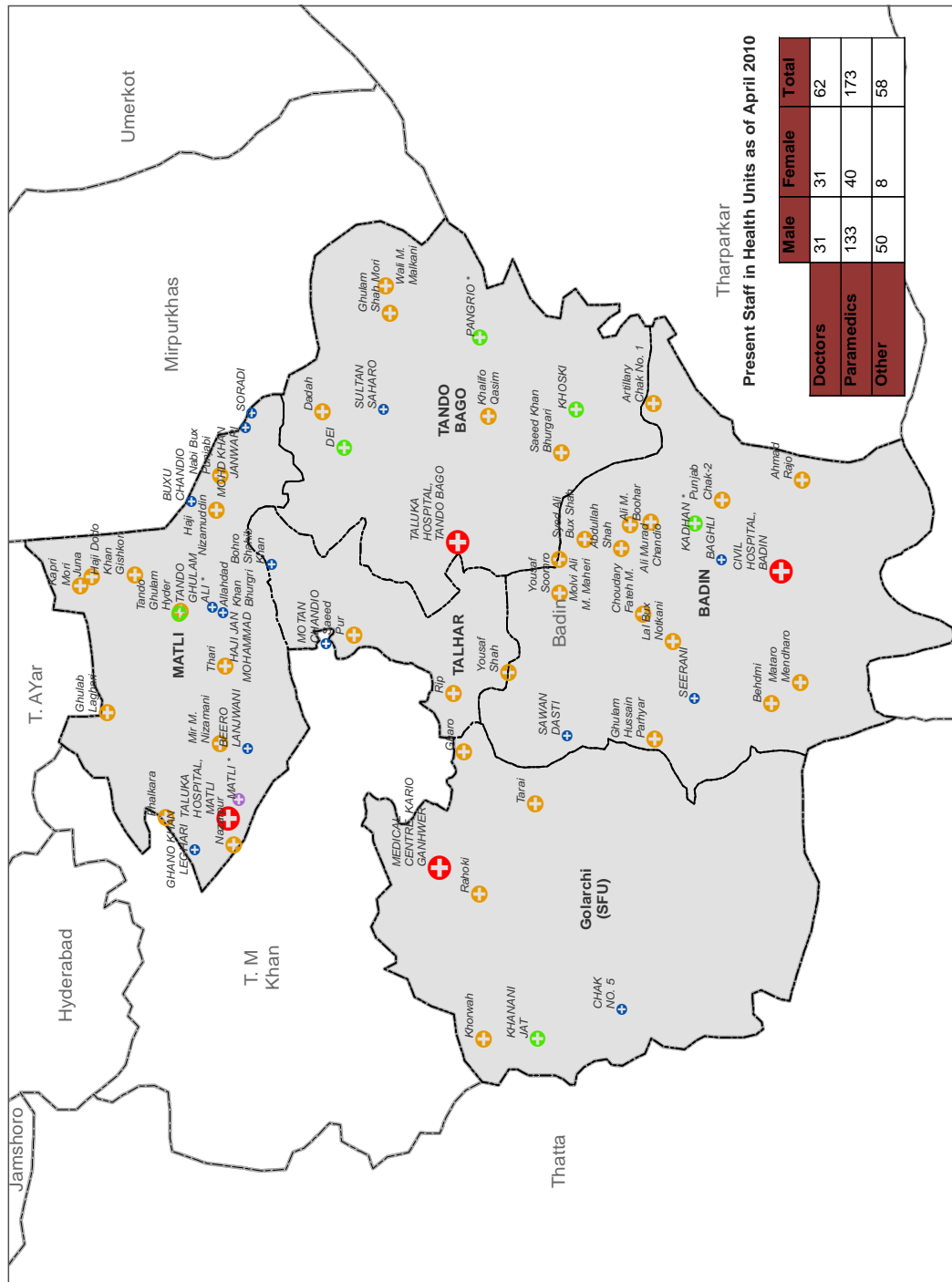
In district Badin around 47% pregnant women have received tetanus toxoid injections. In urban areas this percentage is 48% and in rural areas it is 47%<sup>29</sup>. Record based<sup>30</sup> immunization data of district Badin shows that 37% (Male 40%: Female 34%) of the children aged 12-23 months have received full immunization. In urban areas this percentage is 38 percent (Male 45%: Female 33%) and in rural areas it is 37% (Male 40%: Female 35%).

<sup>28</sup> Table 3.4 b and 3.11: Pakistan Social and Living Standards Measurement Survey (PSLM)2010-2011

<sup>29</sup> Pakistan Social and Living Standards Measurement Survey (PSLM)2010-2011

<sup>30</sup> 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',

## Badin - Health Facilities Map April 2012



## 1.7 Education

### 1.7.1 Highlights

Literacy Rate (10 years and above)	39%
Adult Literacy Rate (15 years and above)	36%
GPI	0.65
GPI Primary	0.73
GPI Middle	0.68
GPI Matric/Secondary	0.48
GPI Higher Secondary	0.18
Population that has ever attended School	41%
Male	56%
Female	23%
Population that has completed primary level or higher	32%
Male	45%
Female	18%
Student Teacher Ratio	33
Primary	30
Middle	31
Matric	31
Higher Secondary	31

Source: Statistical Education Bulletin 2011, RSU, GoS

### 1.7.2 District School Enrolment Ratio

The education status is quite poor in District Badin. The literacy rate (10 years and above) for the whole district is 39 percent; for male it is 54 and female it is 22 percent. For the urban rural comparison, urban literacy rate is higher, which is 56 percent (male 69% and female 42%); whereas the rural literacy rate is 35 percent (51% and female 18%). Adult literacy rate (> 15 years) is 36 percent. Gross Enrolment Rate (GER) at the primary level in all of BADIN is 65% (Male: 78%, Female: 51%). In the urban community it is 84% (Male: 97%, Female: 72%) and in the rural community it is 62% (Male: 75%, Female: 48%). Net Enrolment Rate (NER) at the primary level is 41 per cent (Male: 45%, Female: 37%), in the urban community it is 46 percent (Male: 44%, Female: 47%) and in the rural community it is 40 (Male: 45%, Female: 35%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural/ Urban and Gender at different levels:



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 (10-13)	Matric Group (13-14)	Primary Group (5-9)	Middle Group (10-12)	Matric Group (13-14)
URBAN	Male	97%	66%	47%	44%	29%	16%
	Female	72%	41%	62%	47%	21%	8%
	Total	84%	55%	53%	46%	26%	13%
RURAL	Male	75%	37%	41%	45%	13%	6%
	Female	48%	17%	11%	35%	10%	4%
	Total	62%	28%	25%	40%	12%	5%
TOTAL	Male	78%	41%	42%	45%	16%	8%
	Female	51%	20%	19%	37%	12%	4%
	Total	65%	32%	30%	41%	14%	6%

### 1.7.3 Gender and Level Wise Details

The total male enrolment of District BADIN is 185,282 wherein the total enrolment for males is 112,368 and the total female enrolment is 73,460. Out of a total of 6,105 teachers 5,067 are male and 1,038 are female teachers. This illustrates that, on average, one teacher is teaching 30 students. There are 472 boys' schools, 449 schools for females in District Badin and the mixed gender schools are 2,238. Thus the total number of schools is 3,159. This means that on average every school has teaching staff of around two<sup>31</sup>.

#### 1.7.3.1 Primary

The total number of primary level schools in the district is 2,967. The total enrolment at the primary level is 145,568 of whom 84,347 are boys and 61,221 are girls. The total number of teachers at the primary level is 4,875 out of which 4,041 are male and 834 are female teachers. Thus on an average, each primary school has an enrolment of 49 students with teaching staff of 2. However the student to class ratio is 36 and each school has averagely around 1 class room.

#### 1.7.3.2 Middle

There are 133 middle schools reported. The total enrolment at the middle level is 9,927 of which 5,912 are boys and 4,015 are girls. The total number of teachers at the middle level is 331, out of which 283 are male teachers, while 48 are female teachers. Thus on an average each middle school has an enrolment of 75 students with a teaching staff of 2. However the student/class ratio is 26 and each school has averagely around 3 class rooms.

#### 1.7.3.3 Matric

There are a total of 50 secondary schools in the district. The total enrolment at the secondary level is 20,914 of which 14,104 are boys' and 6,810 are girls'. The total

<sup>31</sup> Statistical Education Bulletin, Reform Support Unit, Sindh Government.

number of teachers at the secondary level is 673, out of which male teachers are 537 and female teachers are 136. Thus on an average, each secondary school has an enrolment of 418 students with teaching staff of 13. However the student/class ratio is 26 and each school has averagely around 7 class rooms.

#### 1.7.3.4 Higher Secondary

There are a total of 9 higher secondary schools. The total enrolment at the higher secondary level is 9,419; out of which 8,005 are boys' and 1,414 are girls. The total number of teachers at the higher secondary level is 241 out of which 206 are male teachers and 35 are female teachers. Thus on an average, each higher secondary school has an enrolment of 1,046 students with a teaching staff of 27. However the student/class ratio is 73 and each school has averagely around 14 class rooms.

Table 1.6.2: Enrolment and Educational Facilities by level and Gender

Level	Enrolment				School Facilities				Teachers			
	Boys	Girls	Mixed	Total	Boys	Girls	Mixed	Total	Boys	Girls	Mixed	Total
<b>Elementary</b>		371	1,818	2,189		3	9	12		8	55	63
<b>Higher Secondary</b>	6,584	1,098	1,737	9,419	5	2	2	9	158	36	47	241
<b>Middle</b>	1,024	1,535	5,179	7,738	19	37	65	121	53	40	174	267
<b>Primary</b>	21,372	33,095	91,101	145,568	438	396	2,133	2,967	843	890	3,128	4,861
<b>Secondary</b>	7,026	4,866	9,022	20,914	10	11	29	50	215	146	312	673
<b>Grand Total</b>	36,006	40,965	108,857	185,828	472	449	2,238	3,159	1,269	1,120	3,716	6,105

Source: Educational MIS 2011, RSU, GoS

## 2 Disaster History and Its Impact

### 2.1 Disasters in Badin

#### 2.1.1 Disaster History

Badin is a highly disaster prone area and disasters of different types have occurred in the history of Badin. The most frequent and damaging disasters are the floods. Table 7.1 chronologically shows a brief history of the disasters that have affected Badin and the effects of these on humans, livelihood and infrastructure.

Table 2.1.1: Disaster History and Losses in Badin

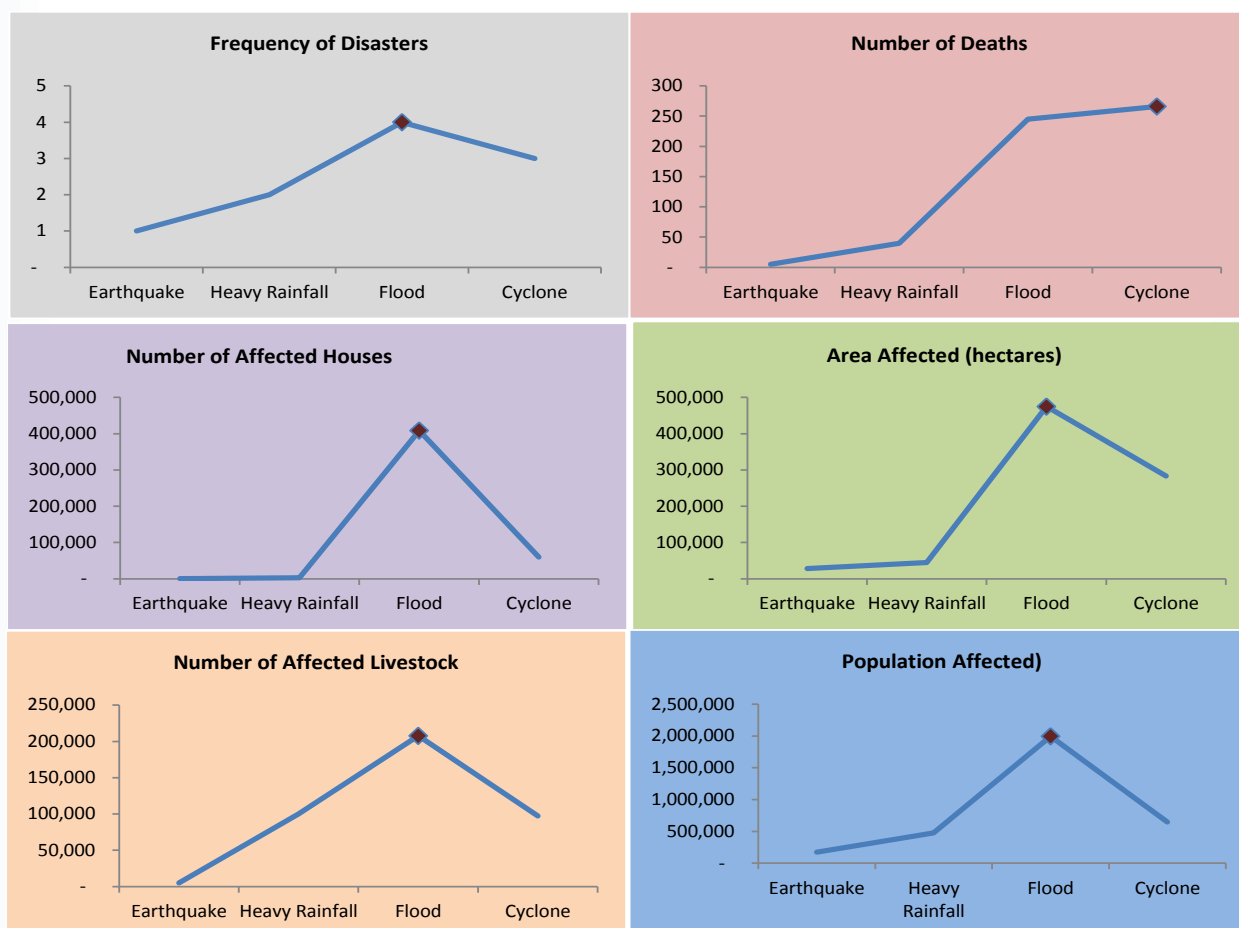
Disaster	Year	Impact/Losses				
		Deaths	Houses Destroyed	Land Degraded in Acres	Livestock	People Affected
<b>Cyclone</b>	1964-65	90	1,650	20,000	80,000	170,000
<b>Heavy Rainfall</b>	1973	20	1,400	30,000	40,000	250,000
<b>Flood</b>	1976	40	2,000	3,000	98,000	210,000
<b>Flood</b>	1988	15	1,000	10,000	20,000	160,000
<b>Heavy Rainfall</b>	1994	20	1,200	15,000	60,000	225,000
<b>Cyclone</b>	1999	176	56,678	263,055	17,289	452,000
<b>Earthquake</b>	2001	5	800	28,000	5,000	171,000
<b>Flood</b>	2003	115	22,567	80,937	85,000	560,000
<b>Flood</b>	2006	2	500	5,000	3,599	45,000
<b>Cyclone</b>	2007	-	1,500	-	-	25,000
<b>Flood</b>	2011	73	382,562	375,718	1,060	1,021,301

Source: DDRMP, UNDP 2008, PDMA Sindh 2011

#### Disaster Comparison and Vulnerability Profile from 1964 to 2011

A comparison has been made to see what the aggregate extent of these disasters is from 1964 to 2011. It can be clearly seen that in all instances, except deaths where cyclones were most lethal, floods proved to be the most damaging disaster for the population of Badin. The following graphs show the casualties and damages against different types of disasters.

## Disaster history and losses in Badin during a period of 47 years (1964 – 2011)

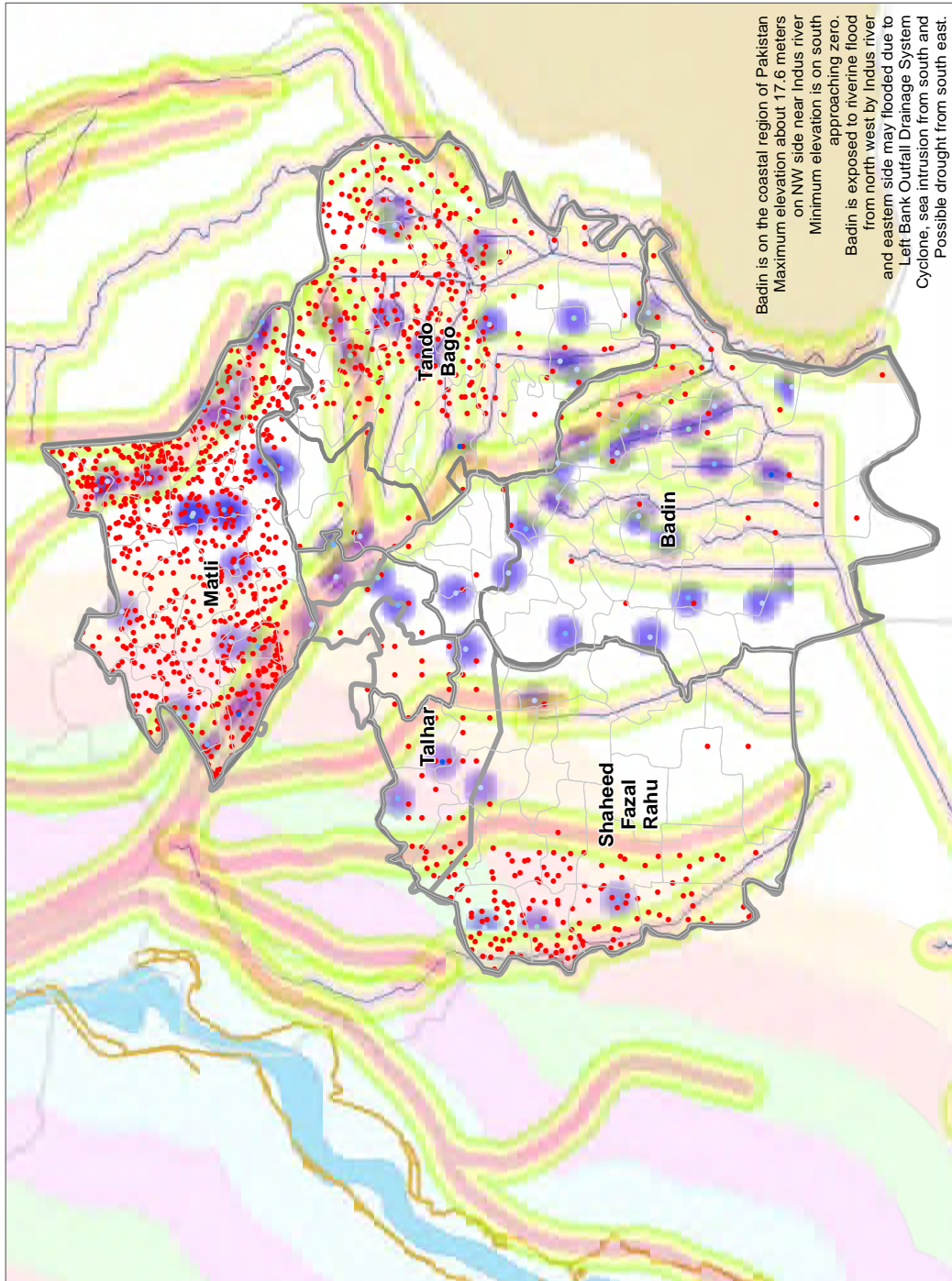


## Badin Floods Historical Perspective

Southern Sindh area is usually affected by floods due to precipitation and poor drainage. Badin's July 2003 precipitation was 303.9 mm, which caused major flooding and destruction, and was estimated to have a 66 years return period. In 2011, on the 11th and 12th of August, the precipitation recorded in Badin, added together, was 297 mm which when looked as one 48-hour event the corresponding return period is near 100 years. Also, the highest ever monthly precipitation record in Badin was surpassed in August 2011 with 331 mm corresponding to more than 80 years return period. Moreover, if a 30-day period is observed from 10 August to 9 September 2011, Badin experienced 512 mm of rainfall in one month. Badin is in the coastal region of Pakistan, with maximum elevation about of 16.7 meters on the North West side near the Indus River, while minimum elevation is in the south approaching zero metres. Badin is exposed to riverine floods from the North West.

<sup>32</sup> Preparation of Regional Plan for the Left Bank Indus Delta and Coastal Zone: Sindh Irrigation and Drainage Authority, 2012

# Risk Analysis Badin District June, 2012



**Legend**

- Badin Tehsil Boundary
- Settlements
- Distance from Indus River in (km)
  - 10
  - 20
  - 30
  - 40
  - 50
- LBOD Drainage System
- Canals
  - 1
  - 2
  - 3
- Distance from LBOD Canals (km)
  - 1
  - 2
  - 3
- River Indus Bund
- Indus River
- Thar Desert
- Health Facilities Density
  - Low
  - High

LBOD: Left Bank Outfall Drainage  
PCO: Line Burger Group  
LBO: Line Burger Group

Information Management Unit  
IMMAP Pakistan

Map Doc Name: IMMAP\_Badin\_Risk\_Analysis\_MapA3L\_v1.01  
Creation Date: May 01, 2012  
Project Manager: MGS  
Web Resource: <http://www.immap.org>  
Nominal Scale at A3: 1:30,000,000

Map data source(s):  
PCO, LBO, ASTER

Disclaimers:  
The information employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of IMMAP concerning the boundaries and territorial jurisdiction of any country, authorities, or concerning the delimitation of its frontiers or boundaries.



### Causes of 2011's flood

1. Unprecedented heavy rains.
2. Breaches in LBOD.
3. Breaches in Irrigation Canals.
4. High tide in Sea.
5. LBOD drain

### Most Disaster Prone UCs

FAO has reported that out of a total of 45 UCs of Badin, 11 UCs are most disaster prone. Two of these UCs are both cyclones and flood vulnerable and 9 are flooding prone UCs. Details of these UCs are given in table 7.2.

Table 2.1.2: Details of Disaster Prone UCs

UCs At Risk	Total	Male	Female
High Risk Of Cyclone And Flooding			
Bhugra Memon (Badin)	34,521	18,241	16,280
Ahmad Rajo (Golarchi)	31,778	17,024	14,754
Sub Total	66,299	35,265	31,034
High Risk Of Flooding			
Mithi III (Badin)	32,927	17,450	15,477
Kadhan (Badin)	29,415	15,703	13,712
Seerani (Badin)	33,491	17,543	15,948
Lowari Sharif (Badin)	27,206	14,198	13,008
Abdullah Shah (Badin)	28,085	14,934	13,151
Nindo Shaher (Badin)	31,318	16,421	14,897
Khoski (Tando Bago)	35,422	19,125	16,297
Dai Jarkas (Tando Bago)	33,210	17,693	15,517
Khalifo Kasim (Tando Bago)	31,779	16,978	14,801
Sub Total	282,853	150,045	132,808
Grand Total	349,152	185,310	163,842

Source: Badin; Hazard, Livelihood and Vulnerability Baseline and Contingency Plan, 2009: Food and Agriculture Organization





## 2.2 2011 Flood's Impact

### 2.2.1 Demography

Badin has a long history of disasters as has been discussed in the previous section. The Monsoon floods of 2011 in Badin are marked as the most disastrous floods in the history of Badin. These floods affected all the 46 UCs and 72 percent of the total Population i.e. 1,021,301 persons in district Badin. A total of 382,562 Houses were damaged out of which 172,155 houses were partially damaged and 210,407 houses were completely destroyed<sup>33</sup>. Out of the destroyed houses, 54 percent of the total mud houses, 53 percent of the total bamboo-straw houses and 9 percent of the total concrete houses were destroyed<sup>34</sup>. Table 8.1 shows the losses and damages summary

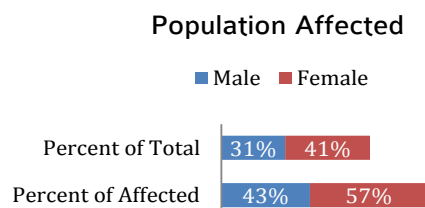


Table 2.2.1: Demographic Losses and Damages

Attribute	Figure	Percent Of Total Affected	Reporting Source
Estimated Total Households 2010	265116		Estimated
Vulnerable Households	116,271	44%	MCNANovember 2011
Total Houses Affected	382,562		
Partially Damaged	172,155	45%	NDMA Losses And Damages 30 <sup>th</sup> November, 2011
Destroyed	210,407	55%	
Affected Population	1,021,301	72%	
Male	438,099	43%	
Female	583,202	57%	
Deaths	73		
Male	36		
Female	17		
Children	20		
Injuries	10		
Male	4		
Female	6		
Children	-		

According to the Multi-Cluster Needs Assessment (November 2011), more than 36 percent of the households reported that their houses were fully destroyed and cannot be used for living purpose. Displaced households were more than 32 percent and economic activities of 62.8 percent of the households were totally disrupted.

<sup>33</sup> NDMA Losses and Damages: 30<sup>th</sup> November 2011

<sup>34</sup> Multi-Cluster Need Assessment Novmebr: 2011

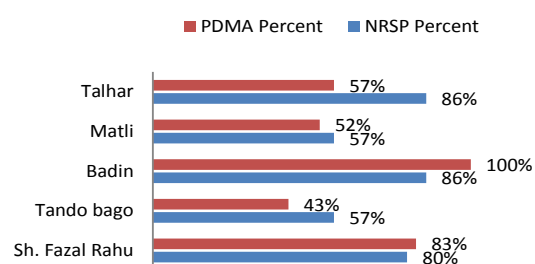


Population affected, broken down by Taluka is shown in table 2.2.2.

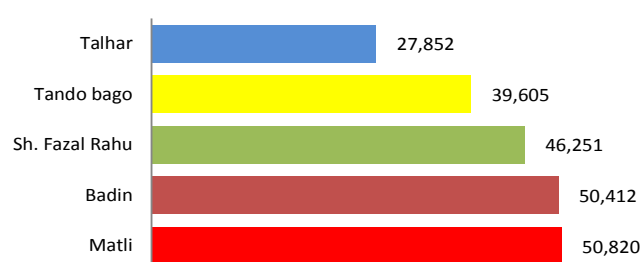
Table 2.2.2: Taluka wise affected population<sup>35</sup>

TALUKA	TOTAL POPULATION <sup>36</sup>	AFFECTED POPULATION <sup>37</sup>	TOTAL POPULATION <sup>38</sup>	AFFECTED POPULATION <sup>39</sup>	NRSP PERCENT	PDMA PERCENT
Badin	353,734	281,970	378,893	379,277	80%	100%
Matli	351,496	199,008	372,464	195,520	57%	52%
Sh. Fazal Rahu	264,642	227,220	239,426	198,287	86%	83%
Talhar	136,456	77,108	139,518	112,345	57%	81%
Tando Bago	314,391	269,267	318,569	135,872	86%	43%
<b>Total</b>	<b>1,420,719</b>	<b>1,054,573</b>	<b>1,448,870</b>	<b>1,021,301</b>	<b>75%</b>	<b>70%</b>

Percentage of affected Population



Crop Area Damaged



Comparison of Percentage reported by NRSP and PDMA UNOCHA Badin District Profile: Jan-Feb 2012

<sup>35</sup> Due to estimation, affected population may be greater than total population

<sup>36</sup> Updates of NRSP's response Floods as of November 13, 2011

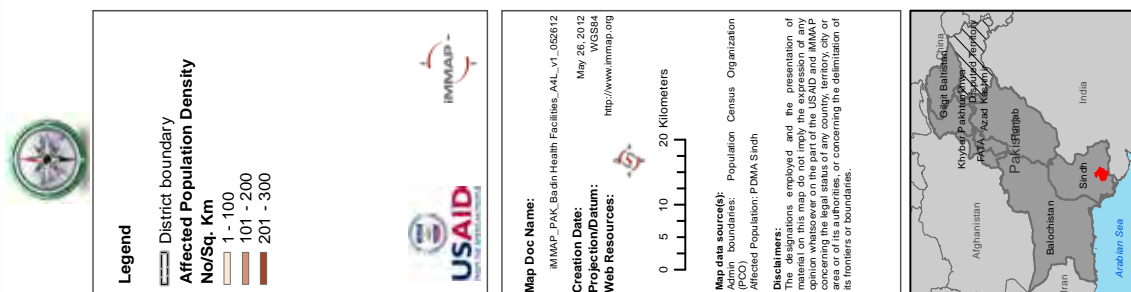
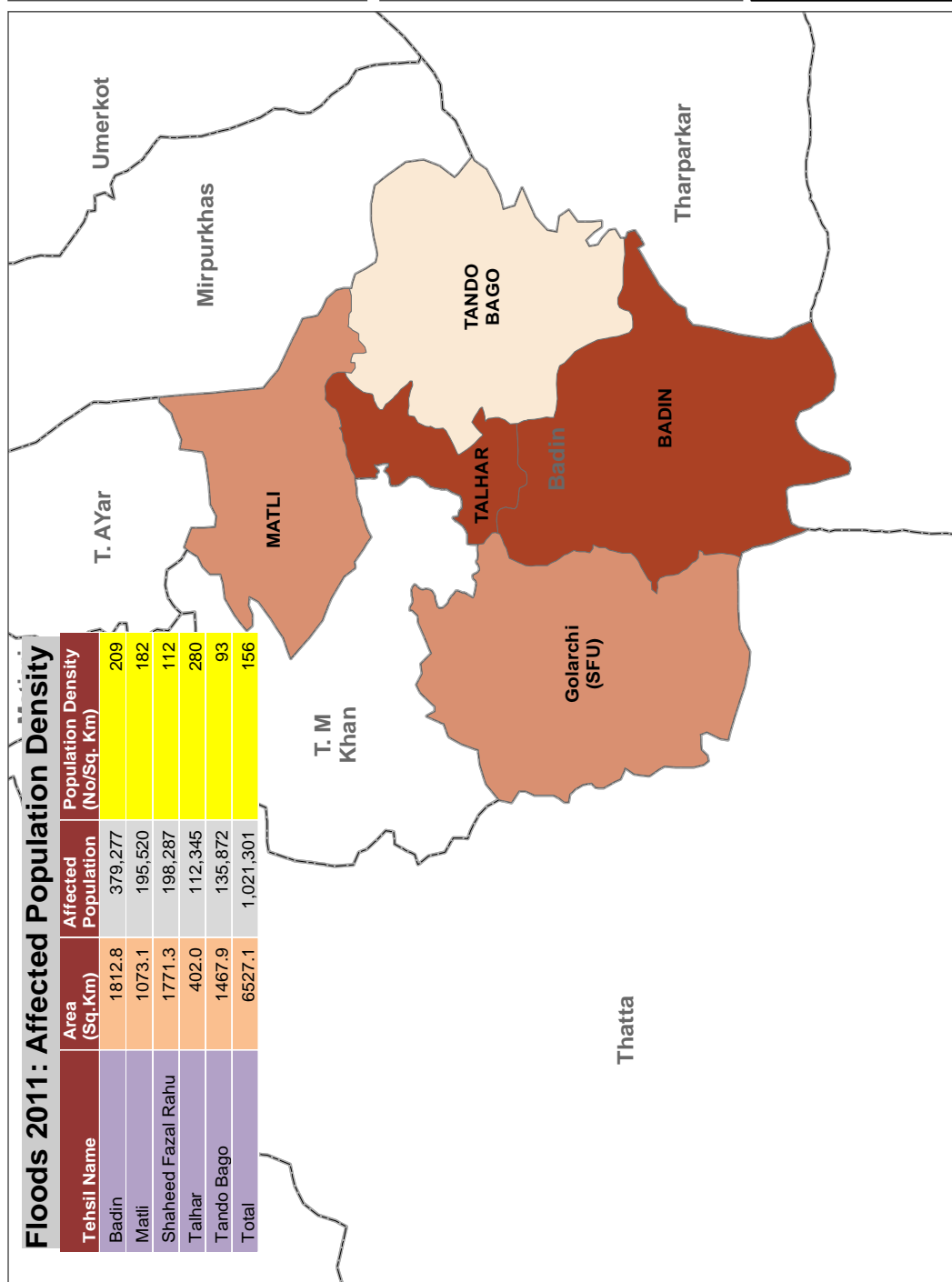
<sup>37</sup> Ibid

<sup>38</sup> Estimated on the basis of Total Population Reported in UC Ranking Report by UNOCHA

<sup>39</sup> <http://www.pdma.rain.pk/rain2011/FrmpdBadinlosses.aspx>

ected Popu  
May 2012

Floods 2011: Affected Population Density			
Tehsil Name	Area (Sq.Km)	Affected Population	Population Density (No/Sq. Km)
Badin	1812.8	379,277	209
Matl	1073.1	195,520	182
Shaheed Fazal Rahu	1771.3	198,287	112
Talhar	402.0	112,345	280
Tando Bago	1467.9	135,872	93
Total	6527.1	1,021,301	156



### 2.2.3 Livelihood

In the last two decades, sources of livelihood, in district Badin, have been continuously shrinking. Till 1980, people of Badin had many options, having, agriculture, livestock and fisheries as major sources of livelihood. However, over the years, situation changed and many had to migrate to other areas. The following are some of the issues, which adversely affected the livelihood means of the people of district Badin:

- Total uncultivable land due to water logging and salinity is 184,850 acres which constitutes 16.4 percent of the total cultivable land.
- Decreased fresh water availability diverted livelihood means from crops and livestock to fishing. Livestock has been badly affected as a result of the degradation of Indus delta. Due to fresh water decline and salinity prevailing in the delta region; vegetation around lakes and mangroves forest have degraded or have been lost. The rate of increase in uncultivable land is directly related to the decreased fresh water availability.

Left Bank Outfall Drain (LBOD), though built with positive intentions, proved to be a disaster for the people of Badin in the long run. LBOD passing from Badin was designed to lower the water table and remove salinity in 1.27 million acres of Mirpurkhas, Sanghar and Shaheed Benazirabad districts.

Instead, the Left Bank Outfall Drain has increased the vulnerability of Badin to cyclones and floods<sup>40</sup>. LBOD was not designed to carry water from heavy floods as was proved in 2003 and 2011. In 2005, the World Bank investigated the program failures at the request of local leaders. Its inspection panel concluded in a July 2006 report that the bank violated six safeguard policies and in the process caused heavy damage in the coastal areas. "Throughout design, construction and operation of LBOD and NDP," the investigators wrote, "social and environmental aspects were largely overlooked or downplayed. In particular, the Panel found that the Project paid inadequate attention to the people and environment downstream of the irrigation and drainage system in southern Sindh." Perhaps most damning was the finding that significant technical mistakes were made during the design of the Tidal Link<sup>41</sup>.

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<sup>40</sup> Badin Hazard Livelihood and Vulnerability Baseline Report, 2009: Food and Agriculture Organization

<sup>41</sup> South Asia Partnership-Pakistan

In 2011 floods, all the 46 UCs were affected with the flood water. According to Food and Agriculture Organization (FAO), the whole cotton cultivated land, 83 percent of the rice cultivated area and 43 percent of the sugarcane area was inundated. 99 percent of the area with other crops was affected too. In all the UCs, agriculture, fisheries, livestock, and personal businesses, were adversely affected. Growers of cotton were rendered most disadvantaged by the floods as a whole harvest of cotton was wasted. Besides, the sugar and rice industries were adversely affected due to the non-availability of the inputs for these industries which rendered more than 6,000 households vulnerable.

#### Livestock and Agriculture Affected

Agriculture and livestock, as mentioned above, are the major sources of livelihood in District Badin. A considerable damage was reported in livestock and agriculture sectors. 8,077 livestock heads were lost during 2011 floods.

Table 2.2.3: Livestock Losses

ATTRIBUTE	NUMBER	PERCENT
Livestock Population	1,710,160	
Livestock Loss	8,077	0.5%
Livestock Lost Sold %	59	

Source: FAO Sitrep 29

Total area of Badin district in acres calculated to the nearest acres is 1,662,031 and out of this total area 59% area was sown before 2011 floods. 38% of the sown area was damaged and the standing crops on that area were lost. Below table gives details of area damaged

Table 2.2.4: Area Inundated and Crop Area Damaged

ATTRIBUTE	NUMBER	PERCENT
Total Area (Acres)	1,662,031	
Area Sown (Acres)	984,805	59% of Total Area
Area Affected (Acres)	500,004	
Crop Area Affected (Acres)	375,718	38% of Sown Area

Source: FAO Sitrep 29

According to FAO, cotton was affected 100% as the total area sown for cotton was inundated. Rice was affected up to 83% and loss to sugarcane was 43%. Following table gives details of area cultivated and percentage of damage caused.

Table 2.2.5: Major Crops Damage reported by FAO

MAJOR CROPS	AREA SOWN	AREA AFFECTED	PERCENT
Cotton	70,849	70,849	100%
Rice	215,867	179,169	83%
Sugarcane	152,485	65,569	43%
Other	60,804	60,132	99%

Source: FAO Sitrep 29

In terms of number of households that suffered crop losses due to floods, Multi-Cluster Need Assessment (MCNA) provided details in terms of percentage of households against different crop loss. Again, the highest reported damage was to the cotton crop of 96 percent and 51.7 households bore this loss. The following Table provides details of losses to crops and percentage of households affected:

Table 2.2.6: Major Crops Damage reported by Multi-Cluster Needs Assessment

Percentages	Paddy	Cotton	Maize	Pulses	Orchards	Sugarcane
Percent Of HH	43.2	51.7	2.9	1.4	16.2	19.8
Percent Of Loss	86	96	70	100	98	66

Source: Multi-Cluster Needs Assessment Final: November 2011

### Gap Analysis of Main Sources of Livelihoods and Major Crops

According to UNOCHA, as of Feb 2012, the extent of damaged crops was:

- Cotton 100 %
- Rice 83%
- Sugarcane 43%

At the time of the flood, in august, 111,300 bales of cotton production, 84,600 tons of rice production and 2,100 tons of fodder was lost. Government and Humanitarian sector responded but their meagre efforts couldn't fill the gaps. WFP supported 125,753 households with 17,399 metric tons of food. The share of other agencies was supporting 44,499 households. Sunflower seeds and fertilizers were distributed among 18,000 families. A mere 3 percent of the total requested funding was provided for early recovery. Deligent planning is needed for the future monsoons.

## 2.2.4 Health

Damages reported in Health Sector

Around 21,477 Pregnant & Lactating Women (PLW) and 37,530 children below 5 years of age were affected of malnutrition due to food insecurity and lack of proper hygiene facilities. Pregnant women in particular are facing problems in accessing health services. The most prevalent ailments are diarrhoea, respiratory infections, skin diseases and fever.

<b>Moderate Acute Malnourished Children</b>	<b>23,375</b>
<b>Sever acute Malnourished Children</b>	<b>14,155</b>
<b>Malnourished PLWs</b>	<b>21,477</b>

Source: Pakistan Floods 2011, Badin District Profile Jan-Feb 2012, UN OCHA

According to initial health assessments, conducted by WHO and GoS, after floods 2011, 19 out of 37 BHU were damaged, 3 out of 11 RHC were affected, and the only district headquarter hospital was affected too<sup>43</sup>. As of now, 63 % of the moderate malnourished children, 51% of the severely malnourished children and 37% of malnourished PLWs have been covered<sup>44</sup>.

Badin Health Facilities Gap Analysis

According to the EDO Health Badin, the 2011 floods didn't cause any major damage to these health facilities. Presently, all the health facilities are functional and are serving their purpose. Most of the Health facilities have been taken over by district Government for their rehabilitation and reconstruction. The EDO office also states that the building department recently conducted a survey and will start working on the reconstruction of health facilities. (Source EDO Health Badin)

Most Damaged RHC in Badin is "Pangrio" which hasn't been rehabilitated yet and the surrounding areas around the HF are in really bad conditions which includes sanitation Problems

RHC repaired by Merlin International -

1. Khadan
2. Nindo
3. Khanijat
4. Talhar
5. Dei

HF repaired by Save the Children

1. Fazal Mohammad Talpur - RHC
2. Badin City – City OPD
3. Golarchi - Taluka Hospital
4. Fatehabad – GD
5. Mureed Chang – GD

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

<sup>44</sup> <http://pakresponse.info/LinkClick.aspx?fileticket=sBDg2mW6GqI%3D&tabid=98&mid=722>

Gap Analysis of Agriculture and Livestock in Badin

COMPONENT	PRE FLOOD	POST-FLOOD	UN OCHA	POST-FLOOD RESPONSE	GAP
<b>Agriculture</b>	<ul style="list-style-type: none"> <li>Area Sown in acres was 70,849 for Cotton</li> </ul>	MCNA November 2011 Final			
	<ul style="list-style-type: none"> <li>Area Sown in acres was 215,867 for Rice</li> </ul>	Cotton 96 % damaged 51.7 % households bore this loss	Cotton 100 % damaged	Sunflower seed distributed among 18,000 families <sup>42</sup>	
	<ul style="list-style-type: none"> <li>Area Sown in acres was 152,485 for Sugarcane</li> </ul>	Rice 86% damaged and 43.2% of households bore this loss	Rice 83 % damaged	FAO helped 11,500 Families to restore livelihoods	Seeds, fertilizer and agricultural inputs for rabbi crops were provided to affected farmers but almost 20% households were not able to grow crops due to inundated area till December, 2011.
	<ul style="list-style-type: none"> <li>Area Sown in acres was 40,733 for chilies</li> </ul>	Sugarcane 66 % damaged and 19.8 % Households bore this loss	Sugarcane 43 % damaged	FAO provided sunflower planting package to 58,000 households	
	<ul style="list-style-type: none"> <li>Area Sown in acres was 20,072 for other crops and vegetables</li> </ul>	2.9 % households had Maize loss and loss percentage is 70		Along with this FAO also provided vegetable seeds to 23,500 families for kitchen gardening	Sources: Crop damage assessment by SUPARCO & FAO
<b>Livestock</b>	1,710,160 Livestock Heads	FAO reported a loss of 8,077 heads of livestock		WFP provided CFW to 2,478 Households	
				29,900 households were provided agricultural inputs	
				400,923 animals treated	
				332,400 kg of animal food distributed	

<sup>42</sup> <http://pakresponse.info/LinkClick.aspx?fileticket=sBDg2mW6GqI%3D&tabid=98&mid=722>

## Gap Analysis of Health facilities in Badin

ATTRIBUTE	PRE FLOOD SITUATION		POST FLOOD SITUATION (as of Feb 2012)		GAP
Health Facilities	<ul style="list-style-type: none"><li>19 out of 37 BHU were damaged,</li><li>3 out of 11 RHC are affected, and the</li><li>District headquarter hospital is affected</li><li>Moderate Malnourished Children: 23,375</li><li>acute Malnourished Children: 14,155</li><li>Malnourished PLWs: 21,477</li></ul>	<p>RHC repaired by Merlin International -</p> <ul style="list-style-type: none"><li>Khadan</li><li>Nindo</li><li>Khanijat</li><li>Talhar</li><li>Dei</li></ul> <p>Health Facilities repaired by Save the Children</p> <ul style="list-style-type: none"><li>Fazal Mohammad Talpur - RHC</li><li>Badin City – City OPD</li><li>Golarchi - Taluka Hospital</li><li>Fatehabad – GD</li><li>Mureed Chang – GD</li></ul> <p>Malnutrition</p> <ul style="list-style-type: none"><li>Moderate Malnourished Children Treated: 14,675</li><li>Acute Malnourished Children Treated: 7,166</li><li>Malnourished pregnant and lactating women Treated: 7,895</li><li># of women reached with relevant information on appropriate IYCF: 50,852</li></ul>	<ul style="list-style-type: none"><li>Moderate Malnourished Children: 8,703</li><li>Acute Malnourished Children: 6,989</li><li>Malnourished pregnant and lactating women: 13,552</li></ul>		
Hospital Access (Physical)	<ul style="list-style-type: none"><li>In Badin Mean Distance of BHU from main population 3.74KM</li><li>Maximum distance is 15 km from population to Health Unit</li></ul>	<ul style="list-style-type: none"><li>The health Facilities were not accessible after the floods, as most of these HF were submerged in Floods.</li></ul>	<ul style="list-style-type: none"><li>Currently, all health Facilities in Badin are accessible by the local population apart from 1 RHC located in Pangrio.</li></ul>		
Working Conditions	<ul style="list-style-type: none"><li>Before 2010 floods all 37 Basic Health Units, 11 RHC and 1 DHQ were in working Condition.</li><li>The average numbers of rooms in BHUs were 6.68 and for females an average room of 2.16 per BHU.</li></ul>	<ul style="list-style-type: none"><li>After the 2011 floods in Badin 19/37 BHU have been damaged, 3/11 RHC are damaged and 1 DHQ hospital in Badin city is in working condition.</li></ul>	<ul style="list-style-type: none"><li>Presently, all the health facilities are functional and none of the BHUs, RHC are in non-working condition. However,1 RHC in Pangrio Badin is nonfunctional due to bad sanitation problems</li><li>The Health Facilities in Badin are damaged but are fully functional and are serving their purpose.</li></ul>		



## 2.2.5 Education

Post Emergency Situation of Education Sector

Education and Literacy Department of Sindh<sup>45</sup> reported that, according to the educational census, there are 3,159 schools of which, 2,967 are primary, 133 are middle, 50 are matric/secondary and 9 are higher secondary schools. During floods 2011, 249 schools were partially damaged and 221 were fully destroyed.

District Badin, Schools' Details<sup>46</sup>

Out of these affected schools, 59 primary schools, 5 middle schools and 1 higher secondary school have been rehabilitated.

Table 2.2.7: Activities Performed by the Education Cluster

ACTIVITY DESCRIPTION	TARGET	ACHIEVED	BENEFICIARY TARGET	BENEFICIARY ACHIEVED
Establishment Of TSS	150	150	11094	12822
Partially Damaged School Renovation	65	65	N/A	3,042
To Provide Education In Emergency	308	308	14,780	14,620
To Provide Training To Govt. And Para Teachers	100	76	100	76
Training Of Teachers	7	7	N/A	210

Source: UNICEF

### Gap Analysis of Education Sector

ATTRIBUTE	PRE FLOOD SITUATION	POST FLOOD SITUATION	Response/Gap
<b>SCHOOLS</b>	<ul style="list-style-type: none"> <li>2,967 Primary Schools</li> <li>133 Middle Schools</li> <li>50 Secondary Schools</li> <li>9 Higher Secondary Schools</li> <li>Average Enrolment per school is 59 students per school</li> </ul>	<ul style="list-style-type: none"> <li>249 schools partially damaged</li> <li>221 schools fully destroyed</li> <li>Total damage to schools were 16% of the total schools</li> <li>A maximum estimated number of 27,648<sup>47</sup> students are affected in these partially or fully damaged schools</li> </ul>	<p>In response to the emergency, Education Cluster has performed the following Activities:</p> <ul style="list-style-type: none"> <li>59 primary schools were rehabilitated as of 18<sup>th</sup> May 2012</li> <li>5 middle Schools rehabilitated</li> <li>1 higher school rehabilitated</li> <li>As of 18<sup>th</sup> May, 129 temporary learning centers were established where more than 9,000 beneficiaries are getting education</li> <li>65 partially damaged schools were rehabilitated where the number of beneficiaries is 3,042</li> <li>Emergency Education provided to 14,620 beneficiaries</li> <li>286 Government and Para teachers are trained This is all response, Gaps have not been worked out</li> </ul>

<sup>45</sup> Flood Report on Education Sector for Sindh Province: 2010-11

<sup>46</sup> Education Cluster Response in Sindh 18th May 2012

<sup>47</sup> This figure is generalized

## 2.2.6 Infrastructure Damage

Floods 2011 caused disruption to the entire major infrastructure as per details given below:

- 23 Km of National Highway was affected,
- 1,708 Km of Provincial District Road was affected
- 2,412 Km of Kacha Pakka road affected
- 13.3 Km Railway Network affected
- 5 Bridges affected
- 1,277 settlements affected<sup>48</sup>

Table 2.2.8: Government Infrastructure Damage

SR. NO	OFFICE/DEPTT./BUILDING	TOTAL BUILDINGS PARTIALLY DAMAGED	TOTAL BUILDINGS DESTROYED
1	Civil Administration	67	50
2	Judiciary	3	2
3	Police	20	5
4	Auqaf Deptt.	1	1
5	Audit	-	-
6	Post Office	1	1
7	Prisons	20	-
8	Treasury Office	2	1
9	Election Office	-	-
10	Civil Defence Office	-	-
11	NADRA	-	-
12	Health	50	20
13	Education	100	35
14	Grand Total	284	120

Source: District Badin Contingency Plan 2012 for Cyclones, Rains and Flood

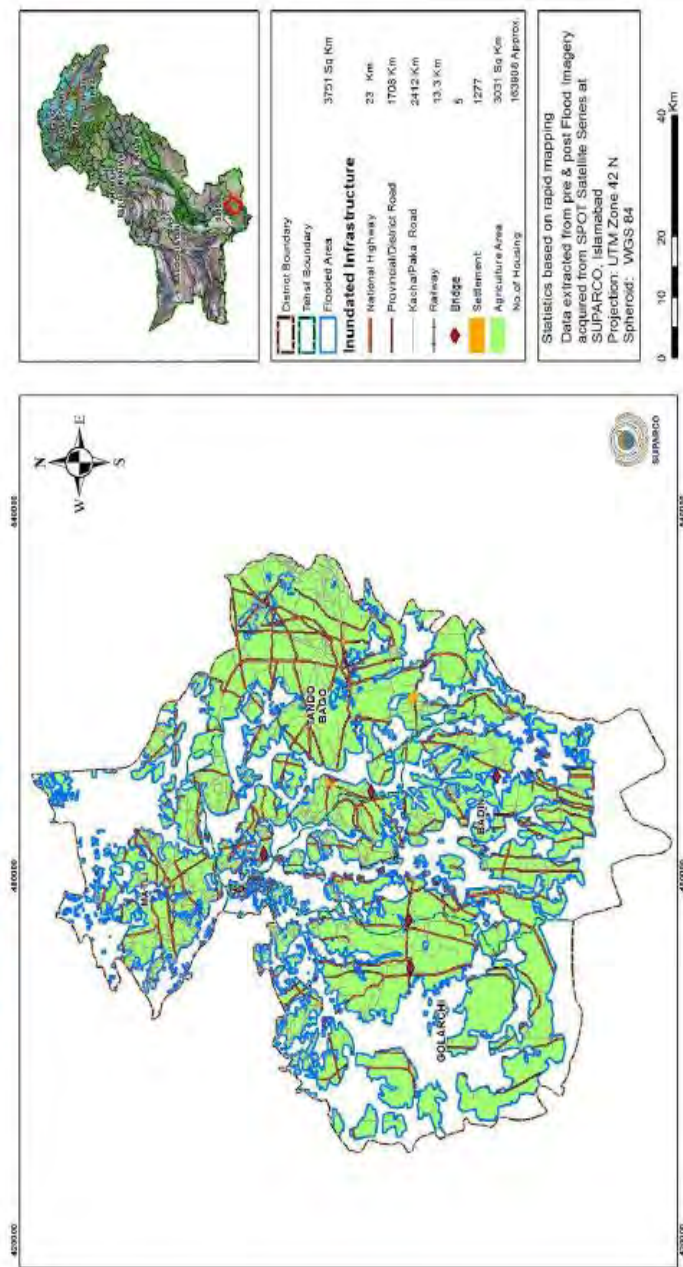
Table 2.2.9: Roads Damage

SR.	PRIORITY	TOTAL DAMAGE (IN KMS.)
1	Roads (Priority -I)	659.455
2	Roads (Priority -II)	10.268
TOTAL	669.723	

According to UNDP's 2012 contingency plan for District Badin for Cyclones, Rains and Floods, the total estimated cost for the rehabilitation in terms of housing is Rs. 114.096 million, and roads and bridges is Rs. 3,368.722 millions. Currently there are 14 major Non-Governmental Organizations (NGOs) working in the district. There are 11 emergency control rooms and 41 focal points available for emergency response. Details of these Coordination and Support Services are given in annexure 2.

<sup>48</sup> Joint venture of FAO and SUPARCO, September 28, 2011

# **BADIN DISTRICT FLOOD / RAIN 2011** **Thematic Map - Affected Infrastructure**



## 3 Hazard, Vulnerability and Capacity Analysis

### 3.1 Hazard Vulnerability and Capacity Analysis

Prior to analysing existing hazards, vulnerability to hazards and capacity to cope with the same of the district and its population, 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”<sup>49</sup>

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.

##### 3.1.1.1 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.

##### 3.1.1.2 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.

##### 3.1.1.3 Hazard Matrix of district Badin

HAZARD	FREQUENCY	AREA AFFECTED/UNION COUNCILS	SEVERITY/FORCE	YEAR
CYCLONE	Once in decade	Ahmed Rajo, Bhugra Memon, Kadhan, khoski ,mithi and seerani	High	1964/1999/2007

<sup>49</sup> The “Urban Governance and Community Resilience Guides” (ADPC, 2010)

HAZARD	FREQUENCY	AREA AFFECTED/UNION COUNCILS	SEVERITY/FORCE	YEAR
FLOOD	Once in three year	Ahmed Rajo, Bhugra Memon, Khorwah, Tarai, Garho, Seerani, Kadhan, Mithi III, Abdullah Shah/ entire Badin	High	1970/1976/1979/1988/1994/1999/2003/2006/2010/2011
HEAVY RAINFALL	Once In three year	Taluka Badin, Taluka SF Rahoo	Medium(270-320 mm)	1973/1994/2003/2006/2010/2011
EARTHQUAKE	Once in life	Taluka Badin, Taluka SF Rahoo	Medium	2001
LBOD	1997 onwards	Entire Badin	High	1999/2003/2010/2011
DROUGHT	Once in thirty years	-do-	Medium	1894/1932/1965-69
SEA INTRUSION	Permanent	Coastal area	Medium	
INDUSTRIAL WASTES	Permanent	Entire Badin	Medium	---

### 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 hazard<sup>50</sup>”

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

#### 3.1.2.1 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.

#### 3.1.2.2 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.

#### 3.1.2.3 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.

<sup>50</sup> Participant's Course workbook (ADPC)

## 3.1.2.4 Vulnerability matrix

PHYSICAL/ MATERIAL	SOCIAL/ORGANIZATIONAL	ATTITUDINAL/MOTIVATIONAL
Rural/coastal population of Badin is entangled in vicious circle of poverty. Having lost everything in flood, they have gone under the poverty line and are in miserable condition.	Badin has got large population (2007) 1265,000 and most of them are illiterate.	Sense of dependence is found in the people, looking for aid from govt. and NGOs.
Less availability of boats and vehicles for evacuation of population from low lying areas	Lack of coordination between govt. and NGOs working on DRM and climate and environment.	No interest in improving their own lives but wait for other to come and take initiative.
Exposure to different kinds of hazards like flood, cyclones and heavy rainfall etc.	Self-interest oriented leaders of the local community, attach themselves to NGOs just for their benefits.	Lack of trust between government and the community
Badin is a coastal area with maximum elevation of 16.7 m on north west while minimum elevation in south is zero meters.	Unawareness of Zamindars, who blocked watercourses to their fields which result in the burst of canals at the end. Creating flood situation in the area and damaging everything what comes in its way.	Fatalism, natural hazards are seen as "Acts of Nature"
Not enough funds provision, for DRM activities.	Lack of coordination between govt. and NGOs working on DRM and climate and environment mentioned above.	People of Badin are not aware of their vulnerabilities, due to their ignorance, to natural and manmade hazards.
Breaches in LBOD, due to seasonal monsoon heavy rain falls and excessive municipal and industrial water	Community is divided into different political groups, lacking unity I. politicizing important issues which affects the people.	At risk communities are mostly not familiar with preventive measures to be taken before, during and after disaster.
Breaches in the irrigation canals, because they are not maintained properly.	Most population lives in rural areas (86 %) having no approach to basic life facilities.	
No water treatment plant in industries (Agro-based and sugar mills )	Community people don't cooperate with govt., in implementation of already made rules for land use planning and building codes.	
Non availability of boats on both sides of LBOD, in the district for emergency situation.	In emergency, evacuees usually stay on Bunds, causing hindrance in movement of machinery and rescue staff.	
Design defects in LBOD and its component. In LBOD construction social and environmental aspects were largely overlooked.	No disaster committees in communities, for assistance in assessment and implementation of DRM Plans.	
Water logging and salinity affects the cultivated land and agriculture. Nearly 30% of irrigated lands in Sindh are threatened by water logging and salinity.	Inefficient monitoring system of hazards in monsoon season, by the govt. and local disaster committees.	
Nonexistence of District Emergency Operation Centre in the district. (DEOC)	Insufficient CBDRM projects in the union councils of district Badin.	

PHYSICAL/ MATERIAL	SOCIAL/ORGANIZATIONAL	ATTITUDINAL/MOTIVATIONAL
Kacha (mud ) houses at coastal area, exposed to cyclones etc.	No coordination of the local administration departments	
Insufficient hospitals, with low standard health facilities and minimum number of doctors.	Communication gap between govt. and community, keeping away people from community projects, not appreciating people participation in the projects.	
370,000 individuals are living in danger zone, of the coastal area, of Badin district, thus are exposed and vulnerable to tropical cyclones.	Livelihood is not sustainable, i.e. there is no incorporation and integration of DRR measures in the livelihood.	
No disaster resilient infrastructure in the entire Badin district.	Scarcity of trained volunteers on DRR/DRM	
Industrial wastes from Agro-based industries not only pollute water but air also and provide base for diseases.	Less capacity of district govt. to tackle issues related to emergency.	
Inadequate Early warning system for flood, rainfall and cyclones etc.	Less capacity and interest of district administration towards DRM	
No systematic and proper database is available at district level	Lack of social security, and pro poor development initiatives	
Unplanned development ( no integration of DRR measures in building codes)	Out of 3,159 schools 2967 are primary and just 9 are higher secondary. This implies that most of the Population has only access to primary education. 9 HSS indicates lack of interest in education.	
Rainfall is highly unpredictable in the Badin with an average of 258.8mm	Around 76,199 pregnant and 27498 lactating woman (PLW) are affected by malnutrition.	
Badin is at the extreme tail end of the irrigation system.	Drinking water accessibility in Badin is also not satisfactory just 18% of households are using tap water. Majority of people are using other sources for drinking and thus are prone to water borne diseases.	
Sanitation facility is not satisfactory. 86% people live in rural in which just 9% have flush facility.	Economic situation of 26.04% of Hh in Badin has become poorer due to exposure to many hazards like droughts, floods and cyclones.	
Decreased fresh water availability has increased uncultivable land. As a result Salinity prevailed in the delta region, degrading vegetation and mangroves around lakes.	Food prices in Badin have increased many folds ranging from 7 to 40% for different commodities thus increasing food insecurity.	

### 3.1.3 Capacity

Capacity is contrasted to vulnerability. Ability to perform or produce is termed as capacity. Capacities are resources, means and strengths, which exist in households and communities and which enable them to cope with, withstand, prepare for, prevent, mitigate or quickly recover from a disaster. The combination of all the strengths attributes and resources available within a community, society or organization that can be used to achieve agreed goals constitute its capacity to cope with hazards<sup>51</sup>.

#### 3.1.3.1 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.

#### 3.1.3.2 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.

#### 3.1.3.3 Attitudinal/Motivational Capacity

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

#### 3.1.3.4 Capacity matrix

PHYSICAL/ MATERIAL	SOCIAL/ORGANIZATIONAL	ATTITUDINAL/MOTIVATIONAL
Irrigation system is well developed i.e. kotri and sukkar barrages irrigate the fertile land of Badin.	Traditional Family system/structure is found in Badin which provides manpower and give structure to the society.	People of Badin district has sympathy and love for each other and cooperate and facilitate in floods and heavy rainfalls.
Badin is Gas and crude oil (4 oil fields ) producing district which contributes to the development of the country (50% crude oil of the total production of the country)		Awareness sessions and trainings conducted by welfare departments in vulnerable to risk communities has really influenced the perception towards disaster.(Paradigm shift concerning disasters)
Crops i.e. cash & food crops (sugar cane, sunflower, rice, wheat etc.) are the livelihood source for poor farmers.	Presence of CBO's chairmen and presidents who understand the community very well and possess great influence on the people.	Contingency plans formation shows change in perception of govt. regarding DRM.
There are 11% Pakka Houses which are disaster resilient	Tribal heads can facilitate the govt. and NGOs in implementation of DRM plan.	Flood management plans provide guideline in management of floods.
Sugar and rice husking mills provides sugar and rice not only to		Identification of relief sites by the govt. and community shows their level

<sup>51</sup> Participant's Course workbook (ADPC)

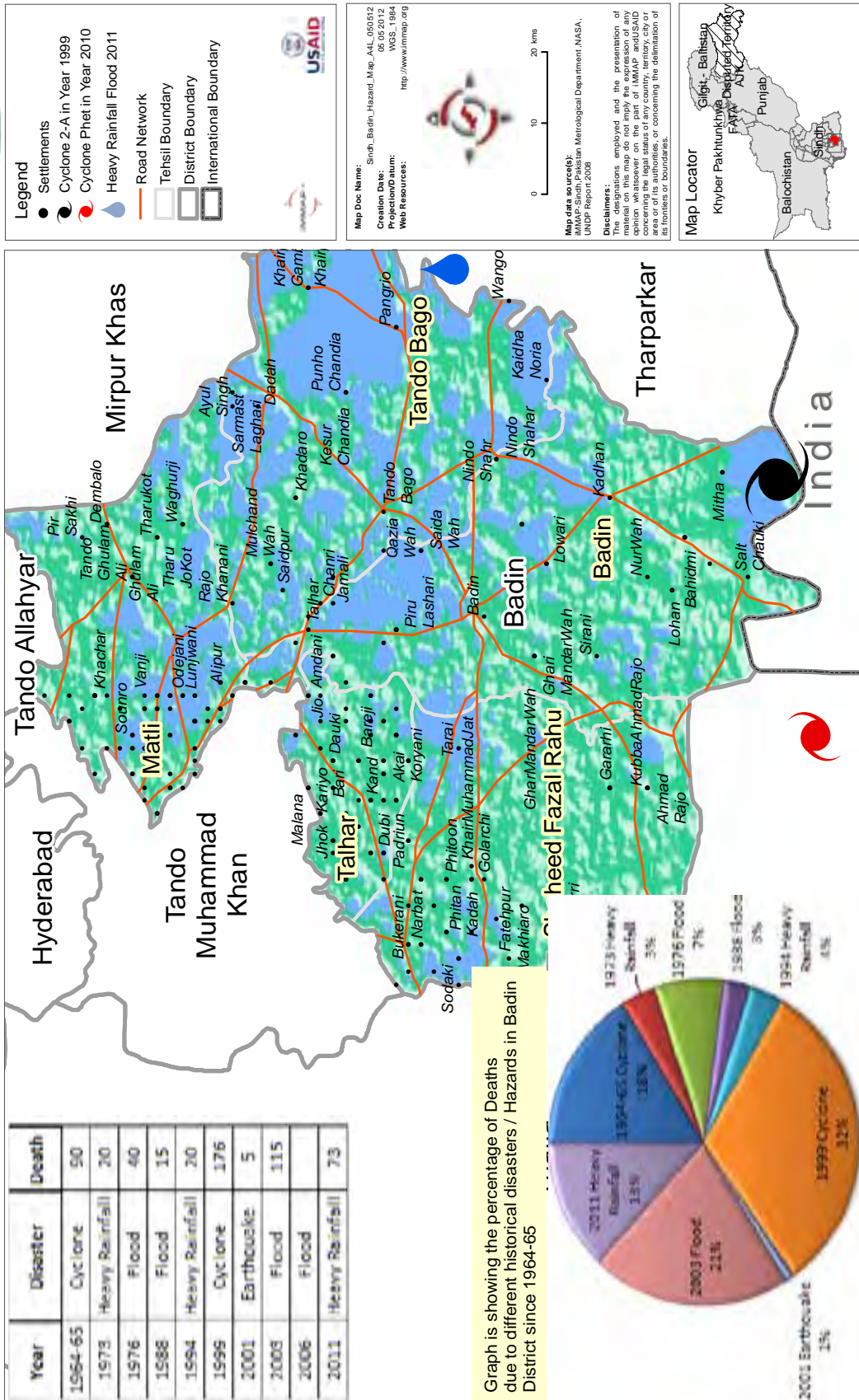


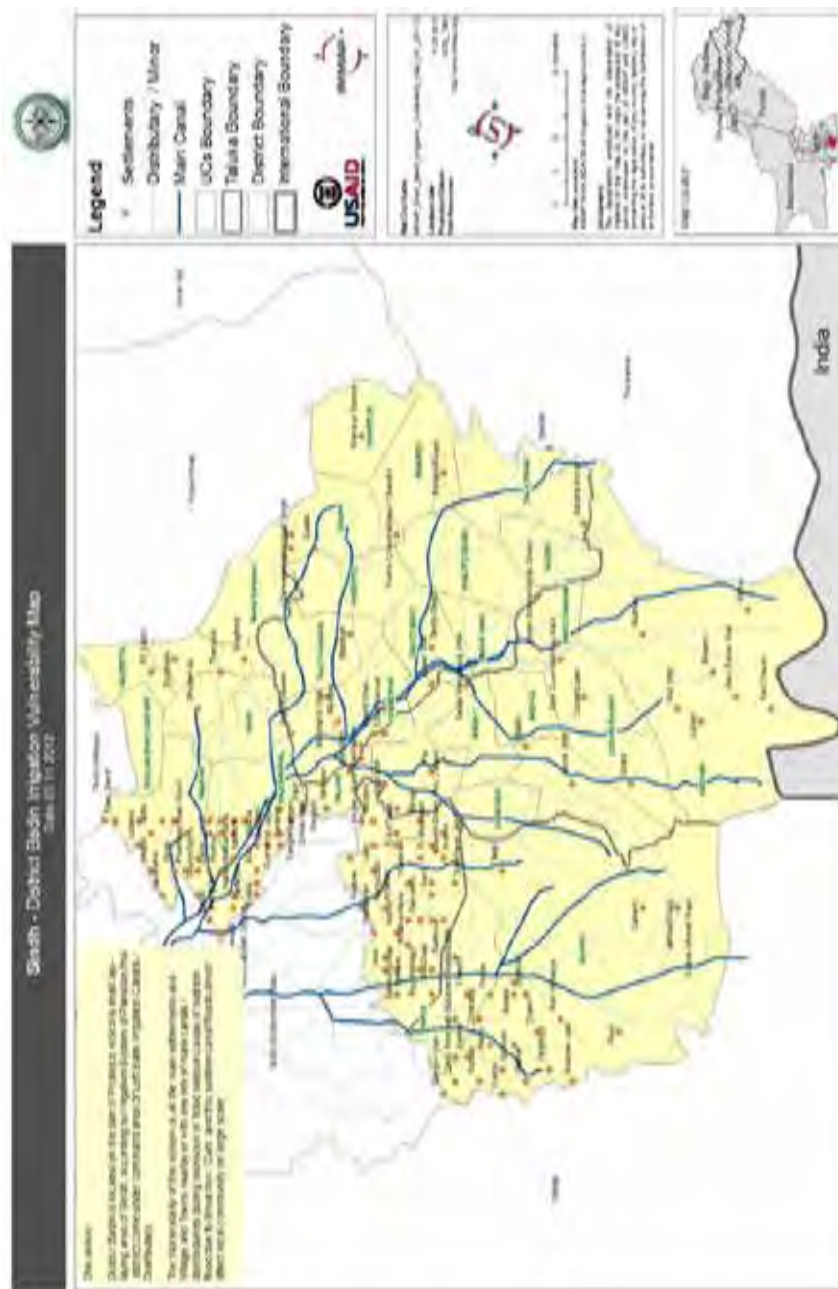
PHYSICAL/ MATERIAL	SOCIAL/ORGANIZATIONAL	ATTITUDINAL/MOTIVATIONAL
Badin but also other parts of the country. (6 Sugar Mills, 30 Rice husking mills )		of preparedness.
Buharki and Rarri Forests can stop/minimize the flow/speed of flood and prevent soil erosion.	Local govt. system can provide assistance at local level by coordinating with stockholders or can act as medium between state and local community.	Advocacy seminars, Trainings and awareness sessions by NGOs are contributing in policy making towards DRM.
TMA's play its significant role in urban area by providing services in the field of sanitation and construction.	Monitoring of LBOD after disaster by the irrigation dept. and local committee members can provide psychological relief to the community at risk.	Indigenous knowledge of the local community can be useful if considered. In LBOD project the project specialists refused to take the indigenous knowledge and now is creating problem in the form of flood disasters.
10 available ? Fumigation machines can be used in monsoon season by spraying on the stagnant water and preventing people from being infected by malaria and other diseases.	For effective flood management ,district govt. Badin has formed few committees like taluka flood relief committee, district health security and livestock committees	
30 Dewatering pumps are provided to all TMA's of the district which can be used in low lying areas for dewatering the area.	Health/veterinary committee's formation can facilitate in the emergency as well as in recovery process.	
BHUs, RHCs, Civil Hospital (49, 9, 1) are useful in providing health facilities in rural and urban areas	Mobile teams of local district departments (veterinary, health etc.) can provide facility to those who are in far flung areas.	
Dispensaries, maternity homes (15, 3) provide mother child services in small towns.	Union council's secretaries are helpful because they keep data and information of the whole union council.	
Veterinary hospitals, veterinary centre (7, 49) are available in the district Badin	Internet links/sites of NDMA/PDMA etc. can provide data on flood damages and affected people etc.	
Fire brigades,24 ambulances,11 emergency control rooms,41 focal points for emergency response etc. increase the capacity of Badin against disasters	Availability of trained volunteers in District Badin	
	Maps of hazard and vulnerable areas of the district Badin can be useful in DRM planning.	
	For the compensation of affected people the govt. provides/issues cash grants in the shape of watan card.	

PHYSICAL/ MATERIAL	SOCIAL/ORGANIZATIONAL	ATTITUDINAL/MOTIVATIONAL
	Funds for DRM from international agencies	
	Numerous shrines are there in Badin district which attracts number of local tourist and are a source of income generation.	
	District disaster management authority in the district	

# Sindh - District Badin Hazard Analysis Map

May 05, 2012





## 4 Coordination and Support Services Annexures

### 4.1 Annexure 1: List of Health Facilities

#### 4.1.1 List of Rural Health Centre (RHC)

SR. #	NAME OF HEALTH FACILITY	ADDRESS
1	RHC Nindo Shehr	P.O Nindo Taluka Badin
2	RHC Fazal Mohammad Talpur	P.O Lunwar Sharif Taluka Badin
3	RHC Kadhan	P.O Kadhan Taluka Badin
4	RHC Talhar	P.O and Taluka Talhar
5	RHC Rajo Khanani	P.O Rajo Khanani, Taluka Talhar
6	RHC Dando	P.O Dando Via Matli
7	RHC Tando Ghulam Ali	P.O & Taluka Tando Ghulam Ali
8	RHC Khanani Jat	P.O Arif abad Taluka Golarchi
9	RHC Dei	P.O Dei, Taluka Tando Bago
10	RHC Pangrio	P.O Pangrio, Taluka Tando Bago
11	RHC Khoski	P.O Khoski Taluka Tando Bago

#### 4.1.2 List of Basic Health Units (BHU)

SR. #	NAME OF BASIC HEALTH UNIT	ADDRESS OF BHU
1	BHU Yousif Soomro	P.O & Taluka Badin
2	BHU Lal Bux Notikani	P.O Lunwar Sharif, Taluka Badin
3	BHU Abdul Shah	P.O Lunwar Sharif, Taluka Badin
4	BHU Ali Murad Chandio	P.O Lunwar Sharif, Taluka Badin
5	BHU Ali Mohammad Boohar	P.O Lunwar Sharif, Taluka Badin
6	BHU Artelary Chak # 1	P.O Khoski
7	BHU Punjab Chak # 2	P.O Kadhan, Taluka Badin
8	BHU Ghulam Hussain Parhyar	P.O & Taluka Badin
9	BHU Behdmi	P.O Kadhan, Taluka Badin
10	BHU Yousif Shah	P.O Yousif Shah, Taluka Badin
11	BHU Rip	P.O Morjhar Mori, Taluka Badin
12	BHU Ghulam Mohammad Nizamani	Via Talhar
13	BHU Saeed pur	P.O Rajo Khanani, Taluka Talhar
14	BHU Ghulam Shah Mori	P.O, Tando Bago
15	BHU Tando Ghulam Hyder	P.O, Tando Ghulam Hyder
16	BHU Phalkara	P.O Phalkara, Taluka Matli
17	BHU Ghulab Laghari	P.O Gulab Laghari via Tando Allahyar
18	BHU Mir Mohammad Nizamani	Via Matli
19	BHU Nabi Bux Punjabi	P.O Matli
20	BHU Nazarpur	Via Matli
21	BHU Thari	P.O Thari, Taluka Matli
22	BHU Haji Nizamuddin	P.O New Dumbalo, Taluka Matli

SR. #	NAME OF BASIC HEALTH UNIT	ADDRESS OF BHU
23	BHU Haji Dodo Khan Gishkori	P.O New Dumbalo
24	BHU Kapri Mori	Via Tando Ghulam Ali
25	BHU Chaudhry Fateh Mohammad	P.O New Dumbalo
26	BHU Tarai	P.O Tarai Taluka Golarchi
27	BHU Khorwah	P.O Golarchi
28	BHU Molve Ali Mohammad Maheri	P.O Kario Ghanwar Tal. Golarchi
29	BHU Juna	P.O Kario Ghanwar Tal. Golarchi
30	BHU Ahmed Rajo	P.O & Taluka Golarchi
31	BHU Gharo	P.O Morjhar Mori Via Badin
32	BHU Mataro Mendharo	P.O Fateh abad, Taluka Golarchi
33	BHU Rahuki	P.O Rahuki Taluka Golarchi
34	BHU Dadah	P.O Dei Taluka Tando Bago
35	BHU Khalifo Qasim	P.O Tando Bago
36	BHU Wali Mohammad Malkani	P.O Wali Mohammad Malkani, Taluka Tando Bago
37	BHU Syed Ali Bux Shah	P.O Tando Bago
38	BHU Saeed Khan Bhurgri	P.O Nindo Shehr

SPO and Helping Hand Survey of Health Facilities in Badin

### 4.1.3 List of Dispensaries

SR. #	NAME OF DISPENSARY	SR. #	NAME OF DISPENSARY
1	Govt. Disp. Motan	9	Govt. Disp. Abdullah Samoo
2	Dr. Chandio Dr. Asadullah Jamali	10	Govt. Disp. Beero Lanjwani
3	Govt. Disp. Boro Shaib Khan	11	Govt. Disp. Bakhoo Chandio
4	Govt. Disp. Baghali	12	Govt. Disp. Sultan Chandio
5	Govt. Disp. Abdullah Samoo	13	Govt. Disp. Seerani
6	Govt. Disp. Sorhadi	14	Govt. Disp. Qabaili Chak
7	Govt. Disp. Ghainoo Khan Laghari	15	Govt. Disp. Meehna
8	Govt. Disp. Manik Laghari	16	Govt. Disp. Allahabad
		17	Govt. Disp. Chak No.5

SPO and Helping Hand Survey of Health Facilities in Badin

### 4.1.4 BHU Rooms by Type and Number

SR. #	FACILITY	AVAILABLE	NON AVAILABLE
1	Consultation Rooms In Bhus	25	6
2	Consultation Room In Health Units For Female Patients	23	8
3	Checkup Rooms For Patients	30	1
4	Screen Facility For Female Patients	28	3
5	Waiting Room	29	2
6	Latrines For Patients Within Bhu Compound	27	4
7	Latrines For Female Patients	26	5
8	Latrines For Male Patients	27	4
9	Drinking Water	22	9
10	Electricity Facility In Health Units	26	5

SPO and Helping Hand Survey of Health Facilities in Badin

#### 4.1.5 Furniture and other material in BHUs

Sr. #	DETAIL	Total	Average
1	Chairs	286	9.23
2	Table	135	4.35
3	Cupboard	43	1.43
4	Patients Bed	72	2.32
5	Laboratory	03	0.10
6	Chemical Test	17	0.57
7	Ambulance	0	0
8	Blood Bank	0	0
9	Sterilizer	30	0.97
10	Freezer	28	0.90
11	Other	09	0.29

SPO and Helping Hand Survey of Health Facilities in Badin

#### 4.1.6 Availability of Instruments in Health Units

SR. #	INSTRUMENT	NUMBER AND AVAILABILITY
1	Stethoscope	30
2	Bp Apparatus	30
3	Thermometer	31
4	Tongue Depressor	30
5	Weight Machine	29
6	Diagnostic Set	24
7	Examination Couch	29
8	Delivery Kit	22
9	Screen	24
10	Drip Stand	28
11	Dnc Kit	5
12	Fetoscope And Gluco Meter	2
13	Surgical Instruments	Total: 90 Average: 3.1

#### 4.1.7 Present Staff in Health Units

SR. #	STAFF	MALE	FEMALE	TOTAL
1	Doctors	31	31	62
2	Nursing Staff	133	40	173
3	Other	50	8	58



## 4.2 Annexure 2: List of Physical Assets and Infrastructure

### 4.2.1 Machinery & Equipment available in the District with different stakeholders

NAME STAKEHOLDER	MACHINE	QUANTITY	STATUS
Tma Matli	Fire Brigade	1	in working condition
Tma Talhar	Fire Brigade	1	in working condition
Tma Badin	Fire Brigade	2	1 in working condition and 1 in poor conduction
Civil Hospital Badin	Ambulances	6	4 in working condition and 2 out of order
Taluka Hospital Matli	Ambulances	6	3 in working conduction and 3 in poor condition
Tulka Hospital Sf Rahu	Ambulances	3	2 in working condition and 1 out of order
Tulka Hospital Tando Bagho	Ambulances	3	1 in working condition and 2 out of order
Bhu Tando Ghulam Ali	Ambulances	4	2 in working condition and 2 out of order
Rhc Kadhan	Ambulances	2	2 out of order
Rhc Kario Ghanhwar	Ambulances	2	2 out of order

EDO Heath, Badin 2012

### 4.2.2 List of NGOs working in Badin

SR.#	NAME OF NGO	FOCAL PERSON	ADDRESS
1	Laar Humanitarian and Development organization (LHDP)	Mr. Iqbal Haider Fida Hussain Somroo, National Manager	Main Kadhan Road Badin, e-mail: <a href="mailto:lhdp_aorg@yahoo.com">lhdp_aorg@yahoo.com</a> Fida. 0333-2527893
2	Badin Development & Research Organization Badin. (BDRO)	Mr. Muhammad Khan Somroo	Near new Seerani bus stop, Seerani Road Badin (0277-861429)/03332524272 Email: <a href="mailto:bdrobadin@hotmail.com">bdrobadin@hotmail.com</a>
3	Badin Rural Development Society (BRDS) Badin	Mr. Dr. Akash Ansari	Near Badin X-ray, Badin (0297-861683) Email: <a href="mailto:brdsngo@yahoo.com">brdsngo@yahoo.com</a>
4	Laar Development Association (LDA) Badin	Mr. Ghulam Hussaian Mallah	Near Shahnawaz Chowk Ali Medical Centre Street Karachi Road Bad (0297-862318)/03323884284 Email: <a href="mailto:laarbadin@hotmail.com">laarbadin@hotmail.com</a>
5	Society for Science, Education and Research (SSER) Badin	Mr. Khadim Talpur	Shah Latif Public School, Seerani Road Badin (0297-862303) Email: <a href="mailto:sserbadin@hotmail.com">sserbadin@hotmail.com</a>
6	Young Sheedi Welfare Organization Badin	Mr. Allah Bachayo	Abid Town Badin Ph. 0297 861792, email. <a href="mailto:Y_sheed@yahoo.com">Y_sheed@yahoo.com</a>
7	Village Development Association Village Moosa Soomro, Badin	Mr. M. Suleman Soomro	C/o Sagar Tailor Near Mohammadi Petroleum Services Badin Cell no. 0333 2522952
8	Sukh Des Development Society Talhar	Mr. Anwar Panjwani	PO Talhar District Badin (0227-730126)



0	Pakistan International Peace & Human Rights Organization	Mr. Fayaz H. Abro	PO Nindo Shahar Taluka Badin (0297861536)/03332668296 Email: piphro@yahoo.com
10	Sindh Graduates Association	Mr. Abdul Karim Branch Head	Memon Hall district council road Badin Cell # 03003024273
11	Sindh Abadgar Board	Haji M Nawaz Memoon	0297 861237 cell 03332526678 C/o Amjad Rice Mill, Distrct. Badin
12	Family Planning Association of Pakistan	Dr. Iftikhar Ahmed Khuwaja	Bagh Mohalla Badin Ph. 0297 861060
13	National Rural Support Programme	Ghulam Mustafa Hyder	Al-Aman Hotel Hyderabad Road Badin 0297 862253/861353
14	Pakistan Fisher folk Forum	Mr. Mithan	# 1-B Abid Town Kaarchi Road Near Taraae Stop Badin. Phone: 0297 810015 8) Email: <a href="mailto:efs_org@yahoo.com">efs_org@yahoo.com</a>

Source DDRMP 2008 by UNDP: Verified and Updated by iMMAP, May 2012

### 4.2.3 List of Departmental Focal Points For Emergency Response

SR.#	NAME OR ORGANIZATIONS	OFFICE CONTACT	SR.#	NAME OR ORGANIZATIONS	OFFICE CONTACT
1	Army Cantonment Badin	0297 861200/861201	22	XEN Highways Badin	0297 861410
2	District Nazim Badin	0297 862081/862108	23	DO Roads & Transport	0297 861840
3	DCO Badin	0297 861001	24	DO CDD Badin	0297 861232
4	DPO Badin	0297 861667/861324	25	D. Controller C. Defence	0297 861996
5	EDO Revenue	0297 861744	26	DDO Revenue Badin	0297 861358
6	EDO Education	0297 861183/861784	27	DDO Revenue SF Rahoo	0297 853197
7	EDO Works & Services	0297 862283	28	DDO Revenue Matli	0297 8740255
8	SE Irrigation	0297 861259	29	DDO Revenue T. Bago	0297 854037
9	EDO Agriculture	0297 861623	30	Mukhtiarkar (R) Badin	0297 861245
10	Taluka Nazim	0297 862165	31	Mukhtiarkar (R) Talhar	0297 8730280
11	Taluka TMA Talhar	0297 8730230	32	Mukhtiarkar (R) SF Rahoo	0297 853053
12	Taluka TMA Matli	0297 8740760	33	Mukhtiarkar (R) Matli	0297 8740205
13	Taluka TMA Tando Bago	0297 854120	34	Mukhtiarkar (R) T. Bago	0297 854037
14	Taluka Nazim FS Rahoo	0297 853018	35	A. Engineer Drainage	0297 861422
15	SDO HESCO Badin	0297 861972	36	PMD Badin	0297 861125
16	Civil Surgeon Badin	0297 8619081/862479	37	District Zakat Officer	0297 861322
17	Deputy Manager SSGC	0297 862241	38	XEN Irrigation	0297 861422
18	SDO Telephones	0297 861266/861111	39	XEN LBOD	0297 861422
19	Fire Brigade Badin	116	40	Director Left Bank Canal Area Water Board	0344 3595929/0297 861259
20	Emergency Police Badin	15	41	Executive District Officer (F&P)	0297 861048
21	Edhi Centre Badin	115			

Source DDRMP 2008 by UNDP: Verified and Updated by iMMAP, May 2012

### 4.2.4 List of Control Rooms used in Emergency

SR.#	FOCAL POINTS FOR EMERGENCY	COTACT NO
1	Control Room Relief Commissioner Sindh	022 9200573
2	Army Cantonment Badin	0297 861200-861201
3	District Government Control Room	0297 862384
4	Met Office Islamabad	051 9250363-4
5	District Police Control Room	0297 861244
6	Navy Maritime Centre Karachi (Met Office)	021 4671300-4671302
7	Taluka Control Room Badin	0297 81245
8	Taluka Control Room SF Rahu	0297 853053
9	Taluka Control Room Tando Bago	0297 854037
10	Taluka Control Room Talhar	0297 830280
11	Taluka Control Room Matli	0297 840205

Source DDRMP 2008 by UNDP: Verified and Updated by iMMAP, May 2012

Press Club Badin

(0297 861944)

#### 4.2.5 List of Police Stations/Police Posts

Sr. no	Name of Police Station	Name of Police Post
1	PS Badin	PP Town
		PP Nindo
		PP Seerani
		PS Badin
		PP Lunwari Sharif
2	PS	Kadhan
3	PS Talhar	PS Rajo Khanani
4	PS Shaheed Fazal Rahu	PP Kharwah
		PP Girani
5	PS Kario Ganhwar	PP Tarai
6	PS Matli	PP Phulkara
7	PS Tando Ghulam Ali	PP Bhudo Qambran
8	PS Ghulab Leghari	
9	PS Tando Bago	PP Dai
10	PS Pangrio	PP Khoski
		PP Khairpur Gamboh
		PP Hayat Khaskheli

DDRMP Revision in UNDP 2008

### 4.3 Annexure 3: List of Road Network by National Highway Authority

#### 4.3.1 List of Road Networks Available in Badin District

S. NO:	ROAD ID	NAME OF SCHEME WITH LENGTH	SEC. NAME	RD-CL	LENGTH (KM)	WIDTH	NO: OF BRIDGE	OF LANES	OF
1	2	4	5	6	7	8	9	10	
01		Road Hyderabad-Badin	Mali, Talhar, Badin	70 A1	63.35	7.30/5.47	10		Single
02		Road Badin-Khoski-Wango	Nindo, Khoski Shadi Wango	70 A1	44.25	7.30/5.47	13		Single
03		Road Badin-Kadhan to Ali Bunder	Lunwari, Kadhan Raheem Ke Bazar	70 A1	44.25	5.47	07		Single
04		Road Badin-Tando Bago	Vonai, Tando Bago	70 A1	18.00	7.30	04		Single
05		Road Tando Bago-Jhudo road	Sangi Pharo, Jhudo	70 A1	40.00	4.87	09		Single
06		Road Matli Tando Ghulam Ali Dumbalo	Matli, Haji sawan, Thari T.G. Ali, Dumbalo	70 A1	37.40	7.30/5.47	06		Single
07		Road Chamber-T.G.Ali	T.G.Ali, Gulab Leghar Chamber	70 A1	24.15	5.47	02		Single
08		Road Matli-Phulkara Shaikh Bhirkio	Matli, Shaikh Bhirkio Gulab Leghari	70 A1	20.00	7.30/5.47/3.65	04		Single
09		Road Mataro Hotal-Kario Khorwah to Bathoro	Mataro Hotel, Kario Ganhwar, Khorwah,	70 A1	55.30	7.30/5.47/3.65	16		Single
10		Road of Talhar-Rajo Khanani to Hajji Sawan	Talhar, Rajo Khanani Hajji Sawan	70 A1	24.55	5.47	05		Single
11		Road Badin-Seerani to Bhugra Memon	Badin, Seerani, bhugra Memon	70 A1	32.20	5.47/3.65	03		Single
12		Road Golarchi-Ahmed Rajo	Golarchi, Ahmed Rajo	70 A1	28.98	5.47/3.65	02		Single
13		Road Tando Bago – Dehi - Digri	Tando Bago, Khadharo Dehi, Digri	70 A1	25.76	5.47	10		Single
14		Road from Kario Ganhwar to Golarchi	Rahoki, Kario Ganhwar Golarchi	70 A1	19.32	5.47	05		Single
15		Road Lowari to Nindo road	Lowari, Nindo	70 A1	17.30	3.65	03		Single
16		Road Kadhan –Seerani	Kadhan –Seerani	70 A1	19.32	5.47/3.65	03		Single
17		Road from Dumbalo to Budho Kambrani	Dumbalo, Budho Kambrani Chutto Madrani	70 A1	14.50	5.47/3.65	02		Single
18		Road Pattan Parhiyar-Ahmed Rajo	Pattan Parhiyar, Hamid Mandharo, Ahmed Rajo	70 A1	33.79	3.65	03		Single
19		Road Seerani-Ahmed Rajo	Seerani-Ahmed Rajo	70 A1	24.00	3.65	05		Single
20		Road Talhar- Tando Bago-Pangrio-Jhudo	Talhar- Tando Bago Pangrio-	70 A1	70.40	7.30/5.47	15		Single

S. NO:	ROAD ID	NAME OF SCHEME WITH LENGTH	SEC. NAME	RD-CL	LENGTH (KM)	WIDTH	NO: BRIDGE	OF	NO: LANES	OF
			Jhudo							
21		Road Saeed Pur-Khadaro	Saeed Pur-Khadaro	70 A1	17.00	3.65	04		Single	
22		Road Kadhan-Nindo	Kadhan-Nindo	70 A1	14.50	5.47/3.65	04		Single	
23		Road Khoski-Khalifo Qasim	Khoski-Khalifo Qasim	70 A1	12.88	5.47/3.65	02		Single	
24		Road Tando Bago-Nindo	Tando Bago-Nindo	70 A1	15.30	5.47/3.65	03		Single	
25		Road Pangrio-Wango	Pangrio, Balouch Chack, Wango	70 A1	16.00	4.87	02		Single	
26		Road Badin-Sujawal	Badin, Golarchi, Khorwah Chok, Sujawal	70 A1	77.00	7.30	14		Single	
27		Road Dehi to Tando Jan Muhammad	Dehi, 57 Mori, Tando Jan Muhammad	70 A1	29.00	3.70			Single	
28		Road Pattan Parhyar-Ahmed Rajo to Village Hamid Mandhoro	Badin-Seerani Ahmed Rajo	70 A1	2.81	3.65	05		Single	
29		Road from Tando Bago to Khairpur Gambo via Oliya Khan Shah	Tando Bago, Khairpur Gambo Oliya Khan Shah	70 A1	30.59	3.65	07		Single	
30		Road Matli-Tando Ghulam Ali Road to Village Ali Akber Nizamani via Thari	Ali Akber Nizamani, Thari	70 A1	12.07	5.47/3.65	03		Single	
31		Road from Digri to Rajo Khanai via Budho Kambrani Deh-170	Digri to Rajo Khanai, Budho Kambrani	70 A1	33.00	3.65	05		Single	
32		Road Khalifo Qasim to Tando Bago-Jhudo	Khalifo Qasim, NoorKerio, Dato Junejo	70 A1	19.20	3.65	05		Single	
33		Road from Haji Sawan to Rajo Khanai Link road Dargah Mukhtiar Shah Bachal Lund	Dargah Mukhtiar Shah, Bachal Lund	70 A1	1.00	3.65	-		Single	
34		Road from Baran Mori Regulator to Mirani Mori via Mohammad Hassan Leghari village	Mirani Mori, Mohammad Hassan Leghari	70 A1	2.00	3.65	-		Single	
35		Road from Manik Leghari inside village	Manik Leghari	70 A1	0.50	3.65	-		Single	
36		Road from Gulab Leghari Saban Dasti road link to Sain Bux Rind	Gulab Leghari Saban Dasti, Sain Bux Rind	70 A1	0.50	3.65	-		Single	
37		Road from Gulab Leghari Saban Dasti road link to Haji Piru Rind	Gulab Leghari Saban Dasti, Haji Piru Rind	70 A1	0.50	3.65	-		Single	
38		Road from Tando Jan Mohammad to Dei road Sim Nali from village Mohammad Ali Kakepota	Mohammad Ali Kakepota	70 A1	1.00	3.65	-		Single	
39		Road from Iqbal Memon Otaque village to Ghulam Hsassin Tehbo	Ghulam Hsassin Tehbo	70 A1	1.00	3.65	-		Single	
40		Road from Digri Dei road to Village Chanesar Kaloi via patasho Dalwani to	Chanesar Kaloi, Patasho Dalwani	70 A1	1.00	3.65	-		Single	

S. NO:	ROAD ID	NAME OF SCHEME WITH LENGTH	SEC. NAME	RD-CL	LENGTH (KM)	WIDTH	NO: BRIDGE	OF	NO: LANES	OF
		Bludho Qambrani								
41		Road from Khadharo to village Talib Khan Gurgaze	Talib Khan Gurgaze	70 A1	1.00	3.65	-		Single	
42		Road from Behdami to Shekhani Ghari	Behdami, Shekhani	70 A1	5.00	3.65	-		Single	
43		Road from Kario Ganhwar road to Haji Ismail Chandio	Haji Ismail Chandio	70 A1	1.50	3.65	-		Single	
44		Road from Kario Ganhwar road to Haji Allah Dino Chandio	Khorwah, Haji Allah Chandio	70 A1	1.50	3.65	01		Single	
45		Road from Yasirabad Haji Sawan Bus Stop T.G.Ali road	Yasirabad, Haji Sawan	70 A1	1.20	3.65	-		Single	
46		Road Abdul Hussain Khoso road from Mehboob Shah	Abdul Hussain Khoso, Mehboob Shah	70 A1	1.61	3.65	-		Single	
47		Road Shah wah Mori Bus Stop to Village Kaleemullah	Village Kaleemullah	70 A1	1.61	3.65	-		Single	
48		Road from Dabharo to Ghulam Shah Mori 1/4 Fakir Mohammad Juman Huliya	Fakir Mohammad Juman Huliya	70 A1	1.00	3.65	-		Single	
49		Road from kapri Mori to Sanjar Chang @ Mile 3/0 to Village Kafila	Sanjar Chang, Village Kafila	70 A1	1.00	3.65	-		Single	
50		Road from Gulab Laghari to Saban Dasti to Village Pir Bux Rind	Village Pir Bux Rind	70 A1	0.50	3.65	-		Single	
51		Road from Hyderabad Badin road at Mile 54/7 to Village Bagh Talpur	Village Bagh Talpur	70 A1	1.00	3.65	-		Single	
52		Road from Kario Bye pass to Village Abdul Jabbar Nizamani	Village Abdul Jabbar Nizamani	70 A1	4.00	3.65	-		Single	
53		Road from Ghulam Shah Mori to Mir-Jo-Tambo	Mir-Jo-Tambo	70 A1	3.62	3.65	-		Single	
54		Road from Pangrio -Jhudo road at Village Pir (Shah) Mohammad Shah Rashidi	Pir (Shah) Mohammad Shah Rashidi	70 A1	2.60	3.65	01		Single	
55		Road from Badin-Sujawal road left bank of Morjhar Canal to Jamali Goth	Morjhar Canal to Jamali Goth	70 A1	6.00	3.65	01		Single	
56		Road from Aliahdin Soomro to Village Master Abdullah Chang via Mazar Chang	Master Abdullah Chang, Mazar Chang	70 A1	7.00	3.65	-		Single	
57		Road from Olya Khan Shah Khairpur Gambo to Tando Bago Jhudo	Olya Khan Khairpur Gambo, Tando Bago, Jhudo	70 A1	2.00	3.65	-		Single	

S. NO:	ROAD ID	NAME OF SCHEME WITH LENGTH	SEC. NAME	RD-CL	LENGTH (KM)	WIDTH	NO: BRIDGE	OF	NO: LANES	OF
58		Road from Shah Wah Mori upto Gamani Inspection Path Shah Wah	Shah Wah Mori	70 A1	2.00	3.65	-		Single	
59		Road from Bahdmi Kadhan road to Abdul Rasool Chang	Abdul Rasool Chang	70 A1	3.00	3.65	-		Single	
60		Road from Kari Wari Mori upto Ahmed Rajo Seerani road Inspection Path of out fall drain	Kari Wari Mori, Ahmed Rajo Road	70 A1	5.00	3.65	-		Single	
61		Road from Pangrio Jhudo road to Bukhsho Lund	Pangrio, Bukhsho Lund	70 A1	2.00	3.65	-		Single	
62		Road from Kario Ganhwar Bagheli	Bagheli	70 A1	5.00	3.65	-		Single	
63		Road from Seerani City Mir Wah Talhar Right Path Way upto Bhugra Memon	Seerani, Bhugra Memon	70 A1	10.00	3.65	-		Single	
64		Road from Pir Fateh Shah Bridge upto Ghulam Ali Chandio	Ghulam Ali Chandio	70 A1	5.00	3.65	-		Single	
65		Road from Hyderabad-Badin road to Village Muhammad Iqbal Sarejo	Muhammad Iqbal Sarejo	70 A1	3.00	3.65	01		Single	
66		Road from Kadhan Ali Bunder road to Mama Soomro Chandio Goth	Mama Soomro Chandio Goth	70 A1	2.00	3.65	-		Single	
67		Road from Tando Bago Pangrio road to Village Jaleel Mallah	Pangrio, Jaleel Mallah	70 A1	1.00	3.65	-		Single	
68		Road from Pangrio Tando Bago road to Village Haji Qasim Mangrio	Tando Bago, Haji Mangrio	70 A1	1.00	3.65	-		Single	
69		Road from Tando Bago Khadharo to Village Talib Mallah	Talib Mallah	70 A1	1.20	3.65	-		Single	
70		Road from Hyderabad-Badin road to Village Mithin Junejo via Haji Juman Junejo	Mithin Junejo, Haji Juman Junejo	70 A1	5.00	3.65	01		Single	
71		Road from District Jail Badin to Sajjan Soomro	Sajjan Soomro	70 A1	3.00	3.65	-		Single	
72		Road from Badin-Hyderabad road to Village Partio Arisar UC Pero Lashari	Village Partio Arisar	70 A1	1.00	3.65	-		Single	
73		Road from Ahmed Rajo to Village Choudary Wilayat Taluka Golarchi	Village Choudary Wilayat	70 A1	1.00	3.65	-		Single	
74		Road from Kario Gahnwar to Golarchi to Village Muhammad Bux Jatoi.	Village Muhammad Bux Jatoi.	70 A1	1.00	3.65	-		Single	
75		Road Tando Bago Pangrio road to Olya Khan Shah	Olya Khan Shah	70 A1	9.60	5.47	01		Single	
76		Road Badin-Sujawal road to Village Jat	Village Jat	70 A1	6.00	5.47	01		Single	

S. NO:	ROAD ID	NAME OF SCHEME WITH LENGTH	SEC. NAME	RD-CL	LENGTH (KM)	WIDTH	NO: BRIDGE	OF	NO: LANES	OF
77	Road Kapri Mori upto Bashirabad via Sanjar Chang Inspection Path Naseer Canal		Kapri Mori, Sanjar Chang	70 A1	5.00	5.47	-		Single	
78	Road Dehi to Ghulam Shah		Dehi, Ghulam Shah	70 A1	6.00	3.65	-		Single	
79	Road from T. Bago-Jhudo road Point Khadim Ali Shah to Masjid-E-Taqwa		Masjid-E-Taqwa	70 A1	4.62	3.65	01		Single	
80	Road from T.Bago-Jhudo road mile 12/4 to T.Bago-Tando Jan Mohd. Via Bachal Khan Leghari		Bachal Khan Leghari	70 A1	10.06	3.65	01		Single	
81	Road from Tando Bago – Jhudo road at Mile 17/0 to Connect Tnado Bago-Digri Road at point Alamabad		Alamabad	70 A1	5.00	3.65	-		Single	
82	Road from Deh Tando Jan Muhammad road at 57 Mori to Jhudo with link to Village Haji Ibrahim Jalo , Village Ram & Village Ghulam Mustafa Brohi		Haji Ibrahim Jalo, Village Ram & Village Ghulam Mustafa Brohi	70 A1	3.00	3.65	-		Single	
83	Road Dumbalo–Ghulam Shah Mori		Dumbalo–Ghulam Shah Mori	70 A1	16.00	3.65	01		Single	
84	Road Chutto Madrani to Haji Nabi Bux Arain Village To Digri		Haji Nabi Bux Arain	70 A1	11.27	3.65	-		Single	
85	Road from Phurdo Jamali to Khadaro		Phurdo Jamali, Khadaro	70 A1	4.80	3.65	02		Single	
86	Road from Badin-Khoski road at point scape to Lowari-Nindo road via Village Noor Muhammad Farooqi		Noor Muhammad Farooqi	70 A1	1.50	3.65	-		Single	
87	Road from Village Lal Bux Notkani road to Pir Fateh Shah via Mazher Khan Chang		Mazher Khan Lal Bux Notkani	70 A1	3.00	3.65	02		Single	
88	Road from Khalifo Qasim-Jhudo road to Olya Khan Shah road via Talib Odhejo & Noor Kiryo		Talib Odhejo & Noor Kiryo	70 A1	3.21	3.65	01		Single	
89	Road from Bulsho Lund to Mehboob Shah road via Dato Junejo		Dato Junejo	70 A1	6.20	3.65	02		Single	
90	Road from Badin-Sujawal road to Suman Nagar, Haji Soomar Samoon		Haji Soomar Samoon	70 A1	3.21	3.65	01		Single	
91	Road from Ahmed Rajo to Zero Point of LBOD (Upto Narrari Dhand)		Zero Point	70 A1	7.00	3.65	-		Single	
92	Road from Matli Bye Pass road from Hyderabad-Badin road mile 29/0 to Matli-T.G. Ali		Matli Bye Pass	70 A1	2.80	5.47	-		Single	



S. NO:	ROAD ID	NAME OF SCHEME WITH LENGTH	SEC. NAME	RD-CL	LENGTH (KM)	WIDTH	NO: BRIDGE	OF	NO: LANES	OF
93		Road from Balouch Chack to Bachoo Bhoot	Bachoo Bhoot	70 A1	3.00	3.65	-		Single	
94		Road from Wali Muhammad Leghari to Village Pehliwan Khan Leghari	Wali Muhammad Leghari	70 A1	3.21	3.65	01		Single	
95		Road Kario Ganhwar Bye Pass	Kario Ganhwar Bye Pass	70 A1	1.61	3.65	01		Single	
96		Road Pangrio-Jhudo to Arbab Sikandar	Arbab Sikandar	70 A1	2.65	3.65	01		Single	
97		Road Tando Bago-Pangrio to Fazal Ahemdani	Fazal Ahemdani	70 A1	1.00	3.65	-		Single	
98		Road Rasheed Arain to Jhudo via Sangi Phuro	Rasheed Arain	70 A1	3.21	3.65	-		Single	
99		Road Kario Ganhwar Khorwah Road to Village Ali Muhammad Mehri	Ali Muhammad Mehri	70 A1	10.00	3.65	-		Single	
100		Road Rejo Khanani Haji Sawan - Naveedabad	Haji Sawan, Naveedabad	70 A1	1.00	3.65	-		Single	
101		Road Dumbalo-Ghulam Shah Mori to Khamiso Jalalani	Khamiso Jalalani	70 A1	2.00	3.65	-		Single	
102		Road Dumbalo -Budho Kambrani to Amir-ul-din Arain	Amir-ul-din Arain	70 A1	1.80	3.65	01		Single	
103		Road Pir Bux Nizamani to Ahmed Khan Bagrani	Ahmed Khan Bagrani	70 A1	1.61	3.65	-		Single	
104		Road Tando Ghulam Ali Saban Dasti Samjar Chang	Saban Dasti	70 A1	1.40	3.65	-		Single	
105		Road Gulab Leghari to Nawab Hassan Ali Talpur Nawab-Jo-Tambo along Bank of Murad Wah	Nawab-Jo-Tambo	70 A1	5.00	3.65	01		Single	
106		Road Budho kambrani to Mir Muhammad Unner	Mir Muhammad Unner	70 A1	6.00	3.65	-		Single	

Source: National Highway Authority May 2012