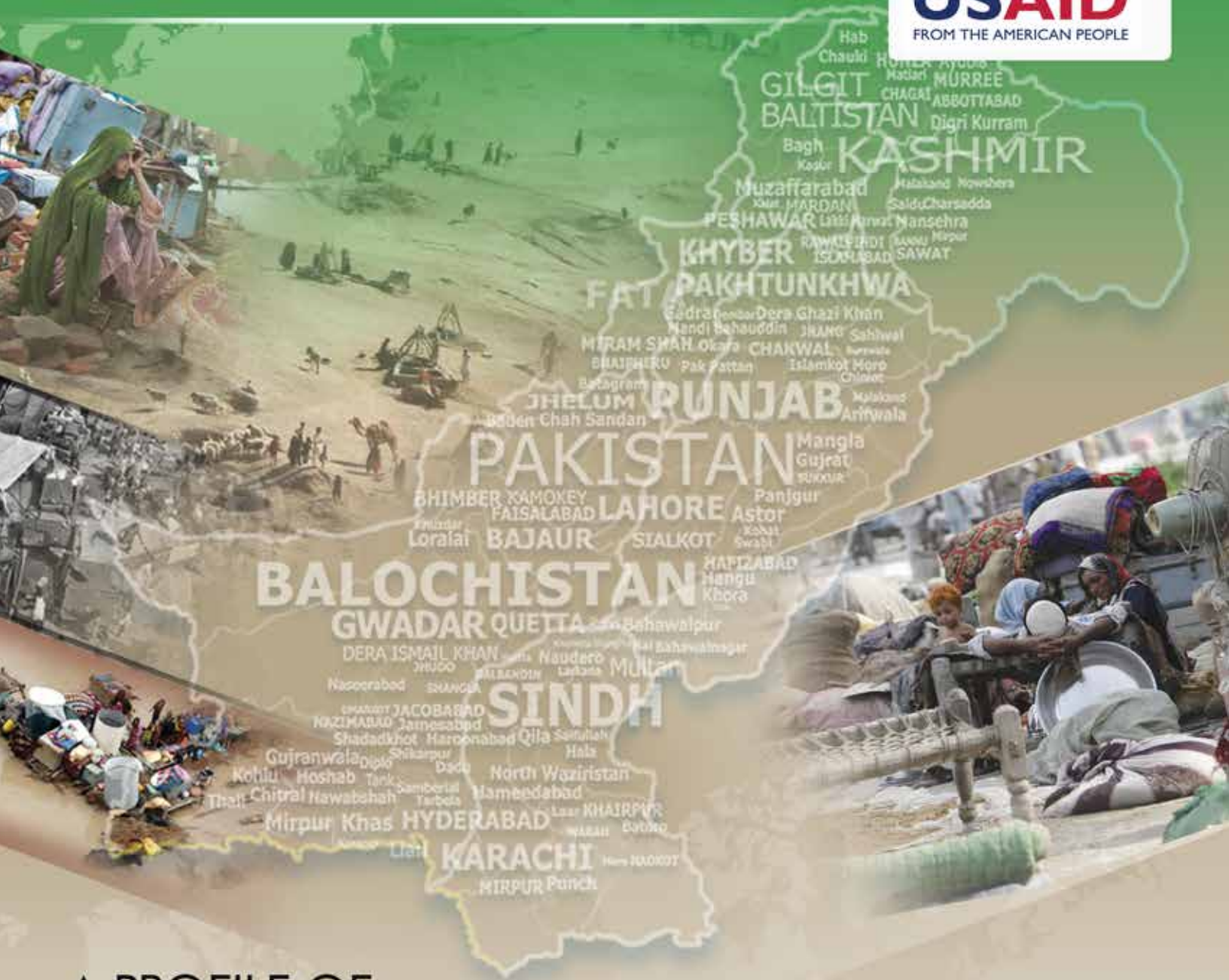


PAKISTAN EMERGENCY SITUATIONAL ANALYSIS



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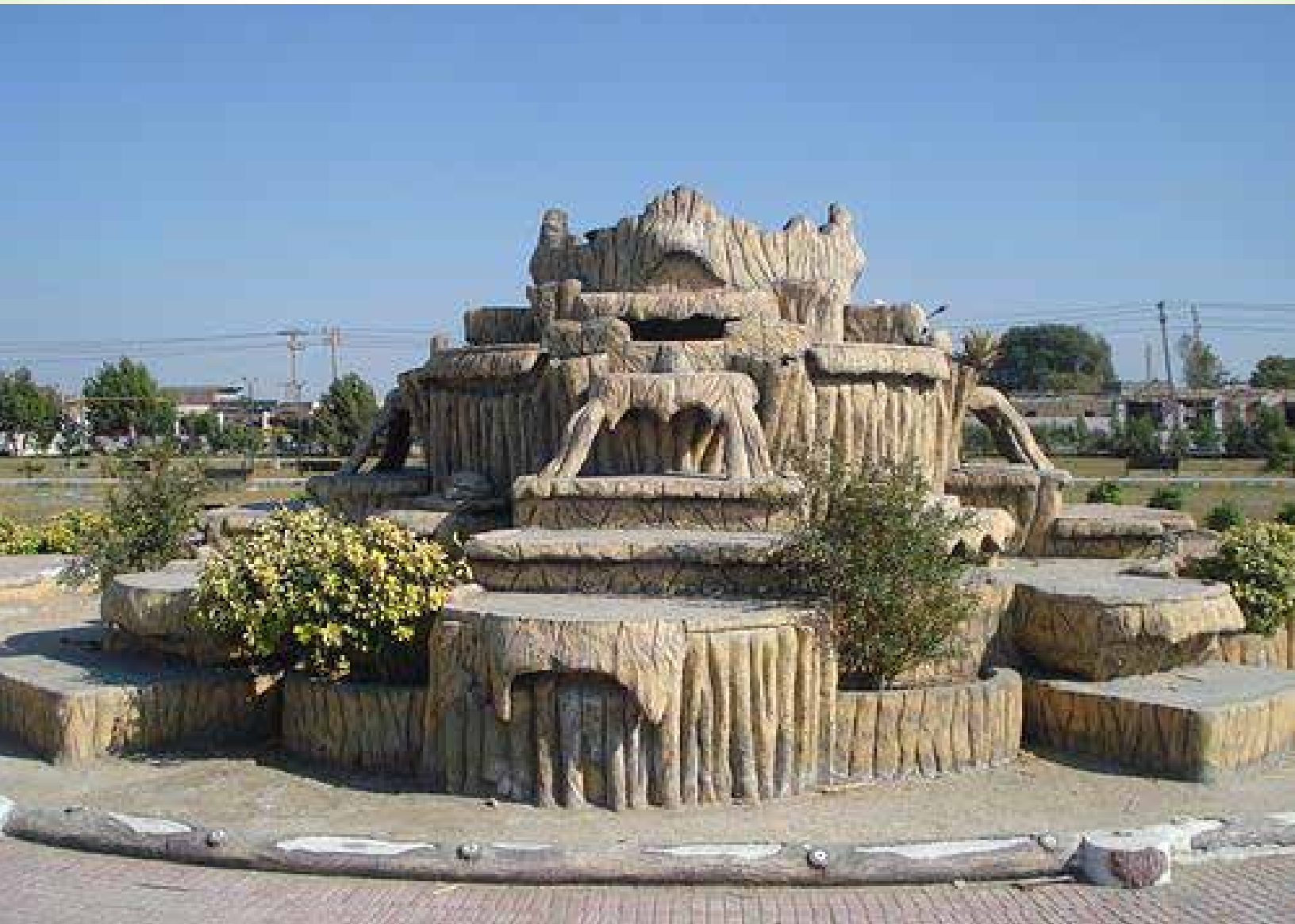
A PROFILE OF **DISTRICT TANDO MUHAMMAD KHAN**



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Mir Ghulam Allah Park, Tando Muhammad Khan

“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 Tando Muhammad Khan

September 2014

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

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

Disclaimer

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

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

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NOTE:

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

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

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eMail: cop@immap.org

Credits

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

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

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

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

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



Mehdi Bokhari
PESA Project Director

Foreword

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

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

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

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



Major (Retd) Tahir Iqbal
iMMAP Pakistan
Chairman

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DISTRICT TANDO MUHAMMAD KHAN

AT A GLANCE

Population 1998

441,039 Persons



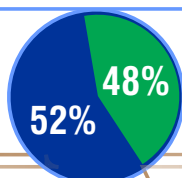
Population Density (Est 2014)
337 per Sq. Km

2.13%

Average Annual Growth Rate (1981 - 98)



Male
323,959



Female
293,958



Urban Population
124,739 (11 %)

Rural Population
988,455 (89%)

Estimated

Population 2014

917,917
Persons

Area

1,831 Sq. Kms



Average Household Size
5.6

Estimated Household
110,342



Sex Ratio **110**
Males per 100 females

27%

73% Rural Population
452,782

Urban Population

165,135

Administrative Units

| | |
|----------------|-----|
| Taluka | 3 |
| Union Councils | 16 |
| Mouzas | 161 |

Infant Mortality Rate

81/1,000 Live Births

Under 5 Mortality Rate

101/1,000 Live Births

Maternal Mortality Ratio

314/100,000 Live Births



Health & Education



Health Facilities

40



Educational Facilities

1,055



Male
57%



Female
31%

Literacy Rate

2012-13
(10+)

45%

Electoral Representation

Male

124,124

Female

99,232

Eunuch (Khawaja Sara)

1

National Assembly Seat: 3

(NA-222, NA-224, NA-225)

Provincial Assembly Seat: 2

(PS-53, PS-54)

Registered Voters
223,357



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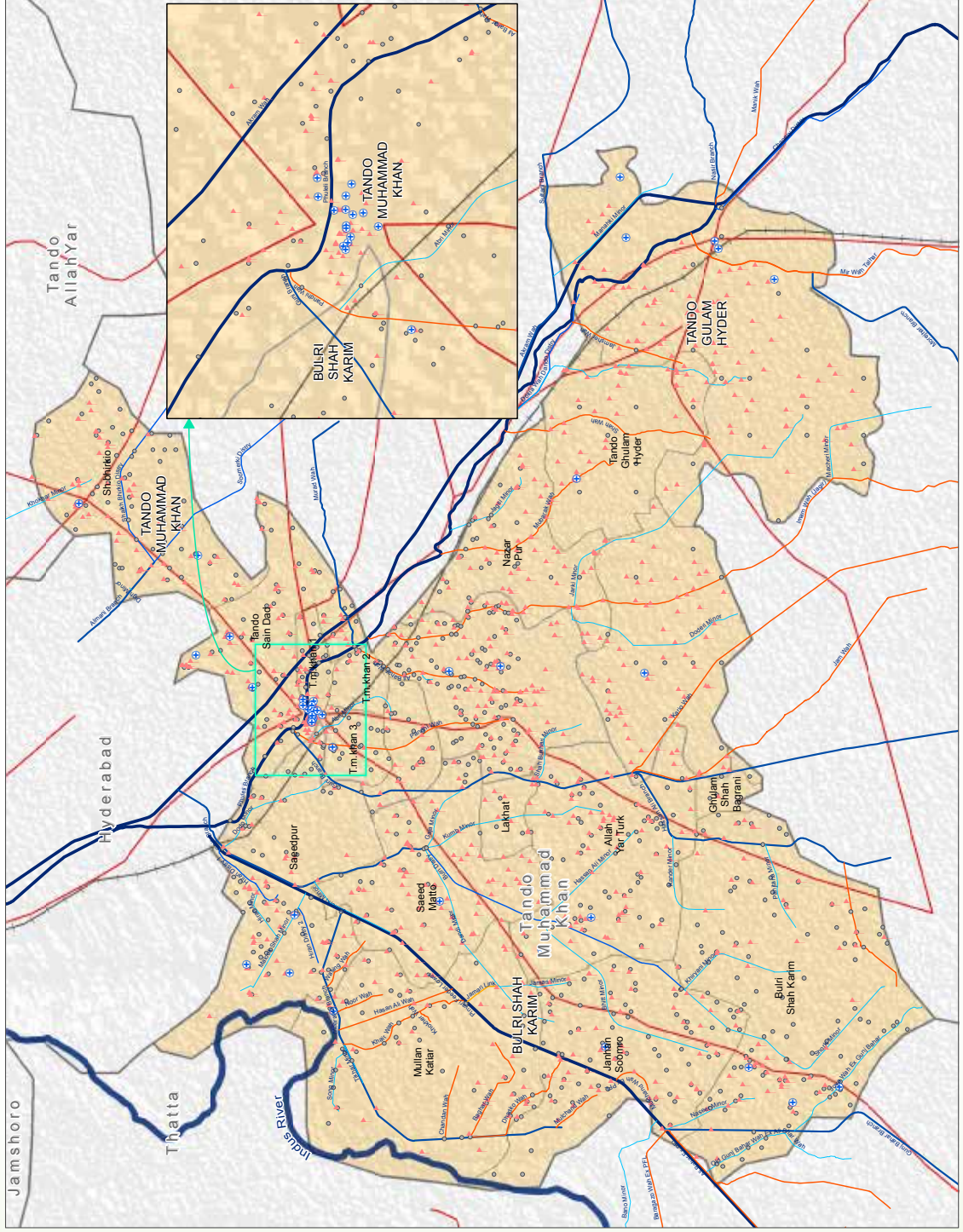
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Because Information Matters

Sindh - Tando Muhammad Khan Reference Map

September, 2014



Legend

- Education Facilities
- Health Facilities
- Settlements
- Roads
- Railway

Irrigation System

- Branch
- Canal
- Disty
- Link
- Mirror
- Wah
- Indus River
- District boundary
- Taluka boundary
- UC boundary



Map Doc Name: IMMAP_PAK_T.M. Khan Reference Map_v02_080914

Creation Date: September 06, 2014

Projection/Datum: WGS84

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

Map data source(s):

Ahassan Systems Private Limited; Admin boundaries, Health Facilities, Education Facilities, World Food Programme (WFP); Roads, Railway, National Geospatial Agency (NGA); Settlements, Sindh Irrigation and Drainage Authority (SIDA); Rivers, Canals.

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



Abbreviations

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

1. Background Information

1.1 Introduction

1.1.1 History

District Tando Muhammad Khan, on its creation by the Government of Sindh in June 2005, started functioning with its headquarter at Tando Muhammad Khan Taluka. The district derives its name from Mir Mohammad Khan Talpur who was a famous personality in the history of Anglo-Pakistan. Talpur dynasty ruled this region from 1783 to 1843. They arrived in Sindh during the invasion of Nadir Shah.

His son Mir Allah Bux Talpur rendered historical sacrifices during the British Regime. The Mir family played a very key role during the independence as well during the British regime in the development. Mir Mohammad Khan planned all the boundaries of the district and included parts of GUNI in its jurisdictions. The efforts were continued by Mir Ghulam Ali Khan Talpur who not only established the educational institutions for the provision of quality education but he himself was involved in providing social services in the area. He is well remembered in the history of Tando Mohammad Khan and is famous in all the areas Hyderabad and Badin¹ as well.

1.1.2 Geography

It is bordered by Hyderabad and Tando Allahyar districts to the north, to the south and east Badin district and to the west Thatta district. The river Indus flows in north-west. It is located between 68° 15' 14" to 68° 44' 2" east longitude and 24° 45' 41" to 25° 17' 8" north latitude. The climate of Tando Mohammad Khan District is moderate. However, the summer months - April, May and June - are very hot during the day. The mean minimum and maximum temperatures during this period are 25° and 45°C respectively. December and January are the coldest months with maximum and minimum temperatures of 30° and 10°C respectively. The temperature falls abruptly at night. The climate is tempered by the west and south air breeze, which blows for eight months from March to October, making the hot weather tolerable. The autumn starts in September and lasts for about two months. The maximum-recorded humidity at Tando Mohammad Khan is 55 percent. Rainfall is highly erratic with an average of about 130 mm. The monsoon dominates from July to September².

1.1.3 Culture (Ethnicity, Religion and Politics)

District Tando Muhammad Khan represents the traditional sindhi culture. Sindhi is the major language of the district, although Urdu is also spoken and understood. Punjabi, Pushto, Balochi, Brahavi and Saraiki are also spoken in the city area. The district is famous for the manufacturing

¹ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=4&Itemid=4

² <http://www.sindh.gov.pk/DISTRICTS/TANDO%20M%20KHAN/admin.htm>

of *Ajrak* (a unique form of block print shawls that display special designs and patterns made using block printing by stamps). Common colors used while making these patterns may include blue, red, black and yellow. Over the years, *Ajrak* has become a symbol of the Sindhi culture and traditions. It has been in Sindh since the era of the Moenjodaro Civilization. From birth to marriage until death *Ajrak* is worn on all significant events of the life cycle in Sindh.

For the people of Tando Muhammad Khan, *Ajrak* is not only a symbol of culture but it is also a source for subsistence and survival. A large number of people are associated with different stages of manufacturing process of *Ajrak*, market supply and selling of *Ajrak*. Tando Muhammad Khan is the second largest *Ajrak* manufacturing district in the country³.

For a long time, Tando Mohammad Khan remained as a taluka in the administrative shadow of Hyderabad district. However Arbab Ghulam Rahim, the then chief minister, transformed it into a district in 2005.

The move also helped install Mir Inayat Ali Khan Talpur, the grandson of Mir Ghulam Ali Talpur, as *Zila Nazim* of the district and revive in small measure the Talpur era. Pakistan People's Party has appeared to be the strong political party of this district and have won the National Assembly seat in the last general election. The Talpur family has formed political alliance with Muslim League Functional to raise on anti-PPP fronts⁴.

1.1.4 Administrative Division

District Tando Muhammad Khan consists of three talukas named Tando Muhammad Khan, Bulri Shah Karim and Tando Ghulam Hyder. There are a total 16 union councils spread over 160 dehs⁵. There are total 161 mouzas out of which 156 are rural, one is urban, 3 are partly urban and one is forest mouzas.

Table 1.1-1: Administrative Division of District Tando Muhammad Khan

| Tando Muhammad Khan | Knungo Circles/ Supervisory Tapas | Patwar Circles/ Tapas | Number of Mouzas | | | | | |
|---------------------|--------------------------------------|--------------------------|------------------|-------|-------|--------------|--------|--------------|
| | | | Total | Rural | Urban | Partly urban | Forest | Un-populated |
| Tando Muhammad khan | 1 | 7 | 29 | 26 | 1 | 2 | - | - |
| Bulri Shah Karim | 3 | 17 | 77 | 75 | | 1 | 1 | - |
| Tando Ghulam Hyder | 2 | 12 | 55 | 55 | - | - | - | - |
| TOTAL | 6 | 36 | 161 | 156 | 1 | 3 | 1 | |

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

1.1.5 Road Network Infrastructure

The existing road network in Tando Muhammad Khan district is fairly good. Although there is no national highway passing through this district, yet the provincial highways connected the whole district quite well. The district headquarter of Tando Muhammad Khan is connected

³ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=2&Itemid=6

⁴ <http://archives.dawn.com/weekly/herald/herald83.htm>

⁵ www.tmkpolice.com/AboutTMK/About%20TMK.doc

with its taluka headquarters of Bulri Shah Karim and Tando Ghulam Hyder through metalled roads.

1.1.6 Irrigation

District Tando Muhammad Khan has a well-established irrigation system. The names of main canals and branches are Phulili canal, Akram wah, Ginyari canal and Guni wah⁶. In addition to this, there also exist some *Sim Nalas* in taluka Tando Ghulam Hyder & Bulri Shah Karim under the command of Sindh Irrigation & Drainage Authority (SIDA).

Agriculture, in Tando Muhammad Khan, mainly depends upon canal irrigation. However, other modes of land irrigation like river water and tube wells are also used. Table 1.1.3, given below, shows the total irrigated mouzas of district Tando Muhammad Khan by different modes of irrigation. All the mouzas are irrigated with the help of canals. Tubewell irrigation is also common in 42 mouzas which constitutes 26% of the total rural mouzas irrigation

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 | RA-VINE | SPRING/S TREAM/KAREZ | ARID (BARANI) | FLOODING/TORRENT |
| TM Khan district | NUMBER | 159 | 2 | 42 | - | - | - | - |
| | PERCENT | 100 | 1 | 26 | - | - | - | - |
| TM Khan | NUMBER | 28 | - | 22 | - | - | - | 1 |
| | PERCENT | 100 | - | 79 | - | - | - | 1 |
| Bulri Shah Karim | NUMBER | 76 | 1 | 10 | - | - | - | - |
| | PERCENT | 100 | 1 | 13 | - | - | - | - |
| Tando Ghulam Hyder | NUMBER | 55 | 1 | 10 | - | - | - | - |
| | PERCENT | 100 | 2 | 18 | - | - | - | - |

Source: Mouza Statistics of Sindh 2008, Agriculture Census Organization

In the year 2008-09, 98% of the net sown area was irrigated and from this irrigated area 83% was irrigated through canals and tube wells. From 2008-09 to 2009-10, there is almost 32% increase in canal-irrigated area. The table below gives information regarding irrigation in the district.

Table 1.1-3: Irrigation by Type

| Irrigation Type | 2008-09 | 2009-10 |
|----------------------|---------------|---------------|
| Canal | 48,125 | 36,436 |
| Tube well | 9,710 | 9,637 |
| Total Irrigated Area | 57,835 | 46,073 |
| Un-Irrigated | 1,129 | 12,706 |
| Total Sown Area | 58,964 | 58,779 |

Source: Table 4.36 Sindh Development Statistics 2011

⁶ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=5&Itemid=3

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.”⁷

Taluka Municipal Authority (TMAs) of each taluka is responsible for solid waste management in the district Tando Muhammad Khan. No updated and proper data is found on the current situation of Solid waste management system in the concerned district. Likewise such other major districts of Sindh, District Tando Muhammad Khan also have no proper solid waste management system. It is responsibility of the municipal authorities to collect and dispose of solid waste but they had failed to perform their job because of lack of required machinery, capacity, expertise and mismanagement etc.

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.

Official document (Financial record) of Govt.of Sindh Finance department forwarded for ‘Release of remaining 50% share (Years:2005-06) to TMA’s on account of Water supply, Sanitation and Solid waste management ‘shown as total Rs.1,524,515/ for the District Tando Muhammad Khan. It clearly depicts the bitter reality 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.⁸

According to news report, The Asian Development Bank (ADB) in a meeting by ADB’s urban specialist Kathie Julian Sindh Cities Improvement Programme (SCIP) presided over by Chief Minister Qaim Ali Shah assured the grant of \$400 million, for a programme to improve the infrastructure and municipal utility services for about five million people of the province through reforms and investments.

While it was proposed that an Urban Utility Services Corporation will be set up to invest in water supply, wastewater and solid waste management and other infrastructure through public-private partnerships. Accordingly the ADB assured to provide \$300 million in five tranches and the Sindh government would contribute \$100 million over 10 years, from 2008 to 2018.

Sindh Urban Services Corporation was set up for the cities of upper Sindh that have poor sanitation. The corporation will be responsible for implementing the reforms and investing in the six districts of Khairpur, Larkana, Shikarpur, Sukkur, New Sukkur and Rohri. Next districts will be Jacobabad, Kandhkot, Ghotki, Ratodero, Nawabshah, Moro, Nausheroferoz, Sanghar, Shahdadpur and Tando Adam Khan, and then Mirpurkhas, Tando Allahyar, Tando Muhammad

⁷ Journal of Environmental and Occupational Science Environ Occup Sci 2012; 1(2):129-131

⁸ 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)

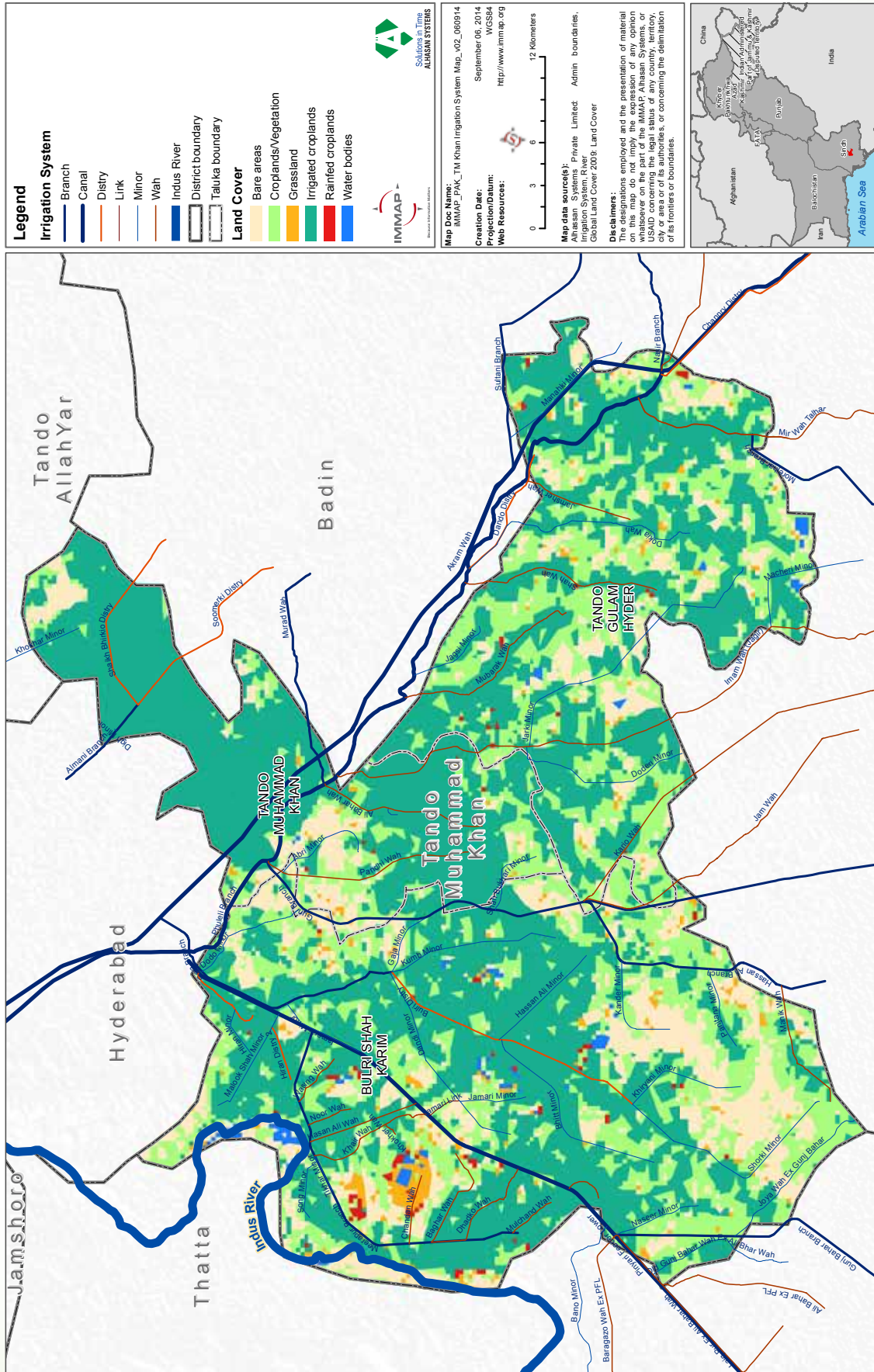
Khan and Matli.⁹ The district government has reported that 30% of the urban households have been provided with the sanitation facilities while the rest of the 70% yet to be provided these facilities. Similarly, among the rural households, only 11% of the households have been provided with the sanitation and drainage facilities¹⁰.

⁹ News report/source: <http://tribune.com.pk/story/179092/development-adb-to-give-400m-for-infrastructure/> (Accessed on September 4, 2014)

¹⁰ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=5&Itemid=3

Sindh - Tando Muhammad Khan Irrigation System and Land Cover

September, 2014



1.2 Demography

1.2.1 Population Characteristics

In Pakistan, male population is more than the female population and is among those four countries where life expectancy for female, at birth, is less than that of males¹¹. Sex ratio in TM Khan is 110 male per 100 females, which is more than the ratio at the National level that is 106¹². 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 rate¹³ and poor health care at the district and provincial level¹⁴ are likely to be instrumental for this difference. District TM Khan is rural by its characteristics like majority of the other districts in Sindh. 73 percent of the population resides in rural area as compared to the 27 percent that resides in the urban areas.

Table 1.2-1: Estimated Population of District for 2014

| AGE GROUP (IN YEARS) | TOTAL | | | RURAL | | | URBAN | | |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|
| | BOTH SEXES | MALE | FEMALE | BOTH SEXES | MALE | FEMALE | BOTH SEXES | MALE | FEMALE |
| ALL AGES | 617,917 | 323,959 | 293,958 | 452,782 | 237,665 | 215,117 | 165,135 | 86,294 | 78,841 |
| 00 -- 04 | 100,936 | 51,519 | 49,417 | 77,138 | 39,382 | 37,756 | 23,798 | 12,137 | 11,661 |
| 05 -- 09 | 103,591 | 55,302 | 48,289 | 78,467 | 42,179 | 36,288 | 25,124 | 13,123 | 12,001 |
| 10 -- 14 | 74,931 | 41,835 | 33,096 | 53,592 | 30,481 | 23,111 | 21,338 | 11,354 | 9,985 |
| 15 -- 19 | 61,698 | 31,584 | 30,114 | 43,205 | 22,182 | 21,023 | 18,493 | 9,402 | 9,091 |
| 20 -- 24 | 57,279 | 27,980 | 29,298 | 41,268 | 19,940 | 21,328 | 16,011 | 8,040 | 7,970 |
| 25 -- 29 | 48,181 | 25,089 | 23,092 | 34,976 | 18,077 | 16,899 | 13,205 | 7,012 | 6,193 |
| 30 -- 34 | 37,283 | 20,194 | 17,090 | 26,584 | 14,293 | 12,292 | 10,699 | 5,901 | 4,798 |
| 35 -- 39 | 27,520 | 14,619 | 12,900 | 19,524 | 10,247 | 9,277 | 7,995 | 4,372 | 3,623 |
| 40 -- 44 | 26,642 | 13,266 | 13,377 | 19,190 | 9,474 | 9,717 | 7,452 | 3,792 | 3,660 |
| 45 -- 49 | 21,072 | 11,084 | 9,987 | 15,317 | 8,012 | 7,305 | 5,754 | 3,072 | 2,682 |
| 50 -- 54 | 18,234 | 9,767 | 8,467 | 13,339 | 7,176 | 6,163 | 4,895 | 2,591 | 2,304 |
| 55 -- 59 | 11,465 | 6,265 | 5,200 | 8,258 | 4,498 | 3,761 | 3,206 | 1,768 | 1,439 |
| 60 -- 64 | 11,541 | 6,199 | 5,342 | 8,624 | 4,667 | 3,957 | 2,917 | 1,532 | 1,385 |
| 65 -- 69 | 5,959 | 3,207 | 2,751 | 4,365 | 2,353 | 2,012 | 1,594 | 854 | 740 |
| 70 -- 74 | 5,683 | 3,011 | 2,672 | 4,351 | 2,321 | 2,030 | 1,332 | 690 | 642 |
| 75 & ABOVE | 5,903 | 3,039 | 2,864 | 4,583 | 2,384 | 2,199 | 1,320 | 655 | 665 |

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

¹¹ A profile for District Badin: 2009, South-Asia Partnership Pakistan

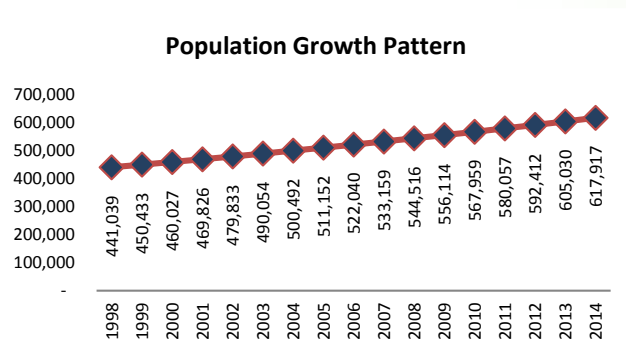
¹² Labour Force Survey 2010-11: *Pakistan Bureau of Statistics*

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

¹⁴ Mean distance from hospital/dispensary is 12 km for Sindh: Pakistan Mouza Statistics, Table 15

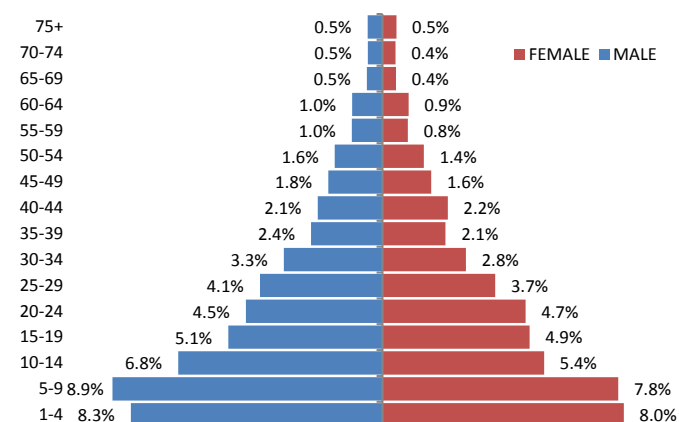
1.2.2 Population Growth Pattern

District TM Khan is newly created and total 1998 population of the talukas that formed this district, was 44,039. Population of District TM Khan has an estimated growth rate of 2.13% per annum, which means that the population will double itself in 232.9 years¹⁵ from 1998. 45.23 percent of the population is below 15 years of age and 2.84 percent is 65 years or above. The estimated population for 2010 is 617,917¹⁶, showing a 40% increase in 16 years from 1998.



1.2.3 Population Distribution by Age and Gender

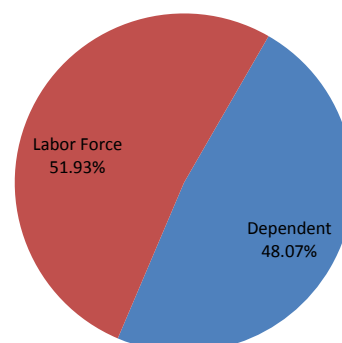
Out of the total population, 53 percent are males and 47 percent are females. Largest cohort of population is 5-9 years, which decreases with 5 years interval. Total population in this cohort is 103,590. Except the age groups 20-24 and 40-44, in all the rest of the age groups, male population out numbers female population.



1.2.4 Dependent Population

The economically dependent population is considered to be the population that is less than 15 years and more than 65 years of age. In addition to them, widowed, and/or divorced women are also considered dependent population. Dependent population in the case of TM Khan District is 48.07 percent of the total population and the working population is 51.93 percent, which shows that dependency ratio¹⁷ in the district is 93 percent.

Dependent Population percent



¹⁵ Rule of 70 <http://controlgrowth.org/double.htm>

¹⁶ DP TM Khan, April 2012. UNOCHA

¹⁷ Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

Table 1.2-2: Population Details by Taluka

| Taluka | Area ¹⁸ | Population | Male | Female | Pop Density | Sex Ratio | Average HH Size | Estimated HHs |
|---------------------|--------------------|----------------|----------------|----------------|-------------|------------|-----------------|----------------|
| Shah Kareem | 916 | 220,922 | 115,824 | 105,098 | 241 | 110 | 5.6 | 39,450 |
| Tando Ghulam Haider | 557 | 164,155 | 86,063 | 78,093 | 295 | 110 | 5.6 | 29,313 |
| TM Khan | 338 | 232,840 | 122,073 | 110,768 | 651 | 110 | 5.6 | 41,579 |
| Total | 1,831 | 617,917 | 323,959 | 293,958 | 337 | 110 | 5.6 | 110,342 |

Source: Estimated using Table 1 of Census 1998

Table 1.2-3: Estimated UC Population for 2014

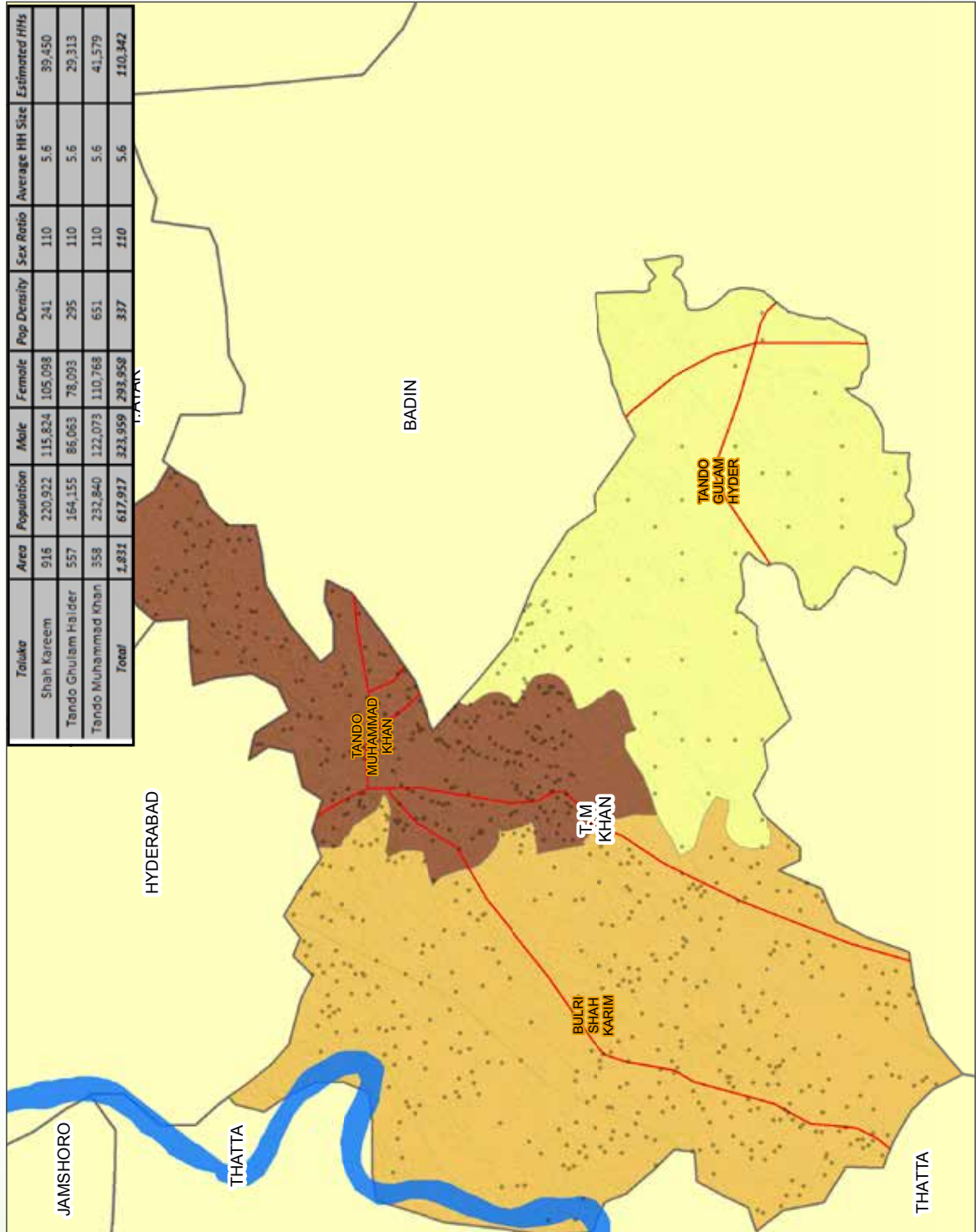
| Taluka | Union council | Population |
|----------------------------|-------------------------|----------------|
| Tando Muhammad Khan | Sheikh Brikhio | 40,137 |
| | Tando Saindad | 41,880 |
| | Lakhat | 41,836 |
| | Tando Muhammad Khan I | 40,326 |
| | Tando Muhammad Khan II | 40,109 |
| | Tando Muhammad Khan III | 28,552 |
| | Total | 232,840 |
| Bulari Shah Kareem | Allah Yar Turck | 35,784 |
| | Saeed Mato | 32,411 |
| | Jinana Soomro | 38,307 |
| | Mulakatiar | 39,219 |
| | Bulari Shah kareem | 41,814 |
| | Saeed Pur | 33,387 |
| | Total | 220,922 |
| Tando Ghulam Hyder | Nazrpur | 43,201 |
| | Tando Ghulam Hyder | 44,226 |
| | Moya @ Ghulam Shah | 36,627 |
| | Dando | 40,102 |
| | Total | 164,155 |
| Grand Total | | 617,917 |

¹⁸ PCO Admin Boundaries 2011

Sindh-Tando Muhammad Khan Population Density Map Date (September 2014)



| Taluka | Area | Population | Male | Female | Pop Density | Sex Ratio | Average HH Size | Estimated HHs |
|---------------------|--------------|----------------|----------------|----------------|-------------|------------|-----------------|----------------|
| Shah Kareem | 916 | 220,922 | 115,824 | 105,098 | 241 | 110 | 5.6 | 39,450 |
| Tando Ghulam Haider | 557 | 154,155 | 86,063 | 78,093 | 295 | 110 | 5.6 | 29,313 |
| Tando Muhammad Khan | 358 | 232,840 | 122,073 | 110,768 | 651 | 110 | 5.6 | 41,579 |
| Total | 1,831 | 617,917 | 323,959 | 293,958 | 337 | 110 | 5.6 | 110,342 |



Legend

- Settlements
- Population Density: Low (light yellow) to High (dark brown)
- Road Network (red line)
- River Indus (blue line)
- Tehsil Boundary (dashed line)
- District Boundary (dotted line)
- Provincial Boundary (dash-dot line)
- International Boundary (thick solid line)

Map Doc Name: Sindh-Tando Muhammad Khan Population Density Map_Atlas_140909
Creation Date: 08/09/14
Projection: UTM
Scale: 1:100,000
Web Resources: <http://www.inmap.org>

Map data source(s):
 National Geo-Spatial Agency (Settlements), PGO (Roads)
 Disclaimers:
 The designations employed and the presentation of material on this map do not imply the expression of any opinion on the part of INMAP or the United States of America or USAID concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

1.3 Livelihood

1.3.1 Main Sources of Livelihood/Income

Like most of the other district of Pakistan, Tando Muhammad Khan is also an agro-based district where 70% of the mouzas have reported agriculture sector as the major source of employment. The following table reveals the sources of employment for the people of district Tando Muhammad Khan. Out of the 159 rural mouzas, 111 (70%) reported agriculture as the source of employment for male. The table also reveals that casual labour is frequent in this district which is a source of employment for 23% of the male population. Services and personal business are also major source of employment for some of the population. In the category of mostly and some, for both male and female population; agriculture, labor, services and personal business are the major sources of employment for the people of this district.

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

| GENDER | QUANTIFICATION | SERVICE | AGRICULTURE | TRADE | INDUSTRY | PERSONAL BUSINESS | OVERSEAS EMPLOYEMENT | LABOUR |
|--------|----------------|---------|-------------|-------|----------|-------------------|----------------------|--------|
| MALE | MOSTLY | 0 | 111 | 0 | 0 | 2 | 0 | 37 |
| | SOME | 117 | 40 | 8 | 7 | 101 | 4 | 112 |
| | NONE | 42 | 8 | 151 | 152 | 56 | 155 | 10 |
| FEMALE | MOSTLY | 0 | 57 | 0 | 0 | 6 | 1 | 48 |
| | SOME | 74 | 87 | 2 | 4 | 77 | 2 | 93 |
| | NONE | 85 | 15 | 157 | 155 | 76 | 156 | 18 |

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

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

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

1.3.2 Agriculture

As per geographical area, it is spread over an area of 404,398 acres which comes to 1,733 Sq. Km. As mentioned above this district is agro-based as majority of the people depend for their livelihood on agriculture, this accounts for 70 percent of the population. Main crops of this district are sugarcane, rice, wheat and cotton. Phuleli, Pinyari and Akram canals are main source of irrigation in this district.

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

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

| Type | Crop | Area Sown in 2008-09 (000 Hectares) | Production in 2008-09 (000 Tonnes) | Area Sown in 2010-11 (Hectares) FAO |
|------|-----------|--|---------------------------------------|--|
| Food | Wheat | 11.4 | 32.5 | - |
| | Rice | 18.1 | 61.8 | 41,587 |
| Cash | Sugarcane | 28.8 | 1,536.6 | 71,881 |
| | Cotton | 4.4 | 28.5 | 19,412 |

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

1.3.3 Industry

Tando Muhammad Khan is primarily an agro-based district and the industrial base in this district is dependent on the agriculture. This district has established industries which are related to the agriculture i.e. the raw material, for these industries, is provided by the agriculture sector. Besides, this district is the second largest *Ajrak* manufacturer in Pakistan. So a huge small scale *Ajrak* manufacturing industry is well established in this district. Besides there are sugar mills, flour mills, and rice mills in this district.

Table 1.3-3: List of Industries in Tando Muhammad Khan¹⁹

| INDUSTRY | UNITS |
|------------------------------|-------|
| Sugar Mills | |
| 1. T.M.K Sugar Mills | |
| 2. Faran Sugar Mills | 04 |
| 3. Ansari Sugar Mills | |
| 4. Sindh Abadgar Sugar Mills | |
| Flour Mills | 18 |
| Rice Mills | 08 |
| Ajrak Industries | 80 |

1.3.4 Livestock

Livestock is one of the major sub-sector of agriculture and the back bone of Pakistan's economy. Its main by-products including hides and skins have substantial potential as semi-finished products. A substantial growth in Livestock products such as milk, meat, beef, mutton, poultry and eggs have been noticed since many years for the people of district Tando Muhammad Khan. According to a food security survey, this district is producing animal based food (meat & meat products) in surplus to its requirements²⁰.

There are three veterinary hospitals, one livestock dispensary and six other veterinary centres in the district²¹.

Table 1.3-4: Livestock Population

| Livestock | Number |
|-----------|---------|
| Cattle | 57,416 |
| Buffaloes | 157,934 |
| Sheep | 24,233 |
| Goat | 136,266 |
| Camel | 2,429 |
| Horse | 83 |
| Mule | 211 |
| Asses | 8,257 |
| Poultry | 239,491 |

Source: Livestock Census 2006

¹⁹ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=5&Itemid=3

²⁰ Food Insecurity in Pakistan (2009), Sustainable Development Policy Institute (SDPI), Islamabad

²¹ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=5&Itemid=3

1.4 Food Security

Food security can be broadly divided into four components:

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

1.4.1 Availability

In this district, wheat and rice are produced, as major crops, for meeting food requirement along with cash crops of cotton and sugarcane. Maize, pulses and vegetables are produced in relatively lesser quantities in the district as the below table shows, wheat and rice are cropped in 84% and 95% of the mouzas respectively, whereas cotton and sugarcane are cropped in 12%, 97% and 42% of the mouzas respectively. The overall crop based food availability is sufficient in the Tando Muhammad Khan district²².

Table 1.4-1: Number of Mouza Reporting Major Crops

| ADMINISTRATIVE UNIT | NUMBERS OF MOUZAS REPORTING MAJOR CROPS | | | | | | | |
|---------------------|---|------|--------|-----------|-------|--------|----------|------------|
| | WHEAT | RICE | COTTON | SUGARCANE | MAIZE | PULSES | ORCHARDS | VEGETABLES |
| TM Khan District | 135 | 151 | 19 | 155 | 11 | 10 | 16 | 12 |
| Tando Muhammad Khan | 26 | 20 | 14 | 26 | 11 | - | 13 | 10 |
| Bulri Shah Karim | 75 | 76 | 2 | 74 | - | 1 | 3 | 2 |
| Tando Ghulam Hyder | 34 | 55 | 3 | 55 | - | 9 | - | - |

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

Food availability not only depends on the obtainability of wheat but also rests on availability of other cereals like rice, maize etc. As far as cereal food is concerned, this district is producing surplus food for the consumption of its residents. However, animal based food availability (meat, milk, milk products) is also important for total food availability. As for as animal based food self-sufficiency is concerned, this district is producing surplus of animal-based food against its requirements. Combining both, crop based and animal based food self-sufficiency, TM Khan is self-sufficient for food availability²³

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

²³ *ibid*

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, availability alone cannot make a society food secure. Certain indicators like household income, inflation, child dependency and monthly food expenditures depict the access of food. The per capita income in Tando Muhammad Khan is less than Rs. 11,000/-month which is considered extremely low according to the food security perspective²⁴. 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 a 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 Sindh²⁵. So the low level of income, high food expenditures, high child dependency and high inflation (particularly food inflation) hinders access to food.

The table below shows physical access of food in the district Tando Muhammad Khan depicting the distance of mouzas from the wholesale markets. Average distance from the fruit and vegetable market of a mouza is 30 and 26 kilometres respectively, whereas the distance from the grain market is 23 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 | 159 | 19 | 2 | 45 | 75 | 35 | 2 |
| | Percent | 100 | | 1 | 28 | 47 | 22 | 1 |
| Grains Market | Number | 159 | 23 | 2 | 37 | 69 | 35 | 16 |
| | Percent | 100 | | 1 | 23 | 43 | 22 | 10 |
| Fruit Market | Number | 159 | 30 | - | 34 | 59 | 24 | 42 |
| | Percent | 100 | | - | 21 | 37 | 15 | 26 |
| Vegetable Market | Number | 159 | 26 | - | 40 | 63 | 24 | 32 |
| | Percent | 100 | | - | 25 | 40 | 15 | 20 |
| Govt. Procurement Centre | Number | 159 | 22 | 3 | 38 | 68 | 42 | 8 |
| | Percent | 100 | | 2 | 24 | 43 | 26 | 5 |

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

1.4.3 Utilization

In addition to food availability and access, proper assimilation of food in the body is essential. Food utilization and stability depicts this absorption of food and its sustainability. Improved sanitation facilities, clean drinking water, health infrastructure and individual health status along with the female literacy plays vital role in food absorption. According to Food Security Analysis (FSA) 2009, access to improved drinking water is reasonable in this district. 83% of the

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

²⁵ *ibid*

HH use hand pumps and 8% use tap water as source of drinking water²⁶ which was 15% in the previous reporting period of 2010-11. Female literacy rate is 31% in this district, which is considered as low.

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

| District | Water Delivery System | | | | |
|----------|-----------------------|-----------|------------|----------|-------|
| | Tap Water | Hand Pump | Motor Pump | Dug Well | Other |
| Total | 8 | 83 | 6 | 1 | 1 |
| Urban | 39 | 37 | 21 | 0 | 3 |
| Rural | 1 | 94 | 3 | 1 | 1 |

Source: PSLM 2012-13

Also, the sanitation conditions are relatively poor in the district Tando Muhammad Khan where 28% of the households use flush toilets (4% decrease from previous reporting period of 2010-11) and 61% use the non-flush toilets. 12% of the households have no toilet facility (6% increase from previous reporting period of 2010-11).

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 |
| 71 | 18 | 28 | 26 | 68 | 61 | 3 | 13 | 12 |

Source: PSLM 2012-13

In a nutshell, this district has sufficient availability of food; a relatively poor socio-economic access; and low level of food utilization environment. However, the research studies have shown that access element of food security plays a dominating role in measuring the overall food security situation. Combining all the indicators of food security i.e, availability, access, utilization and stability; it can be ascertained that district Tando Muhammad Khan lies on the borderline of food insecurity.

²⁶ PSLM 2012-13

1.5 Health and Immunization

1.5.1 Health Facilities

There are total 40 public health facilities present in the district with 116 beds. When comparing to WHO standards, these health facilities are sufficient only for 32% of the estimated population for 2014. Bedding facility is sufficient only for 8%. Table 1.5.1 shows the details of health facilities in the district.

Table 1.5-1: Number of Health Facilities by Type

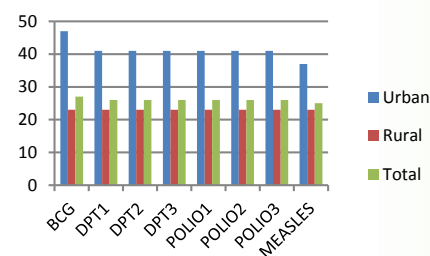
| Type | Number | Bed Strength |
|-------------------------------|-----------|--------------|
| Teaching Hospital | | 0 |
| District Headquarter Hospital | | 0 |
| Tehsil Headquarter Hospital | 1 | 30 |
| Rural Health Centres | 3 | 60 |
| Basic Health Unit | 13 | 26 |
| Govt. Rural Dispensary | 19 | |
| MCH Centres | 2 | |
| Sub Health Centres | 2 | |
| Total | 40 | 116 |

Source: Technical Resource Facility, Pakistan. 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 TM Khan, around 59% pregnant women have received tetanus toxoid injections. In urban areas this percentage is 79% and in rural areas it is 55%²⁷. Record based²⁸ immunization data of district TM Khan shows that 25% (Male 32%: Female 17%) of the children aged 12-23 months have received full immunization. In the urban areas this percentage is 37 percent (Male 36%: Female 38%) and in the rural areas it is 23% (Male 31%: Female 15%). The corresponding graph shows the percentage of children of 12-23 months that have been immunized by the type of Antigen based on records²⁹.

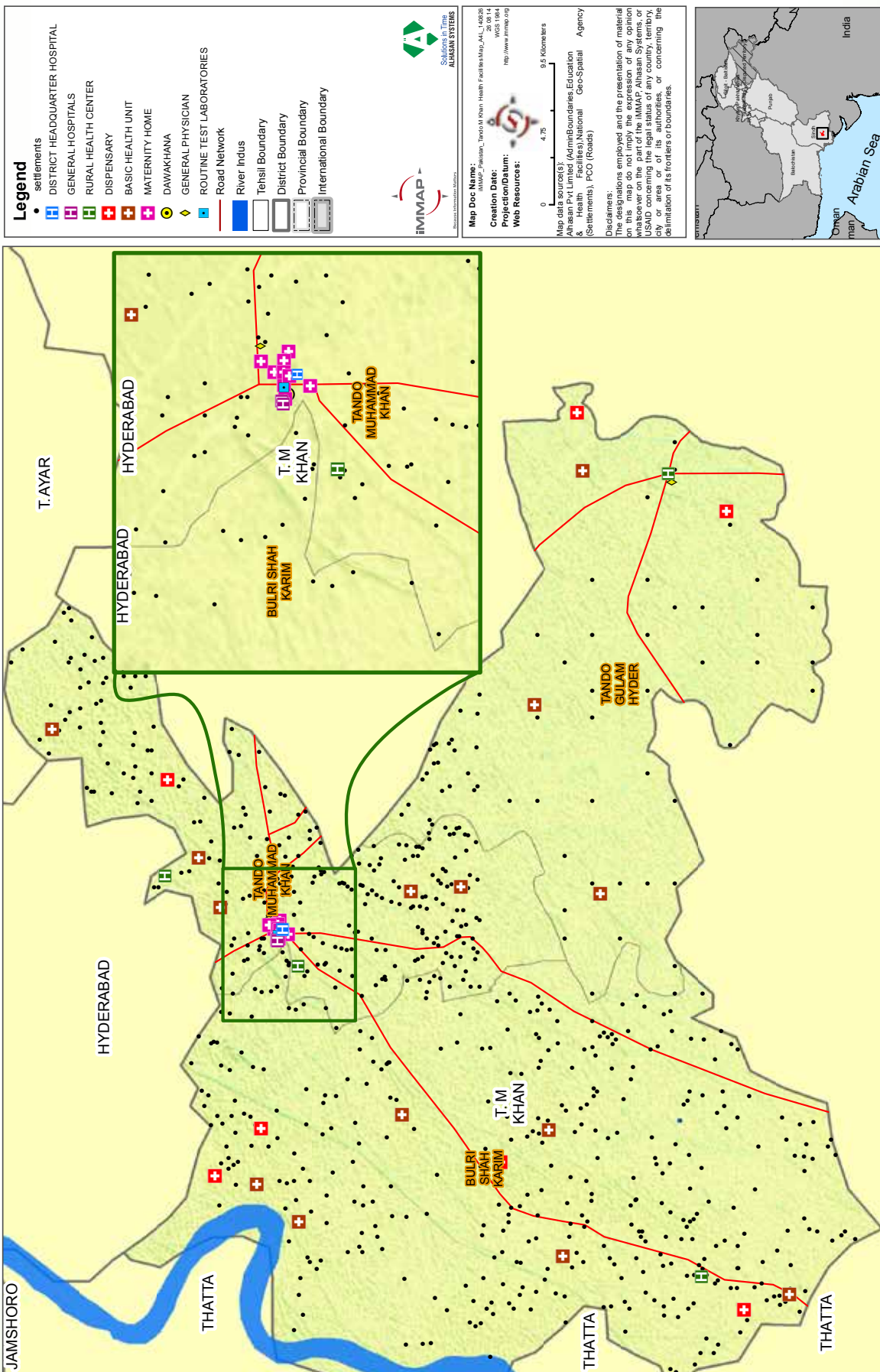


²⁷ Table 3.11, Pakistan Social and Living Standards Measurement Survey (PSLM) 2012-13

²⁸ Table 3.4 (b) Based on record: Children who reported having received full immunization who also have an immunization card, expressed as a percentage of all children aged 12-23 months. Also immunizations to be classed as fully immunized a child must have received: 'BCG', 'DPT1', 'DPT2', 'DPT3', 'Polio1', 'Polio2'

²⁹ Table 3.5: Pakistan Social and Living Standards Measurement Survey (PSLM) 2012-13

Sindh-Tando Muhammad Khan Health Facilities Map Date (August 2014)



1.6 Education

1.6.1 Some Highlights

| | |
|---|------|
| Literacy Rate (10 years and above) | 45% |
| Adult Literacy Rate (15 years and above) | 45% |
| GPI Primary | 0.62 |
| GPI Middle | 0.44 |
| GPI Secondary | 0.84 |
| GPI Higher Secondary | 0.22 |
| Population that has ever attended School | 41% |
| Male | 54% |
| Female | 27% |
| Population that has completed primary level or higher | 32% |
| Male | 42% |
| Female | 21% |
| Student Teacher Ratio | 27 |
| Primary | 28 |
| Middle | 22 |
| Secondary | 24 |
| Higher Secondary | 31 |

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

1.6.2 District School Enrolment Ratio

The education status is quite poor in TM Khan. The overall literacy rate (for the population of 10 years and above) is 45%; for males it is 57% and for females it is 31%. For the urban rural comparison, urban literacy rate is higher than the rural, which is 59%. Among urban community, literacy rate for male is 64% and for female it is 54%; whereas the rural literacy rate is 41%, and in the rural community, literacy rate for male is 56% and for female, it is 26%. Adult literacy rate (for the population of 15 years and above) is also 45%. Gross Enrolment Ratio³⁰ (GER) for primary level in TM Khan is 63% (Male: 73%, Female: 50%), in urban community it is 74% (Male: 70%, Female: 80%) and in rural community it is 61% (Male: 74%, Female: 44%). Net Enrolment Ratio³¹ (NER) for the primary level is 34% (Male: 38%, Female: 30%), in urban community it is 48% (Male: 45%, Female: 48%) and in rural community it is 32% (Male: 36%, Female: 27%). Table 1.6.1 shows details of Gross and Net Enrolment Rates by Rural and Urban Gender at different levels.

³⁰ 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.

³¹ 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 | 70% | 55% | 61% | 45% | 22% | 17% |
| | Female | 80% | 74% | 33% | 48% | 27% | 13% |
| | Total | 74% | 64% | 45% | 48% | 24% | 15% |
| Rural | Male | 74% | 23% | 36% | 36% | 5% | 4% |
| | Female | 44% | 12% | 10% | 27% | 5% | 5% |
| | Total | 61% | 18% | 23% | 32% | 5% | 5% |
| Total | Male | 73% | 28% | 40% | 38% | 8% | 6% |
| | Female | 50% | 22% | 15% | 30% | 8% | 7% |
| | Total | 63% | 25% | 27% | 34% | 8% | 6% |

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

1.6.3 Gender and Level Wise Details

The total enrollment of students in government schools in District TM Khan is 57,054 (Male: 35,042 and Female: 22,012). Out of a total of 2,092 teachers, 1,729 are male and 363 are female teachers. This illustrates that one teacher is teaching averagely 27 students. The total boys' schools of District TM Khan are 126, and the total female schools are 133. Besides, there are 796 mixed gender schools. Thus, the total number of schools is 1,055 and, averagely, every school has an enrolment of 54 students and a teaching staff of around 2³².

Primary

The total number of primary level schools, that are reported, is 989. The total enrolment at the primary level is 48,180. Gender wise 28,431 are boys and 17,749 are girls. Total number of teachers at the primary level is 1,634, out of which 1,368 are male and 266 are female teachers. Thus, on an average, each primary school has an enrolment of 47 students with a teaching staff of 2. However, the student class ratio is 32 and each school has averagely around 1 classrooms.

Middle

There are a total of 28 middle schools reported. The total enrolment at the middle level is 2,880, of which 1,997 are boys' enrolment, whereas, the girls enrolment is 833. The total number of teachers at the middle level is 133, out of which 122 are male teachers, while, 11 are female teachers. Thus, on an average, each middle school has an enrolment of 103 students with a teaching staff of 5. However, the student class ratio is 30 and each school has averagely around 3 classrooms.

³² District Education Profile TM Khan 2012-13

Matric

There are a total of 36 secondary schools in the district. The total enrolment at the secondary level is 6,990, of which 3,789 are boys' enrolment whereas 3,201 are girls' enrolment. The total number of teachers at the secondary level is 293, out of which male teachers are 207 and female teachers are 86. Thus, on an average, each secondary school has an enrolment of 196 students with a teaching staff of 8. However, the student class ratio is 33 and each school has averagely around 6 classrooms.

Higher Secondary

There are a total of 2 higher secondary schools in the district. The total enrolment at the higher secondary level is 1,004, out of which 825 are boys' enrollment and 179 are girls' total enrolment. The total number of teachers at the higher secondary level is 32, and all are male teachers. Thus, on an average, each higher secondary school has an enrolment of 502 students with a teaching staff of 16. However, the student class ratio is 77 and each school has averagely around 7 classrooms.

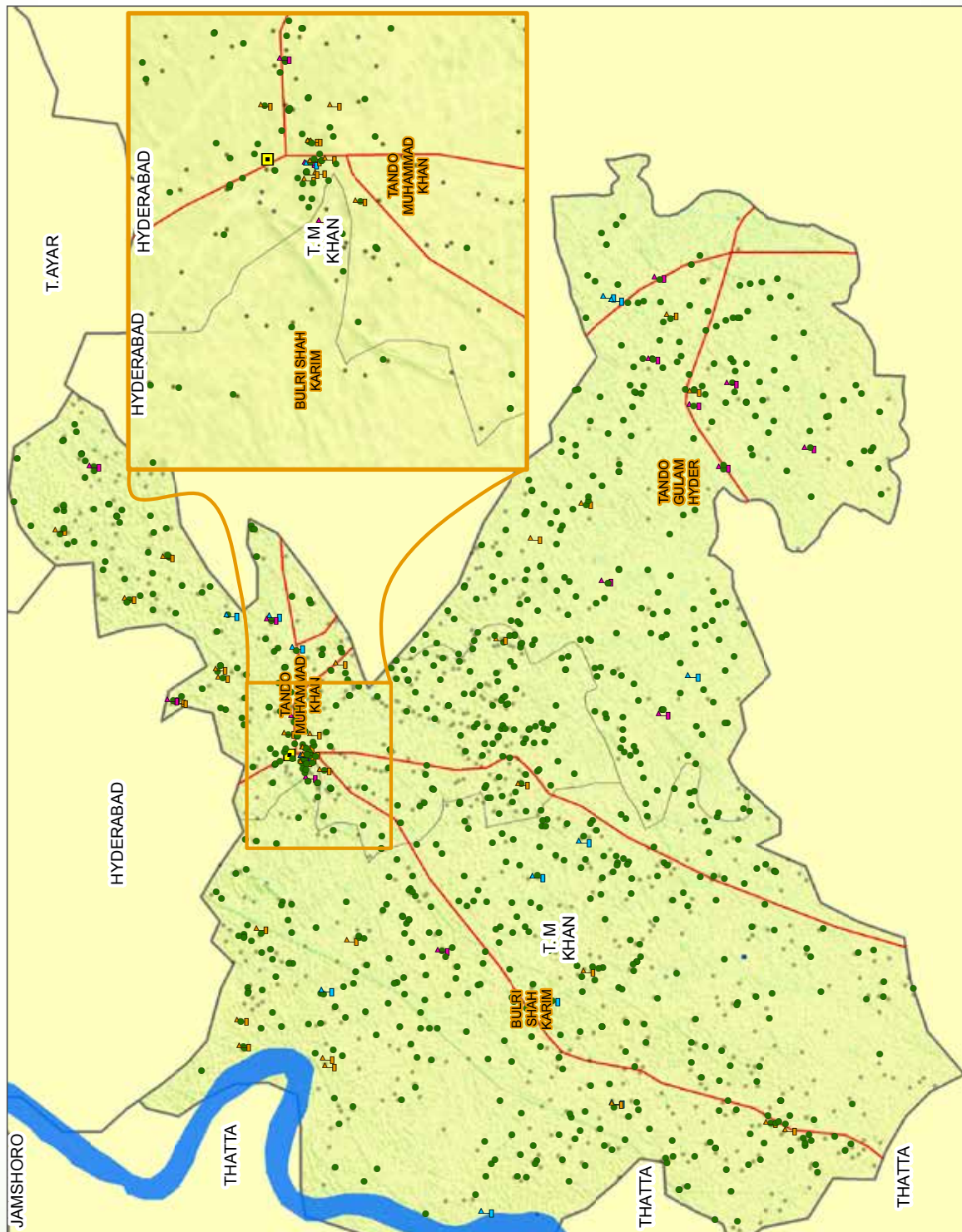
Table 1.6-2: Enrolment and Educational Facilities by level and Gender³³

| Level | Enrolment | | | School Facilities | | | | Teachers | | |
|------------------|---------------|---------------|---------------|-------------------|------------|------------|--------------|--------------|------------|--------------|
| | Boys | Girls | Total | Boys | Girls | Mixed | Total | Male | Female | Total |
| Primary | 28,431 | 17,749 | 46,180 | 110 | 115 | 764 | 989 | 1,368 | 266 | 1,634 |
| Middle | 1,997 | 883 | 2,880 | 5 | 6 | 17 | 28 | 122 | 11 | 133 |
| Secondary | 3,789 | 3,201 | 6,990 | 10 | 12 | 14 | 36 | 207 | 86 | 293 |
| Higher Secondary | 825 | 179 | 1,004 | 1 | 0 | 1 | 2 | 32 | 0 | 32 |
| Total | 35,042 | 22,012 | 57,054 | 126 | 133 | 796 | 1,055 | 1,729 | 363 | 2,092 |

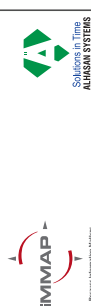
³³ District Education Profile TM Khan 2012-13

Sindh-Tando Muhammad Khan Education Facilities Map

Date (August 2014)



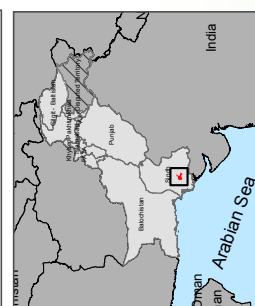
- Legend**
- Settlements
 - PRIMARY
 - HIGH SCHOOL
 - HIGHER SECONDARY
 - MIDDLE
 - COLLEGE
 - Road Network
 - River Indus
 - Tehsil Boundary
 - District Boundary
 - Provincial Boundary
 - International Boundary



Map Doc Name: **Alhaasin_Pakistan_Tando M Khan Education Facilities Map_AE_14082014**
 Creation Date: **20/08/14**
 Projection/Date: **WGS 1984**
 Web Resources: **http://www.iimap.org**

Map Scale: **1:50,000**
 Alhaasin Pvt Limited (Admin) Boundaries Education & Health Facilities National Geo-Spatial Agency (Settlements), PCO (Roads)

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2 Disaster History and Its Impact

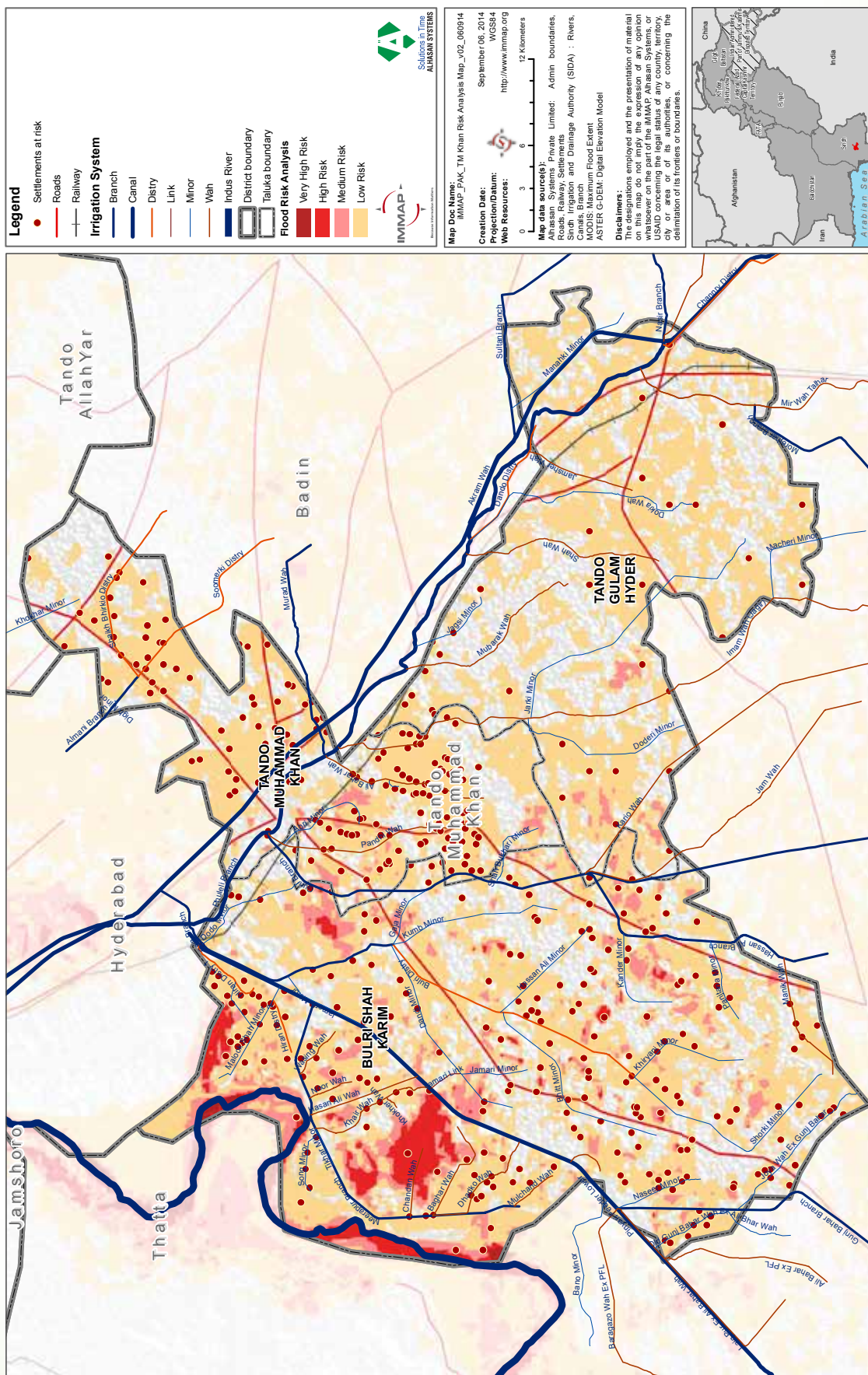
2.1 Disaster in District

2.1.1 Disaster History

TM Khan District is one of the newly created districts of Sindh. It was hit by 2010 and 2011 rains/floods. The relative severity of floods was ranked as medium in district TM Khan³⁴. 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, Naushahroferoze and Shaheed Benazirabad on the left bank of River Indus. These districts on the right and left banks of River Indus are prone to severe threat when River Indus is in high flood. The districts in the lower Sindh prone to riverine flooding include Dadu, Jamshoro and Thatta on the right bank of River Indus and Tando Muhammad Khan, Matiari and Hyderabad. The length of River Indus along the province is 750 kms long.

Vulnerable points of the district are Son Paari, Part of Shoukat Colony, Deh Patgai, Naseerabad Mohalla, Usman Chutto, Hajipur, Ramzan Brohi Hajipur, Habibdino Mirbahar Hajipur, Qado Mirbahar Hajipur, Muhammd Mirbahar Hajipur ,Rahim Bux Chutto Hajipur ,Juman Dal Mullankatiar ,Moledino Mirbahar Tikhar ,Sharif Khaskheli Tikhar, Malook Shah Dhandabo, Ali Muhammad Miranpur, Gidda Miranpur, Sang Mian Khokhar, Haji Karam ali Khokhar, Shafi Muhammad Jamari Rayati Shor, Mirbahar Rayati Shore, Janoo Macchi Khalso, Mushtraka Colony Dodi, Shoukat Colony Dodi, Behrani Mohalla Dodi, Muhammad Bux Laghari Deh Douki, Boor Laghari Deh Chhachri, Bachal Laghari Deh Bareji, Mitho Chang & Idrees Grano Deh Machhari, Kamal @ Booro Chang Deh Ahmedani, Faiz Muhammad Nizamani Deh Erazi, Deh Gulshan, Moya Deh Sathiyari, Sono Khan Chandio Deh Kath Bhambhan.

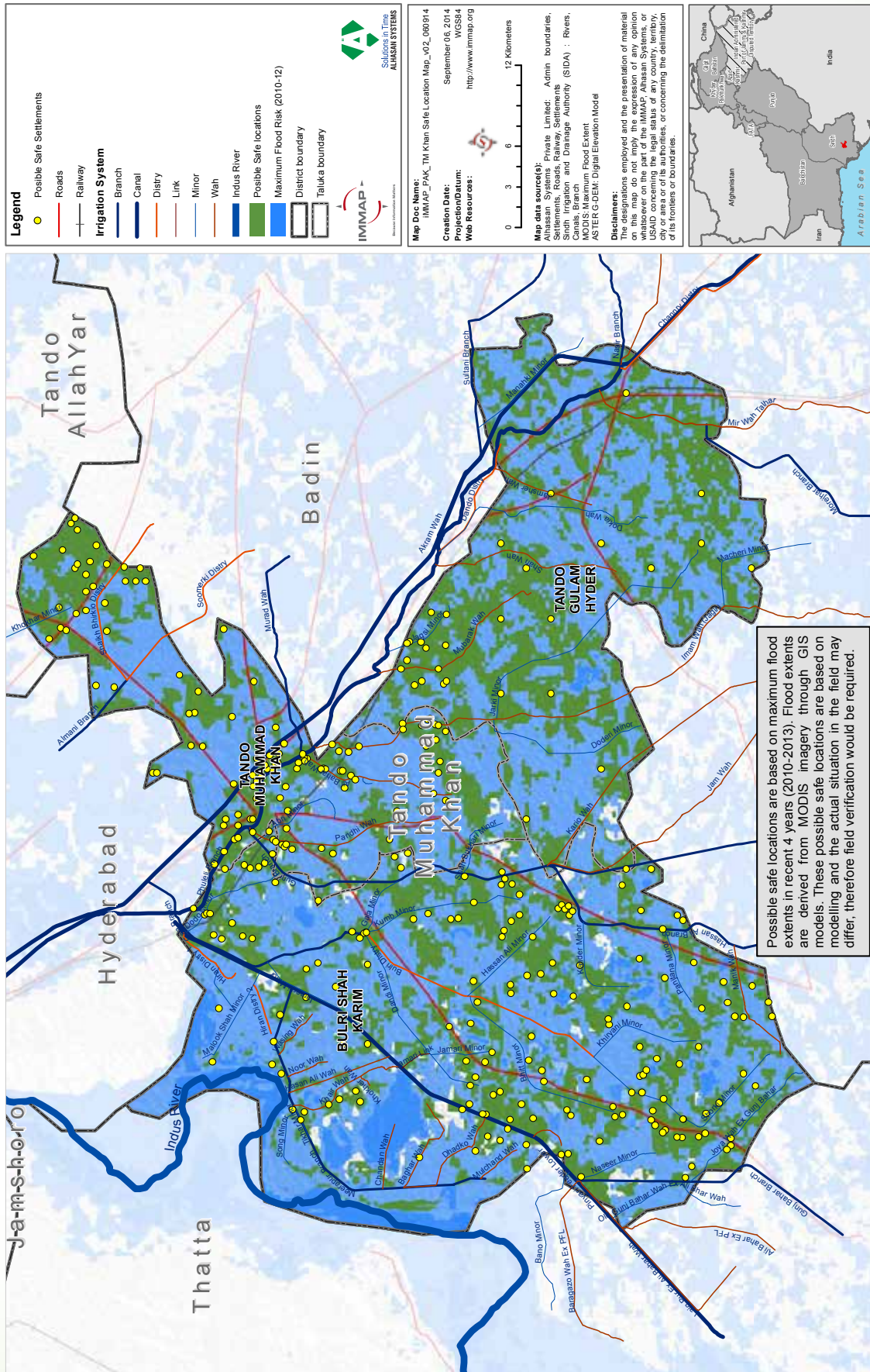
³⁴ Flood Facts, Disaster Management Apparatus, 2010





Sindh - Tando Muhammad Khan Possible Safe Locations Map

September, 2014



2.1.2 Demography

TM Khan was hit by floods in 2010 and 2011. The extent of damage in 2011 was far more than that of the 2010 floods. In 2011 floods³⁵ 2,835 villages/settlements of 16 union councils in 3 talukas were affected. A population of 585,411 persons was affected and there were 17 casualties and 24 injuries. Table 2.2.1 shows the losses and damages summary.

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

| Attribute | Figures 2010 | Figure 2011 |
|-------------------------------|--------------|-------------|
| Total Households 2010 | 100,409 | |
| Affected Households | 6,063 | 97,198 |
| Total UCs | 16 | |
| UC Affected | n/a | 16 |
| Total Revenue Villages | 160 | |
| Villages/Settlements Affected | 79 | 2,835 |
| Total Houses Affected | 1,060 | 72,935 |
| Partially Damaged | n/a | 47,582 |
| Destroyed | n/a | 25,353 |
| Katcha | 1060 | n/a |
| Pakka | 0 | n/a |
| Total Population | 605,821 | |
| Affected Population | 36,578 | 585,411 |
| Deaths | 4 | 17 |
| Male | n/a | 9 |
| Female | n/a | 4 |
| Children | n/a | 4 |
| Injuries | 1 | 24 |
| Male | n/a | 8 |
| Female | n/a | 10 |
| Children | n/a | 6 |
| Total Area | 452,518 | |
| Total Affected Area | n/a | 390,997 |
| Crop Area Affected | 20,160 | 78,038 |

Situational update for the 2012 floods, in the district:

As of 15th October 2012, only 1 casualty and 1 injury reported and 20t acres of crop area inundated³⁶.

2.1.3 Impact of Disaster on Agriculture and Livelihood

As mentioned in the previous section, district Tando Muhammad Khan was hit of floods in 2011 and 2012. The following is a separate analysis of these floods:

Impact of Floods 2011:

The floods of 2011 had devastating effect on this district as all the 16 union councils were affected in 3 talukas. All the sources of livelihood were destroyed for the population,

³⁵ Summary of Losses and Damages as of 17/02/2012, PDMA Sindh

³⁶ NDMA Losses and Damages as of 15th October 2012

particularly for those whose livelihood sources were mainly dependent on agriculture and related industries. Out of a total population of 605,821, 96% of the population (585,411 was affected). Within the affected population, 59% male and 41% female population were affected. 72,935 houses were damaged out of which 47,582 were partially damaged and 25,353 were destroyed³⁷. A total 141,712 acres of area was sown out of which 78,038 acres (55%) was damaged.

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

| | Major Crops | Area |
|---------------------------|---------------------|----------------|
| Cotton | Area sown (Acre) | 19,412 |
| | Area Damaged (Acre) | 18,830 |
| | % | 97% |
| Rice | Area sown (Acre) | 41,587 |
| | Area Damaged (Acre) | 28,279 |
| | % | 68% |
| Sugarcane | Area sown (Acre) | 71,881 |
| | Area Damaged (Acre) | 23,002 |
| | % | 32% |
| Other | Area sown (Acre) | 8,831 |
| | Area Damaged (Acre) | 7,927 |
| | % | 90% |
| Total Area Sown | | 266,567 |
| Total Area Damaged | | 68,679 |

The above table shows the damage of crops due to floods 2011. 97% of the cotton crop was damaged along with 68% rice crop, 32% sugarcane and 90% of other crops. 85 livestock head died due to floods³⁸.

Impact of 2012 Floods

The severity of floods 2012 was less as compared to the floods 2011. The geographical location of this district makes it vulnerable to water inundation. Nonetheless, a significant proportion of crop area was damaged. One person died while another got injured due to floods 2012³⁹.

³⁷ Summary of Losses/Damages due to Floods 2011, PDMA, Government of Sindh

³⁸ Flood Situation Update 2011, FAO

³⁹ Detail of Damages Sindh (23/09/2012), NDMA

2.1.4 Analysis of Food Security Situation

As established in the previous section, district Tando Muhammad Khan is on the borderline of food insecurity. Floods of 2011 and 2012 worsened the existing situation of the population. Thus the indicators of food security i.e. availability, access, utilization and stability showed dismal situation in this district.

District Tando Muhammad Khan is an agro-based district with majority of the households engaged in agriculture farming and livestock rearing activities; while there are still some other households involved in non-agriculture activities and casual labour. Among these three types of the households, empirical studies have shown that poverty has been relatively higher in the non-agriculture households, followed by livestock households and small farmers⁴⁰. It has been shown in the previous section that many individuals of this flood affected district have lost their homes (72,935 houses were damaged), their crops (55% crop area damaged) and heads of livestock (85 livestock died). Due to the lack of 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 (as shown in section 1.2.1, share of agriculture and casual labour is more than 80% in total employment).

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 markets (transporters, processors, wholesalers and retailers) has been decreased with upward movement of transaction costs and shortage of food commodities. This phenomenon hinders the socio-economic access of food in the district⁴¹.

The losses to crops and livestock along with the poor functioning capacity of the market have significantly reduced the expected income of the population of this district. Thus the floods and rains affected people of the district Tando Muhammad Khan have to face a number of key challenges to recover their livelihood, agriculture and livestock; directly affecting the food security situation. So this district may not be categorized as food secure because of the vulnerable situation of the population. All the social indicators show the higher level of poverty and deprivation in this district with large household size, poor literacy level, higher mortality rate and poor level of infrastructure with poor access to education and health facilities.

2.1.5 Health

During 2011 floods, out of 31 BHUs, 7 BHUs were reportedly damaged. Out of 4 RHCs 1 was reported damaged⁴². In response to the floods, Aga Khan Health Service Pakistan (AKHSP) provided health services to people in three UCs. In 16 UCs of the district, HANDS provided Antenatal, Post Natal, and routine health services. Flood rendered, 13,400 children moderate

⁴⁰ Arif, et al (2010), "The 2010 Flood and Poverty in Pakistan: A Preliminary District-level Analysis", Pakistan Institute of Development Economics Islamabad, Background Paper for Conference on the "The Environments of the Poor", 24-26 Nov. 2010, New Delhi

⁴¹ Ibid

⁴² WHO, G. N. (8th to 12th September, 2011). Health Initial Rapid Assessment, 22 flood affected districts in Sindh. Islamabad

acute malnourished (MAM) and 8,114 children severe acute malnourished (SAM) children. Along with these, there were 12,294 pregnant and lactating women (PLW). Only 2,623 MAM children and 1,340 SAM children along with 2,245 PLW were treated⁴³. According to the floods 2012 initial rapid assessment, no damage was reported to any health facility. However, Women, children and elderly people needed immediate health support. The environment was ideal for mosquitoes and flies, which aggravated the already worsening situation of malaria in the area. Poor hygiene, sanitation and unsafe water were also contributing to the poor health status of rain hit communities. Mobile teams and camps could serve the purpose. Pregnant and lactating women needed special attention and nutrition.

2.1.6 Education

During 2011 floods, Out of a total of 1,056 schools, 71 schools (Boys': 61, Girls': 10) were destroyed and 247 schools (Boys': 182, Girls': 65) were partially damaged. Besides these schools, 187 schools were used as camps for IDPs. In response to this damage, Education Cluster, planned to establish 318 Temporary Learning Centers (TLCs). The cluster also planned to refurbishment of 247 partially damaged schools. In addition the provision of Transitional School Structure (TSS) to 71 destroyed schools was also a part of planning. Training of 636 teachers in psychological support and joyful learning, and 795 School Management Committees on school management was also planned. Due to lack of funding only 200 TLCs were established where 10,456 children were facilitated, of which 4,252 were girls. Only 361 teachers including 33 female teachers were trained⁴⁴.

⁴³ <http://pakresponse.info/LinkClick.aspx?fileticket=Qsik3wHt4cc%3d&tabid=93&mid=722>

⁴⁴ *Ibid*

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”⁴⁵

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 District⁴⁶

| Hazard | Frequency | Area affected/union councils | Severity/Force | Year |
|---------------------|-----------|------------------------------|----------------------|-----------------|
| Floods | Monsoon | Entire district | Medium ⁴⁷ | 2010,2011, 2012 |
| Heavy rains | Monsoon | Whole district | Medium | 2010,2011, 2012 |
| Epidemics | Seasonal | Entire district | Low | Every year |
| Earthquakes | Rare | Whole district | Low | 2013 |
| Transport accidents | Often | Entire district | Low | Throughout year |

3.1.2 Vulnerability

Vulnerability is a situation which is:

⁴⁵ The “Urban Governance and Community Resilience Guides” (ADPC, 2010)

⁴⁶ Sindh Contingency Plan 2012

⁴⁷ Flood Facts, Disaster Management Apparatus, 2010

“The attributes and circumstances of a community or system that makes it sensitive, vulnerable or susceptible to the damaging effects of a hazard⁴⁸”

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

Physical/Material Vulnerability

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

Social/Organizational Vulnerability

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

Attitudinal/Motivational Vulnerability

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

Vulnerability matrix

| Physical/material | Social/organizational | Attitudinal/motivational |
|--|--|--|
| The district is vulnerable to riverine floods and rains which occur usually in monsoon season. It was hit by 2010 and 2011 rains/floods. The river Indus flows in north-west of Tando M Khan which inundates the area near to river and washes away everything which comes in its way. In 2011 rains/floods ⁴⁹ , 2,835 villages/settlements of 16 union councils in all the 3 <i>talukas</i> were affected. A population of 585,411 persons was affected. In total, 72,935 houses were damaged. | According to the 1998 census, population of the district was 441,039 persons while the estimated population for the year 2014 is 617,917 persons. Population of District TM Khan has an estimated growth rate of 2.56% per annum, which means that population will double itself in 3 ⁵⁰ years 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. | Female representation in the welfare projects and disaster risk reduction management process is very limited. Women are kept intentionally away from these activities. |
| The climate of Tando Mohammad Khan District is moderate. However, the summer months -April, May and | District TM Khan is rural by its characteristics like majority of the other districts in Sindh. 73 percent | In spite of the NGOs awareness efforts most of the local communities are still unaware of |

⁴⁸ Participant’s Course workbook (ADPC)

⁴⁹ Pakistan Floods 2011, Tando M Khan profile (April 2012)

⁵⁰ Rule of 70 <http://controlgrowth.org/double.htm>

| Physical/material | Social/organizational | Attitudinal/motivational |
|--|--|--|
| June - are very hot during the day. The maximum recorded humidity at the Tando M.K is 55%. Rainfall is highly erratic with an average of about 130 mm. Most of the people leaving in mud houses are vulnerable to heavy Monsoon rains. | of the population resides in rural area as compared to the 27 percent that resides in the urban areas. Most of the basic facilities of life are not available in these remote areas of the district. | their risks and natural hazards like flood. |
| In whole district, piped water is available to only 8 per cent of housing units ⁵¹ while in rural areas pipe water is available to only one per cent of the households. By drinking unsafe and contaminated water people gets vulnerable to hepatitis and other water born disease. | Dependent population (the population that is less than 15 years and more than 65 years of age including widows and divorced women) in the case of Tando M Khan district is 48.07 per cent of the total population and the working population is 51.93 per cent, which shows that dependency ratio ⁵² in the district is 93 per cent, which is very high and as such makes the population highly vulnerable. | The influential segment of the area always tries to influence the social mobilizers and demand some financial compensation for allowing mobilization activities. |
| Mainstreaming of DRR practices in the district development projects is not incorporated. Even district's concerned departments are lacking integration of DRR measures in their projects and that's why they receive great damage against smaller hazards. | The education status is quite poor in TM Khan. The overall illiteracy rate (for the population of 10 years and above) is 55%; for females it is 69% and for males it is 33%. For the urban rural comparison, urban illiteracy rate is higher than the rural. | Most of the projects lack sustainability because these projects do not encourage/support bottom up approach. |
| In Tando M Khan district, 57.14 per cent people use wood/bamboo material for roof construction. This percentage is higher in rural areas (66.16 per cent) as compared to (17.98 per cent) ⁵³ urban areas. Houses having wood/bamboo roofs are vulnerable during heavy rains. | District government departments have almost failed in the implementation of disaster related policies. Awareness sessions and trainings, for educating the local vulnerable communities, are amongst one of the policies of the District Disaster Management Authority, which has not been implemented up till now. | Cultural norms in the interior Sindh are an obstacle in the mobilization process. |
| The district lack funds and resources for risk reduction projects. The government and the people both are in dire need of funds and resources like boats, life jackets etc. | The immediate response by the Government, in terms of relief activities in emergencies has always been elusive. It always responds in the end and mostly when the situations has somewhat improved. | |
| Neither Evacuation centres nor exit routes are identified by the people | Lack of coordination amongst all stakeholders is a major hindrance in | |

⁵¹ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

⁵² Dependency Ratio= (Population < 15 Years + Population > 65 Years)/ Population 15-65 Years

⁵³ Pakistan Social and Living Standards Measurement Survey (PSLM), 2012-13

| Physical/material | Social/organizational | Attitudinal/motivational |
|--|---|--------------------------|
| of the district. In case of floods most people move up to their roofs and don't leave their vulnerable houses. | implementation and progress of the disaster risk reduction process. | |

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 hazards⁵⁴.

Physical/Material Capacity

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

Social /Organizational Capacity

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

Attitudinal/Motivational Capacity

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

Capacity matrix

| Physical/material | Social/organizational | Attitudinal/motivational |
|--|--|--|
| The existing road network in Tando Muhammad Khan district is fairly good. Although there is no national highway passing through this district, yet the provincial highways have well connected the whole district. The district headquarter of Tando Muhammad Khan is connected with its <i>taluka</i> headquarters of Bulri Shah Karim and Tando Ghulam Hyder through metalled roads. Road networks are useful in carrying out relief activities. | District Disaster Management Authority [DDMA] T.M.Khan is a disaster policy making department at district level. It prepares disaster management plans including district response plan for the district. It coordinates and monitors the implementation of district plan in line with national and provincial policies and plans. | 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. |

⁵⁴ Participant's Course workbook (ADPC)

| Physical/material | Social/organizational | Attitudinal/motivational |
|--|--|--|
| District Tando Muhammad Khan has well established irrigation system. The name of main canals and branches are Phulili canal, Akram wah, Ginyari canal and Guni wah. Other modes of land irrigation like river water and tube wells are also used in the district for irrigation purpose. Good irrigation system is helpful in controlling the intensity of floods. | Different political parties exist in the district for serving the people of the area but Pakistan People's Party has appeared to be the strong political party of this district and have won the National Assembly seat in the last general election. Political parties run welfare projects like Benazir Bhutto Income support Programme for uplifting the living standard of vulnerable communities. | The local people use their local and traditional approaches to overcome the negative impacts of hazards like heavy rains, floods etc. |
| The district is known as agro-based as majority of the people sustain their livelihood on agriculture. Seventy percent of the population is engaged in agriculture. Main crops of this district are sugarcane, rice, wheat and cotton. Wheat and Sugar cane production in the year 2008-9 was 32.5 and 1,536.6 thousand tonnes. Good agricultural production decreases the threat of food security problems. | Police and Pak Army with their limited resources help the disaster hit communities. Police try to evacuate people to safer places and maintain law and order situation while Army helps in search & rescue and first aid assistance. (Army Doctors) | Non-governmental organizations NGOs are playing a great role in the awareness of the vulnerable communities. However, there is still more to do in this regard. |
| Tando Muhammad Khan is primarily an agro-based district. So the industrial base in this district is dependent on the agriculture. This district has established industries which are related to the agriculture i.e., the raw material for these industries are provided by the agriculture sector. There are sugar mills, flour mills, rice mills and <i>Ajrak</i> industry in this district. | Union council's secretaries are helpful because they keep data and information of the whole union council. This data and maps of the area can be useful in risk assessment and risk management plan of the area. | Primary teachers in rural communities really support the welfare activities. They not only motivate the local community for project support but also encourage their students to join the cause. |
| According to a food security survey, the district is producing animal based food (meat & meat products) in surplus to its requirements ⁵⁵ . A substantial growth in Livestock products such as milk, meat, beef, mutton, poultry and eggs have been noticed since many years for the people of district Tando Muhammad Khan. | Different local and national and International Non-governmental Organizations are working in the district on different projects including disaster risk reduction. Some of the organizations are Goth Seengar Foundation, People's Primary Healthcare Initiative, Young Lunghari Welfare Organization, World Health Organization and International Medical Corps. | Youth of the district is very energetic and know their responsibilities. In any kind of emergencies they move forward to help the needy people. |

⁵⁵ http://www.tmkhan.gos.pk/index.php?option=com_content&view=article&id=5&Itemid=3

| Physical/material | Social/organizational | Attitudinal/motivational |
|---|---|--------------------------|
| The total number of schools ⁵⁶ in the district is 1,055. Out of which 989 are primary schools, 17 are middle schools, 11 elementary, 36 are secondary schools and 2 are higher secondary schools. These school buildings are also used as shelter and evacuation centres in emergency. | Tando Muhammad Khan is the second largest Ajrak manufacturing district in the country. Ajrak is a unique form of block print shawls that display special designs and patterns made using block printing by stamps. Common colours used while making these patterns may include blue, red, black and yellow). These Ajrak are known throughout the country and source of income for the local traders. | |
| The district has health facilities ⁵⁷ , which include 1 hospital, 3 Rural health centres (RHCs), 13 Basic health units (BHUs), 19 Dispensaries and 2 mother child health centres. The rural people visit these centres without hesitation and get benefited. | | |

⁵⁶ District Education Profile, Tando Muhammad Khan, 2012-13, Reform Support Unit

⁵⁷ Health Facility Assessment Sindh, district Tando Muhammad Khan, 2012

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.
- Teaching staff should train the students for evacuation in the case of flood and practice them a variety of safety drills on weekly or monthly basis.
- The Government and NGOs should invest in DRR sector and should incorporate DRR measures in improving school buildings as these can be used as shelter and evacuation centres in case of emergency.
- Incorporate disaster risk reduction measures i.e., ensure their suitable location and construction while establishing new schools in order to avoid future hazard threats.
- Humanitarian organizations should take on board the District Education Department and should provide trainings and necessary skills to the education officials to enable them to prepare School Based Disaster Risk Management Plans (SBDRM-Plan) for each school in the district.

4.1.2 Infrastructure

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

4.1.3 Health

- NGOs should encourage the community participation in the awareness sessions, programs and trainings, related to water treatment practices and hygiene practices which will capacitate the vulnerable communities of the area against the communicable diseases.
- Health department should take care of establishment of health facilities focused on certain population. All the health related issues should be dealt by them. But the responsibilities have to be identified.
- Health facilities should be located on higher grounds along or near good roads and adequate means of transportation readily accessible to the community.

- Stabilization centers for the people suffering from acute malnutrition should be established in each small and big hospital.
- A logistic system should be put in place for determining the requirement of medicine, maintaining an inventory, storing and stocking, issuing and controlling the use of medicine, stockpile of emergency medicine and supplies, special arrangement with vendors and suppliers for emergency purchases in time of disaster.
- Advocacy seminars should be organized at district level for the training of medical staff to implement National Health Programs.
- DDMA should assign the responsibilities of health department to ensure the availability of medical and paramedical personal in hospital, BHU's, MCHC, and RHC's. Moreover, mobile health teams should be mobilized so that the health facilitators can visit the local areas to provide basic health care especially for the vulnerable group such as people with disabilities, elderly persons, children, females and those who hesitate to go to the hospitals because of cultural constraint and long distance.

4.1.4 Livelihood

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

4.1.5 Food

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

- Civil administration should look after the availability of food.

4.1.6 Wash

- Innovative approaches are required to ensure the availability of low-cost, simple, and locally acceptable water and sanitation interventions. Integrating these approaches into existing social institutions such as schools, markets, and health facilities is required.
- Municipal workers should monitor the quality of water and should distribute chlorine tablets for water purification in order to avoid diseases like cholera and hepatitis etc.
- DRR measures should be incorporated in the construction of sewerage system in order to minimize the possibility of over flowing of sewage water in rainy days and to mitigate the hygiene issues.
- NGOs in district TM Khan 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 TM Khan 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 | Asil Ali Memon | DC | 0223-342160 | |
| | | Ijaz Ul Hassan | ADC-I | 0223-340453 | |
| | | Vacant | ADC-II | 0223-340282 | |
| 2 | Irrigation | Ghuam Akbar Lashari | XEN | 022 9210343 | |
| 3 | Agriculture | Roshan Memon | District Officer | | 03003092139 |
| 4 | Health | Abdul Kareem Burti | District Health Officer | 0223-340399 | |
| 5 | Education | Shafi Muhammad Pathan | District Education Officer | 0223-340648 | |
| 6 | Social Welfare | Khair Muhammad Tahiri | District Officer | 0223-342243 | |
| 7 | Livestock | Dr Zakir | District Officer | | 03443579773 |

Source: DC office Tando Muhammad Khan

5.1.2 Emergency Response

| S.No | Name or Organizations | Office Contact |
|------|-----------------------|----------------|
| 1 | Edhi Ambulance | 115 |
| 2 | Electricity Complaint | 118 |
| 3 | Police Emergency | 15 |
| 4 | Telephone (Complaint) | 1218 |
| 5 | Telephone Enquiry | 1217 |
| 6 | Sui Gas Help line | 1199 |
| 7 | PIA Flight enquiry | 114 |
| 8 | TCS Courier | 022-3342996 |

5.1.3 NGOs working in Tando Muhammad Khan

| Name | Contact |
|---|----------------|
| Goth Seengar Foundation | 0792-621115 |
| Health and Nutrition Development Society | 021-34532804 |
| Bhandar Hari Sangat | 022-2652292 |
| Shama Social Development Organization | 022-3341133 |
| Sachai Social Welfare Association | 0333-2804135 |
| Eco-Conservation Initiatives | 051-4446362 |
| Solidarity Equality Environment and Development Sindh | 022-3341567 |
| Integrated Health Services | 051-2260001 |
| International Organization for Migration | 051-2876948 |
| World Health Organization | 051-925 5077 |
| People's Primary Healthcare Initiative | 051-5200851-2 |
| Care the People Foundation | 051-756-6781-2 |
| Idara-e-Taleem-o-Aagahi (ITA) | 051-517-3005-7 |
| Young Lunghari Welfare Organization | 0333-7203964 |
| Sachal Sami Samaji Welfare Organization | 0300-3196993 |
| Sewai Foundation | 0306-3683998 |

| Name | Contact |
|---|-----------------|
| Shah Abdul Latif Development Organization | 0302-3156764 |
| Hawa Foundation | 0301- 3834516 |
| Insaf Social Welfare Association | 0331-3216324 |
| Bhittai Social Welfare Association | 0300-3191325 |
| Gul Welfare Association | 0307-8223730 |
| Social Welfare Association | 0344-3853887 |
| South-Asia Partnership Pakistan | 022-2650243 |
| Sindh Rural Support Organization | 071-5633516-657 |
| PLAN International | 051-2609435-41 |

5.2 Health Facilities

List of health facilities are provided by WHO for 2010

| TEHSIL | UC | HF_TYPE |
|---------------------|---------------------------------|---------------------|
| BULRI SHAH KARIM | ALLAHYAR TURK | DISPENSARY |
| BULRI SHAH KARIM | ASGHARABAD | DISPENSARY |
| BULRI SHAH KARIM | BULRI SHAH KARIM * | RURAL HEALTH CENTRE |
| BULRI SHAH KARIM | DADOON | BASIC HEALTH UNIT |
| BULRI SHAH KARIM | GHULAM KHAN SANJRANI | DISPENSARY |
| BULRI SHAH KARIM | JHOKE SHARIF | BASIC HEALTH UNIT |
| BULRI SHAH KARIM | MULAH KATIAH * | BASIC HEALTH UNIT |
| BULRI SHAH KARIM | SAEED KHAN LUND | BASIC HEALTH UNIT |
| BULRI SHAH KARIM | SAEED MATTO | BASIC HEALTH UNIT |
| BULRI SHAH KARIM | SAEED PUR | BASIC HEALTH UNIT |
| BULRI SHAH KARIM | SULEMAN SOOMRO | DISPENSARY |
| TANDO GULAM HYDER | GHULAM MUHAMMAD NIZAMANI | BASIC HEALTH UNIT |
| TANDO GULAM HYDER | GHULAM SHAH BAGRANI | BASIC HEALTH UNIT |
| TANDO GULAM HYDER | MANIK LAGHARI | DISPENSARY |
| TANDO GULAM HYDER | MOTAN CHANDIO | DISPENSARY |
| TANDO GULAM HYDER | TALHAR * | RURAL HEALTH CENTRE |
| TANDO GULAM HYDER | TANDO GHULAM HAIDER * | BASIC HEALTH UNIT |
| TANDO MUHAMMAD KHAN | BAQAR NIZAMANI | DISPENSARY |
| TANDO MUHAMMAD KHAN | DHINGANO BOZDAR | BASIC HEALTH UNIT |
| TANDO MUHAMMAD KHAN | GHULAM MUHAMMAD TALPUR | DISPENSARY |
| TANDO MUHAMMAD KHAN | NANGO SHAH | BASIC HEALTH UNIT |
| TANDO MUHAMMAD KHAN | RAJO NIZAMANI | RURAL HEALTH CENTRE |
| TANDO MUHAMMAD KHAN | SAINDAD WASSAN * | DISPENSARY |
| TANDO MUHAMMAD KHAN | SHAIKH BHIKIO | BASIC HEALTH UNIT |
| TANDO MUHAMMAD KHAN | TALUKA HOSPITAL, TANDO MOHAMMAD | HOSPITAL |