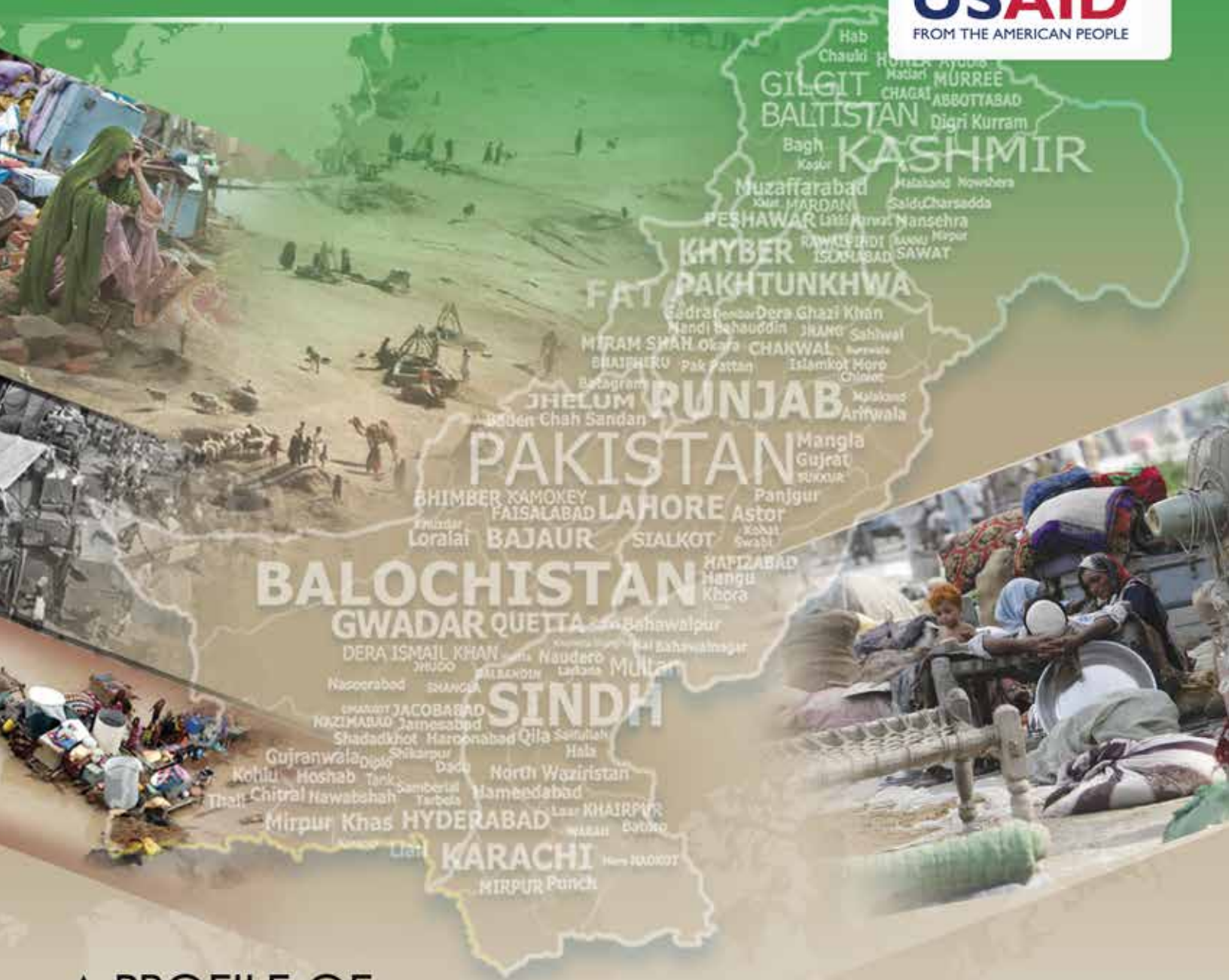


# PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



**USAID**  
FROM THE AMERICAN PEOPLE



## A PROFILE OF **DISTRICT NAUSHAHRO FEROZE**



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Dargah Hazrat Sayad Ismail Shah Jelani,  
District Noshehro Feroze, Sindh



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

Kasey Channell,

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

# PAKISTAN EMERGENCY SITUATIONAL ANALYSIS

## District Naushahro Feroze

August 2014

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

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

# Disclaimer

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

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

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## NOTE:

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

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

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# Credits

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

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

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

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

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



**Mehdi Bokhari**  
PESA Project Director

# Foreword

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

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

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

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



**Major (Retd) Tahir Iqbal**  
iMMAP Pakistan  
Chairman

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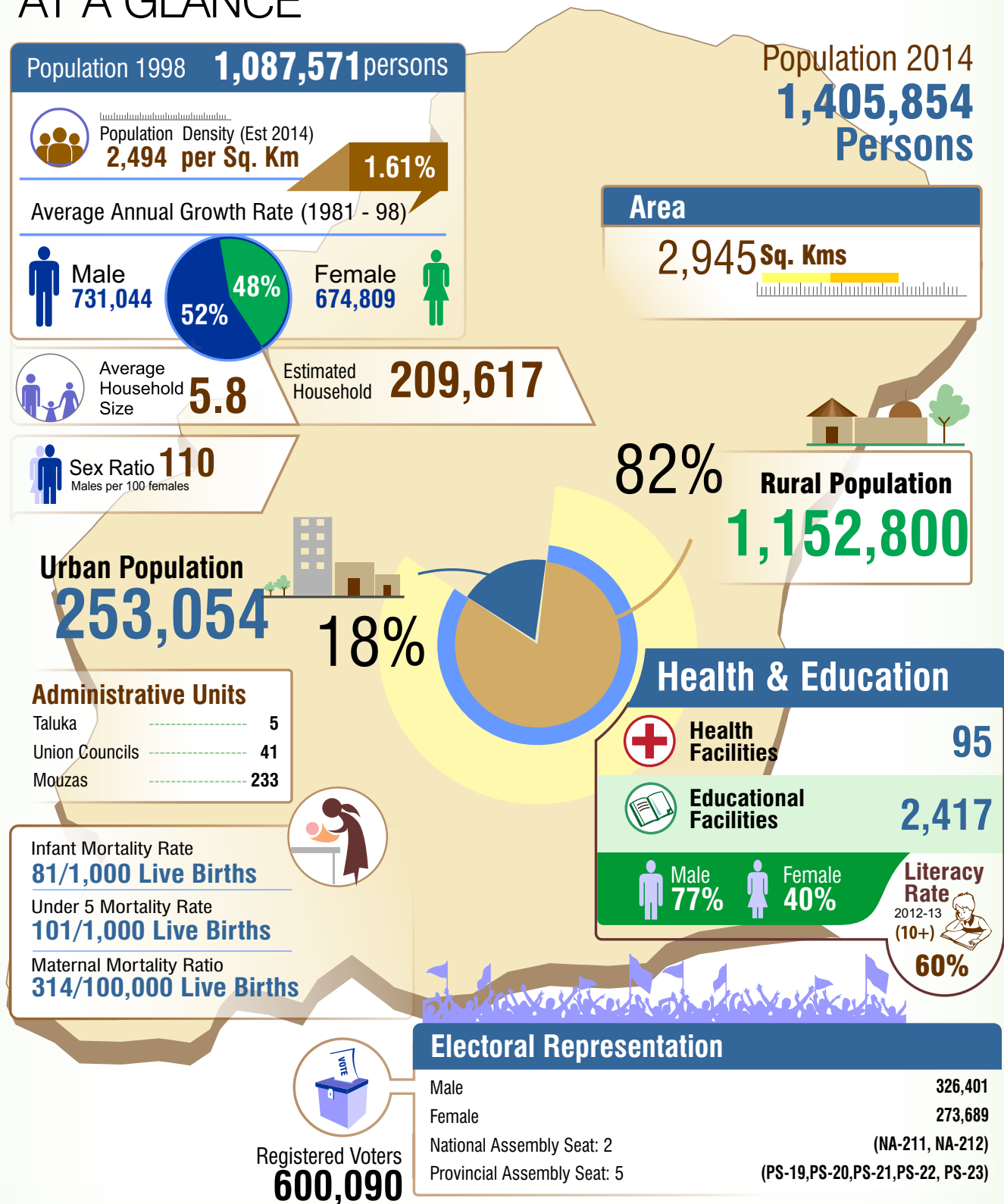
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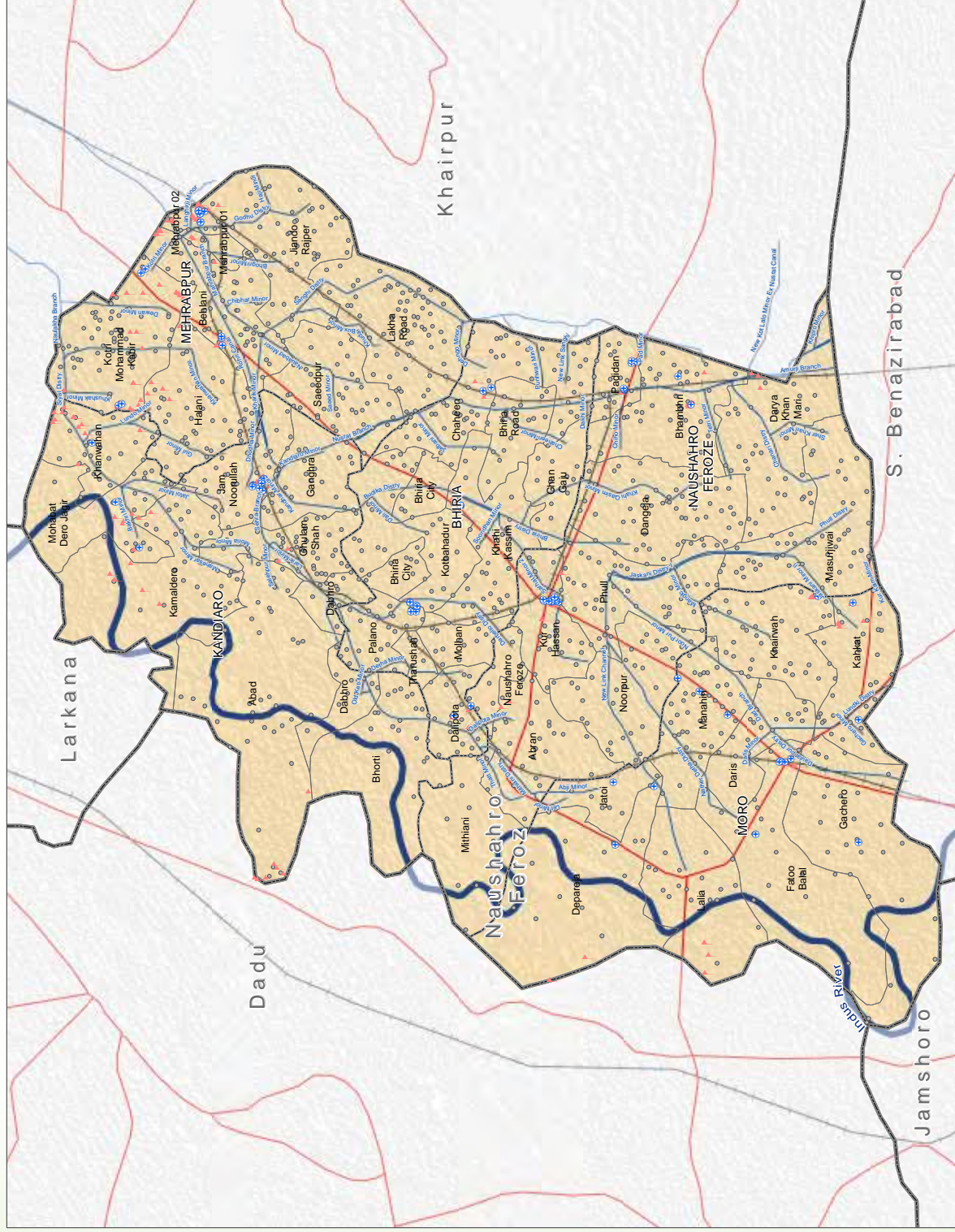
# DISTRICT NAUSHAHRO FEROZE

## AT A GLANCE



# Sindh - Naushahro Feroze Reference Map

August, 2014

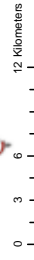


## Legend

- Education Facilities
- Health Facilities
- Settlements
- Canals
- Indus River
- Roads
- Railway
- District boundary
- Taluka boundary
- UC Boundary



Map Doc Name: IMMAP\_PAK\_Naushahro Feroze RefMap\_v02\_081814  
 Creation Date: Aug 18, 2014  
 Projection/Datum: WGS84  
 Web Resources: <http://www.immap.org>



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

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## Abbreviations

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



# 1 Background Information

## 1.1 Introduction

### 1.1.1 History

Historically, this region has been ruled by different dynasties, including the Soomras (1024-1351), the Summas (1335-1520), the Arghuns (1520-1650), the Kalhoras (1657-1783) and the Talpurs (1783-1843). In 1783 A.D, the Kalhoras were defeated by the Talpur dynasty and Sindh was divided, for administrative purposes, into seven parts, by the Talpur Mirs. When Britain invaded the subcontinent, General Charles Napier, a commander in the British Army, defeated the Talpur dynasty and conquered Sindh in 1843. He was appointed as the first Governor General of Sindh. The province was divided into different administrative parts and assigned to *Zamindars* (landlords) to collect taxes for the British government. Later on, the rulers developed these areas as urban centers. People migrated from other districts and provinces as well and started to reside here. The British Empire named these small developed areas as "Talukas". They built a network of roads, schools, dispensaries and many other civic amenities throughout the province<sup>1</sup>.

After the independence of Pakistan, in 1947, this district remained neglected by the authorities. But the gradual process of development has changed this district significantly.

### 1.1.2 Geography

District Naushahro Feroze lies in 67° 48" 2' to 68° 26" 51' east longitudes and 26° 32" 45' to 27° 13" 36' north latitudes. This district is bounded by district Khairpur on the east, district Larkana on the north, district Dadu on the west, and district Jamshoro and Shaheed Benazirabad on the south. Indus Rivers flows alongside the western boundary of the district.

The climate of the district is extreme, both in winters and summers. During summers, the mean maximum temperature is 44 °C and minimum temperature is 25 °C and during winters, the mean maximum temperature is 24 °C and minimum is 5 °C. Average precipitation is maximum in the months of July and August, reaching at 42mm.

The land structure of this district comprises of plain fertile lands suitable for agriculture. Due to a well-organized canal system and proximity of Indus River, the whole district has irrigation facility resulting in the grasslands and irrigated crop lands.

### 1.1.3 Culture (Ethnicity, Religion and Politics)

Naushahro Feroze has a rich traditional Sindhi culture. Women usually wear *Shalwar Qameez* but quite often dress in the traditional attire, *Ghaghra* or *Parro* as well. Traditionally, women

---

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

wear bangles. Men commonly wear a *Shalwar Qameez* distinguished by broader bottoms, and a traditional Sindhi style cap.

People of this district are pre-dominantly Sindhi speaking but a significant Urdu speaking population is also residing in this district and still others speak Seraiki, Punjabi and Balochi. Islam is the religion of majority in this district as 96.72% of the population is Muslim followed by 2.89% Hindu community.

Pakistan People's Party Parliamentarians (PPPP) is the major political party of this district. But the Jatoli family also has significant political influence in this district. PPPP is trying their best to make in to the district's politics but have yet to succeed.

### 1.1.4 Administrative Division

District Naushahro Feroze has its district headquarters in Naushahro Feroze city. This district has five talukas, named: Naushahro Feroze, Bhiria, Digri, Moro, Kandiaro and Mehrabpur. It has 51 union councils and 233 mouzas (revenue village). Out of the total mouzas, 194 are rural mouzas, 3 are urban, 15 are partly urban, 7 are forests and 3 are un-populated mouzas.

*Table 1.1-1: Administrative Division of District Naushahro Feroze*

Naushahro Feroze	Kanungo Circles/ Supervisory Tapas	Patwar Circles/ Tapas	Number of Mouzas					
			Total	Rural	Urban	Partly urban	Forest	Un-populated
Naushahro Feroze District	14	97	233	194	2	27	7	3
Naushahro Feroze	3	21	60	51	1	7	-	1
Bhiria Taluka	2	17	33	21	1	10	-	1
Moro Taluka	4	26	53	47	-	2	3	1
Kandiaro Taluka	3	17	53	46	-	3	4	-
Mehrab Pur Taluka	2	16	34	29	-	5	-	-

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

### 1.1.5 Road Network Infrastructure

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

Naushahro Feroze district covers an area of 2,945 square kilometers yet it has only 472 kilometers of good quality roads, which are grossly inadequate for the area and population<sup>2</sup>. A National Highway (N5) connects Naushahro Feroze with Hyderabad and onwards to Karachi (capital of Sindh province). The district headquarter of Naushahro Feroze is linked with its taluka headquarters of Moro and Kandiaro through metalled roads.

<sup>2</sup> Sindh Development Statistics, (2011), Lahore University of Management Sciences (LUMS), pp.262

### 1.1.6 Irrigation

The district has a well-established canal irrigation system. Rohri canal passes through the center of this district and irrigates the central and eastern parts of the district. Indus River passes alongside the western border of the district.

As the table 1.1.2 shows, majority of the mouzas in this district are irrigated through canals. Out of the 221 rural mouzas, 201 (91%) are irrigated with the help of canals. 166 (75%) are irrigated with tube-wells and 52 (24%) are irrigated through river.

*Table 1.1-2: Mouzas Reporting Sources of Irrigation*

ADMINISTRATIVE UNIT		RURAL POPULATED MOUZAS	NUMBERS OF MOUZAS REPORTING SOURCE OF IRRIGATION						
			CANAL	RIVER	TUBEWELL / WELL	RAVINE	SPRING/ STREAM / KAREZ	ARID (BARANI)	FLOODI NG/ TORRE NT
Naushahro Feroze District	Number	221	201	52	166	-	-	2	10
	Percent	100	91	24	75			1	5
Naushahro Feroze Taluka	Number	58	56	17	41	-	-	-	-
	Percent	100	97	29	71				
Bhiria Taluka	Number	31	31	-	26	-	-	-	-
	Percent	100	100		84				
Moro Taluka	Number	49	38	20	43	-	-	2	4
	Percent	100	78	41	88			4	8
Kandiaro Taluka	Number	49	42	15	46	-	-	-	6
	Percent	100	86	31	94				12
Mehrab Pur Taluka	Number	34	34	-	10	-	-	-	-
	Percent	100	100		29				

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

In the year 2008-09, 97% of the total sown area was irrigated and from this irrigated area 100% area was irrigated through canals and tube wells. From 2008-09 to 2009-10, there is 2% decrease in total sown area and there is also 3% decrease in canal irrigated area. The table below gives information regarding irrigation in the district.

*Table 1.1-3: Irrigation by type*

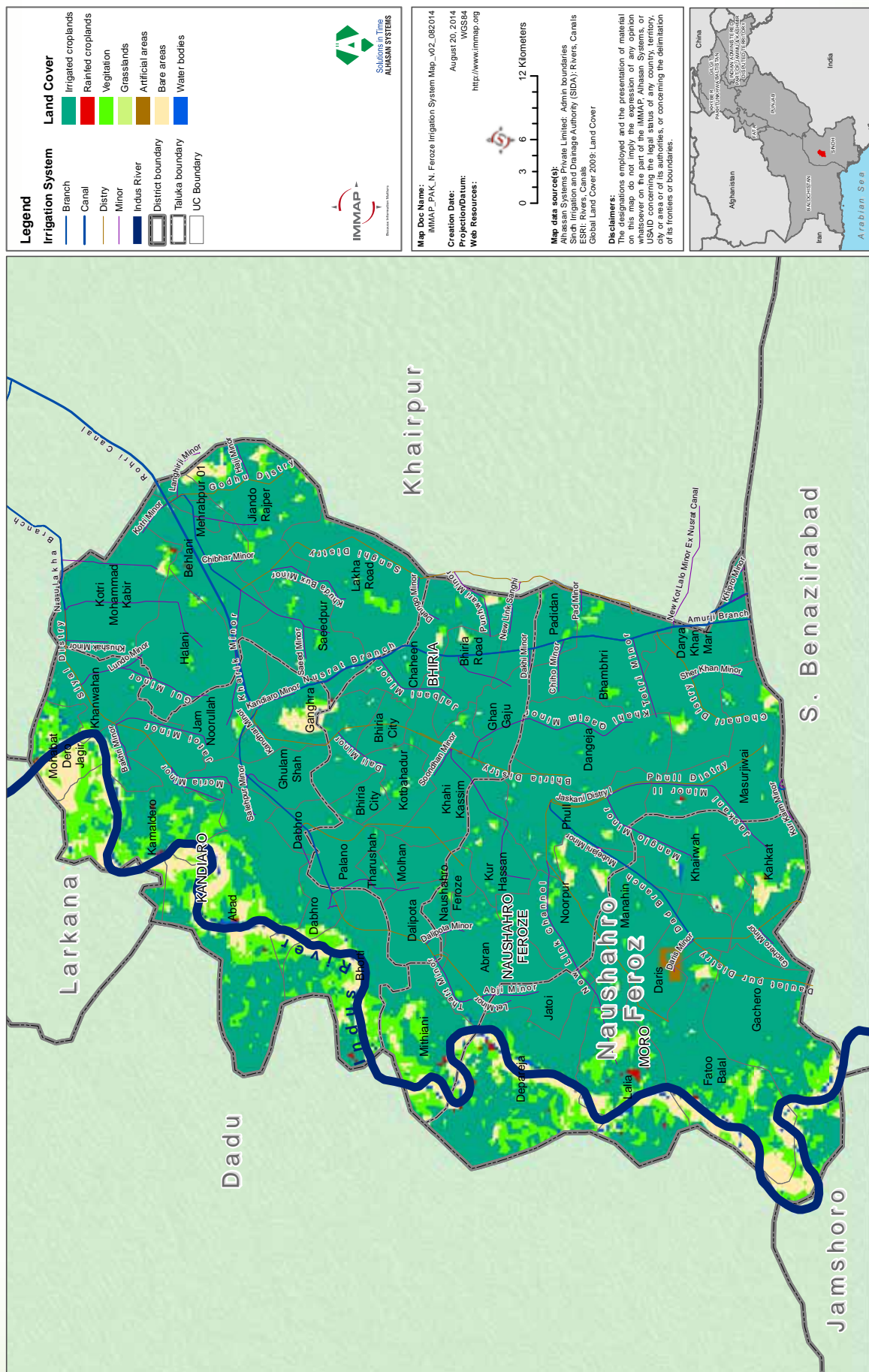
Irrigation Type	2008-09	2009-10
Canal	145,198	140,893
Tube well	13,721	13,629
<b>Total Irrigated Area</b>	<b>158,919</b>	<b>154,522</b>
Un-Irrigated	5,521	6,345
<b>Total Sown Area</b>	<b>164,440</b>	<b>160,867</b>

Source: Table 4.36 Sindh Development Statistics 2011



## Sindh - Naushahro Feroze Irrigation System Map

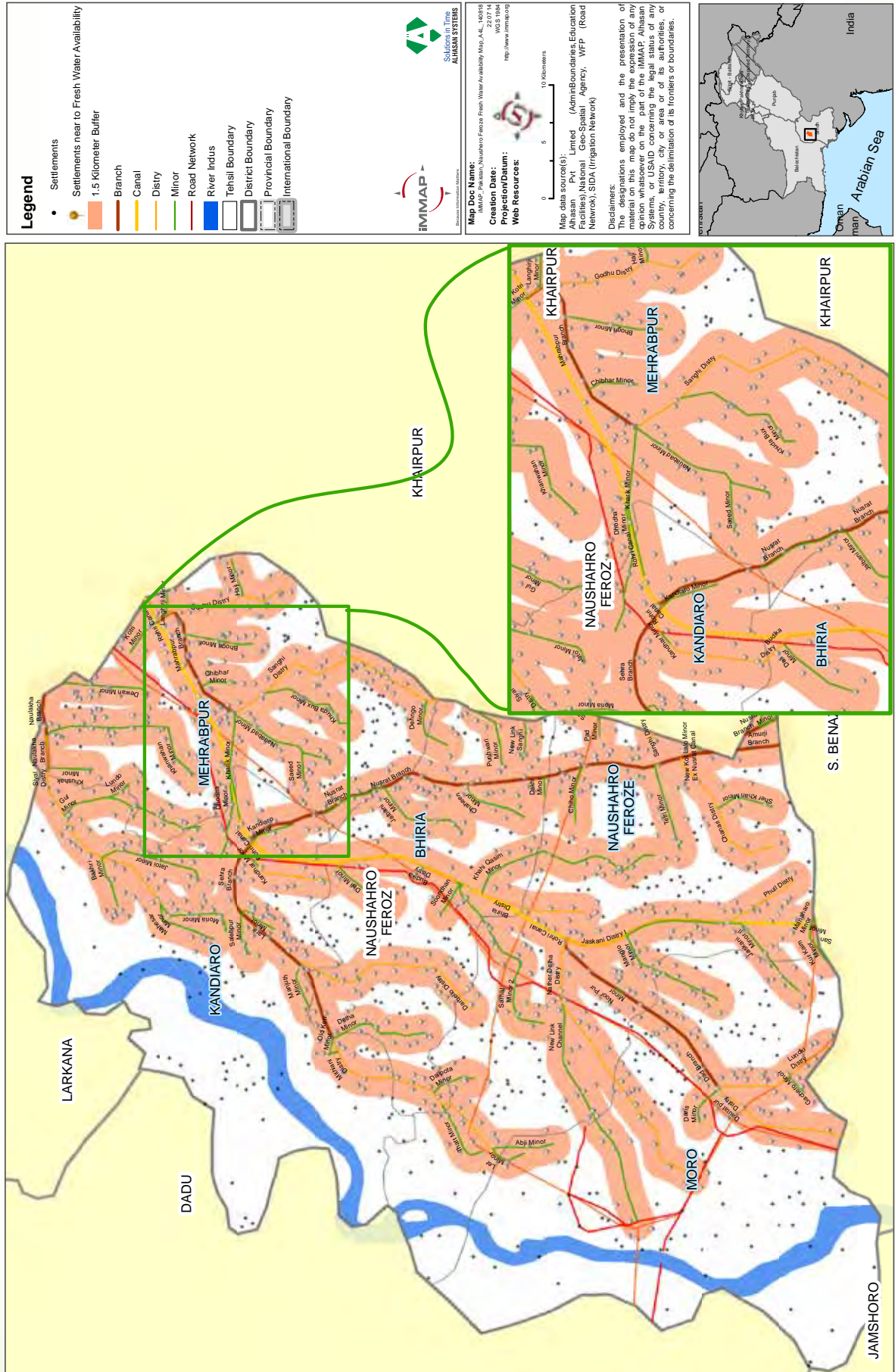
August, 2014





# Sindh-Naushahro Feroze Fresh Water Availability Map

Date (August 2014)



- Legend**
- Settlements
  - Settlements near to Fresh Water Availability
  - 1.5 Kilometer Buffer
  - Branch
  - Canal
  - Disty
  - Minor
  - Road Network
  - River Indus
  - Tehsil Boundary
  - District Boundary
  - Provincial Boundary
  - International Boundary



**Map Doc Name:** Naushahro Feroze Fresh Water Availability Map\_AUSMAN 137326  
**Creation Date:** 21/07/14  
**Projection Datum:** WGS 1984  
**Web Resource:** <http://www.immap.org>

Map data source(s):  
 Aghsan Pvt. Limited (AdminBoundaries, Education Facilities) National Geo-Spatial Agency, WFP (Road Network), SIDA (Irrigation Network)

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### 1.1.7 Solid Waste Management

“Solid Waste Management (SWM) is the generation, separation, collection, transfer, transportation and disposal of waste in a way that takes into account public health, economics, conservation, aesthetics, and the environment, and is responsive to public demands.”<sup>3</sup>

#### **Current Scenario of Solid Waste Management (SWM)**

Updated and proper data is not found on the current situation of Solid waste management system in the district Naushahro feroze. Likewise such other major districts of Sindh, District Naushahro froze also has no proper solid waste management system, while indiscriminate dumping and open burning of waste is a common practice.

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

According to the official document (Financial record) of Govt. of Sindh Finance department forwarded for ‘Release of remaining 50% share (Years; 2004-05 & 2005-06) to TMA’s on account of Water supply, Sanitation and Solid waste management ‘shown as total Rs.4, 702,663 for the district Naushahro feroze. It clearly depicts the fact that either the released funds/budget for such basic public facilities including solid waste management are not invested properly for the concerned operational & management tasks, or may be the poor solid waste management situation in the concerned district is only due to the poor check and balance at TMA’s level. <sup>4</sup>

During socio-economic survey conducted by a team of the Asian Development Bank (ADB) in the areas of Badin, Naushahro Feroze and Dadu it was found that; conditions of drainage and water supply were in pathetic condition and the citizens of these localities were facing problems. The team also holds a meeting with the Dadu taluka nazim, Naban Lund, and concern TMA officials. During the meeting Asian Development Bank (ADB) Gender & Market specialist Fiza Qureshi who was leading the survey assure from ADB a loan of 50 million dollars to improve water supply, sanitation, sewerage and solid waste management in concern areas including Naushahro feroze. She also added that 40 per cent of the loan would be spent for the betterment of Katchi Abadis (villages) and the remaining 60 per cent would be spent in middle class areas. It was also alleged by the team members that the loan the ADB had given last time was not spent honestly. Therefore, the bank would keep a strict check on all plans and ideas this time, as well as, schemes could only be start with the consultation of stake holders, NGOs, technical staff and citizens. The community mobilizer of the team said that the bank had

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<sup>3</sup> Journal of Environmental and Occupational Science Environ Occup Sci 2012; 1(2):129-131

<sup>4</sup> Govt.of Sindh: Finance department; Release of remaining 50% share to TMA’s on account of Water supply, Sanitation and Solid waste management, Years;(2004-05 & 2005-06)

completed the survey in Badin, Naushahro Feroze and Khairpur, while the survey at Dadu was still in progress.<sup>5</sup>

## 1.2 Demography

### 1.2.1 Population Characteristics

In Pakistan, male population is more than the female population and is among those four countries where life expectancy for female, at birth, is less than that of males<sup>6</sup>. Sex ratio in district Naushahro Feroze is 106 male per 110 females, which is equal to the ratio at the National level that is also 106<sup>7</sup>. Though there could be other possible reasons for such a difference in male to female ratio, one probable reason of this ratio could be underreporting of females during national surveys. Besides, a very high maternal mortality rate<sup>8</sup> and poor health care at the district and provincial level<sup>9</sup> are likely to be instrumental for this difference. District Naushahro Feroze, like majority of the other districts in Sindh, is rural by its characteristics. 82 percent of the population resides in rural areas as compared to the 18 percent that resides in the urban areas.

*Table 1.2-1: Estimated Population of District for 2014*

AGE GROUP (IN YEARS)	TOTAL			RURAL			URBAN		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
<b>ALL AGES</b>	1,407,178	735,662	671,516	1,158,232	606,708	551,523	248,946	128,954	119,992
00 -- 04	233,497	119,714	113,783	195,054	100,219	94,834	38,444	19,495	18,949
05 -- 09	238,181	127,512	110,669	197,507	106,030	91,477	40,674	21,482	19,192
10 -- 14	170,391	96,479	73,912	138,249	79,279	58,970	32,142	17,199	14,943
15 -- 19	145,039	73,668	71,371	117,860	59,869	57,991	27,179	13,799	13,380
20 -- 24	130,743	62,315	68,428	106,823	50,627	56,197	23,920	11,689	12,231
25 -- 29	108,749	56,098	52,650	89,580	46,134	43,446	19,169	9,964	9,205
30 -- 34	83,595	45,483	38,111	68,292	37,126	31,166	15,303	8,357	6,946
35 -- 39	58,289	31,450	26,839	47,537	25,648	21,888	10,752	5,802	4,950
40 -- 44	59,840	28,791	31,049	49,136	23,572	25,564	10,704	5,219	5,485
45 -- 49	48,413	24,664	23,749	40,268	20,512	19,756	8,145	4,152	3,993
50 -- 54	40,076	20,972	19,104	33,205	17,456	15,749	6,872	3,517	3,355
55 -- 59	26,379	14,420	11,959	21,473	11,803	9,670	4,906	2,618	2,289
60 -- 64	25,170	13,461	11,708	20,830	11,120	9,711	4,340	2,342	1,998
65 -- 69	13,812	7,629	6,183	11,407	6,317	5,090	2,405	1,312	1,093
70 -- 74	12,170	6,214	5,956	10,228	5,196	5,032	1,942	1,018	924
75 & ABOVE	12,833	6,789	6,044	10,783	5,800	4,983	2,049	989	1,061

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

<sup>5</sup> News source; <http://www.dawn.com/news/166571/dadu-adb-team-conducts-survey> (Accessed on August 19, 2014)

<sup>6</sup> A profile for District Badin: 2009, South-Asia Partnership Pakistan <http://www.sappk.org/district-profiles-with-focus-on-livelihood-related-issues-0> retrieved on 05-03-2012

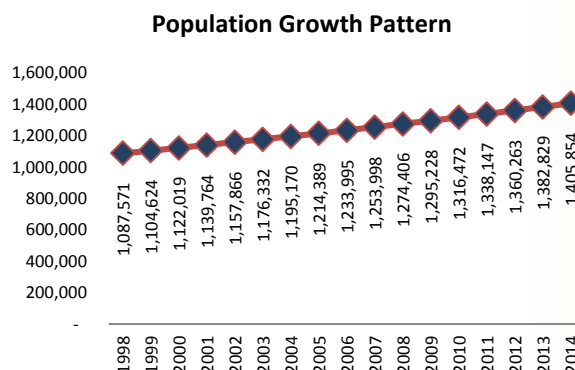
<sup>7</sup> Labour Force Survey 2010-11: *Pakistan Bureau of Statistics*

<sup>8</sup> 0.5 for Sindh, Pakistan Demographic and Health Survey, 2006-07: National Institute of Population Studies, Pakistan. pp. 179

<sup>9</sup> Mean distance from hospital/dispensary is 12 km for Sindh: Pakistan Mouza Statistics, Table 15

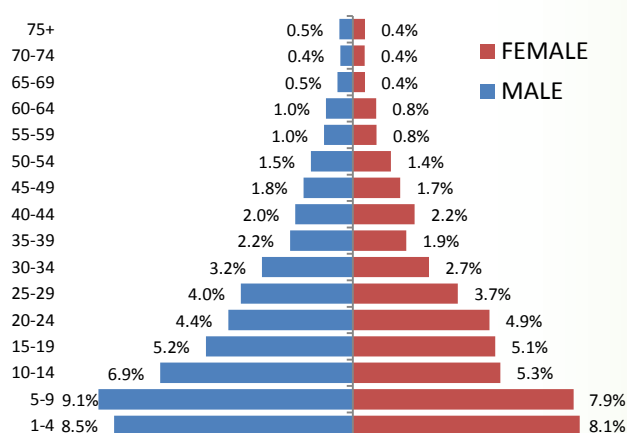
### 1.2.2 Population Growth Pattern

In 1998, the total population of the district was 1,087,571. Population of district Naushahro Feroze has an estimated<sup>10</sup> growth rate of 1.61% per annum, which means that the population will double itself in 43.48 years<sup>11</sup> from 1998. 45.63 percent of the population is below 15 years of age and 2.76 percent is 65 years or above. The estimated population for 2014 is 1,405,854, showing a 29% increase in 12 years from 1998.



### 1.2.3 Population Distribution by Age and Gender

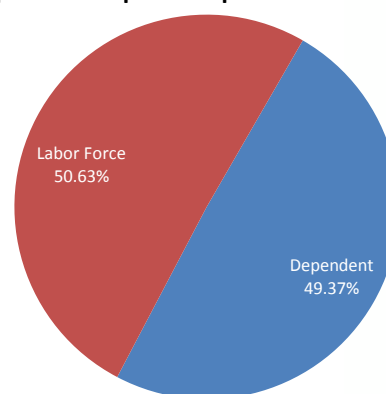
Out of the total population, 52 percent are males and 48 percent are females. Largest cohort of the population is 5-9 years, which decreases with 5 years interval. Total population in this cohort is 237,957. Except in the age groups of 20-24 and 40-44, in all the rest of the age groups, male population outnumbers female population.



### 1.2.4 Dependent Population

The economically dependent population is considered to be the population that is less than 15 years and more than 65 years of age. In addition to them, widowed, and/or divorced women are also considered dependent population. Dependent population in the case of Naushahro Feroze district is 49.37 percent of the total population and the working population is 50.63 percent, which shows that dependency ratio<sup>12</sup> in the district is 94 percent.

**Dependent Population percent**



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

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

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

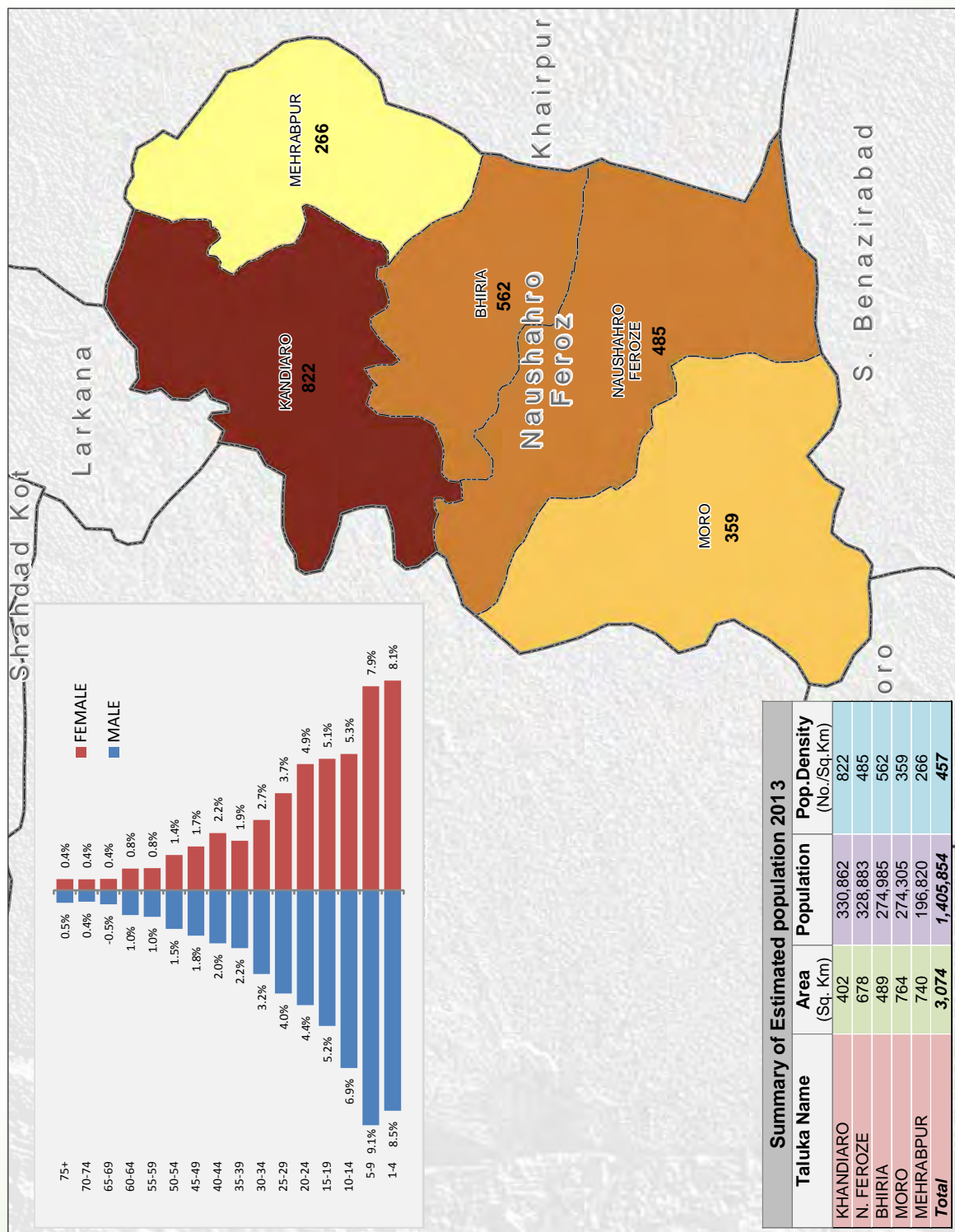
Table 1.2.2: Population Details by Taluka (Estimated 2014)

Taluka	Population	Male	Female	Pop Density	Sex Ratio	Average HH Size	Estimated HH
Khandiaro	330,862	172,972	157,890	822	110	5.9	56,078
N. Feroze	328,883	171,937	156,945	485	110	5.8	56,704
Bhiria	274,985	143,760	131,225	562	110	6.1	45,079
Moro	274,305	143,405	130,900	359	110	5.3	51,756
Mehrabpur	196,820	102,896	93,924	266	110	5.8	33,934
<b>Total</b>	<b>1,405,854</b>	<b>734,970</b>	<b>670,884</b>	<b>457</b>	<b>110</b>	<b>5.8</b>	<b>209,617</b>

Source: Estimated using Table 1 of Census 1998



# Sindh - Naushahro Feroze Population Density Map August, 2014





## 1.3 Livelihood

### 1.3.1 Main Sources of Livelihood/Income

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

The following table shows the number of rural mouzas reporting sources of employment in district Naushahro Feroze. Majority of the male population is associated with agriculture (in 45% of rural mouzas). While in the category of some, services sector, personal business and labor are most frequently reported sources of employment for the male population.

Since district Naushahro Feroze is a rural district, where 82% of the population resides in rural areas, sources of livelihood are less diversified for the resident population and as mentioned above, Agriculture sector is the dominant employer for the population of this district. The Agriculture Census 2000 classifies rural households under three broad categories: agricultural households that operate land as owner-cultivators or tenants; livestock owners; and non-agricultural households. In district Naushahro Feroze, the share of non-agricultural households is 46% percent, while agricultural households and livestock owners constitute 25% percent and 29% percent respectively<sup>13</sup>.

Given the cultural trait of Sindh and rural areas, where women actively work alongside the men, the female participation in economic activity is reasonable in this district, as 55 mouzas (25%) have reported that women are also engaged in agriculture. In the category of some, services sector and casual labor are sources of livelihood for the female population.

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

GENDER	QUANTIFICATION	SERVICE	AGRICULTURE	TRADE	INDUSTRY	PERSONAL BUSINESS	OVERSEAS EMPLOYEMENT	LABOUR
MALE	MOSTLY	1	99	1	-	2	1	62
	SOME	184	107	85	30	134	25	138
	NONE	36	15	135	191	85	195	21
FEMALE	MOSTLY	3	55	-	-	-	-	53
	SOME	116	110	12	12	53	9	125
	NONE	102	56	209	209	168	212	43

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

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

- Mostly: population of 50 percent and above
- Some: population between 1 percent and 50 percent

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

- None: less than or equal to 1 percent

### 1.3.2 Agriculture

Agriculture sector plays a significant role in the overall economic performance of Pakistan. Currently, this sector provides employment opportunities to 45% of the labor force in Pakistan. This sector provides sources of livelihood to 60% of the population in the rural areas. Agriculture contributes 21% to the Gross Domestic Product (GDP) of Pakistan<sup>14</sup>.

Naushahro Feroze contributes significantly in agriculture sector of Sindh because its climate is suitable for production of various food items including the Kharif crops of maize, rice, sugarcane, cotton and the Rabi crop of wheat. In addition to these, fruit orchards are abundant in this district. Mouza statistics have reported that fruit orchards are widespread in 57% of the mouzas<sup>15</sup>.

Total reported area of the district is 303,000 hectares, out of which 161,000 hectares (53%) are cultivated. Within the cultivable area, 169,000 hectares are net sown<sup>16</sup> whereas 30,000 hectares are currently fallow lands<sup>17</sup>. The remaining 112,000 hectares of the total reported area is un-cultivated; out of which 53,000 hectares are not available for cultivation, 10,000 hectares are forests and 49,000 hectares are culturable waste<sup>18</sup>.

*Table 1.3-2: Land Utilization Statistics of District Naushahro Feroze (000 Hectares)*

Naushahro Feroze		Area
<b>Reported Area</b>		303
<b>Cultivated</b>	Total	161
	Current Fallow	30
	Net Sown	169
<b>Un-cultivated Area</b>	Total	112
	Culturable <sup>19</sup> Waste	49
	Forest	10
	Not available for Cultivation	53

Source: Sindh Development Statistics 2011

<sup>14</sup> Economic Survey of Pakistan (2013-14), Ministry of Finance, Government of Pakistan

<sup>15</sup> Sindh Mouza Statistics, (2008), Agriculture Census Organization, Government of Pakistan pp.80

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

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

<sup>18</sup> Sindh Development Statistics, (2011), Lahore University of Management Sciences (LUMS), pp. 75

<sup>19</sup> **Culturable waste** means all cultivable land not actually cultivated. It should include all grazing and other land not included under forest. Sindh Development Statistics 2011, pp 81.

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

Table 1.3.3: Food and Cash Crops Cultivated in District Naushahro Feroze

Type	Crop	Area Sown in 2008-09 (000 Hectares)	Production in 2008-09 (000 Tonnes)	Area Sown in 2010-11 (Acres) FAO
Food	Wheat	100.2	376.2	-
	Rice	608	20.7	7,942
Cash	Sugarcane	20.9	1,137.8	47,569
	Cotton	36.9	186.6*	101,400

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

\*production of cotton crop is measured in bales

### 1.3.3 Industry

Industries in Naushahro Feroze are mainly associated with agriculture. The famous among these are the sugar mills since sugarcane is cultivated on large scale in this district. In the census of manufacturing industries 2000-01, 14 industries were reported in this district with a total asset value of 794 billion rupees in that year. These industries reported a daily employment of 1,217 persons in 2000-01<sup>20</sup>.

### 1.3.4 Livestock

Livestock sector maintains a unique position within the agriculture sector of Pakistan. It contributes about 56% to the value addition in agriculture sector of Pakistan. It also contributes 11% to the GDP of Pakistan<sup>21</sup>. Besides, this sector provides foreign earnings, dairy products' needs, food security and daily cash income to the people of Pakistan. It helps to reduce the income inequalities, especially in case of emergencies (floods, crop failure). Hence this sector is considered as most secure source of livelihood for small farmers and landless poor. The share of Sindh province in livestock population of Pakistan is 20%. The livestock population of district Naushahro Feroze is given in the following table.

Table 1.3-3: Livestock in District Naushahro Feroze

Livestock	Population
Cattle	334,758
Buffalo	530,530
Sheep	51,564
Goat	820,422
Camel	3,711
Horse	627
Mule	1,204
Ass	35,593
Domestic Poultry	923,006

Source: Livestock Census (2006)

<sup>20</sup> Sindh Mouza Statistics, (2008), Agriculture Census Organization, Government of Pakistan pp. 159

<sup>21</sup> Economic Survey of Pakistan (2013-14), Ministry of Finance, Government of Pakistan

## 1.4 Food Security

Food security can be broadly divided into four components<sup>22</sup>:

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

### 1.4.1 Availability

Wheat along with other crops like maize, cotton and sugarcane is produced in most of the rural mouzas of district Naushahro Feroze. Besides, vegetables and fruits are also produced in the district. As the following table shows, wheat and rice are cropped in 93% and 63% of the mouzas respectively. Wheat is dominant among food crops cultivated in this district. The table also shows that the district also produces cash crops and the overall the crop based food is surplus in the district.

Table 1.4-1: Number of Mouza Reporting Major Crops

ADMINISTRATIVE UNIT	NUMBERS OF MOUZAS REPORTING MAJOR CROPS							
	WHEAT	RICE	COTTON	SUGARCANE	MAIZE	PULSES	ORCHARDS	VEGETABLES
Naushahro Feroze District	218	147	195	161	73	74	126	132
Naushahro Feroze Taluka	58	33	46	36	10	27	23	25
Bhiria Taluka	31	30	30	30	12	11	24	21
Moro Taluka	49	36	49	42	13	10	28	35
Kandiaro Taluka	46	21	36	23	25	26	21	29
Mehrab pur Taluka	34	27	34	30	13	-	30	22

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

Food availability not only depends on the obtainability of wheat but also depends on other cereals like maize etc. As far as cereal food is concerned, this district is producing surplus food for its food requirements. In addition to cereals, animal based food (meat, milk, milk products) availability is also important for total food availability, and that is also produced in surplus quantities in the district. Combining both the crop based and animal based food production, district Naushahro Ferozee is producing surplus food<sup>23</sup>.

<sup>22</sup> Define by Food & Agriculture Organization

<sup>23</sup> Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

### 1.4.2 Access

Per capita availability of food items alone is not a reliable indicator of food security. If the available food is socio-economically not accessible to the masses, it cannot make a society food secure. The income level of the households reflects access to food, capacity of consumption and even food poverty. Average monthly income of a household (HH) in this district is less than Rs.11, 000/-, which is considered as extremely low<sup>24</sup>.

Child dependency (ratio between children and household members in economically active age group) is one of the limiting factors in meeting the daily needs of households and is an important indicator to measure access to food. The increased dependency ratio enhances the spending of the household on child care and food, which results in per capita reduction of socio-economic access to food. Child dependency ratio is very high in this district. The share of household expenditures on food is 61.8% of the total income in Sindh. So the inadequate level of income, high food expenditures, high child dependency and high inflation (particularly food inflation) hinders access to food<sup>25</sup>.

The table below shows physical access to food in district Naushahro Feroze by providing distances of different mouzas from the wholesale markets. Average distance from the fruit and vegetable market of a mouza is 9 kilometres whereas the distance from the grain market is 8 kilometres. Such long distances impede access to food.

*Table 1.4-2: Distance of Mouzas from Wholesale Markets*

Type of facility		Rural Populated Mouzas	Overall Mean Distance (KM)	Mouzas by Distance (in Kilometres) by Facility				
				Less Than 1	1 - 10	11 – 25	26 – 50	51 & Above
Livestock Market	Number	221	9	16	155	49	1	-
	Percent	100		7	70	22		
Grains Market	Number	221	8	18	158	45	-	-
	Percent	100		8	71	20		
Fruit Market	Number	221	9	12	153	55	1	-
	Percent	100		5	69	25		
Vegetable Market	Number	221	9	14	153	53	1	-
	Percent	100		6	69	24		
Govt. Procurement Centre	Number	221	8	33	150	36	2	-
	Percent	100		15	68	16	1	

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

<sup>24</sup> Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

<sup>25</sup> Ibid



### 1.4.3 Utilization

In addition to food availability and access, proper assimilation of food in the body is essential. Food utilization and stability depicts this absorption of food and its sustainability. Improved sanitation facility, clean drinking water, health infrastructure and individual health status along with female literacy play vital role in food absorption. According to Food Security Analysis (FSA) 2009, access to improved drinking water is reasonable in this district<sup>26</sup>.

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

N. Feroze	Water Delivery System				
	Tap Water	Hand Pump	Motor Pump	Dug Well	Other
<b>Total</b>	14	64	22	0	0
<b>Urban</b>	1	46	53	0	0
<b>Rural</b>	16	68	16	0	0

Source: PSLM 2012-13

Sanitation conditions in district Naushahro Feroze are relatively poor where only 43% of the households use flush toilets and 52% of the households have non-flush toilets. The sanitation facilities are comparatively poorer in rural areas of the district and the female literacy rate is 56% in rural areas.

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

Flush			Non-Flush			No Toilet		
Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
98	32	43	2	62	52	0	6	5

Source: PSLM 2012-13

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

<sup>26</sup> Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

## 1.5 Health and Immunization

### 1.5.1 Health Facilities

According to Health Facility Assessment 2012 (HFA) by Technical Resource Facility (TRF), total health facilities in district Naushahro Feroze are 95. There are two Tehsil headquarter hospitals in district<sup>27</sup>. These health facilities are sufficient for only 34% of the estimated 2014 population of the district<sup>28</sup>. Table 1.5.1 shows the details of health facilities.

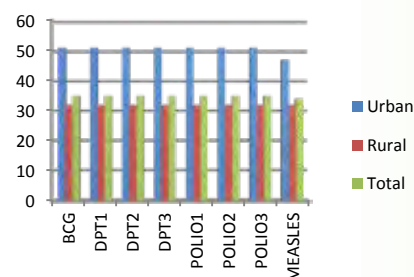
*Table 1.5-1: Number of Health Facilities by Type*

Type	Number	Bed Strength
Teaching Hospitals	0	0
District headquarter hospital	1	105
Tehsil headquarter hospitals	2	50
Rural health centres	12	92
Basic Health units	48	96
Govt. Rural Dispensaries	30	-
MCH centres	1	-
Sub health centres	1	-
<b>Grand Total</b>	<b>95</b>	<b>343</b>

Source: Health Facility Assessment, District Naushahro Feroz 2012

### 1.5.2 Immunization

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



In district Naushahro Feroz, around 48% pregnant women have received tetanus toxoid injections. In urban areas this percentage is 62% and in rural areas it is 37%<sup>29</sup>. Record based<sup>30</sup> immunization data of district Naushahro Feroz shows that 34% (Male 38%: Female 29%) of the children aged 12-23 months have received full immunization. In the urban areas this percentage is 47 percent (Male 35%: Female 57%) and in the rural areas it is 32% (Male 39%: Female 40%). The corresponding graph shows the percentage of children of 12-23 months that have been immunized by the type of Antigen based on records<sup>31</sup>.

<sup>27</sup> Health Facility Assessment, District Naushahro Feroze 2012

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

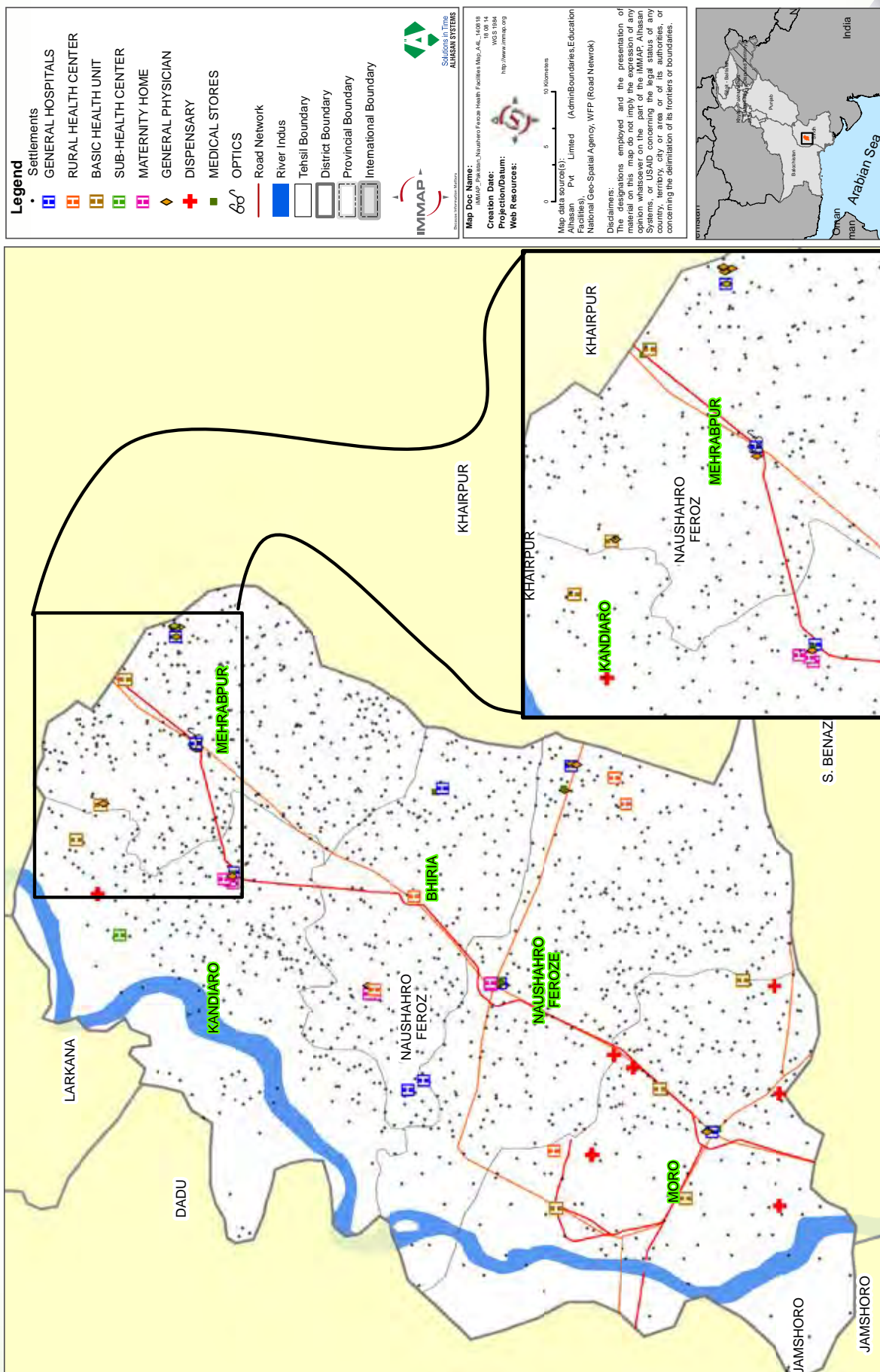
<sup>29</sup> Table 3.11, Pakistan Social and Living Standards Measurement Survey (PSLM)2012-13

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

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

# Sindh-Naushahro Feroze Health Facilities Map

Date (August 2014)



## 1.6 Education

### 1.6.1 Highlights

Literacy Rate (10 years and above)	60%
Adult Literacy Rate (15 years and above)	57%
GPI Primary	0.68
GPI Middle	1.00
GPI Secondary	0.48
GPI Higher Secondary	0.67
Population that has ever attended School	52%
Male	66%
Female	36%
Population that has completed primary level or higher	44%
Male	56%
Female	30%
Student Teacher Ratio	34
Primary	31
Middle	29
Secondary	39
Higher Secondary	48

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

### 1.6.2 District School Enrolment Ratio

The education status is quite better in district Naushahro Feroz. The overall literacy rate (for the population of 10 years and above) is 60%; for male it is 77% and for female it is 40%. For the urban rural comparison, urban literacy rate is higher than the rural, which is 77% (male: 87% and female: 66%); whereas the rural literacy rate is 56% (male: 75% and female: 35%). Adult literacy rate (for the population of 15 years and above) is 57 %. Gross Enrollment Rate<sup>32</sup> (GER) at the primary level in Naushahro Feroz is 79% (Male: 92%, Female: 66%), in urban community it is 98% (Male: 98%, Female: 98%) and in rural community it is 75% (Male: 90%, Female: 59%). Net Enrollment rate<sup>33</sup> (NER) at the primary level in district Naushahro Feroz is 55% (Male: 59%, Female: 51%), in urban community it is 70% (Male: 69%, Female: 71%) and in rural community it is 52% (Male: 57%, Female: 47%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural, Urban and Gender at different levels.

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

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

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

Urban/ Rural/ District	Gender	Gross Enrolment Rates			Net Enrolment Rates		
		Primary Group (5-9)	Middle	Matric	Primary	Middle	Matric
			Group (10-12)	Group (13-14)	Group (5-9)	Group (10-12)	Group (13-14)
Urban	Male	98%	73%	80%	69%	33%	27%
	Female	98%	67%	82%	71%	33%	32%
	Total	98%	71%	81%	70%	33%	29%
Rural	Male	90%	58%	48%	57%	19%	11%
	Female	59%	25%	24%	47%	13%	6%
	Total	75%	45%	38%	52%	16%	9%
Total	Male	92%	60%	53%	59%	21%	14%
	Female	66%	34%	35%	51%	17%	11%
	Total	79%	49%	45%	55%	19%	12%

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

### 1.6.3 Gender and Level Wise Details

The total enrollment of students in the government schools of district Naushahro Feroz is 234,526 (Male: 141,220 and Female: 93,306). Out of a total of 6,992 teachers, 5,415 are male and 1,577 are female teachers. This illustrates that one teacher is teaching averagely 34 students. The total boys' schools of District Naushahro Feroz are 565, and the total female schools are 334. Besides, there are 1,518 mixed gender schools. Thus, the total number of schools is 2,417 and averagely every school has an enrolment of 97 students and a teaching staff of around 3<sup>34</sup>.

#### Primary

The total number of primary level schools, that are reported, is 2,179 and the total enrollment at the primary level is 156,928 (Male: 93,543 and Female: 63,385). Total number of teachers, at the primary level, is 4,984, out of which 3,920 are male and 1,064 are female teachers. Thus, on an average, each primary school has an enrolment of 72 students with a teaching staff of 2. However, the student class ratio is 50 and each school has averagely around 1 class rooms.

#### Middle

There are a total of 150 middle schools reported. Total enrollment, at the middle level, is 16,141 (Boys: 8,055 and Girls: 8,086). The total number of teachers at the middle level is 555, out of which 386 are male teachers and 169 are female teachers. Thus, on an average, each middle school has an enrolment of 108 students with a teaching staff of 4. However, the student class ratio is 61 and each school has averagely around 2 class rooms.

#### Matric

There are a total of 69 secondary schools. Total enrollment at the secondary level is 37,066 (Boys: 24,995 and Girls: 12,071). The total number of teachers at the secondary level is 940, out

<sup>34</sup> District Education Profile, Naushahro Feroze 2012-13



of which male teachers are 756 and female teachers are 184. Thus, on an average, each secondary school has an enrolment of 537 students with a teaching staff of 14. However, the student class ratio is 53 and each school has averagely around 10 class rooms.

### Higher Secondary

There are a total of 19 higher secondary schools in the district. Total enrollment at the higher secondary level is 24,391 (Boys: 14,627 and Girls: 9,764). The total number of teachers at the higher secondary level is 513, out of which male teachers are 353 and female teachers are 160. Thus, on an average, each higher secondary school has an enrolment of 1,284 students with a teaching staff of 27. However, the student class ratio is 109 and each school has averagely around 12 class rooms.

Table 1.6.2: Enrolment and Educational Facilities by level and Gender<sup>35</sup>

Level	Enrolment			School Facilities				Teachers		
	Boys	Girls	Total	Boys	Girls	Mixed	Total	Male	Female	Total
Primary	93,543	63,385	156,928	508	267	1,404	2,179	3,920	1,064	4,984
Middle	8,055	8,086	16,141	34	48	68	150	386	169	555
Secondary	24,995	12,071	37,066	18	12	39	69	756	184	940
Higher Secondary	14,627	9,764	24,391	5	7	7	19	353	160	513
Total	141,220	93,306	234,526	565	334	1,518	2,417	5,415	1,577	6,992

<sup>35</sup> District Education Profile, Naushahro Feroze 2012-13

# Sindh-Naushahro Feroze Education Facilities Map

Date (August 2014)



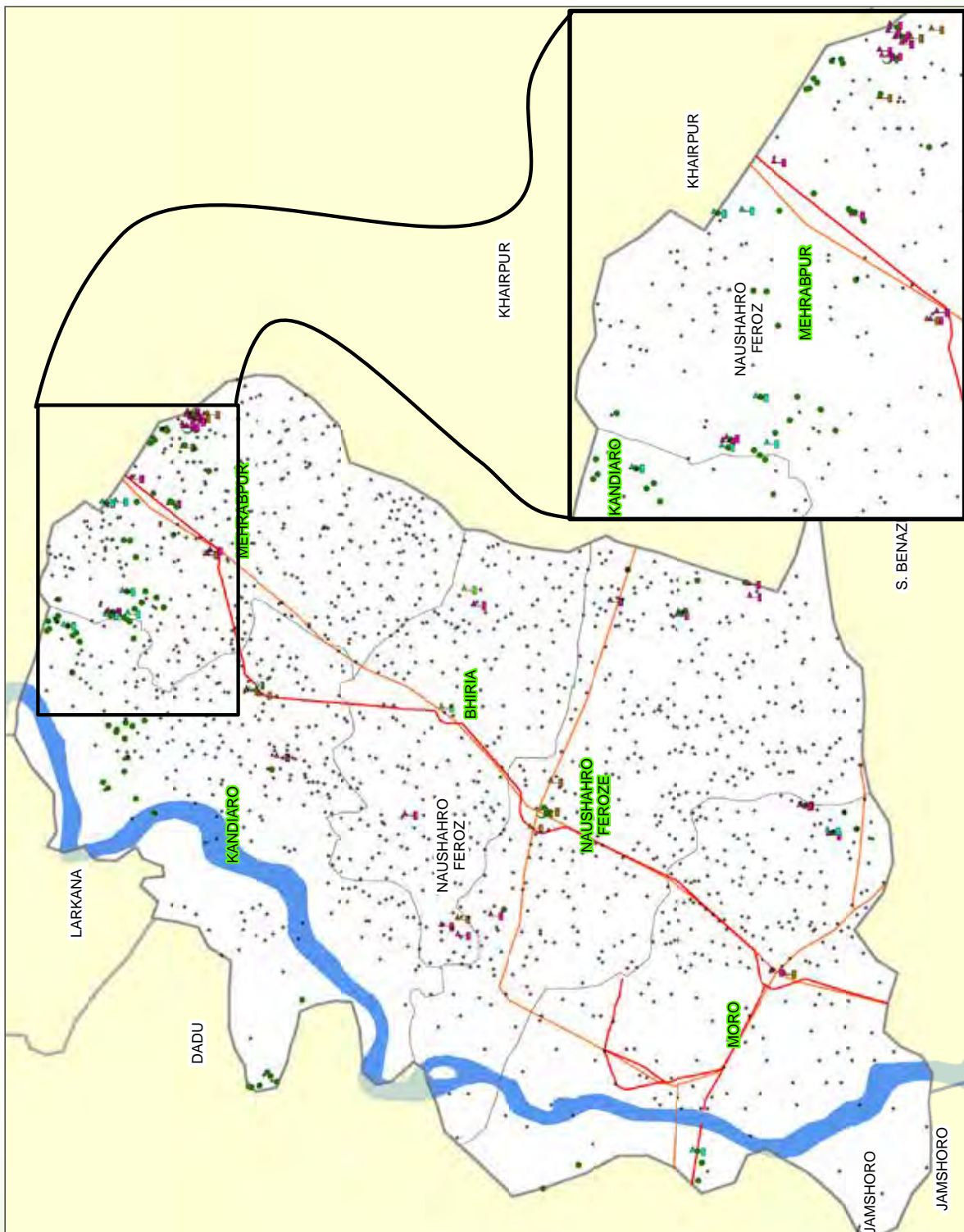
- Legend**
- Settlements
    - COLLEGE
    - HIGH SCHOOL
    - HIGHER SECONDARY
    - MASJID SCHOOL
    - MIDDLE
    - PRIMARY
  - Wetlands
  - Road Network
  - River Indus
  - Tehsil Boundary
  - District Boundary
  - Provincial Boundary
  - International Boundary



Map Doc Name: Naushahro Feroze Education Facilities Map\_AE\_140816  
 Creation Date: 18/08/14  
 Projection/Datum: WGS 1984  
 Web Resources: <http://www.immap.org>

Map data sources:  
 Alhasan Pvt. Limited (Admin Boundaries, Education & Health Facilities)  
 National Geo-Spatial Agency, WFP (Road Network)

**Disclaimers:**  
 The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the IMMAP, Alhasan Systems, or USAID concerning the legal status of any territory, or the endorsement or acceptance of boundaries concerning the delimitation of its frontiers or boundaries.



## 2 Disaster History and Its Impact

### 2.1 Disaster in District

#### 2.1.1 Disaster History

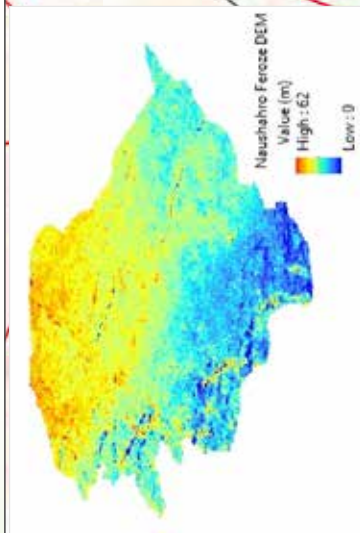
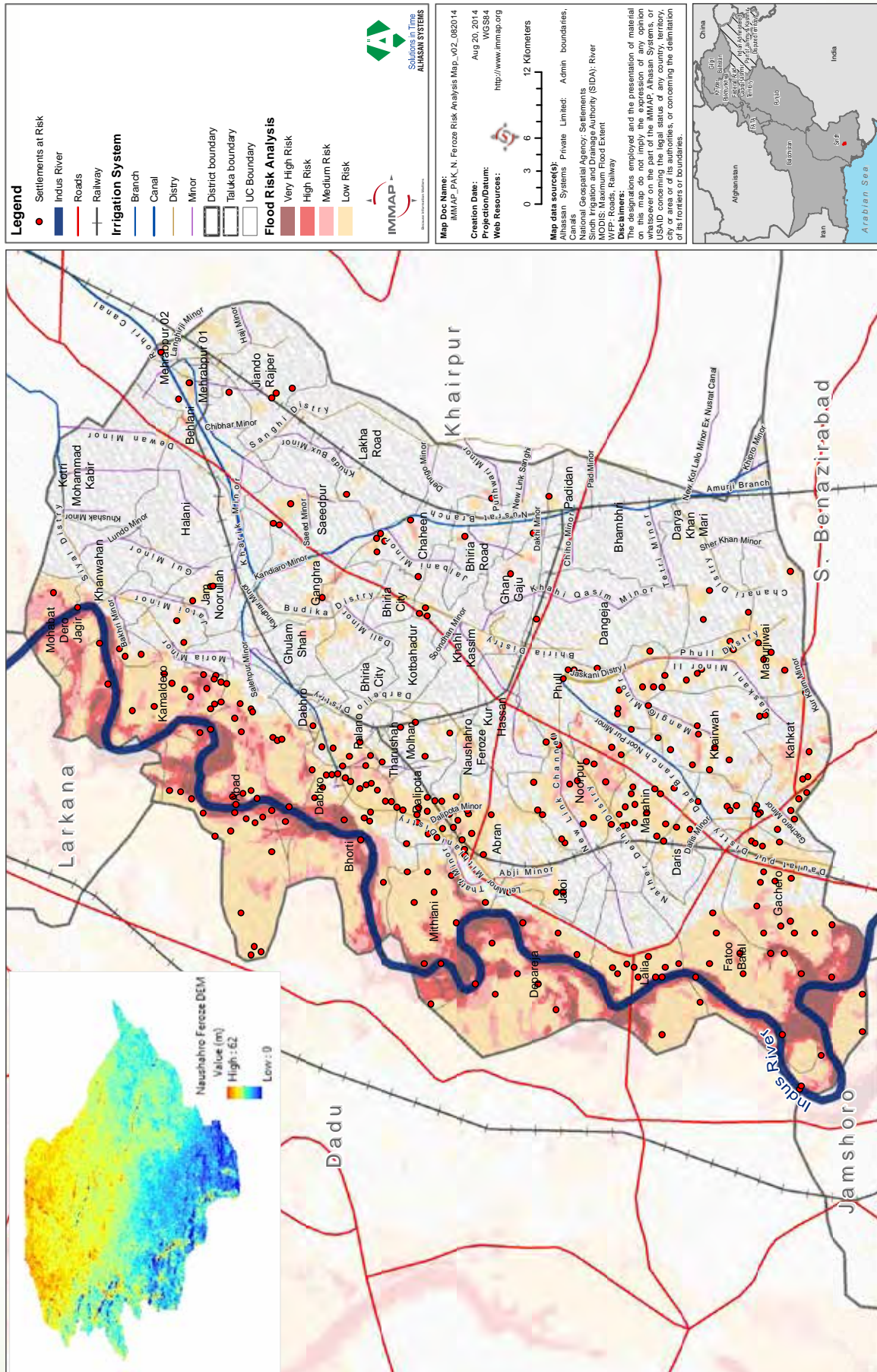
Naushahro Feroze district is one of the oldest districts of Sindh. It was hit by 2010 and 2011 rains/Riverine floods. The relative severity of floods was ranked as *medium* in 2010 and *severe* in 2011. River Indus, after receiving water from 5 of its tributary rivers, causes floods in the northern and southern parts of Sindh province. The upper region of Sindh Province comprises of the districts of Jacobabad, Shikarpur, Kashmore, Larkana and Kamber Shahdadkot on the right bank of River Indus and Ghotki, Sukkur, Khairpur, NaushahroFerozee and Shaheed Benazirabad on the left bank of River Indus. These districts on the right and left banks of River Indus are prone to severe threat when River Indus is in high flood. The districts in the lower Sindh prone to riverine flooding include Dadu, Jamshoro and Thatta on the right bank of River Indus and Tando Muhammad Khan, Matiari and Hyderabad on the left bank. The length of River Indus along the province is 750 kms long.

Flood affected union councils of district Naushahro Feroze: Bhiria city , Chaheen , Dalipota , Jiando Rajper, Palano, Abad, Behlani, Bhorti, Dabhro, Ghulam Shah , Halani, Kamaldero, Khanwahan , Kotri Mohammad Kabir, Mehrabpur 02, Mohabat Dero Jagir , Unknown18, Depareja, Fattoo Balal, Gachero, Jatoi, Kahkat, Khairwah, Lalia, Manahin, Abran, Bhambhri, Dangeja, Darya Khan Mari, Masurjiwai, Mithiani, Naushahro Ferozee and Padidan.



# Sindh - Naushahro Feroze Risk Analysis Map

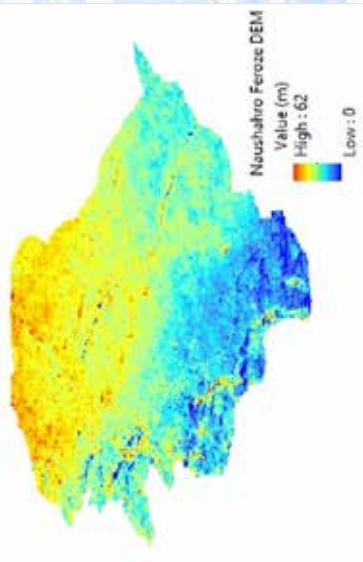
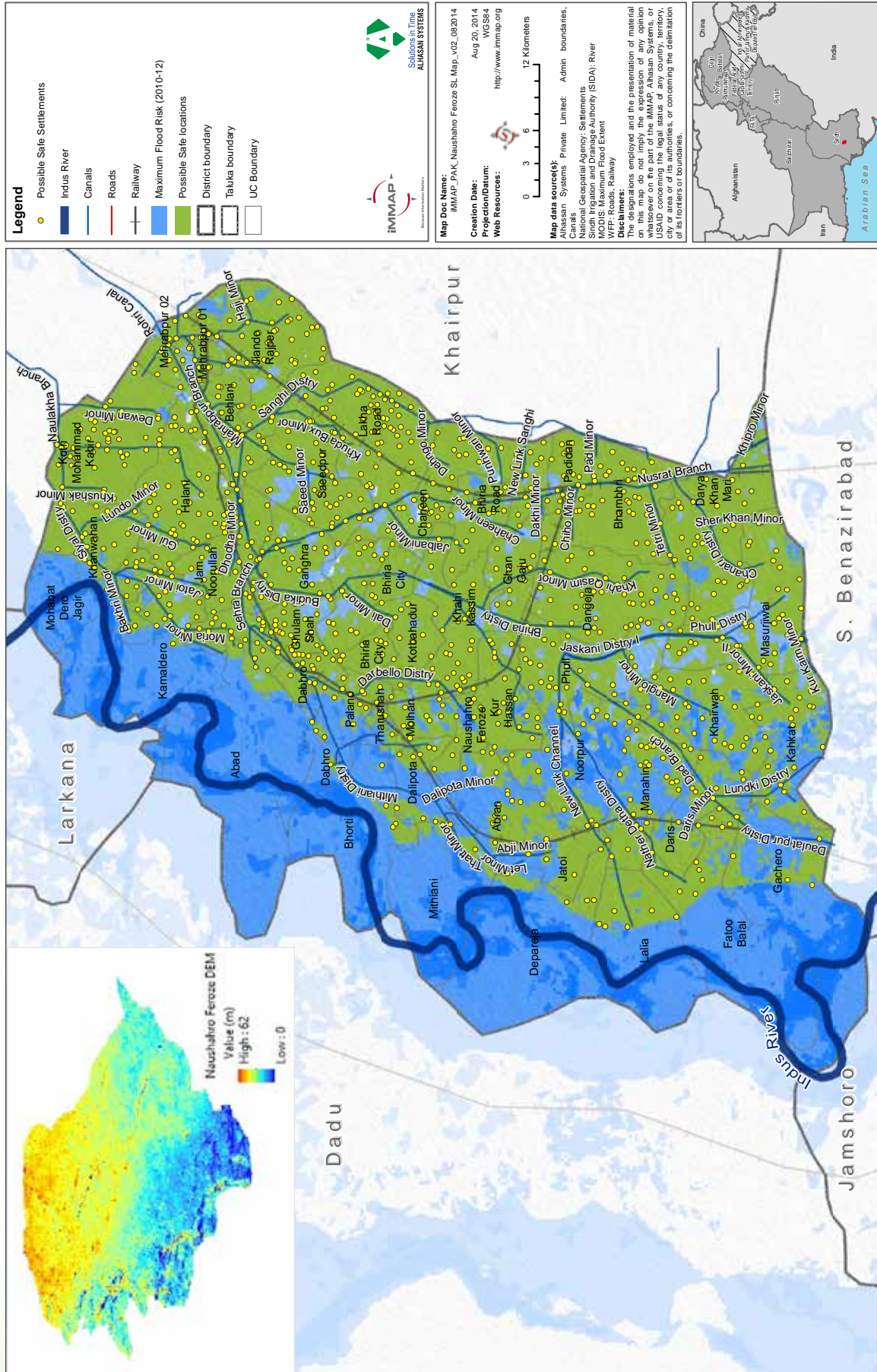
Aug, 2014





# Sindh - Naushahro Feroze Possible Safe Locations Map

Aug, 2014





### 2.1.2 Impact of Disaster on Demography

As mentioned above, district Naushahro Feroze was moderately hit by floods in 2010; whereas it was again severely hit in 2011 by rains/floods. After 2010 floods, the district falls under the category of medium risk districts, as declared by the PDMA Sindh<sup>36</sup>.

In 2011 rains/floods, the extent of damage was not moderate at all as assessments showed that 431 villages/settlements of 51 union councils in all the 5 talukas were affected. A population of 671,499 persons was affected and there were 26 casualties and 50 injuries. In total, 31,455 houses were damaged. Geographically (all talukas and its UCs) 92% of the whole district was inundated and 44 percent of the sown area was affected due to these rains/floods. Table 2.2.1 summarizes the losses and damages of 2010 floods and 2011 rains.

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

Attribute	Figures 2011	Source
Total Households 2010	216,221	Estimated
Affected Households	117,525	Contingency Plan 2012
Total UCs	41	UN-OCHA
UC Affected	41	
Villages/Settlements Affected	3,178	Contingency Plan 2012
Total Houses Affected	118,110	PDMA Sindh
Partially Damaged	30,627	
Destroyed	87,483	
Total Population	1,290,527	GPW3 Data Set
Affected Population	705,151	UN-OCHA
Male	350,540	PDMA Sindh
Female	354,611	
Deaths	61	
Injuries	230	
Total Area (acres)	826,556	PCO
Total Affected Area (acres)	819,833	UN-OCHA
Area Sown	180,890	FAO
Crop Area Damaged	171,522	

### 2.1.3 Impact of Disaster on Livelihood & Agriculture

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

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

	Major Crops	Area
<b>Cotton</b>	Area sown (Acre)	101,400
	Area Damaged (Acre)	58,812
	%	<b>58%</b>
<b>Rice</b>	Area sown (Acre)	7,942
	Area Damaged (Acre)	1,588

<sup>36</sup> Flood 2010, Disaster Management Apparatus in Sindh

	%	<b>20%</b>
Sugarcane	Area sown (Acre)	47,569
	Area Damaged (Acre)	7,135
	%	<b>15%</b>
Other	Area sown (Acre)	10,457
	Area Damaged (Acre)	6,124
	%	<b>59%</b>
<b>Total Area Sown</b>		<b>167,368</b>
<b>Total Area Damaged</b>		<b>73,660</b>

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

As given in the table above, 58% of the cotton and 20% of rice crops were damaged along with 15% sugarcane and 59% of the other crops. 353 livestock heads died due to these floods<sup>37</sup>.

### 2.1.4 Analysis of Food Security Situation

Since district Naushahro Feroze is agro-based, majority of the households are engaged in agriculture farming and livestock rearing activities and still others in non-agriculture activities/casual labour. Among these three types of the households, empirical studies have shown that poverty is relatively higher in the non-agriculture households, followed by livestock households and small farmers<sup>38</sup>. It has been shown in the previous section that many individuals of this flood affected district have lost their homes (31,455 houses were damaged), their crops (44% crop area damaged) and heads of livestock (353 livestock died). Due to the lack of an industrial base, the sources of income of households, situated in this severely affected district, are less diversified, with their heavy dependence on agriculture, livestock and casual labour. The deplorable social indicators i.e., large household size, poor literacy level, higher mortality rate, inadequate infrastructure with poor access to education and health facilities show the higher level of poverty and deprivation in this district.

Through the destruction of roads, transport and market infrastructure, the floods had a significant negative impact on the commodity market. As a result, the functioning capacity of the markets (transporters, processors, wholesalers and retailers) decreased with upward movement of transaction costs and shortage of food commodities. This phenomenon hindered the socio-economic access of food in the district<sup>39</sup>.

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

<sup>37</sup> Flood Situation Update, 2011, Food & Agriculture Organization (FAO)

<sup>38</sup> Arif, et al (2010), "The 2010 Flood and Poverty in Pakistan: A Preliminary District-level Analysis", Pakistan Institute of Development Economics Islamabad, Background Paper for Conference on the "The Environments of the Poor", 24-26 Nov. 2010, New Delhi

<sup>39</sup> Ibid

### 2.1.5 Impact of Disaster on Health

Severe floods can not only cause damage to health care infrastructure but also affect health indicators of the affected population. The 2010 floods and 2011 rains resulted in damage to the public health infrastructure in Sindh Province. District Naushahro Feroze was hit by the floods of 2010 and was also affected in 2011 rains, which deteriorated the district's health situation.

In 2010 Floods, OCHA reported that 7 dispensaries were partially damaged and were not functioning due to lack of repairs. Respiratory infections were widely reported in winter. Diseases like diarrhoea, skin diseases, suspected malaria and measles were widely reported.<sup>40</sup>

Since 2010 floods and 2011 rains, the district's health situation remained serious and required continuous monitoring and assistance from health cluster partners. According to Pakistan Health Cluster, there was a need to strengthen malaria control program including the provision of bed nets and RDTs in all affected districts. Serious gap existed in nutrition, water and sanitation, Maternal Neonatal & Child Health (MNCH) and Lady Health Worker (LHW) coverage, immunization and health facilities' restoration. Gaps in MNCH and LHWs coverage were not only in officially registered camps for displaced population but also for the rest of the population. Local authorities request assistance in further fumigation of affected areas as well as in distribution of mosquito nets<sup>41</sup>.

### 2.1.6 Impact of Disaster on Education

Due to the floods/rains of 2010, 120 school facilities were damaged, out of which 30 were fully destroyed and 53 were partially damaged. 37 schools were occupied by the IDPs. Also, heavy rains affected the school going children. Due to the damages to the schools, houses and roads; education of 9,600 students was affected (Girls: 4,128, Boys: 5,472). Teachers numbering 360 were also affected.

Due to the floods/rains of 2011, 64 school facilities were damaged, out of which 55 were partially damaged. 9 schools were occupied by the IDPs. Due to the damages to schools, houses and roads, education of 5,120 students was affected (Girls: 2,202, Boys: 2,918). Teachers numbering 171 were also affected<sup>42</sup>.

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<sup>40</sup>OCHA- PAKISTAN FLOODS 2010 – NAUSHAHRO FEROZE DISTRICT PROFILE (Jan 2011)

<sup>41</sup> Pakistan Health Cluster- Situation report#3-Pakistan/Floods in Sindh (22-0-11 untill 24-09—11)

<sup>42</sup> Damage Need Assessment, Sindh-EMIS Reform c Unit, Department of Education and Literacy, Government of Sindh.

## 3 Hazard Vulnerability and Capacity Analysis

### 3.1 Hazard Vulnerability and Capacity Analysis

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

#### 3.1.1 Hazard

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

“A potentially damaging physical event, phenomenon or human activity that may cause the Loss of life or injury, property damage, social and economic disruption or environmental degradation”<sup>43</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.

#### Natural Hazard

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

#### Man-made Hazard

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

#### Hazard Matrix of District

Hazard	Frequency	Area affected/union councils	Severity/Force	Year
Riverine Floods	Monsoon	Western <i>Talukas</i>	High	1973, 1976, 2010
Rain floods	Monsoon	Entire district	High	2011, 2012
Epidemics	Seasonal	Entire district	low	Every year
Earthquakes	Rare	Entire district	low	---
Accidents/ fires	Frequently	Entire district	Low	Through out

<sup>43</sup> “Urban Governance and Community Resilience Guides”, (2010), Asian Disaster Preparedness Center

### 3.1.2 Vulnerability

Vulnerability is a situation which is:

“The attributes and circumstances of a community or system that makes it sensitive, vulnerable or susceptible to the damaging effects of a hazard<sup>44</sup>”

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

#### Physical/Material Vulnerability

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

#### Social/Organizational Vulnerability

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

#### Attitudinal/Motivational Vulnerability

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

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<sup>44</sup> Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)



### Vulnerability Matrix

Physical/material	Social/organizational	Attitudinal/motivational
District Naushahro feroze is vulnerable to riverine floods and heavy rainfalls. River Indus flows in the west of the district and makes the district vulnerable against flood hazard. In 2010 flood <sup>45</sup> , 10,000 households of the 10 union councils were affected. 148,000 people were affected in this super flood. This district is also affected by rain/floods of 2011 and 2012.	According to 1998 census, total population of the district Naushahro feroze was 1,087,571 while its estimated population for the year 2014 is 1,405,854. The district has an estimated <sup>46</sup> growth rate of 2.17% per annum, which means that the population will double itself in 32.26 years <sup>47</sup> from 1998. Such rapid growth in population gives birth to many socio-economic problems and makes the area vulnerable to different natural and made-made hazards.	There is lack of training, appropriate skills and awareness on disaster risk management, both at the community and the public servants' level. Skills to handle emergencies are very weak and need to be strengthened.
Disasters are rooted in development failures e.g. unsafe buildings that could not withstand heavy rains, floods, earthquakes and results in disasters. In Naushahro feroze district, 37.41 per cent people use wood/bamboo material for roof construction. This percentage is higher in rural areas (43.67 per cent) as compared to (6.88 per cent) <sup>48</sup> urban areas.	Like majority of the other districts in Sindh, district Naushahro feroze is rural by its characteristics. 82 per cent of the population resides in rural area as compared to the 18 per cent that resides in the urban areas. Most people in rural areas lack job opportunities, health and educational facilities which escalate the risk against different hazards. [Floods, rains etc.]	Reactive approach prevails in the district i.e., government and all other stakeholders come into action when disaster occurs rather the need is for proactive approach (disaster risk reduction) where actions are taken in advance of the disaster. Therefore, gravity of the situation demands for a paradigm shift from reactive approach to proactive one.
Floods and heavy rainfalls have damaged and weakened, the protection Bund (linear levees along rivers and ring levees around cities), in the west of the district Naushahro feroze. There is no proper monitoring system for the maintenance of these vulnerable points of the protection Bund.	Dependent population (the population that is less than 15 years and more than 65 years of age including widows and divorced women) in the case of Naushahro feroze district is 48 per cent of the total population and the working population is 52 per cent, which shows that dependency ratio <sup>49</sup> in the district is 94 per cent, which is very high and as such makes the population highly vulnerable	Advocacy seminars and awareness raising campaigns regarding disaster risk reduction are very limited.
There are settlements in the district, which are situated in the low lying risk areas. These are the areas which are exposed and sensitive to regular occurring of floods.	The status of education is quite poor in Naushahro feroze district. The overall illiteracy rate (for the population of 10 years and above) is 40%; for male it is 23% and for female it is 60 % while Adult	Land use planning and wise management of land are rarely followed by the people of the district. People prefer to live near river side for agriculture purposes, which is mostly in low lying areas

<sup>45</sup> UNOCHA, Pakistan Floods 2011, Naushahro feroze District Profile, Jan 2011

<sup>46</sup> Estimated using 2010 population estimates from Gridded Population of World (GPW) 3 data set

<sup>47</sup> Rule of 70 <http://controlgrowth.org/double.htm> retrieved on 05-03-2012

<sup>48</sup> Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

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

Physical/material	Social/organizational	Attitudinal/motivational
	illiteracy rate (15 years and above) is 43 %. Illiterate people cannot be easily mobilized and made aware of the different disasters' risks.	that receive the heaviest damage.
Early Warning systems, in Pakistan, lack the basic capacities of equipment, skills and resources. Similarly, early warning system for the floods in the district is not up to the mark. Monitoring stations from the agriculture department, in some instances, were unable to take measurements and report them, timely.	Risk assessment is the process of hazard identification, analysis and determination of appropriate ways to control these hazards. At the district level, there is a deficiency in risk assessment of disaster prone areas. Vulnerability map (used to identify vulnerable locations) of the district is also not available.	In rural areas of the district, women are marginalised in disaster risk reduction process because of social, economic, biological and physical differences. Disaster impacts women and men differently, even within the same household. Women have less social, economic and political power and are not represented in formal leadership structures.
In whole district, piped water is available to only 14 per cent of the housing units. Even in urban areas of the district, pipe water is available to only one per cent of the households <sup>50</sup> . By drinking unsafe and contaminated water people gets vulnerable to hepatitis and other water born disease.	There is lack of Community Based Disaster Risk Reduction (CBDRM) projects in the vulnerable areas of the district. Focus of the different organizations working in the area is towards relief side.	
Livelihoods of the people are not sustainable that is it can't cope with and recover from stress and shocks and when disaster strikes; these livelihoods collapse. As a result poor people get poorer and fall under the poverty line.	Non-structural mitigation measures which include trainings, workshops, seminars, land use planning and building codes etc. are not properly implemented by the concerned departments in the district which makes the people vulnerable to different hazards e.g, floods, earthquakes etc.	
According to an initial assessment by the district education department (2010-11) about 257 schools are fully affected. Schools affected due to Internally Displaced Persons (IDPs) are 53 while 143 are rain affected schools. <sup>51</sup> Most of the affected schools are not rehabilitated up till now and are vulnerable to upcoming disasters.	Poverty, disasters, and vulnerability are interlinked as it has been observed that, during disasters, majority of the affected population are the poor of the community. The incidence of poverty has increased as floods/rains have reduced income level of the households by damaging their assets and sources of income and thus have aggravated the household poverty. In many households there is just one earning person with many dependents.	

<sup>50</sup> Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

<sup>51</sup> Flood report on educational sector of Sindh province, 2010-11, Reform Support Unit, Department of Education & Literacy, Government Of Sindh, pp. 48

Physical/material	Social/organizational	Attitudinal/motivational
Sanitation conditions in district Naushahro feroze are relatively poor where only 43% of the households use flush toilets and 56% of the households have non-flush toilets <sup>52</sup> . The sanitation facilities are comparatively worse in rural areas of the district.	There are no Disaster Management Committees (DMCs) and Emergency Response Committees (ERTs) in the vulnerable communities of the district. DMCs and ERTs have representation from vulnerable communities' which includes ex-counsellor, religious leaders, union council sectary, youth, farmer's representation etc. DMC and ERT members are trained (on DRR and first aid etc.) and are first responder to any emergency situation.	

### 3.1.3 Capacity

Capacities are resources, means and strengths, which exist in households and communities and which enable them to cope with, withstand, prepare for, prevent, mitigate or quickly recover from a disaster. The combination of all the strengths attributes and resources available within a community, society or organization that can be used to achieve agreed goals constitute its capacity to cope with hazards<sup>53</sup>.

#### Physical/Material Capacity

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

#### Social /Organizational Capacity

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

#### Attitudinal/Motivational Capacity

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

<sup>52</sup> Pakistan Social and Living Standard Measurement Survey 2012-13, pp. 435

<sup>53</sup> Participant's Course Workbook, Asian Disaster Preparedness Center (ADPC)

## Capacity Matrix

Physical/material	Social/organizational	Attitudinal/motivational
Naushahro feroze contributes significantly in agriculture sector of Sindh because its climate is suitable for production of various food items e.g, maize, rice, sugarcane, cotton, wheat etc. Wheat and rice are cropped in 93% and 63% of the <i>mouzas</i> respectively while cotton and sugarcane are cropped in 83% and 69% of the <i>mouzas</i> <sup>54</sup> . Total reported area of the district is 302,000 hectares, out of which 189,000 hectares (62%) are cultivated <sup>55</sup> .	The overall literacy rate <sup>56</sup> (for the population of 10 years and above) is 60 %; for males it is 77 and for females it is 40 % while Adult literacy rate (15 years and above) is 57 %. For the urban rural comparison, urban literacy rate is higher than the rural, which is 74%. Literate people can easily be mobilized and made aware of the different disaster risks.	Advocacy seminars and trainings regarding disaster risk reduction (DRR) are very limited but are initiated by different NGOs for the mobilization of vulnerable communities against their hazards (floods, rainfalls etc.).
The total health facilities in district Naushahro feroze are 95. There are three hospitals <sup>57</sup> , twelve Rural health centres (RHCs), forty eight Basic Health Units (BHUs), one MCH centre, thirty general dispensaries (GD) and one sub health centre. These health facilities provide health services both in rural and urban areas of the district, not only as a routine but also in extreme circumstances.	District Disaster Management Authority (DDMA) of Naushahro feroze has been established in the DCO's office on a temporary basis. DDMA formulates disaster plan for the district and assigns roles and responsibilities to the local district departments. DDMA carry out emergency response and relief activities in the affected areas.	Youth of the district is very energetic and know their responsibilities. In any kind of emergencies they move forward to help the needy people.
The total number of schools in the district is 2,476. Out of which 2,222 are primary schools, 35 are elementary, 154 middle, 48 secondary and 17 are higher secondary schools <sup>58</sup> . These school buildings are also used as shelter and evacuation centres in emergency.	After the 2010, 2011 and 2012 floods, different NGOs /INGOs have focused their attentions on shelter, wash, and livelihood activities. These organizations include USAID, WHO, Oxfam GB, NCHD, RDF and World Food Organization (WFO) etc. <sup>59</sup> They provide funds and relief stuff to the affected people, to enable them to stand on their own.	Indigenous knowledge of the local communities is a great asset not only for the vulnerable communities but also for the humanitarian organizations. Humanitarian Organizations do consider suggestions from local communities and incorporate those in their policies.
District Naushahro feroze has an efficient canal irrigation system	Community organizations are formed by NGOs in the affected	In post flood activities, Psycho-Social problems of the people (especially

<sup>54</sup> Mouzas Development Statistics of Sindh, 2008, Agriculture Census Organization

<sup>55</sup> Sindh Development Statistics, , (2011), Lahore University of Management Sciences (LUMS), pp. 80

<sup>56</sup> Pakistan Social and Living Standard Measurement Survey, 2012-13

<sup>57</sup> Health facility assessment, Sindh, district Naushahro feroze, pp. 63

<sup>58</sup> District Education Profile, Naushahro feroze, 2010-11

<sup>59</sup> UNOCHA, Pakistan Floods 2011, Naushahro feroze District Profile, Jan 2011, [www.pakresponse.info](http://www.pakresponse.info), retrieved on 3/27/2013

Physical/material	Social/organizational	Attitudinal/motivational
which helps in agriculture productivity. Out of a total of 233 mouzas, 201 are irrigated by canal irrigation system while 166 <i>mousaz</i> are irrigated by tube wells <sup>60</sup> .	areas to encourage the local representation. Active people from the community are part of these organizations which facilitate the humanitarian organization work at the grass root level.	children and women) were addressed by the psychologists, hired by different organizations. Religious scholars ( <i>Ulemas</i> ) also contribute their part by counselling flood affected people.
Road network is considered as a vehicle for economic development. The district is well-connected with other districts through good quality roads. Total good quality roads length is 472 kilometres in this district <sup>61</sup> . These roads can be used as evacuation point in flood disaster. Good roads are also helpful in carrying out relief activities.	Law Enforcement Agencies are important stakeholders in relief activities. <i>Jawans (Soldiers)</i> of Pakistan Army assist the affected communities directly and help them in evacuation, by providing transport facilities. Army doctors provide medicines and other health facilities to the affected people especially to the children and women.	
Forests help in protection of soil, improve environment by controlling pollution and cause rainfall. Total forest area of the Sindh Province is 1,037,571.36 hectares (2006-07) out of which district Naushahro feroze shares an area of 10,273.84 hectares <sup>62</sup> . The increased protection of forests could lead to a decrease in the severity of floods.		

<sup>60</sup> Mouzas Development Statistics of Sindh, 2008, Agriculture Census Organization

<sup>61</sup> Sindh Development Statistics, (2011), Lahore University of Management Sciences (LUMS), pp. 262

<sup>62</sup> *Ibid*, pp. 148



## 4 Sectoral DRR Mitigation Measures

### 4.1.1 Education

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

- Humanitarian organizations should take on board the District Education Department and should provide trainings and necessary skills to the education officials to enable them to prepare School Based Disaster Risk Management Plans (SBDRM-Plan) for each school in the district.

#### 4.1.2 Infrastructure

- Awareness programs should be organized by District Disaster Management Authority about the need of land use planning and building codes so that it can be followed by all the stakeholders, to avoid future threats.
- The Communication and Works department should utilize the available funds on the maintenance of roads and find alternative routes that can be used in case of emergency.
- Active people from the community can be used for disseminating early warning for the local endangered communities because people have lot of trust in informal and locally influential sources of information; e.g. a religious leaders, a teachers, an NGO worker or a local government official. But firstly these active people should also be trained on EWS.
- Organizations that are involved in construction of homes, health, education and other facilities should work with the government to establish and strictly enforce strict construction codes so that of future threats can be mitigated.
- DRR Planners, District and Provincial authorities should identify safe land and location for low income citizens who are living near the flood prone areas.
- Awareness regarding investment in the DRR sector should be initiated in order to avoid future threats.
- Brick lining projects should be initiated by the government for strengthening the canals.
- Radio can be a very important part of early warning system but care should be taken while transmitting early warnings. It should be in clear words and confirmed through reliable sources to avoid false reports and unnecessary panic.
- Media in district Naushahro Feroz should expand its role as a watchdog in monitoring and handling of donations in the post disaster phase so that the funds are given to the affected people of the district rather than self interest groups.

#### 4.1.3 Health

- NGOs should encourage the community participation in the awareness sessions, programs and trainings, related to water treatment practices and hygiene practices which will capacitate the vulnerable communities of the area against the communicable diseases.

- Health department should take care of establishment of health facilities focused on certain population. All the health related issues should be dealt by them. But the responsibilities have to be identified.
- Health facilities should be located on higher grounds along or near good roads and adequate means of transportation readily accessible to the community.
- A logistic system should be put in place for determining the requirement of medicine, maintaining an inventory, storing and stocking, issuing and controlling the use of medicine, stockpile of emergency medicine and supplies, special arrangement with vendors and suppliers for emergency purchases in time of disaster.
- Advocacy seminars should be organized at district level for the training of medical staff to implement National Health Programs.
- DDMA should assign the responsibilities of health department to ensure the availability of medical and paramedical personal in hospital, BHU's, MCHC, and RHC's. Moreover, mobile health teams should be mobilized so that the health facilitators can visit the local areas to provide basic health care especially for the vulnerable group such as people with disabilities, elderly persons, children, females and those who hesitate to go to the hospitals because of cultural constraint and long distance.

### 4.1.4 Livelihood

- Fodder stocks should be maintained by the livestock department of the district to cope with emergencies.
- Livestock owners should be encouraged to insure their cattle heads.
- Capacity can be built through awareness programs on livelihood diversification.
- Flood control and salinity control projects can be conceived to make more land available for cultivation
- NGO's should organize advocacy seminars, trainings and awareness sessions for improved agricultural practices by incorporating CBOs' chairmen and presidents as they have great influence over the community members.
- Irrigation department should carry out hydraulic studies so that flooding can be avoided and find out catchment areas and water courses for surface run off.

### 4.1.5 Food

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

- Civil administration should look after the availability of food.

#### 4.1.6 Wash

- Innovative approaches are required to ensure the availability of low-cost, simple, and locally acceptable water and sanitation interventions. Integrating these approaches into existing social institutions such as schools, markets, and health facilities is required.
- Municipal workers should monitor the quality of water and should distribute chlorine tablets for water purification in order to avoid diseases like cholera and hepatitis etc.
- DRR measures should be incorporated in the construction of sewerage system in order to minimize the possibility of over flowing of sewage water in rainy days and to mitigate the hygiene issues.
- NGOs in district Naushahro Feroz should install raised hand pumps to maintain adequate access to water supplies in the event of a flood.
- Waste Water treatment projects should be initiated in district Naushahro Feroz to avoid deterioration of aquatic environment.

#### 4.1.7 Government and Humanitarian Sector

- District Disaster Management Authority should coordinate with the NGOs working in different sectors to address the problems of people. The NGOs working on different projects can be invited and can be asked for initiation of DRR projects in the vulnerable areas of the district.
- Coordination among key stakeholders should be strengthened for the implementation of disaster risk reduction measures and effective emergency response through assignment of responsibility to each stakeholder. Stakeholders must have joint meetings to address the issues faced by them.
- District Disaster Management Authority should appeals for assistance through media at the national and international level.
- NGOs should follow the bottom up approach for the initiation of any CBDRM project. The bottom-up approach implies that whole process should start at the community level. Community members should invite to participate in every step of the planning process. It will give a sense of ownership to the community who in turn constructively contribute to achieve project objectives.
- District Disaster Management Authority and NGOs should employ the requisite staff who have a combination of practical experience and up to date theoretical knowledge related to Disaster Management and Sustainable development (Disaster Managers,

Rescue and Relief providers etc.), should stockpile equipment (Boats, Jackets, medicine, food etc.) to build institutional capacity at the district level.



# 5 Coordination and Support Services

## 5.1 Important Contacts

### 5.1.1 Departmental Focal Points

S#	Department	Office In charge	Designation	Telephone Numbers	
				Office	Mobile
1	Administration	Mr. Mirza Nasir Ali	DC	0242-448348	
		Mr. Safdar Ali Bugio	ADC1	0242-448236	
		Mr. Iltaf Gohar Memon	ADC2	0242-448970	
2	Police	Syed Imdad Ali Shah	SSP	0242-448778	
3	HESCO	Abdul Ghaffar Sheikh	XEN-SEPCO	0242-448224	
4	Accounts	Mohammad Ali Panhwar	District Accounts Officer	0242-448690	
5	Agriculture	Ali Nawar Channar	Assistant Director	0242-481240	
6	Irrigation	Mr. Imtiaz Ahmad	EXEN	0242-410457	
7	Health	Dr. Deen Muhammad Khoso	District Health Officer	0242-448778	0300-3205110
8	Education	Mr. Ghulam Rasool Kerio	District Education Officer	0242-448910	0303-8166891
9	Social Welfare			0242-448456	

Source: DC office Naushahro Feroze

### 5.1.2 Emergency Response

S.No	Name or Organizations	Office Contact
1	Edhi Ambulance	0242 - 448 221
2	Natural Gas Complaint	1199
3	Electricity Complaint	118
4	Police Emergency	15
5	Telephone (Complaint)	1218
6	Telephone Enquiry	1217
7	PIA Flight enquiry	114
8	TCS Courier	0242 481383

### 5.1.3 List of NGOs Working in District

S.No	Name or Organizations	Office Contact
1	Edhi Ambulance	0242 - 448 221
2	Natural Gas Complaint	1199
3	Electricity Complaint	118
4	Police Emergency	15
5	Telephone (Complaint)	1218
6	Telephone Enquiry	1217
7	PIA Flight enquiry	114
8	TCS Courier	0242 481383

Source: www.himpakistan.pk

## 5.2 Health Facilities

List of health facilities are provided by WHO for 2010

Taluka	Union Council	Health Facility Name	HF Type
Bhiria	Bhiria	RHC Bhiria	RURAL HEALTH CENTRE
Bhiria	Kot Bahadur	BHU Saeed Khan Otho	BASIC HEALTH UNIT
Bhiria	Khai Qasim	BHU Kundha Khai	BASIC HEALTH UNIT
Bhiria	Dalipota	BHU Dalipota	BASIC HEALTH UNIT
Bhiria	Kot Bahadur	BHU Dali	BASIC HEALTH UNIT
Bhiria	Ghair Geju	BHU Ghair Geju	BASIC HEALTH UNIT
Bhiria	Tharushah	BHU Pathano	BASIC HEALTH UNIT
Bhiria	Dalepota	Govt.Disp.Khud Bux Siyal	DISPENSARY
Bhiria	Khai Qasim	Govt.Disp.Kero Memon	DISPENSARY
Bhiria	Ghair Geju	Govt.Disp.Kero Memon	DISPENSARY
Kandiario	Kamal Dero	RHC Kamal Dero	Rural Health Centre
Kandiario	Darbhro	RHC Darbelo	Rural Health Centre
Kandiario	Abad	BHU SoomarChannar	BASIC HEALTH UNIT
Kandiario	Dabhro	BHU Moledino Larik	BASIC HEALTH UNIT
Kandiario	Dahro	BHU Manjuth	BASIC HEALTH UNIT
Kandiario	Jam Noorullah	BHU Mahmood Chandio	BASIC HEALTH UNIT
Kandiario	M.Dero Jatoi	BHU M.Dero Jatoi	BASIC HEALTH UNIT
Kandiario	Abad	BHU Kot Shah	BASIC HEALTH UNIT
Kandiario	Jam Noorullah	BHU Fazal Sahito	BASIC HEALTH UNIT
Kandiario	Shanghra	BHU Bozidpur	BASIC HEALTH UNIT
Kandiario	Dabhro	BHU Bhority	BASIC HEALTH UNIT
Kandiario	Dashro	Govt.Disp.Uomrowjam	DISPENSARY
Kandiario	Khan Wahan	Govt.Disp.Koro Khan Khushk	DISPENSARY
Kandiario	Kamal Dero	Govt.Disp.Hamroo	DISPENSARY
Mehrabpur	Mehrabpur-I	RHC Mehrabpur	Rural Health Centre
Mehrabpur	Halani	RHC Halani	Rural Health Centre
Mehrabpur	Behlani	BHU Ali Shair Chang	BASIC HEALTH UNIT
Mehrabpur	Saeedpur	BHU Saeed Pur	BASIC HEALTH UNIT
Mehrabpur	Jaindo Rajper	BHU Moli Dino Rajper	BASIC HEALTH UNIT
Mehrabpur	Lakha Road	BHU Lakha Road	BASIC HEALTH UNIT
Mehrabpur	Jaindo Rajper	BHU Jiando Rajper	BASIC HEALTH UNIT
Mehrabpur	Jaindo Rajper	Govt.Disp.Qasimabad	DISPENSARY

Taluka	Union Council	Health Facility Name	HF Type
Mehrabpur	Mehrabpur-II	Govt.Disp.Newtown Mehrabpur	DISPENSARY
Mehrabpur	Jaindo Rajper	Govt. Disp. Hote Khan Jalbani	DISPENSARY
Moro	New Jatoi	RHC New Jatoi	Rural Health Centre
Moro	Khairwah	RHC Khairwah	Rural Health Centre
Moro	Kahkot	RHC Sonhri Form	Rural Health Centre
Moro	Ghachero	BHU Raheem Chand	BASIC HEALTH UNIT
Moro	Khairwah	BHU Qamardin Chandio	BASIC HEALTH UNIT
Moro	Ghachero Old	BHU Malo Ismail Bughio	BASIC HEALTH UNIT
Moro	Fatoo Balal	BHU Fatoo Bilal	BASIC HEALTH UNIT
Moro	New Jatoi	BHU Diloo Shah	BASIC HEALTH UNIT
Moro	Deparja	BHU Deparja	BASIC HEALTH UNIT
Moro	Khairwah	Govt:Disp"Lahino Fakir	DISPENSARY
Moro	Manahi	Govt.Disp.Sadhooja	DISPENSARY
Moro	Ghachero	Govt.Disp.Gachero	DISPENSARY
Moro	Fatoo Balal	Govt.Disp.Ahmdani Laghari	DISPENSARY
Moro	New Jatoi	Govt. Disp.Late Nagar Chandio	DISPENSARY
Naushahro Feroze	Paidan	RHC Paidan	Rural Health Centre
Naushahro Feroze	Mithiani	RHC Mithiani	Rural Health Centre
Naushahro Feroze	D.K.Mori	RHC D.K Mori	Rural Health Centre
Naushahro Feroze	Bhambari	BHU Miran Pur	BASIC HEALTH UNIT
Naushahro Feroze	Bhambhri	BHU Kamil Rajper	BASIC HEALTH UNIT
Naushahro Feroze	NausharoFerzo	BHU Baig Mohammad Panhwar	BASIC HEALTH UNIT
Naushahro Feroze	Dangige	BHU Dangige	BASIC HEALTH UNIT
Naushahro Feroze	Dageja	Govt.Disp:Rahmatullah Rajpar	DISPENSARY
Naushahro Feroze	D.K.Mori	Govt.Disp.Molvi Abdul Rehman Khaskheli	DISPENSARY
Naushahro Feroze	Dalepota	Govt.Disp.Lutufullah Panhwar	DISPENSARY
Naushahro Feroze	Padian	Govt.Disp.Khuhi Jalal	DISPENSARY
Naushahro Feroze	Bahmbhri	Govt.Disp.Gul Khan	DISPENSARY
Naushahro Feroze	NausharoFerzo	Govt.Disp.Dhagano Khan Chandio	DISPENSARY